POPULATION HUMAN RESOURCES & DEVELOPMENT

Edited by Alejandro N. Herrin

POPULATION, HUMAN RESOURCES AND DEVELOPMENT

VOLUME II

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The UP Center for Integrative and Development Studies (UP-CIDS) was established in September 1985 to promote interdisciplinary studies on critical topics that influence development policies and issues.

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Edited by Alejandro N. Herrin

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FOREWORD

I am delighted that an initiative I took when I was the President of the University of the Philippines has finally borne fruit.

When I brought the idea of producing a source book on population to Rafael Salas, who was then Head of the United Nations Fund for Population Activities, he readily agreed to support it because studies on population in the Philippines at that time were scanty and largely concerned with methodology. This was probably because we were tentative, even gingerly, about matters concerning population.

Methodology is obviously important. But what I wanted was to situate population issues in the context of public policy, to view them from a variety of angles in order that we may see the interrelationships with other factors that influence economic and social development.

This compendium of thirty-one technical essays by thirty-four U.P. professors in various disciplines fulfills my early hopes. The scholars, under the overall guidance of Dr. Alejandro Herrin, an economist, dealt not only with the classic themes in demography such as fertility, mortality, and population movements but also with ancillary topics such as education, nutrition, productivity, aging, environment and social institutions.

I am particularly pleased with the volume that reviews policy and program actions. I would have wanted more objective assessments but I can live with the occasional flash of emotion that goes with advocacy. The overview by Dr. Herrin captures succinctly developments in public policies from 1970-1985 and gives us the perspective that we have missed for so long.

In sum, this three-volume work, despite its forbidding title, could very well become the standard reference on population policy in the Philippines.

Demography should be the bedrock of development policy. People after all are the causes, the agents, and the objects of development. But in the final analysis, population should be the major determinant because it is, to use the words of Guy Bois, "the least arbitrary of criteria."

EDGARDO J. ANGARA
Senate President

PREFACE

The University of the Philippines–Center for Integrative and Development Studies (UP-CIDS) undertook in 1987 a multidisciplinary research project entitled "Population, Human Resources, Development and the Philippine Future." The project was made possible by a grant from the United Nations Population Fund (UNFPA). The objective of the project was to review, assess, update and consolidate information on various dimensions of population, human resources and development, including the role of public policies in influencing demographic and economic trends. Such information would be useful for formulating policies and programs to influence demographic trends as an integral part of the overall development strategy. A special focus of the research was on obtaining information that could help clarify the two issues of contention at that time, namely, the role of population in socioeconomic development and the role of government in influencing demographic trends, particularly fertility and population growth.

Several social scientists from the University of the Philippines System participated in the two-year project. The preliminary findings of the individual researches were presented in seminars and workshops conducted in various parts of the country. Preliminary findings and their implications for population and development policy were discussed in several forums participated in by policy makers and planners, including the Parliamentarian's Conference on Human Survival: Population and Development sponsored by the Philippine Legislators' Committee on Population and Development, which was held in Manila in 1988.

The results of the monitoring surveys on the coverage of population, health and nutrition activities were quickly disseminated through workshops participated in by local government officials and local representatives of national line agencies in the areas where the studies were conducted. Abridged versions of several of the papers in this publication have appeared in the **Philippine Population Journal.** *Many of the papers were also cited in a number of articles that appeared in different newspapers. Requests from various sectors for copies of papers have continued since the completion of the project in 1989. It was high time for these papers to be collected into a single publication.*

It is hoped that with the publication of these papers, the findings of the research will reach an even wider audience. Researchers and students will find the studies contained in this publication useful starting points for future social science research on population and development.

Alejandro N. Herrin

ACKNOWLEDGMENT

I am indebted to a number of people who encouraged us to complete the research project and this publication. Edgardo J. Angara, then president of the University of the Philippines (UP) entrusted Dante B. Canlas and me with the responsibility of implementing the project that Rafael Salas, then Executive Director of the United Nations Population Fund (UNFPA) had agreed to support. Carlos P. Ramos, then Director of the newly created UP Center for Integrative and Development Studies (UP- CIDS) provided invaluable assistance. Solita C. Monsod was very encouraging at that crucial time when we needed moral support. While Dante B. Canlas had to beg off as co-director of the project to assume other responsibilities, he was instrumental in helping the research take off the ground.

During the two years of implementation, three UP-CIDS directors provided technical and management support: Carlos P. Ramos, Carolina G. Hernandez and Fe R. Arcinas. Since the completion of the research at the end of 1989, three other UP-CIDS directors, never giving up the idea of compiling the entire set of papers into a single publication, obtained additional funding and commissioned the initial editing of 31 research papers: Jose N. Endriga, Emmanuel C. Lallana and Cynthia Rose B. Bautista.

The main work, of course, was done by the individual researchers from various disciplines and units of the university system. In addition to the dedication they put into their work, they had been very generous with their time, travelling to different regions to present their findings. Several colleagues at the University also acted as consultants and provided helpful suggestions regarding broad research areas to be covered as well as specific approaches and perspectives.

The silent heroes, however, are those who quietly worked behind the scenes so that these volumes will see print. Professors Raul Ingles, Ciriaco Sayson, Winifreda Evangelista, Concepcion Abaya, Fe R. Arcinas and Mr. Placido M. Manalo, Jr. provided editorial assistance.

The following UP-CIDS staff either facilitated the research project, encoded all the corrections or prepared the lay-out of the camera-ready version: Gabriel Fabella, Teresita Tamayo, Ellen Cometa, Emen Prospero, Nanie Domingo, Bella Lucas, Stretch Payawal, Ernie Leonardo, Boy Dominguez, Mel Maulit, Roger Gitana, Joyce Dimayuga and Malu Calugay.

As the publication deadline drew near, the UP-CIDS sought the assistance of Lormie Valino-Lazo in designing the cover. It also called on the following staff of the Third World Studies Center--Marlon Wui, Carlitos Escueta, Francis Carlo Taparan, Ma. Lourdes Pacuribot, Macaria Francisco, Bienvenida Lacsamana and Ma. Teresa Tantoco to help correct the final tables.

I would be remiss if I do not acknowledge UP-CIDS's Joy Aparis. She coordinated the publication of the volumes and patiently nagged us into beating the deadline. Without her persistence and resourcefulness, these volumes would not have been published at this time.

Apart from UP-CIDS and the UNFPA, we also wish to acknowledge the kind assistance of the Population Commission.

Alejandro N. Herrin

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EXECUTIVE SUMMARY

Alejandro N. Herrin

I. INTRODUCTION

In 1986, preliminary estimates obtained from the analysis of survey and census data pointed to several disturbing demographic reversals. Between 1975 and 1980, the rate of natural increase and the crude birth rate appeared to have risen somewhat instead of continuing their usual downward trend. Marital fertility decline, which had been rapid between 1970 and 1975, slowed down between 1975 and the early 1980s. The contraceptive prevalence rate for all methods decreased between 1978 and 1983. The gains in infant and child mortality since the 1950's were not sustained in the 1970s while interregional migration patterns in the 1970s became increasingly urbanward, especially metropolitanward.

In addition to such apparent demographic reversals are the equally disturbing trends in human resource formation. Health status has not improved significantly, and infectious diseases continue to be the major causes of deaths, especially among infants and young children. The gains in the nutritional status of preschoolers from 1978 to 1982 seem to have been nullified by 1985. The educational performance of elementary and secondary students has not improved over the past 10 years and continues to be characterized by low survival rates and low achievement levels.

The above trends raise a number of questions. First, had the preliminary demographic estimates and other human resource indicators been robust? Second, if they were, why such trends? There is a strong suspicion that these apparent reversals in demographic trends and the poor performance in human resource formation had in some way been related to the contemporary performance of the economy and to the failure of public policies and programs to significantly influence demographic trends and human resource formation. What is not clear, however, is the exact nature of these interrelationships. There is, therefore, an urgent need to understand these interrelationships to inform public policy.

The need to clarify such interrelationships became all the more urgent under the Aquino government in view of public debates at that time, especially during the early years of her administration, regarding the role of population in socioeconomic development and the role of government in moderating fertility and population growth.

In 1987, the project entitled "Population, Human Resources, Development and the Philippine Future" was undertaken by the University of the Philippines Center for Integrative and Development Studies through a grant provided by the United Nations Population Fund (UNFPA) to the University of the Philippines. The project's objective then was to undertake a number of studies, mainly in the nature of reviews, assessments and consolidation of what was known about a particular area of concern, in order to better understand the relationships between demographic factors, human resource formation, and economic performance, and to determine the role of public policies in influencing these trends. Moreover, in view of public debates that were then raging (i.e., on the role of population in socioeconomic development and the role of government in influencing fertility and population growth), the project aimed to clarify the nature and extent of the "population problem" in the Philippine situation. This was intended to provide policy makers and planners a better basis for formulating policies and programs to influence demographic trends as an integral part of the overall development strategy of achieving sustained economic growth, total human development, and equity.

The approach was to undertake multidisciplinary research on a number of issues and topics. These included the (1) review and updating of demographic estimates with attention to fertility, mortality and migration; (2) review and updating of information on some of the major indicators of human resource formation with attention to health, nutrition and education; (3) review of the mechanisms through which demographic trends influence socioeconomic development; (4) review of the situation of specific population groups, particularly women, the elderly and adolescents; (5) review of public policies and their impact on human resource development and demographic trends; and (6) determination of the coverage of current population, health and nutrition activities in the field.

Several social scientists from the University of the Philippines System participated in the two-year project as shown in the list of investigators and consultants. The preliminary findings of the individual researches were quickly disseminated mainly through workshops conducted in various parts of the country. Preliminary findings and their implications for population and development policy were also discussed in several forums participated in by policy makers and planners. Chapter 1 of this volume served as a background paper for the Parliamentarian's Conference on Human Survival: Population and Development sponsored by the Philippine Legislators' Committee on Population and Development in 1989.

With the publication of these papers, it is hoped that the findings of the research will reach an even wider audience, including, and perhaps especially, future researchers who could take the studies contained in this publication as baseline from which to steer social science research on population and development forward. Following are brief description of the papers: .

II. OVERVIEW

Herrin (Part I, Chapter 1) gives an overview of population and development trends and the role of public policies in determining such trends. It also brings to bear current research findings and attitudes on key issues on population and development as possible bases for a consensus on population policy, namely, the role of population growth in socioeconomic development with particular attention to household welfare and human resource development, and the role of government in fertility control. The paper suggests that to improve family welfare and the quality of human resources, and to achieve full employment at rising real wages, the government must (1) strengthen the population policy by adopting explicit fertility and population growth objectives; and (2) adopt an integrated human resource development policy, with particular attention to the health, nutrition and basic educational needs of children.

III. DEMOGRAPHIC TRENDS: REVIEW AND UPDATE

Fertility and Mortality. Zablan (Chapter 2) reviews available data on mortality and its correlates. The study reveals that while there had been a long-term trend in mortality reduction, the pace of decline slackened during the most recent period 1975-1983. This slackening was traced to the significant contribution (40 percent) of communicable diseases to total deaths, the victims being mostly infants and very young children. Declines in mortality were not uniformly felt across population subgroups. People in rural areas and those with less education and employed in low-status jobs ran higher risks of death than those who resided in urban areas, who had more education and who held high-status occupations. The large area and social group differentials in mortality observed in the early 1970s persisted up to 1983 (the latest year when mortality estimates based on national demographic surveys were available).

In addition to mortality and health indicators, Zablan reviewed data on nutrition obtained from national surveys conducted by the Food and Nutrition Research Institute, the latest of which had been done in 1982. The data indicate that the Filipino diet in 1982 was somewhat adequate in protein but inadequate in energy and micronutrients, except for niacin. With the exception of ascorbic acid, nutrient intake was almost always higher in urban than in rural areas, but Metro Manila was worse off than other urban or rural areas. Nutrient intake was positively related with income and education, but was negatively related with household size. Those in high-status occupations were better off than those in low-status jobs. Anthropometric indicators of nutritional status showed high rates of undernutrition among preschool children. The rate of undernutrition among preschoolers in 1982 was higher in rural than in urban areas, except for Metro Manila. Equally disturbing was the finding that the practice of breastfeeding and its duration has been slowly declining, especially among rural and less educated mothers-

who would have been the real beneficiaries in terms of improved health and survival chances of their infants and young children.

De Guzman (Chapter 3) reviews existing estimates of fertility, nuptiality and contraceptive practice. Recent figures reveal a slowing down of the decline in fertility, especially in the 1975-1980 period. Some preconditions for long-run fertility decline are present, such as the downward trend in the desired family size. However, there are also indications that fertility declines in the short- or medium-term are not likely to accelerate. These include declining breastfeeding practice, earlier marriages, and slow increase in contraceptive practice. Several policy thrusts are suggested, including the improvement of health and nutrition services to reduce infant and child mortality; improvement of information and education to increase the prevalence of breastfeeding; enhancement of women's status and autonomy by augmenting, among others, educational and employment opportunities for women to influence the age at marriage; and revitalization of the national family planning program.

New estimates of fertility and mortality data are needed to assess recent trends. In Chapter 4, de Guzman, using a common methodology, estimated fertility and mortality from the 1970s to the mid-1980s, incorporating the most recent available data, the 1986 Contraceptive Prevalence Survey. The reanalysis of existing data and the update occasioned by a new set of data showed that fertility in the Philippines is declining – but very slowly, compared to neighboring countries in the region. The large differentials in cumulative fertility by education, occupation and age at marriage, persist.

With respect to mortality, the second half of the 1970s saw some small improvements in the survival of children. The early 1980s, however, indicated a deterioration in conditions, dampening hopes for rapid progress toward mortality reduction. While the infant mortality rate (IMR) might have reached a low level of 55 deaths per 1000 live births in 1980, the actual level in 1984 may have reverted to its original position in 1975, i.e., a little over 60 per 1000 live births. The 1984 estimate, which suggested an increase in infant mortality rate was surprising in a way, if also somewhat expected. It was surprising that the IMR would actually increase (one normally expects a continuing mortality decline after a large drop in mortality such as that which occurred in the immediate postwar period), hence, one would doubt the accuracy of the estimate. On the other hand, the early 1980s was a period of unusual economic difficulties, hence, one might expect that adverse economic conditions significantly affected infant and child survival (although one is not quite sure about how large an impact to expect). On the hindsight de Guzman's estimates suggesting a possible rise in IMR in the early 1980s or at best indicating no improvements in mortality, was essentially correct. Recent estimates of infant mortality released by the National Statistical Coordination Board show that IMR was around

64 deaths per 1000 live births in 1976. This declined to 59 in 1980, increased to 63 in 1983 and remaining at this level in 1986. The IMR for 1990, the latest available data, was about the same in 1980.

Contraceptive Use. In Chapter 5, Zablan provides quantitative measures of "unmet need" for contraceptive services and assesses the extent of fertility reduction that will result from satisfying the current levels of unmet need. The analysis of unmet need revealed the following results: First, the unmet need of couples expressed in 1986 ranged from 12 to 37 percent. If this were fully satisfied by the National Family Planning Program, it would lead to a contraceptive prevalence rate ranging from 58 to 83 percent. Second, a decline in total fertility rate (TFR) from 4.36 births per woman in 1987 to 3.67 in 1993 (the target of the Medium-Term Development Plan) would be achieved under optimistic assumptions, or the same decline could be achieved by 1998 under more realistic assumptions.

The trends over the 1978-1986 period showed that the unmet need expressed by Filipino couples in 1978 was not satisfied by the program in 1986. It further showed that unmet need had increased over the period substantially for married women below 25 years, and slightly for married women 25-39 years. However, these increases were due more to the need for birth spacing than to birth limitation. Contraceptive prevalence rates for married women below 25 years remained constant and only high-parity women 30 years and above showed significant increases in current user rates.

Zablan argues that for the program to achieve its acceptor targets, all it has to do is to satisfy the need, at the least, of all those couples who want to stop childbearing and, at the most, of those who intend to use family planning either to space or to stop childbearing. For the program to achieve its fertility reduction targets, however, it is necessary to adhere to the principle of "free choice" of contraceptive methods so that couples could select methods most suitable to them. In addition, the program needs to promote and maintain an efficient service delivery system.

Migration Patterns. Feranil (Chapter 6) synthesized various data and analysis to provide a broad picture of the historical patterns of migration and population redistribution in the Philippines. The paper highlights the long-distance, frontierward, and male-dominated movements that characterized migration before 1960, and the increasing urbanward and female-dominated migration after 1960.

In Chapter 7, Feranil updates data on the volume of female migration to the cities and the characteristics of female migrants (relative to female nonmigrants and male migrants) using data from the 1970-1975. Feranil's analysis was further expanded to look at female migration across regions (Chapter 8). The questions posed for analyses were: (1) except for the

dominant flow to Metro Manila, is female migration to the other urban areas of the same magnitude across regions; (2) do the urban areas in the different exhibit manifest uniform patterns of female migration or are there pronounced differences among them; and (3) what are the characteristics of female migrants moving to the urban areas of the various regions. The concern for having accurate information of female migration is based on the fact that demographically, their numbers are large; economically, the sector where women find employment (mainly services) involves low earnings; and socially, the workers (young, single and less educated women) are likely to be exploited.

Demographic Development and Public Policies. Herrin (Chapter 9) notes the unfavorable trends in both demographic and economic situation in the most recent period, i.e., continued rapid population growth rate and inability to sustain fertility and mortality declines on the one hand, and continued high poverty rates, slow structural change and employment expansion in the face of a rapidly growing labor force, on the other. A review of existing analyses of the impact of past economic policies indicates a strong bias against the agricultural sector where the large majority of the population is found. Moreover, government priorities, as reflected in the pattern of public expenditures, have tended to favor large-scale infrastructure projects at the expense of basic social services. Are these demographic and socioeconomic trends, and the nature of public policies and priorities merely coincidental or are they intrinsically related?

The paper suggests that Philippine demographic development during the past one-and-a half decade has been influenced by various indirect and unintended impacts of economic policies and by the failure of population-related programs to have large direct impacts on demographic trends.

IV. HUMAN RESOURCE DEVELOPMENT TRENDS: NUTRITION AND EDUCATION

Nutrition. Florencio (Chapter 10) notes that malnutrition presents itself in different forms and degrees, depending on who are affected and when, and what nutrient or nutrients are inadequately provided and utilized to meet the body's requirements. It can affect all kinds of people, although some groups are more vulnerable to malnutrition than others. In the Philippines, four kinds of malnutrition have been the subject of much concern. These are energy-protein undernutrition, as manifested by physical growth deficits; and specific deficiences in iron, vitamin A and iodine.

The paper puts together available information on the nutrition situation of infants and preschoolers, school children, adolescents, pregnant and lactating women, and adults and elderly. It also examines nutrition policy and programs, with particular attention to the Philippine Food and Nutrition Program (PFNP) and the activities of the National Nutrition Council.

Florencio notes that the PFNP has embarked on a variety of activities, tried to put in place a rather elaborate organizational structure at every level of administration, and engaged in an integrated planning process with the different socioeconomic sectors. During the last 14 years, the PFNP has had noteworthy accomplishments that were recognized both locally and internationally. The paper also notes, however, that the complexity of the entire nutrition program, inadequate resources, and some degree of disjointedness in the manner nutrition is perceived by planners and implementors, by beneficiaries and benefactors and by national - and local participants, have contributed to the lack of sustainability of many of the initiatives that have been taken and the unevenness in the program's implementation throughout the country.

The paper calls for an immediate and in-depth review of the entire working of the PFNP. The program involves so many sectors and chains of operations which fall under different administrative units and levels. The weak links thus need to be promptly and correctly identified so appropriate steps can be taken.

Elementary and Secondary Education. Cortes and Lara (Chapter 11) evaluate the performance of elementary and secondary education during the period 1970-1985 in terms of such "efficiency" indicators as participation rates, cohort survival rates, dropout rates, graduation rates and repetition rates, and in terms of such "effectiveness" indicators as mean scores in national achievement tests, performance in the National College Entrance Examination (NCEE), literacy rates and overall educational attainment of the population and of the employed labor force.

For elementary education, the data show that the increases in participation rates in the 1970s (89 percent? in 1970-71, to 95 percent in 1979-80) could not be sustained in the 1980s (it fell back to 89 percent in 1985-86). Furthermore, data by region reveal large variations in participation rates. The cohort survival rates for the nation has not improved over the past 15 years, i.e., the rate stabilized at around 65 percent throughout the period. Moreover, large regional variations persist. In 1985-86, cohort survival rates ranged from 44 percent in Central Mindanao to 87 percent in the National Capital Region (NCR). Mean scores in national achievement tests show improvement between 1975 and 1986, yet the mean scores were still around 50 percent, about two-thirds of passing grade of 75 percent.

For secondary education, data show that, as with elementary education, the increase in participation rates in the 1960s was not sustained in the 1970s (the participation rate increased from 27 percent in 1960-61, to 64 percent in 1970-71, but declined to 60 percent in 1979-80). In government secondary schools, cohort survival rates (first to fourth year) was 70 percent in 1985-86. Mean scores for the NCEE in 1985 was 500, ranging from 471 in Western Mindanao

to 535 in NCR. The percentage of students passing the NCEE declined from 79 percent in 1977, to 67 percent in 1980, and to 60 in 1985.

Tertiary Education. Paderanga (Chapter 12) examines the determinants of schooling performance (years of schooling). The determinants include child characteristics, household characteristics, community characteristics and school characteristics (teacher and school quality). An interesting analysis is made on the determinants of school quality, and the differences between public and private schools in terms of quality.

In Chapter 14, Paderanga takes issue with a popular held view that the immediate problems confronting the educational sector is the large pool of unemployed, highly skilled workers. Since these workers are products of the educational system, they are often viewed as indicators of the system's failure, i.e., the system does not produce the skills and workers required by the economy. Various solutions have been proposed, including the use of national or sectoral manpower planning and the limitation of the number of students going to college (through the NCEE).

The paper contends that these proposals do not deal with the basic problem and will not solve it. The main reason that proposals to correct skilled unemployment in the educational sector will not work is that the defect lies elsewhere, namely, in the industrial structure. The defect is simply reflected in unemployed college graduates. The solutions to the problem, therefore, lie in the industrial structure. Until this is dealt with, all proposals pertaining to the educational sector will come to nothing.

V. ECONOMIC AND SOCIAL IMPACTS OF DEMOGRAPHIC TRENDS

Demographic Processes and Social Institutions. Guerrero and Ballescas (Chapter 15) examine the impact of fertility and migration on specific institutions, particularly the family, the political institution and the church. Unlike usual approaches where impact is assessed on individual units (individuals, households, communities or regions), the paper adopts an institutional approach whereby the analysis is focused on the impacts of demographic processes (fertility and migration) on selected dimensions and processes of specific institutions. For example, fertility and migration affect the family as an institution by affecting several processes which include consumption patterns, labor force participation, relationship between husband and wife, and values and norms. The paper is a welcome complement to the current syntheses of the impacts of demographic processes on socioeconomic development, and fills a serious gap in institutional analysis in the Philippines.

Fertility, Savings and Productivity. In another approach to the study of the socioeconomic impacts of demographic trends, Canlas (Chapter 16) estimates an aggregate consumption function based on a permanent income hypothesis to examine the impact of demographic

variables like crude birth rate, infant mortality rates and migration (international migration related to the oil shock) on consumption and saving. The results show that an increase in the crude birth rate leads to higher consumption, and consequently lower savings. This will have serious consequences with respect to capital per worker and, therefore, on aggregate output.

Consequences of International Migration. A review of levels and trends and an exploration of the potential consequences of international migration was undertaken by Cariño for the permanent migration of professionals to the United States (Chapter 17), and for both permanent and temporary migration to various countries (Chapter 18).

The Philippines has become one of the largest suppliers of immigrants and manpower to various industrialized countries. Among the important factors that have influenced the international movement of Filipinos are: the country's tradition of democracy, which has guaranteed the freedom of mobility; and the country's worsening economic problems.

In turn, the massive emigration of Filipinos could have important socioeconomic consequences for the source country. However, the nature and magnitude of these consequences are difficult to assess at present because of the dearth of information on such aspects as the brain-and-skill drain, repatriated earnings, return migration, and immigrant activities abroad. The impact of these phenomenon are still the subject of considerable debate, and additional studies are obviously needed to serve as a basis for the formulation of emigration-related policies.

Population and the Upland Environment. Cruz (Chapter 19) consolidates available information regarding population and economic activities in the uplands. The paper finds that around 30 percent of the total population of the Philippines now reside in the uplands. A significant 8.8 million people occupy interior forest lands belonging to the public domain. The growth rate of the upland population during the period 1975-1980 was particularly rapid: 2.6 percent per year, which means a doubling of the upland population in 27 years if trends continue. The population dependent on some form of upland cultivation is expected to reach 18.6 million by 1990 and 43.5 million by year 2025. By year 2025, if each upland household were to be given a minimum of one hectare, the remaining forest cover would then be less than one million hectares. This implies a dramatic decline in forest cover from 51 percent of total land area in 1980, to less than 28 percent in year 2025.

The paper discusses environmental indicators of overpopulation, the expansion into marginal lands and depletion of resources, as well as indicators of population pressure: population size and growth, population density, and migration. It also attempts to put together available regional data that could help describe the demographic (fertility, mortality

and migration) and agricultural (expansion of cultivated area, changes in the cropping pattern, and use of more labor inputs) responses to population pressure.

The paper notes that past government policies have played a part in inducing population pressure on forest resources. These policies include: (1) promotion of programs that opened up forest lands to migrants, (2) institution of planned resettlement schemes, (3) effects of lowland agricultural policies, and (4) ineffective population control programs.

VI. ECONOMIC AND SOCIAL WELFARE OF SPECIFIC POPULATION GROUPS

Women and Rural Development Programs. Torres (Chapter 20) analyzes several rural development programs in terms of their effects and impact on gender concerns. Specifically, the assessment revolved around the questions: (1) does the program aim to provide men and women equal access to the potential benefits of the development endeavor; (2) will the development program increase the direct participation of women in social activities; (3) to what extent does the program encourage the use of local materials and low-cost production processes; (4) will the program lead to the dispersal of rural populations and contribute directly or indirectly to fertility reduction; (5) to what extent does the development effort encourage the participation of the private sector, especially organizations of rural women; and (6) does the program provide opportunities for women to acquire nontraditional roles in the community and society.

The programs studied were in the areas of *health*: Maternal and Child Health, and Family Planning Programs of the DOH; *land resources*: Integrated Social Forestry (DENR) and San Isidro Rural Systems Development (Land Bank); *nonformal education*: Functional Literacy Program of DECS and Integrated Program for Rural Women (Agricultural Training Institute formerly the Bureau of Agricultural Extension); and *employment and income generation*: Tulong sa Tao Self-Employment Loan Assistance Program (DTI) and Non-Farm Employment Project (DOLE).

Certain findings may be highlighted. First, with respect to access to development benefits, in general, none of the programs is essentially biased against women. However, cultural views on gender roles have in reality differentiated the beneficiaries of these development efforts. For example, technical assistance and training opportunities are gender-differentiated: men's skills are upgraded for agricultural productions while women receive training for home development. Second, with respect to participation in societal activities, the assessment found that the opportunities provided by the development schemes for the active participation of women in project activities were heavily in favor of health and microenterprise projects and very little on others, i.e., planning land resources. The paper

finds this apparent imbalance as a mirror to societal definitions of gender roles and responsibilities.

In addition to the five original questions above which served as a framework for assessment, other aspects of development are crucial to an examination of the contributions to women's welfare of development. These are: (1) concern for the total women, rather for women in distinct roles; (2) use of integrated and holistic strategies for women's development; (3) women's access to leadership training and positions; and (4) development of scientific thinking in all aspects of women's life.

Women Adjusting to Economic Changes in a Local Economy. How do households, particularly the women members, adjust and cope with the effects of economic changes in the wake of the collapse of the major industry that's their principal source of livelihood? Dungo (Chapter 21) investigates the effects of the sugar crisis in Negros on women. The study provides detailed profiles of the patterns and extent of labor participation of women in different types of farms in Negros as the haciendas introduced changes to cope with the sugar crisis. These changes in turn have had effects on the workers, particularly women, because of the prevailing bias in favor of hiring "breadwinners," and the unskilled workers, of which a large percentage are women. For example, mechanization meant a greater demand for skilled workers to run the machines. Hence women, because they tend to be unskilled, are the first to be displaced. Crop diversification has given rise to greater demand for both male and female labor. However, the type of work available for women often requires long hours and low pay.

Women as International Migrants. Añonuevo (Chapter 22) puts together data from various sources on the increasing numbers of women who migrate overseas as domestic helpers, entertainers, prostitutes, nurses, and mail-order brides. The paper describes various aspects of such migration, which include the recruitment process, the working conditions in the country of destination, the legal and cultural problems women face, and the risk of physical abuse from employers. The paper calls on the government to play a bigger role in protecting overseas workers, particularly women, from such risks and abuses.

The Filipino Elderly. The Philippines has been undergoing gradual shifts in its age structure due to fertility reductions and improvement in mortality. It is expected that the 1980 population of 60 years and older estimated at 2.5 million, will double by the year 2000. This group will eventually outpace the general population. Domingo (Chapter 23) argues that the increase in the number of the elderly and its potential for high growth require that they be addressed as a distinct sector in the economy. There is a need to plan their inclusion in the various socioeconomic development activities as well as to provide them with basic services.

The paper culls most everything that's been written about the Filipino elderly and highlights some findings that can be significant for policy. Current plans and programs of the government as well as proposed legislation designed to benefit the elderly are examined, and gaps identified. Problems include lack of resources for full implementation of programs and limited coverage of programs, e.g., pension. The paper finds that while there's a great many proposed legislations (Senate and House Bills), the scope of benefits is limited and the beneficiaries are highly selective (e.g., discounts on transport fare whose beneficiaries are likely to include mainly urban residents).

The Filipino Adolescents. Raymundo (Chapter 24) gathers available census and survey data to provide a profile of the Filipino adolescents defined by convention as the population age 15-24 years. The profile touches on educational, economic, demographic and family-related characteristics. Particularly interesting are the data from the 1982 Youth and Adolescent Fertility Survey dealing with adolescent sexuality and influences around the female adolescent (family; growing up years with parents, support system outside the home; and sex, pregnancy and marriage). The paper notes that the decline in age at marriage, the low level of sex awareness among the young and the occurrence of early marriages traceable to general irresponsibility among the young people are factors that can effectively negate efforts to moderate the national fertility rate.

VII. POPULATION POLICY AND COVERAGE OF POPULATION, HEALTH AND NUTRITION PROGRAMS

Population Policy. Public policy is not just what government intends to do as embodied in its economic development plans, policy statements or even in legislation, but what it has done and is actually doing to carry out such plans. Caoili (Chapter 25) reviews the evolution of government policies on population, health and nutrition with respect to their origins, objectives and implementation. Particularly interesting are the policies on health and nutrition during the American period and the public health programs as far back as the Spanish period. An unintended consequence of these policies was the rapid growth of the population. Public health and nutrition policies antedated the population policy debates in the late 1960s and 1970s.

At the start of the Aquino administration, population policy debate surfaced once again. Several questions were raised, such as: what is the present government's population policy; what should be the thrust of a national population policy; and how should such policy be formulated in order to ensure its effective implementation. For these and other related questions, Caoili and Baviera (Chapter 26) obtained, through a survey, the views/perceptions and the involvement of various cause-oriented groups and nongovernment organizations on issues of population and development. The study also describes the Catholic Church's

position and the perceptions of selected legislators on population policy. The issues regarding the nature of the population problem and the role of government in influencing population change are far from resolved, even as most respondents emphasized the need for a clear-cut statement of policy on population.

A review of past performance could give important information on how to improve current implementation. Pilar (Chapter 27) reviews the institutional and administrative aspects of the population program during the Marcos Administration. The paper finds that past assessments, while conducted separately by different groups remarkably reached a consensus with respect to the issues, problems and gaps in policy formulation and program implementation. These issues and problems revolve around the structure and functions of the Commission on Population, the funding for the population program, and coordinative mechanisms.

Coverage of Population, Health and Nutrition Programs. While attention is focused on the larger issues of population and human resource development policies, there is a need to have a closer look at how population, health and nutrition services are actually delivered to the population in need. Toward this goal, the project undertook household and community surveys in selected areas of the country to monitor the extent to which the target population for health, family planning and nutrition services are actually getting such services from the appropriate services providers and facilities in the country. Four coordinated studies, using the same design and questionnaire, were undertaken in Leyte. Western Visayas, Cebu and the Ilocos. The results are described by Abilar and Borrinaga (Chapter 28) for Leyte, Ardales (Chapter 29) for Western Visayas, Etemadi and Navarro (Chapter 30) for Cebu, and Rood and Associates (Chapter 31) for the Ilocos. The survey results were analyzed and presented to local government officials and local representatives of national agencies in the data sources, in an attempt to demonstrate how rapid monitoring surveys can be a help to improve service delivery.

Proper monitoring, i.e., determining the extent to which the target population is actually receiving the intended services or resources, requires the proper identification and measurement of the target population. In fact, this is often difficult to measure accurately because of the absence of data on the community level. Very often, national rates are applied to the estimated total population of the communities to arrive at the total beneficiary population, which may not be correct. For example, in estimating the number of births as the denominators for assessing immunization coverage, the usual approach is to assume a crude birth rate of 30 births per thousand population to estimate the number of births in a community eligible for immunization. However, in any particular community, the actual birth rate, and therefore, the number of eligible infants for immunization, may vary widely from the national

average. Thus, the use of national rates to estimate community-level target populations ma either under- or overestimate true rates, and this could affect not only the service delive efforts, but also the morale of agency personnel who are evaluated in terms of coverage c accomplishment rates based on faulty denominators. Using the experience of the four studie mentioned above, Borrinaga (Chapter 32) attempts to develop practical denominators for use in monitoring delivery of population, health and nutrition services.

VIII. CONCLUSION

The thirty papers described above show that the population issue is more than just a concern for population growth, fertility reduction and family planning – although these are important concerns precisely in view of the continued high fertility and population growth – and the great demand for family planning services among currently married women. To be sure, there is no room for complacency. There is also no need to wildly exaggerate the effects of rapid population growth; there are enough real problems associated with it in contemporary Philippine society to merit immediate attention. However, viewed from the larger perspective of human resource development, the population issue encompasses a wide range of concerns beyond population growth, fertility reduction and family planning. These concerns include the health, nutrition and education of children; the welfare of national and international migrants, especially women; the viability of social institutions and their responsiveness to changing conditions; the welfare of specific population groups, including women in various economic settings, adolescents, the elderly, and the growing population in the uplands. Whatever action is designed and carried out to deal with these broader concerns, there will always be a need to constantly monitor population and human resource development activities to improve service delivery.

PART III

HUMAN RESOURCE DEVELOPMENT TRENDS: NUTRITION AND EDUCATION

NUTRITIONAL WELFARE OF FILIPINOS AND THE PHILIPPINE FOOD AND NUTRITION PROGRAM

Cecilia A. Florencio*

I. INTRODUCTION

Nutrition is a priority of the government. This declaration was made in June 1974, with the issuance of Presidential Decree No. 491 and reiterated in July 1987, in Executive Order No. 234. Both documents make reference to nutritional improvement as a critical component of quality of life.

The case for national support for nutrition rests on at least two bases. Malnutrition has an economic cost and the effects of improved nutrition to the national economy can be substantial. No less important is the humanitarian consideration and the role that nutrition plays in enhancing the lives of the people themselves.

Malnutrition manifests its detrimental effects on the affected individuals in various ways: delayed physical maturation, retarded mental development and impaired learning ability, reduced physical capacity and work productivity, negative behavioral changes, increased susceptibility to disease, and in severe cases, death.

The inter-generational effects of malnutrition are increasingly being appreciated. "Feed the mother, feed the child" and "The child is mother to the woman" are some of the ways by which the relationship has been emphasized. For a long time, interest in maternal nutrition as an aspect of reproduction has been focused on the importance of good nutrition during pregnancy. Several studies now indicate that how the mother is nourished before she becomes pregnant, and even her childhood nutritional experience, is vital not only to her health but also to the baby's well-being. Among women matched for age, race, parity and socio-economic status, both the incidence of low birth weight and prematurity are significantly higher among the underheight and underweight mothers (Edwards, 1979 and Luke, *et al.*, 1984). Compared to normal birth weight infants, small-for-date babies tend to have higher neonatal mortality rates, greater incidence of infections and lower growth rates. The physical growth deficit *per se* is not the cause for concern. It is rather the fact that failure to achieve the full genetic potential for physical stature is accompanied by various kinds of degrees of functional incompetence.

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*Most of the data used in the report were provided by the Secretariat of the National Nutrition Council and Nutrition Service, Department of Health. Ms. Raquel Pangan (Research Associate)) and Ms. Jocelyn Bacayo assisted in obtaining, checking, re-checking, and organizing the data.

Iodine deficiency disorders present another example of the inter-generational effects of malnutrition. Iodine deficiency of the fetus is the result of iodine deficiency in the mother. The deficiency is associated with stillbirth, abortion and congenital abnormalities. Another major effect is endemic cretinism, which is expressed as combinations of retarded mental development, hearing disabilities, speech disorders, neurological abnormalities, coordination defects and poor physical growth.

Indicators of nutritional status tell not only about the nutritional well-being of individuals, but also about the state of development of communities and nations. Smallness of children is perhaps the most outstanding feature of poverty, or the general nastiness of life, as Dowler, *et al.* (1982) put it. Studies in the Philippines and other developing countries consistently show a close association between the prevalence of stunting among children, which is commonly attributed to under-nourishment, and socio-economic variables, such as level of education, population density, income and housing.

Nutritional status measurement is not only a sensitive indicator of deprivation but it is also useful in monitoring changes in standards of living and comparing the general welfare of communities. In Japan, for example, changes over time in the height and weight of children run parallel to improvements in other measures of economic change, such as GNP and Gini coefficient, and social change, such as literacy rate and housing. Nutritional welfare is both a means and a measure of development.

II. NUTRITIONAL SITUATION OF FILIPINOS

Malnutrition presents itself in different forms and degrees, depending on who are affected and when, and what nutrient or nutrients are inadequately provided and utilized to meet the requirements of the body. It can affect all kinds of people, although some groups are considered more vulnerable to malnutrition than to others.

Malnutrition has been defined as "a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients, this state being clinically manifested or detected only by biochemical, anthropometric or physiological tests" (Jellifee, 1966). In the Philippines, four kinds or forms of malnutrition have been the subject of much concern. These are energy-protein undernutrition, as manifested by physical growth deficits, and specific deficiencies in iron, vitamin A and iodine.

1. Infants and Preschool Children

According to the NEDA-NCSO, infants make up three per cent of the total population of the Philippines, and one to six year old children account for about 17 per cent of the total population. Based on the 1987 results of Operation Timbang (OPT), a weight-for-age survey of preschoolers conducted yearly throughout the country, 20.4 per cent of the children weighed

had moderate to severe deficits[1] in weight (Table 1). This means that more than one million of our young children are affected. The prevalence rate of moderate and severe[2] underweight has remained at about 20 per cent for the last three years. During this period, the prevalence rate of severe underweight increased, as did the proportion of overweight children, with the latter exceeding the former.

TABLE 1

Results of Operation Timbang, National Level

Year	Normal	Percent of children weighed			
		Mildly Underweight	Moderately Underweight	Severely Underweight	Overweight
1979	21.8	45.5	26.3	6.4	not available
1980	29.4	43.2	24.0	3.3	not available
1981	32.9	41.2	22.2	3.6	not available
1982	32.3	41.6	18.6	2.9	4.7
1983	na	na	na	na	not available
1984	35.8	41.3	16.0	2.2	4.7
1985	34.6	40.6	17.8	2.3	4.7
1986	34.1	41.2	17.3	2.6	4.8
1987	33.4	40.8	17.6	2.8	5.4
No. of underweight children in 1987	3586745	2391784	1029605	165356	

Source: Nutrition Service. Department of Health. Table 2. Trend Analysis of OPT Results from 1979-1987. No date.

[1]Although there are three degrees or levels of underweight for age, the National Nutrition Council (NNC) takes into account only children with moderate (2nd) and severe (3rd) degrees of undernutrition in determining the extent of the malnutrition problem in the country. "In the meantime, for planning purposes, the percentages for 2nd and 3rd degrees of malnutrition are to be used, leaving the 1st degree until such time as a definitive policy statement regarding extent of malnutrition for program target purposes shall have been duly defined" (Minutes of the special meeting of the NNC on December 16, 1976).

It is important to re-examine the position taken by the NNC in 1976. The prevalence of mild underweight is twice that of moderate and severe underweight and recent researches indicate as untenable the facile assumption that mild forms of growth retardation and wasting do not increase the risk to poor health or functional impairment. In their study, Agarwal et al. (1987) found that impairment in physical work capacity and mental function are not restricted to Indian school children with severe grades of malnutrition or stunted children with appropriate weight for height. In the Philippines, Florencio (1987b) found the overall academic achievement of mildly underweight pupils to be significantly lower than that of normal children belonging to the same level of family income, school quality or mental ability.

[2]On the basis of available data during the period 1979–1982, the prevalence rates of severe underweight for age among preschool children were 3.0 per cent in Indonesia, 2.9 per cent in the Philippines, 2.2 per cent in Malaysia and 2.1 per cent in Thailand (Tontisirin, 1985).

The OPT survey for 1987 showed regional differences, with the Western Visayas Region (Region VI) having the highest percentage of moderate and severe underweight children and the National Capital Region having the lowest prevalence rate (Table 2). Consistent with the observation of Popkin (1981), it was found that variations in the proportion of underweight children increase as the administrative unit decreases, from region to province, to municipality, and down to the barangay level. For example, the average prevalence rates of moderate and severe underweight in the regions range from 15.7 per cent to 27.0 per cent; the upper limit is 72 per cent higher than the lower limit. The provincial prevalence rates in a region range from 5.5 per cent to 30.1 per cent. Municipal differences in the same province range from 2.0 per cent to 11.8 per cent (Table 3). The intra-municipality variations are even bigger. For example, the prevalence rates in the municipality of Bukod in Benguet range from 3.6 per cent to 25.9 per cent; here, the upper limit is more than 600 per cent of the lower limit.

TABLE 2

Results of Operation Timbang in 1987, Regional Level

Region	Total Weighed	Percent Distribution				
		Normal	Mildly Underweight	Moderately Underweight	Severely Underweight	Over-weight
I	585,521	32.0	41.4	18.2	3.4	5.0
II	309,095	36.9	42.1	14.8	2.4	3.8
III	767,694	36.7	39.8	15.9	2.3	5.3
IV	844,410	32.5	41.0	17.4	2.9	6.2
V	538,039	31.7	39.4	20.2	4.3	4.4
VI	503,483	24.1	43.5	24.8	3.1	4.5
VII	418,206	34.0	44.5	14.4	1.4	5.7
VIII	308,167	29.5	40.5	21.6	4.1	4.3
IX	227,966	38.4	37.9	15.2	2.5	6.0
X	280,940	32.1	41.6	18.4	2.2	5.7
XI	403,215	35.9	40.4	15.5	2.3	5.9
XII	208,665	35.7	36.0	19.9	3.9	4.5
NCR	427,573	38.3	39.5	12.4	1.5	8.3
National	5,822,974	33.4	40.8	17.6	2.8	5.4

Source: Table 3, 1987 OPT Results, by Region, by Province, by City. Nutrition Service, Department of Health, Manila. January 22, 1988.

TABLE 3

Prevalence of Moderate and Severe Underweight in Preschool Children at Different Administrative Units

Administrative Unit	Prevalence (%)	% Difference[a]
Region		
Cagayan Valley (lowest)	15.7	72
Western Visayas (highest)	27.0	
Region, Provinces		
Cagayan Valley		
Batanes (lowest)	5.5	447
Ifugao (highest)	30.1	
Region, Province, Municipalities		
Cagayan Valley, Batanes		
Uyugan (lowest)	2.0	490
Itbayat (highest)	11.8	

[a] $\left(\frac{\textit{Upper limit of range} - \textit{lower limit of range}}{\textit{lower limit of range}}\right) \times 100$

Source: Operation Timbang Results, 1987 Nutrition Surveillance Division, NNC

There are significant variations in the extent of the nutritional problem not only on the basis of administrative units, but also by urban-rural location and age. Results of the surveys conducted by the Food and Nutrition Research Institute (FNRI) illustrate this point. Rural and urban communities differ in the nature and extent of undernutrition. Current undernourishment, as indicated by low weight for height or wasting, is more common among urban preschoolers while chronic or past undernutrition, as indicated by low height for age or stunting, is found in a higher percentage of preschoolers in the rural area (Table 4).

TABLE 4

Nutritional Status of Preschool Children (0 to 6 years), Based on Physical Growth Measurements

	1978[a]	1982[b]	1987[c]
Weight for Age			
Total no. of subjects	3274(3400)[d]	3634	3421
Distribution of subjects (%)			
Overweight	3.9	4.4	2.6
Normal	27.2	26.9	26.2
Mildly undernourished	46.6	51.5	53.5
Moderately undernourished	20.6	15.6	17.0
Severely undernourished	1.6	1.6	0.7
Prevalence of undernutrition, (moderate and severe)			
All	22.2(21.9)	17.2	17.7
Urban		16.3	
Rural		17.6	
Height for Age			
No. of subjects		3695	3391
Underheight (%)			
All		20.6	14.0
Urban		17.6	
Rural		21.9	
Weight for Height			
No. of subjects		3615	3389
Moderate and severe wasting (%)			
All		9.5	15.7
Urban		11.2	
Rural		8.9	

[a]*Source:* NSDB, FNRI. First Nationwide Nutrition Survey. Philippines, 1978 (Summary Report). 2nd revision. January 1981.

[b]*Source:* FNRI. Second Nationwide Nutrition Survey. Philippines, 1982, October 1984.

[c]*Source:* DOST, FNRI. Third National Nutrition Survey. Philippines, 1987, Preliminary Results.

[d]Number in parenthesis refers to data given in Source b.

Age-wise, younger preschoolers (0 to 2 years of age) have a higher prevalence rate of moderate and severe underweight compared to older preschoolers (3 to 6 years old), as shown in Table 5. There are two other points worth noting in the survey results. One is the large increase in the proportion of underweight children from less than one year to one year of age. The other is that while almost all of the preschool age groups experienced a decrease in the prevalence of moderate and severe undernutrition from 1982 to 1987, in the case of infants, the rate almost doubled.

TABLE 5

Prevalence of Moderate and Severe Underweight for Age Among Preschool Children, by Age Group

Age Group	Percent of Subjects		
	1978[a]	1982[b]	1987[c]
< 1 year	17.9 (17.3)[d]	11.3	20.3
1	38.0 (37.3)	30.3	28.8
2	26.8 (26.4)	21.1	21.0
3	22.6 (22.1)	16.2	16.1
4	13.6 (13.0)	12.9	13.6
5	15.9 (15.9)	13.2	12.1
6	22.1 (20.8)	14.4	12.8

[a]*Source*: NSDB, FNRI. First Nationwide Nutrition Survey. Philippines, 1978 (Summary Report). 2nd revision. January 1981.

[b]*Source*: NSTA, FNRI. Second Nationwide Nutrition Survey. Philippines, 1982. October 1984.

[c]*Source*: DOST FNRI. Third National Nutrition Survey. Philippines. 1987. Preliminary Results.

[d]Number in parenthesis refers to data given in Source b.

In addition to energy-protection undernutrition, young children also suffer from anemia. Preliminary results of the 1987 FNRI survey indicate that 7 out of every 10 infants and 4 out of every 10 preschoolers examined were positive for iron deficiency anemia (Table 6). The prevalence rate of anemia in infants is the highest among all those studied.

TABLE 6

Prevalence of Anemia

Group	Percent anemic		
	1978[a]	1982[b]	1987[c]
< 1 year		51.3	
6 months - 1year			70.4
0-6 years	55.8		
1-6 years		32.0	39.7
7-12 years	59.7	31.0	41.3
13-19 years			31.1
20-59 years			29.8
13-59 years, Males	33.3	14.9	
13-59 years, Females[d]	51.1	27.0	
> 60 years	60.9	37.2	46.9
Pregnant	85.0	48.6	45.4
Lactating	62.5	20.2	50.6
All	50.8	26.6	
Urban		23.6	
Rural		28.1	
Male			33.5
Female			41.0

[a]*Source*: NSDB, FNRI. First Nationwide Nutrition Survey. Philippines, 1978 (Summary Report). 2nd revision. January 1981.

[b]*Source*: NSTA, FNRI. Second Nationwide Nutrition Survey. Philippines, 1982. October 1984.

[c]*Source*: DOST, FNRI. Third National Nutrition Survey. Philippines, 1987. Preliminary Results.

[d]Females, non-pregnant and non-lactating

2. School Children

As in the case of preschool children, two out of every 10 elementary school children surveyed were found to have moderate to severe degrees of growth retardation (Florencio, 1987b) and the proportion of severely underweight schoolers is less than that of overweight children (Table 7). There are variations in the prevalence rate of moderate and severe undernutrition among school children, with girls exhibiting a higher proportion compared to boys and with the rate increasing as the grade level rises from I to VI. In terms of location, school children in the Visayas had a higher percentage of stunting in the Visayas and Mindanao, compared to Luzon.

TABLE 7

Nutritional Status of School Children, Based on Physical Growth Measurements

Indicators	1985
Weight for Age	
Age	6-19
No. of subjects	2240
Distribution of subjects (%)	
Normal	
Mildly underweight	47.7
Moderately underweight	19.4
Severely underweight	1.2
Overweight	4.0
Height for Age	
Age	6-19
No. of subjects	2242
% underheight	16.4
Weight for Height	
Age	6-19
No. of subjects	2027
% moderately or severely wasted	8.5

Source: Florencio, C. The Academic Achievements of Elementary School Pupils and Biological, Educational and Familial Factors. University of the Philippines, Quezon City, 1987.

Anemia affects about 20 per cent of the school children while the prevalence rates of Vitamin A deficiency and goiter are high enough to make these conditions significant public health problems (Table 8).

TABLE 8

Prevalence of Anemia, Vitamin A Deficiency and Goiter Among School Children

Indicators	1985
Anemia	
No. of children	2232
% anemic	20.6
Vitamin A Deficiency	
1. Clinical eye signs	
No. examined	2247
% nightblindness	2.9
% Bitot's spot	0.2
2. Serum retinol	
No. examined	1731
% deficit	4.1
Goiter	
No. examined	2248
% with goiter (Grade Ob to 3)	4.4
% with goiter, boys	3.4
% with goiter, girls	5.4

Source: Florencio, C. The Academic Achievement of Elementary School Pupils and Biological, Educational and Familial Factors. University of the Philippines. Quezon City. 1987. (Data are for 6-19 year old school children, in grades I to IV).

Although the surveys carried out among school children are not exactly comparable to the survey of school-age children conducted by the FNRI in 1982 and 1987, there are some indications that the latter group of children is more nutritionally deprived. For example, those in school had a prevalence rate of anemia of 20.6 per cent compared to the 31 to 41 per cent rate found among school-age children (Table 6 and Table 8).

3. Adolescents

Like infants and preschoolers, adolescents belong to the more nutritionally-at-risk groups. However, the latter have not received as much attention as the former. There are few studies on the nutritional well-being of adolescents and they are seldon the target of nutritional programs.

Studies were undertaken by Florencio (1980b) and Valenzuela *et al.* (1979) on intra-familial distribution of nutrients in rural and urban areas. In both studies, adolescents were found to have the lowest share of available food in proportion to their requirements while household heads have the highest, although the latter's diet was also inadequate.

Preliminary results of the 1987 FNRI survey showed that 3 out of every 10 adolescents were anemic (Table 6) and an earlier survey in 1982 indicated prevalence rates of goiter among pre-adolescents and adolescents (9–20 years old) of 0.5 per cent for the boys and 4.5 per cent for the girls (Table 9).

4. Pregnant and Lactating Women

According to a NEDA-UNICEF report (1987), in 1980, the number of women in the country was 23.9 million and of this number, 11.5 million were in the reproductive age of 15–49 years. Anemia is a prevalent problem among pregnant and lactating women, affecting 45.4 per cent to 50.6 per cent of those surveyed in 1987 by the FNRI (Table 6). Goiter is also a significant problem among this group of women, with 3.3 per cent to 7.4 per cent having such a disorder (Table 9).

5. Adults and Elderly

Few studies are specifically focused on the nutritional status of Filipino adults and elderly. In 1980, it was estimated that the number of elderly was about 2 1/2 million in 1970. The dietary studies of Garcia (1979) and Florencio and Macatangay (1987c) revealed the average nutrient intake of rural and urban elderly to be adequate only to the extent of providing 70 to 80 per cent of the recommended levels. There was little difference in the nutritional quality of the diets of elderly women in rural and urban areas. In the case of males, those in the rural area had a much better diet than those in the urban areas. Florencio and Macatangay's study also found the mean nutrient intake of the elderly living with their families to be much better than that of the elderly residing in a home for the aged.

TABLE 9

Prevalence of Goiter[a]

Group	No.	Percent with Goiter[b]
Pre-adolescents and Adolescents		
(9-20 years)		
Male	2685	0.5
Female	1452	4.5
Adult (> 21 years)		
Male	3289	0.5
female (not pregnant or lactating)	2193	7.6
Pregnant woman	272	3.3
Lactating mothers	513	7.4

[a]NSTA, FNRI. Second Nationwide Nutrition Survey. Philippines, 1982. October 1984
[b]Those with Grade Ob, 1, 2 and 3 oiter.emale

Preliminary results of the 1987 FNRI survey indicate a prevalence rate of anemia of 46.9 per cent among those who are 60 years or older, compared to 29.8 per cent among those in the age bracket of 20–59 years (Table 6).

6. Household Food and Nutrient Intake

Based on the NSO's Family Income and Expenditure Survey, food accounted for 51.9 per cent of total family expenditures in 1985, down from 53.7 per cent in 1971.

Tables 10 and 11 present the per capita food and nutrient of households surveyed by the FNRI in 1978, 1982 and 1987. Compared to 1978 and 1982, the dietary intake of Filipinos in 1987 was more inadequate both in quality and quantity. The mean food intake decreased from 896 grams in 1978 to 869 grams in 1987, and the per capita energy and nutrient intakes in 1987 were also lower.

TABLE 10
Per Capita Food Intake Per Day

Food Group	Consumption (AP, gm)		
	1978[a]	1982[b]	1987[c]
Energy-giving foods			
cereal and cereal products	367	356	345
starchy roots and tubers	37	42	22
sugars and syrups	27(19)[d]	22	24
fats and oils	13	14	14
Body-building foods			
fish, meat and poultry	133	154	157
eggs	8	9	10
milk and milk products	33(42)	44	43
dried beans, nuts and seeds	8	10	10
Body-regulating foods			
green leafy and yellow vegetables	34	37	29
vitamin C-rich foods	47	36	36
other fruits and vegetables	168	159	153
Miscellaneous	21	32	26
Total	396(897)	915	869

[a]*Source:* NSDB, FNRI. First Nationwide Nutrition Survey, Philippines, 1978 (Summary Report). 2nd revision. January 1981.

[b]*Source:* NSTA, FNRI. Second Nationwide Nutrition Survey, Philippines, 1982. October 1984.

[c]*Source:* DOST, FNRI. Third National Nutrition Survey, Philippines, 1987. Preliminary Results.

[d]Number in parenthesis refers to data given in Source b.

TABLE 11

Adequacy of Energy and Nutrient Intake, Per Capita Per Day

Nutrient	Percent of RDA		
	1978[a]	1982[b]	1987[c]
Energy	88.6	89.0	87.1
Protein	102.9 (93.2)d	99.6	98.2
Iron	91.7 (88.3)	91.5	91.5
Calcium	80.4	75.0	
Vitamin A	68.6		
Thiamine		71.8	66.7
Riboflavin		56.3	54.4
Niacin		119.7	119.9
Ascorbic Acid		91.1	80.0

[a]*Source*: NSDB, FNRI. First Nationwide Nutrition Survey, Philippines 1978 (Summary Report). 2nd revision. January 1981

[b]*Source*: NSTA, FNRI. Second Nationwide Nutrition Survey, Philippines, 1982. October 1984

[c]*Source*: DOST, FNRI. Third National Nutrition Survey, Philippines, 1987. Preliminary Results.

[d]Number in parenthesis refers to data given in Source C.

Based on 1982 results, about 67 out of every 100 households and 50 out of every 100 households failed to meet 100 per cent of the recommended level of intake of energy and protein, respectively. The proportions of households with inadequate energy intake were 68 per cent in rural areas and 65 per cent in urban areas while the corresponding figures for protein intake were 56 per cent and 49 per cent, respectively. Preliminary results of the 1987 FNRI survey showed that the proportion of households with inadequate energy intake increased to 69 per 100, from 67 per 100 in 1982.

The 1982 survey revealed that in general, the nutritional quality of the diet improves as income, educational attainment of meal planner or food expenditure increases but it deteriorates as family size increases. The effects of these variables on the food and nutrient

intake of households and the nutritional status of young children were also demonstrated in the studies of Aguillon *et al.* (1982) and Florencio (1980a).

III. NUTRITION POLICY AND PROGRAM

1. Focus

Policy Direction No. 1 of the Philippine Food and Nutrition Program (PFNP) states that priority consideration for the improvement of nutritional status shall be given to the following groups: (1) infants and preschool children, pregnant and nursing mothers, (2) other children up to adolescence, (3) those engaged in heavy manual labor and (4) the aged and other such groups that are found to have serious health problems with nutritional implications (NNC, 1981). It appears, however, that for the last 14 years of the PFNP little attention has been given to groups other than preschool and school children. There have been scarce studies on the nutritional well-being of the other so-called priority groups. There is a need for a better understanding of their nutritional situation and to undertake appropriate measures to enhance their condition.

Within the preschool age group itself, the nutritional conditions are not homogenous. The situation of infants is alarming. Not only did the prevalence of moderate and severe underweight almost double from 1982 to 1987 (a change not found in any of the preschool age groups) but the proportion of infants with anemia is the highest among all the age groups studied. The nutritional problems of infants and those in the 1 to 2 year old age group are of a greater magnitude and have more serious implications than those of 3 to 6 year old preschoolers.[3] The decision by the NNC to exclude mild undernutrition in determining the prevalence of the nutritional problem among children needs to be reviewed in the light of increasing evidence pointing to the biological and social consequences of chronic and mild forms of undernutrition.

There are at least two reasons why current efforts directed at pregnant and lactating women need to be intensified. It makes more sense to intervene for purposes of enhancing the birth of an infant than instituting measures to rehabilitate a child after he has become malnourished. Yet, nutrition programs for pregnant and lactating women appear less developed compared to programs for moderately and severely malnourished preschoolers. The other reason is that because of their much smaller number, pregnant and lactating women are a more manageable target group than malnourished preschoolers. These are not arguments against programs for children but a call for greater emphasis on the improvement of the health and nutritional situation of mothers, the key to child and family health.

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[3]Yet, a higher proportion of children aged 3–6 is reached by nutrition activities.

In her study, Florencio (1980b) noted the increasing number of teenage mothers in the country and the NCSO data showing that about 40 per cent of all 10–29 year old girls who got married in one year (some 315,000) became mothers before they became adults. Writing about India, Gopalan (1984) pointed out that "the most crucial segment of our population from the point of view of the quality of our future generation are today's young girls who are just on the threshold of marriage and motherhood" but "there has been no organized effort to prepare and equip them for the momentous task that awaits them." What he said of India applies also to the Philippines.

Undoubtedly, undernutrition is the major nutritional problem in the country and it deserves priority attention. But it is important to recognize the steadily increasing prevalence of overnutrition among our children and adults. As early as 1977, Florencio (1987a) called for the initiation of measures that could prevent the emergence of overnutrition and its consequences. It would be prudent for us to learn from the experience of developed countries so that we will not err in the direction of too late a cognizance of the deleterious effects of excessive food intake, and so that we can take prompt and appropriate preventive measures.

Information on prevailing patterns of food and nutrient intake and current nutritional status of population groups is necessary for the proper formulation and implementation of policies and programs. As shown in this paper, as the data are disaggregated to smaller administrative units, the variations in the prevalence of malnutrition (expressed in terms of percentage of children surveyed who are moderately and severely underweight for their age) become larger.

For some time, the National Nutrition Council has been identifying the depressed regions, provinces and municipalities, based on OPT and other data. However, this information has not been fully utilized as basis for directing government resources,[4] although nutritional problems at the level of individuals have been a basis for determining who among the children are eligible to participate in feeding programs. Greater consideration should be given to the use of community-level patterns of malnutrition in planning, implementing and evaluating nutrition programs. Usually these patterns are in close agreement with other data sources in identifying disadvantaged communities. In doing this, attempts should be made to go down to the lowest administrative level, the barangays. It is possible to send resources to less needy villages and to ignore villages with much greater need if prioritization is done only at the level of municipalities.

[4]Recently, the NNC made a list of nutritionally depressed municipalities in the country. The intention is to use the information as the basis for allocating a foreign grant for nutrition which is being sought by the Council.

Describing and analyzing the nutritional situation in the country, based on secondary data, are an irksome activity. A good number of the data obtained from several government agencies are incomplete and lacking in accuracy and consistency, resulting in difficulties in deciphering what is really happening at the nutrition front. Here are three examples: one agency gave two different data sets on the same survey reported twice (the second report coming three years after the first), two divisions of the same agency used two different manpower data sets and two agencies, supposedly using the same data source, came up with different values. The variations are not marginal, and the choice of one set of numbers of the other could lead to significantly different research or policy leads.

There could be greater openness in data sharing within and between agencies. This would allow verification of nutrition statistics by different independent groups and provide analysis and interpretations other than those made by the collecting agency itself.

At present, there are many agencies collecting nutrition and nutrition-related data. There is a need to evaluate existing information systems in order to make our nutrition information base less cluttered and strong enough to direct program and policies. The nutrition information system should provide the real data needs of decision makers and implementors and be what communities can meaningfully organize given their infrastructure, manpower and economic situation and use for screening the most affected areas, planning appropriate projects, evaluating program impact and monitoring their nutritional situations on a continuing basis. A premium should be placed on simplicity of the process and critically of data requirements rather than on sophistication and comprehensiveness for the sake of technical elegance.

IV. SELECTED ASPECTS OF THE PFNP

Section 4 of Executive Order No. 234, reorganizing the National Nutrition Council, empowers the Council "to formulate food and nutrition policies and strategies for nutritional improvement and to coordinate the planning and monitor and evaluate the implementation of the integrated national food and nutrition program." It seems clear that the concern of the Council should not be nutrition only, but food and nutrition. However, in practice the Council has limited itself to nutrition policy statements and it still has to develop an integrated food and nutrition plan. There is another body, the National Food Authority Council or NFAC, which decides on all food-related policies. The NNC is not part of the 11-member NFAC. The link between the two is not clear.

Nutritional status is in large measure affected by food-related policies. But as Timmer (1986) pointed out, historically, most food policy has actually been agricultural policy, and most agricultural policy has forced on ways to increase farm output. Such narrow approaches

have failed to improve significantly the nutritional status of large numbers of people living in less-developed countries because they have failed to forge a strong link between the expansion of agricultural output and the reduction of hunger. Mangahas (1984) says that poverty measurement activities and food security policy-making are acquainted with each other, but are not, as yet, close friends. Although nutritional status or access to food is the most common criterion used to measure poverty, this has not implied that poverty reduction policies include food-related policies.

It bears recalling that in 1980, the World Bank asked the Ministry of Agriculture to prepare an integrated food and nutrition plan before the release of addtional funds for agricultural development. Largely through the efforts of the National Nutrition Council and the Ministry of Agriculture, a plan was formulated with the following objectives: to increase and diversify production of food and other agricultural commodities and continue to achieve gains in the productivity of both land and labor, to improve the quality of the diet of all Filipinos and to assure a basic minimum diet for those who are undernourished. Unfortunately, this plan did not get off the ground.

2. Operation Timbang and Growth Monitoring

Operation Timbang or OPT is one of the major and regular activities of the PFNP. This nationwide yearly weight survey of all preschool children (0-83 months old) was launched in 1974, and since then, it has been a common feature of local nutrition activities. In the Implementing Guidelines on Operation Timbang (NNC, 1981), the Rural Health Unit midwife is designated as the head of the OPT team at the barangay level and among the members are the barangay nutrition scholar, day care center worker and purok leaders.

Although intended to be a total enumeration of preschool children, data available from the Department of Health show that for the period 1981–1987, the OPT had a mean coverage of around 45 per cent of the estimated number of preschoolers. The formula, estimated total population in the village multiplied by .20, is used to estimate the number of 0–83 month-old children. OPT records available from the DOH indicate that the preschool population increased by 2.4 per cent from 1986 to 1987, with the 1987 estimate being placed at about 11 1/2 million,[5] from 1986 to 1987, the estimate increased by as much as 100 per cent or decreased by about 50 per cent in some regions.

[5]There has hardly been any attempt to validate these estimates at the village level. A potential for validation exists since every OPT team is expected to prepare a yearly spot map which lists and locates the families in the village and also individual family profiles. The presence of these materials is one of the criteria in evaluating the barangay nutrition program.

Based on 1985 data, 100 per cent of the provinces, 59 per cent of the municipalities and 52 per cent of barangays had OPT reports (Table 12).

TABLE 12

Provinces, Municipalities and Barangays with OPT Report in 1985

Region	Percent with OPT Report		
	Province	Municipality	Barangay
I	100	62.8	55.9
II	100	76.3	74.3
III	100	60.3	58.9
IV	100	62.9	59.8
V	100	67.9	62.4
VI	100	56.9	58.0
VII	100	83.7	74.4
VIII	100	61.2	40.6
IX	100	40.4	32.8
X	100	45.7	42.8
XI	100	57.1	51.0
XII	100	23.1	15.8
NCR		53.8	24.5
National	100	59.3	51.9

Source: NNC Secretariat, Management Information Systems Division. Operation Timbang, 1985. Municipal File.

Region XII (Central Mindanao) and the NCR had the lowest proportion of barangays with OPT reports, at 15.8 per cent and 24.5 per cent, respectively. On the other hand, Regions II (Cagayan Valley) and VII (Central Visayas) had the best records, with more than 70 per cent of the villages having OPT records. A number of municipalities which conducted OPT but did not provide estimates of number of preschoolers was categorized as having zero coverage.

The OPT has been unable to reach all communities, as expected. It is very likely that those villages without OPT data are the less accessible areas and the ones with a relatively higher prevalence of malnutrition. In addition to limited coverage and poor reporting, the OPT is faced with other problems which limit the accuracy and therefore the usefulness of the data obtained. These weaknesses have been identified and documented in studies, such as those conducted by Tabatabai *et al.* (1982) and Florencio (1985). The unfortunate thing is that although the weak points are widely known by both planners and implementors not enough effort has been taken to improve the operation.

Instead of trying to remove the blocks the PFNP decided "to look elsewhere for data pertaining to malnutrition" as suggested by Tabatabai *et al.* (1982). Its position has been that the OPT can remain as a screening device to identify the malnourished but that there should be another source to determine the extent of malnutrition - as if the two were irreconcilable purposes. As a result, the NNC Secretariat instituted its own weight surveys from 1984 to 1987, in addition to the anthropometric surveys carried out by the FNRI at the national level once every five years. National surveys conducted by personnel at the national level have their uses. However, they are not nearly as advantageous as local surveys in terms of providing data at closer intervals, involving local people's participation and enhancing the capability of communities to assess and analyze their own problems. Neither can these national surveys specifically pinpoint individuals, families or localities that are nutritionally needy, thus being of little use in planning for the alleviation of their condition.

The NNC Secretariat's position vis-a-vis the OPT has been less than consistent. For so many years, it has been using OPT results as a basis for determining the most-at-risk barangays and municipalities and evaluating the efficiency and impact of nutrition programs at these levels. Yet, recently when the Governing Board decided to focus on some 100 nutritionally depressed municipalities "for maximum nutrition impact and the efficient use of program resources" (Fifth Governing Board Meeting, November 18, 1988), it expressed lack of confidence in the OPT results and preference for the use of a linear regression equation to identify the areas. The equation uses municipal income, per cent of households with nipa/cogon roofing and per cent of palay area irrigated and has a coefficient of determination of three per cent. The chosen alternative certainly does not look any better. Moreover, the impression given is that OPT is good for local use but not for national decision-making purposes.

We have had 14 years of the OPT. During that period, organizational structures at all administrative levels have been created, manpower and other resource requirements have been identified, training programs have been put in place and, most importantly, the OPT has generated the participation of local people who have learned to link it with the nutrition program. The PFNP need not look elsewhere but it needs to make more determined and consistent efforts to improve the OPT and make of it what it was originally meant to be (Table 13). Properly conducted, the OPT, with all its attendant activities in place (Table 13), can be instrumental in promoting nutrition in the villages.

Even with just a once-a-year OPT, the operation has encountered considerable difficulties. Yet the NNC Secretariat has been considering its replacement with growth monitoring, wherein children up to 36 months shall be weighed *every month* and those in the 37–83 month age group shall be weighed *every quarter.* The proposal is scientifically acceptable but feasibility and sustainability are very important considerations. With a resource base as low as it is in this country at the present time, the NNC would be ill-advised to embark on growth monitoring, even (the better term is, "more so") if the prospect of obtaining grants to initiate it from foreign governments or international organizations is very good. In any case, before the PFNP implements growth monitoring, perhaps it could take lessons from our own OPT experience and the experience of a few countries which are into growth monitoring (Gopalan, et al., 1985 and American Public Health Association, 1987) and consider if in our context, growth monitoring is intermediate technology or expensive luxury (The Lancet, 1985).

Growth monitoring is not an intervention per se, contrary to the initial claims made by the NNC Secretariat, as disseminated widely to nutrition workers through brochures and orientation programs. It is simply a strategy to facilitate health and nutrition action and if resources for follow-up action or post-measurement activities are not readily available, growth monitoring can become a waste of time and effort. The conditions that would permit the meaningful use of the measurements obtained, particularly on the part of the mothers and their children in terms of follow-up action in education, supplementary feeding, health services and rehabilitation, must first be put in place or developed hand in hand with growth monitoring.

3. Nutrition Planning

In 1976 "there was a significant departure from the traditional practice of planning programs at the top for implementation by those at the field level ... with the implementation of an NNC policy on nutrition planning and the formulation of city and municipal action plans" (NNC, no date). The following year planning workshops for city and municipal nutrition committees were conducted, resulting in some 382 city and municipal nutrition action plans.

TABLE 13

Objectives and Uses of Operation Timbang

Policy Direction 1 of the PNP gives consideration to the improvement of the nutritional status of the vulnerable groups, particularly, the infants and preschoolers. In line with this policy, a strategy to identify these priority groups has been defined and named Operation Timbang

Objectives

A. General: to generate basic data for local nutrition program planning, implementation and evaluation.

B. Specific: to locate families with underweight preschool children, to identify and quantify preschool children needing immediate assistance, to determine priority areas for local program implementation and to roughly assess the effectiveness of the local nutrition program.

Uses of OPT Results

1. For planning and implementation purposes: to quantify the magnitude of the malnutrition problem, to identify and locate targets and to indicate the type of intervention to be delivered.

2. For evaluation purposes: to indicate the response of the target, to signify the overall nutritional progress of the community, to denote the efficiency and effectiveness of program implementation and to help identify remedial measures to heighten program impact.

3. For education purposes for mothers and families.

Corollary Activities: deworming, administration of vitamin and mineral supplements, giving instructions on oral rehydration, distribution of nutrition leaflets and other community health activities.

Source: National Nutrition Council. The Philippine Nutrition Program Implementing Guidelines. June 1981. Pages 10 and 14–15.

According to the NNC Implementing Guidelines (1981), a copy of the municipal and city nutrition plans (and the provincial nutrition action plan, part of which is the consolidated municipal action plan) shall be submitted to the NNC Secretariat not later than one month after the conduct of the planning session. The Guidelines also state that the plans shall be developed by the appropriate nutrition committees at the different administrative levels.

Records available at the NNC Secretariat show that in 1987 less than 50 per cent of the provinces had nutrition plans (compared to about 70 per cent in 1985). In the same year, a little over fifty per cent of the total number of municipalities had nutrition plans (Table 14), although it was reported that almost all of the municipalities had nutrition committees.

TABLE 14

Availability of Nutrition Action Plan at Different Administrative Levels in 1987

Region	Percent with nutrition action plans			
	Province	Municipal	City	Barangay
I	42.9	55.8	75.0	1.4
II	100.0	62.9		3.4
III	100.0	94.8	100.0	0.4
IV	45.4	66.2	62.5	27.8
V	83.3	79.5	66.7	19.5
V	0	0.8	0	0.1
VII	50.0	54.5	77.8	2.5
VIII	50.0	71.2	33.3	6.2
IX	0	11.1	50.0	0.7
X	28.6	31.0	42.9	3.3
X	28.6	31.0	42.9	3.3
XI	40.0	51.2	50.0	0
XII	0	0	0	0
NCR		69.2	100.0	18.5
National	46.7	51.4	55.0	7.5

Source: NNC Secetariat, Nutrition Policy and Planning Division. Status of Nutrition Action Plans, 1985-1987

In 1978, nutrition planning was brought to the barangay level. The barangay nutrition action plan is "drawn up by the Barangay Nutrition Committee as complementary and integral to the Barangay Development Plan" (NNC, 1981). Records at the NNC Secretariat show that in 1987 less than 10 per cent of all the barangays had nutrition action plans (from 14.4 per cent in 1985). The percentage increases to more than 33 per cent when only villages with barangay nutrition scholars in 1987 are considered.

The planning process at the local levels is "facilitated" by the guidelines, instructions and forms developed by the NNC Secretariat. A study of these materials indicates that there is a need to modity them, if only for purposes of simplification and ease of understanding. The materials for barangay planning, all of which are written in English, consist of about 20 pages (single space). There appears to be an abundance of data requirements (Table 15). A rough count of the items listed in the materials indicates more than 250 entries considering only two puroks per barangay and two projects per barangay. A way must be found to make barangay nutrition planning and nutrition plans less academic.

At the beginning, when there seems little to use as basis for plans, an algorithmic approach may have a place. Here, a predetermined set of instructions for solving a problem in a finite number of steps is made out (by those who are presumed or who assume to know). After 15 years, one wonders how well the PFNP approach to planning for nutrition at the local level, which is algorithmic in its overall form, has served to advance the cause of nutrition in the long run. It would be interesting to examine its opposite, the heuristic approach, a trial and error method for finding solutions to a problem by evaluating the progress made at various steps along the way. The latter approach would seem to be more consistent with the often repeated principles of people's participation, self-reliance and community initiatives in addressing nutritional problems.

Some committees formulate plans but fail to submit them while others submit incomplete plans. A good number of committees from the barangay level up to the provincial level does not draw up such plans. It is important to find out the explanations for these observations, just as it is important to determine the actual usefulness of these plans to the specific communities, and to the NNC Secretariat which requires that copies of action plans be submitted to it every year. Although local level nutrition planning has been conducted for more than a decade there have not been serious studies to learn more about the planning process as actually conducted by the planning groups, the nature and extent of community involvement, the quality of the plans made and the actual utilitarian value of these plans.

TABLE 15

Guidelines for the Formulation of the Barangay Food and Nutrition Action Plan as Developed by the NNC Secretariat

The barangay plan is composed of two parts: a situational analysis and the plan of action.

Part I. Situational Analysis

A. Health and Nutrition Situation, including OPT data, age specific proportionate mortality rate, diarrhea and nutrient deficiencies.

B. Causal Factors of Malnutrition

1. Food production: foods available and their responsiveness to the nutritional needs of the community, volume of foods produced and sufficiency for the population and factors affecting food production, such as land availability and credit facilities.

C. Program Management

1. Manpower
2. Money and materials
3. Time
4. Tools in managing resources

Part II. Plan of Action

A. Objectives (precise, realistic, time based and measurable)

B. Programs and Projects (what, where, who, when)

C. Budgetary Requirements

D. Monitoring and Evaluation

4. Nutrition Intervention Programs

From the very beginning, the PFNP has recognized the need for both short-term and long-range strategies to address the problem of malnutrition in the country. These involve the delivery of immediate and direct intervention services and the pursuit of programs designed to address the root causes of the problem. Food assistance, health protection, food production and nutrition education have been the traditional components of what has been called the NIP or nutrition intervention program.[6] Table 16 describes these four schemes. For reasons that are unclear. The NIP is described somewhat differently in the Guidelines for the Formulation of Food and Nutrition Action Plans issued by the NNC Secretariat to the municipalities and barangays. For example, the following items are included in the NIP for the municipalities but not for the villages: diarrheal control, deworming, sanitation and Vitamin A deficiency, anemia and goiter control.

TABLE 16

Nutrition Intervention Program Components

Food Assistance consists of the provision of a food supplement that will supply additional calories and protein to targetted beneficiaries in the form of indigenous high energy food crops (rice, corn, fats/oils, beans, etc.) or donated food commodities.

Incremental food production entails the use of homeyards and vacant lots in the production of nutritional foods like crops, livestock, poultry and fish.

Nutrition and nutrition-related health service refer to the delivery of a package of health services which include (1) medical treatment of diseases provided to the severely underweight children through the malwards, RHU, nutributs or home care services and (2) institution of appropriate measures (like immunization, dietary and medical advice to mothers of malnourished children and to pregnant and nursing women).

Nutrition information, education and communication consist of activities aimed at increasing the level of awareness and knowledge about nutrition among our people particularly mothers of underweight children, the pregnant and lactating mothers.

Source: NNC Guidelines for the Formulation of the Barangay Food and Nutrition Action Plan. No date.

[6]In 1988, the NNC Secretariat and Tecnical Committee played around with this subject and came out with several versions of the NIP. Some versions have 3, 4 or 5 components. Growth monitoring is included in some versions and excluded in other versions. Nutrition education is either in or out, depending on the version. What is significantly wrong with the present NIP? Is any of the proposed versions a much better one? The arbitrariness of the proposed changes reveals the need for a clearer definition as to what is (or what is not) a nutrition intervention program.

Although it appears that the Guidelines leave it up to the nutrition committees to determine what types of programs and projects shall be implemented, in reality the committees are led by the same Guidelines to undertake all NIP components. Two instances support this contention. To identify priority barangays in a municipality, the villages are ranked on the basis of some indicators. One indicator is the number of nutrition intervention programs available in the village. To project the percentage of improvement in the nutritional status of the moderately and/or severely underweight preschoolers the number of NIP components is used. For example, the Guidelines states that the projected decrease in the prevalence rate of moderate and severe underweight is 20 per cent if growth monitoring and all four NIP components are carried out, 10 per cent if only 3–4 services are delivered, and so on.

Florencio (1988a) raised the issue of the validity of the assumptions made by the NNC Secretariat, which are widely used for planning and evaluation purposes. Herrin (1988) raised the possibility that the continued use of scarce resources on a wide range of activities, some of which might have limited nutritional impact, may not be the best approach to the nutrition problem. The fact that malnutrition has multiple causes does not necessarily imply that the supposed etiological factors are all present at the same time in all areas, bearing the same kind and magnitude of influence on the nutritional situation of the communities.

There have been some attempts to examine more closely the process and/or consequences of various nutrition intervention schemes (Barba et al., 1982; Solon et al. 1985 and Florencio, 1986) but definitely more determined efforts should be made to assess the NIP as planned and implemented throughout the country and to determine if the "delivery of a comprehensive package of services" approach is more efficient and effective than a judicious choice of nutrition services to be delivered to the target beneficiaries. As pointed out by Berg (1987), everything relates to everything, but not equally, and the multiplicity of possible actions should not be allowed to dictate complex projects.

How many are reached by the different nutrition intervention schemes? It is difficult to give a definite answer because of incomplete records, double counting and conflicting reports. Data on intervention outreach or number of individuals and families served as against the number targetted come from two sources: the reports submitted by the member agencies of the NNC[7] and the reports made by the RNPCs (Regional Nutrition Program Coordinators) of the NNC itself. There is a big difference between regional and agency reports on targets and outreach.[8] For example, in 1987 the agency data on these two items were twice that of the regional data (Table 17). The difference in reported percentage outreach ranges from 13 to 41 percentage points.

[7]The NNC uses the data reported by the central office of the cooperating agencies for purposes of preparing its annual accomplishment reports.

[8]This is not a new observation. In 1986, Iglesias and his co-workers observed discrepancies between these two data sources.

TABLE 17

Outreach of Nutrition Intervention Programs, 1987

Program	Target (No.)		Outreach			
			Number		Percent of Target	
	I[a]	II[b]	I	II	I	II
Food Assistance	2,885,360	7,088,200	2,131,103	8,884,400	73.9	125.3
Nutrition and nutrition-related health services	7,732,906	23,778,500	6,023,507	16,018,200	77.9	67.4
Nutrition information, education and advocacy	3,729,815	7,285,600	3,307,538	5,334,700	88.7	73.2
Incremental food production and income generation	1,575,023	133,693	1,846,402	104,532	117.2	78.2
Total	15,923,104	38,286,000	13,308,550	30,341,800	83.6	79.3

[a]Taken from Table 2.4 Intervention outreach by nutrition intervention program: 4th quarter 1987 of the "1987 Consolidated Regional Food and Nutrition Plan". Nutrition Surveillance Division, NNC.

[b]Taken from the NNC Report "An Assessment of Agency Performance in the Philippine Food and Nutrition Program, 1987." April 1987. The Report used data provided by the agencies involved in the PFNP.

The NNC has been aware of the difficulties in the implementation of the intervention projects. In an attempt to address some of these, it undertook two measures. One measure is Letter of Instruction No. 441, issued in 1976, for the purpose of designating the lead or principal agency in charge of a specific intervention scheme: the DSW, for food assistance; the DA, for food production; the DECS, for nutrition education in schools; and the DOH, for treatment and rehabilitation of the severely malnourished. Another is the issuance in 1979 of implementing guidelines on "Geographic Assignment of Agencies and Agency Technicians", for the purpose of minimizing the overlapping of area and target coverage of nutrition activities by government and private agency personnel as well as religious groups and voluntary organizations. In the face of continuing problems and overlapping coverage of some areas, while leaving other areas unserved or underserved, the two measures undertaken appear to be inadequate and need to be re-assessed.

In an NNC document entitled "An Assessment of Agency Performance in the Philippine Food and Nutrition Program, 1987," it was reported that compared to other target groups, pregnant and lactating women had the lowest outreach (only 6.4 per cent for food assistance and 22 per cent for nutrition education) and food production was undertaken by less than 10 per cent of the target families. According to the same report, the outreach of food assistance for children exceeded the estimated population of severely and moderately underweight children, perhaps because the implementing agencies are reaching the same child and the project is not limited to the target group, so that "unqualified" children are given food aid.

It is very difficult to say if the outreach of the different schemes has been improving. Our own analysis of data for 1980–1987 from regional reports reveals no clear pattern from one year to the next. For example, the percentage coverage of food production is 80 in one year, 48 the next year and 117 the year after.

Compared to 1985, in 1987 the outreach of food assistance decreased in 10 regions while the outreach of the other three schemes decreased in four or five regions. The fate of food assistance to needy children and pregnant and lactating women has been largely in the hands of external donors. As reported elsewhere (Florencio, 1988b), it has been estimated that of the total cost of feeding a school child for a day under the present scheme, 78 per cent comes from foreign assistance and 22 per cent comes from the government. Much of the foreign food aid come from the United States government. The issue of such aid is not simple and is not independent of other negotiations between the two countries. For example, food aid is part of the compensation package agreed upon for the U.S.' continued use of military bases and installations in this country until 1991. About 20 per cent of the $962M package will be in the form of development assistance and food aid. Unfortunately, this new food aid and all the others in the past 20 to 30 years have not merited careful study by local researchers.

Some communities and agencies have been exploring different ways of becoming more self-reliant in food assistance. These initiatives need to be better supported, particularly since these have been few and far between.

According to the Medium Term Food and Nutrition Program for 1988–1992, self-reliance through maximum utilization of indigenous resources, technology and manpower is a guiding principle of the PFNP. The other two principles are effective collaboration with the private sector and support to community initiatives in addressing their own nutritional problems.

In connection with the principle of self-reliance in nutrition programs, it will be advisable to assess the country's approach toward addressing the problems of Vitamin A deficiency and iodine deficiency. It has been about 12 to 15 years since the government, through the Department of Health, issued specific guidelines on the use of Vitamin A supplements and iodized salt. Although other schemes are being used, the approach relies heavily on the use of synthetic supplements, in the form of Vitamin A capsule and iodized salt or iodized oil. All three supplements are not locally produced and there has not been any effort to develop local alternatives or the appropriate local technology for the indigenous preparation of these commodities. There has been no study for example, on what and how local plants can be used to make Vitamin A preparations or how iodine-deficient soils can be enriched. Instead, the few researches that have been done on Vitamin A are on the use of synthetic Vitamin A to fortify monosodium glutamate (more popularly known as vetsin) and the appropriate dosage of the supplement to give to target individuals. There is certainly a place for vitamin and mineral supplementation projects but it seems that what had been thought of as short-term approaches or temporary measures have created an element of complacency and dependency. The five-year plan for Vitamin A deficiency control which was formulated in 1988 is still silent on specific steps to be taken in order to diminish our dependence on foreign sources. Those in a position to make nutrition policies must be reasonably cautious of persistent entreaties from both local and foreign groups regarding "appropriate" technology to address our own nutrition problems.

5. Manpower and Organizational Structures

The NNC established organizational structures at all administrative levels. The set-up begins at the national level with the National Nutrition Council, which is composed of a Governing Board and a Secretariat. At sub-national levels are regional, provincial, city, municipal and barangay nutrition committees. Finally, there is the barangay network composed of all puroks in the barangay. Each purok, headed by a teacher-coordinator and a purok leader, in turn is made up of several units, where each unit, headed by a unit leader, is made up of 20 households. The barangay network acts as the delivery system for food commodities and other nutrition materials, conducts surveillance of public health problems in the community, and makes referrals to the proper agencies.

The foregoing description of the organization of the NNC is as originally planned by the Council. Although the multi-level organizational scheme was instituted as early as the mid-70's, and appropriate guidelines and manual of instructions have been developed, there is no definite knowledge as to the status of these various groupings at the present time. However, based on field visits, reports and feedback from nutrition workers there is little reason to believe that barangay networks have been established throughout the country and that on the whole, those which have been established are carrying out their functions. The barangay networks are supposed to be organized by the BNC or barangay nutrition committees, but as of 1987, it appears that only about 10 per cent of the more than 40,000 barangays have such committees, based on the number of barangay nutrition action plans submitted. According to the NNC Implementing Guidelines (NNC, 1981), the barangay action plan is to be drawn up by the BNC.

If barangay nutrition committees are "very strategic to the whole nutrition program," as claimed by the Council (NNC, no date), then the highest priority must be given to finding ways and means to energize and encourage local people to become active participants in the nutritional care system and much greater effort must be taken towards establishing, strengthening and sustaining village-level organizations.

In 1977, the NNC-pilot tested the Barangay Nutrition Scholar (BNS) Project in six depressed regions of the country. The following year, Presidential Decree 1569 was issued "strengthening the Barangay Nutrition Program by providing for a barangay nutrition scholar in every barangay." USAID and UNICEF provided substantial resources to the BNS project, particularly during the early years. With their support, from 1,000 to almost 3,000 BNS were trained yearly, but in 1984 when the training of BNS was funded solely by the local government, the number of trainees dropped to less than 200.

It has been 10 years since the decree mandating that there should be one BNS per barangay was issued. According to the records at the NNC Secretariat, about 14,000 BNS were trained from 1977–1987. The records are not clear nor consistent as to exactly how many BNS there are in the country in any given year. For example, for 1984 one source (Vega and Bondad, 1985) puts the number of barangays with BNS at 8,995 while another source (Table on Status of 1984 Nutrition Action Plans, NNC Nutrition Policy and Planning Division) puts it at 13,159. In any case, it seems that like during the period 1983–1987, less than 30 per cent of all barangays in the country had BNS. Based on 1987 data, Region XII had the smallest proportion of barangays with BNS (less than 10 per cent) while Regions X and XI had the highest (40 to 50 per cent). A report by Vega and Bondad in 1985 pointed out the slow pace of

implementation of the BNS project and a lack of focus on nutritonally depressed areas in the deployment of BNS. Clearly, the PFNP still has a long way to go in its BNS project.

According to the NNC Guidelines (1981), the BNS has four basic tasks. These include (1) organization, community survey/resurvey and planning, (2) identifying and locating targets, (3) providing basic services and reporting and monitoring. The basic services are divided into primary (nutrition and related health services, environmental sanitation and food production) and secondary (mental feeding, family planning and physical fitness). Are these in fact what the BNS are doing? Again, it is quite difficult to answer this question based on hard facts. However, field visits and interviews with some BNS in the Metropolitan Manila Area suggest that the BNS's do a bit of everything, but that the main focus of their efforts are Operation Timbang and food assistance. It appears that the BNS should spend more time and effort in organizing the community into barangay networks, if they are to pave way "for the community to eventually develop the capabilities to solve its malnutrition problem" (Barangay Nutrition Scholar's Project handout, no date).

The BNS project needs to be studied in depth. Since the BNS is a critical element in the nutrition program at the village level, it is important to obtain a better understanding of factors such as their preparation for the job, quality and quantity of work, compensation, expectations and even the community's perception of them.

What the BNS and the BNC are to the nutrition program at the village level, the Governing Board, Secretariat and Technical Committee are to the program at the national level. The interrelationship between these last three units, their functions and their powers, have not been the subject of any study. One may well ask what changes in the set-up are necessary as the PFNP moves on to its second decade, in order to pave the way toward strengthening the capabilities of the member agencies of the NNC and increasing the autonomy of organizations, both government and private, at sub-national levels.

V. SUMMARY

In the belief that malnutrition is multifactorial in etiology and that a multidisciplinary and multisectoral approach is the appropriate response to the problem, the PFNP has embarked on a wide array of activities has tried to put in place a rather elaborate organizational structure at every level of administration, and engaged in an integrated planning process with the different socio-economic sectors. During the last 14 years, the PFNP has chalked up several accomplishments that did not go unrecognized, locally and internationally. Many of what our neighboring countries are doing in nutrition had their beginnings in this country.

In terms of mandate, political support, overall program design, manpower, strategies and mechanisms, the PFNP is at the forefront. But the complexity of the whole operation, inadequate resources and what appears to be some degree of disjointedness in the manner in which nutrition is perceived by planners and implementors, by "benefactors" and "beneficiaries" and by nationally and locally based participants have resulted in the lack of sustainability of many of the initiatives which have been taken and unevenness in the implementation of the program throughout the country, with many villages still to be drawn into the nutrition network. It is at the level of our barangays where the program needs to establish its roots and sustain itself. But even at the national level, the very idea of nutrition appears to be still under study. The shuttling of the NNC from one department to another reflects this. The consequences to the program of the constant movement still has to be studied. But, the one thing that has been obvious is that with each change have come attempts to fashion out "new" thrusts, projects, etc., resulting in increasing layers of concerns, because the "old" does not necessarily disappear as the "new" is added.

The program has not been bereft of ideas nor of action, but there is a need to forge a greater unity of ideas and action, against a background of an improved understanding of the different milieu. It should aim towards a higher degree of "fit" between the needs and circumstances of the beneficiaries, the objectives and design of activities and the capacities of participating groups. Bold decisions, especially those expected to cover a large part of the country, or the entire country, must be accompanied by a full appreciation of the practical implications of the decision, an adequate grasp of the magnitude of the preparatory tasks and

resources needed and a serious consideration of the probable effects of the decision on on-going operations.

An immediate and in-depth review and analysis of the entire working of the PFNP and its various aspects and organizational units are important. The program involves so many sectors and chains of operations, with these operations falling in diffeent administrative units and levels. Since it is often the weakest link in the chain that determines the fate of the entire operation, the weak links need to be promptly and correctly identified so that appropriate steps can be taken.

We need a better sense of what we have done, and not done, in the past decade and a half. The past, properly and adequately studied, can inform and guide the future of our nutrition program. There is much to learn from what has been done and is being done here and elsewhere.

Kerala, India stands out as the state with the best health status in India. According to Rao (1980), the Kerala experience indicates how even under conditions of poverty and food scarcity, communities can prevent at least the wost forms of malnutrition, through (1) better utilization of health facilities, resulting in a lower rate of "conditioned malnutrition" caused by infections and better preventive and curative health care and (2) a more equitable intra-familial distribution of available food.

In Latin America, Cuba, Chile and Costa Rica have the best health and nutrition indicators. According to Horwitz (1987), the commitments of these countries to improving the health and nutritional condition of their people do not seem to have varied with political fluctuations or diverse ideologies. In addition, he cites the following common features of these countries: sustained political commitment to social equity; community organization for active and informed participation by the people; flexibility in programming (specific programs are not usually implemented in the same geographical areas); use of sound vital statistics and health information; major emphasis on primary health care (with health units actively reaching out to the homes); scientific, technical and operational bases; and concentration on clusters of poverty.

It bears repeating here what Horwitz said in his paper regarding the successful program in health and nutrition of the three Latin American countries. "It has been a long-range process lasting more than 25 years; there are no panaceas. Continuity in decisions, investments and actions is a necessity."

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EVALUATION OF ELEMENTARY AND SECONDARY EDUCATION IN THE PHILIPPINES:1970-1985

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I. BACKGROUND

The history of education could be best traced and understood in terms of the significant milestones that marked different periods, the conditions or problems that led to these developments as felt, observed, and studied by expert groups, and the reforms that resulted from the recommendations made. It is also imperative to anchor one's knowledge of the history of education on the prevailing socio-economic and political conditions occurring at various stages of Philippine history.

For the purpose of this paper, the years spanning the last 7 to 8 decades form the locus of the discussion. This is because the events that occurred during this time appear to have had tremendous impact on today's educational philosophy and practices. This would be expected as this period is marked by two major foreign dominations, and is also characterized by the social, economic and political instabilities of the 60's. It should be borne in mind, however, that the history of education in the Philippines had its beginnings even long before the turn of this century.

1. 1900 to Commonwealth

Towards the close of the 19th century, Americans occupied the Philippines. This marked the end of the almost 3 1/2 centuries of Spanish rule in the country. The U.S. colonial government through a military commission established a public school system of education patterned after the American school system. A significant feature of education under this regime was the introduction of English as medium of instruction, with American soldiers as the first teachers, and the transition from a schooling system previously monopolized by the Catholic church to a non-sectarian public school system.

In 1925, a committee headed by Paul Monroe was created to survey the conditions of the schools. Among its findings were:

a) Most teachers in elementary schools were professionally untrained inexperienced and dissatisfied;

b) About 82% of students did not continue beyond Grade 4;

c) Failure and repeater rates were high in every grade;

d) The curriculum and textbooks were ill-adapted to Philippine conditions;

e) Filipinos had great difficulty in learning English although they spent up to 25 hours a week in English instruction; and,

f) Schools were inadequately financed.

The 1935 Constitution gave the legal basis for the goals of education during the Commonwealth period and onward:

Art. XIII, Sec. 5. All educational institutions shall be under the supervision of and subject to regulation by the State. The Government shall establish and maintain a complete and adequate system of public education, and shall provide at least free public primary instruction and citizenship training to adult citizens. All schools shall aim to develop moral character, personal discipline, civic conscience, and vocational efficiency, and to teach the duties of citizenship. Optional religious instruction shall be maintained in the public schools as now authorized by law. Universities established by the State shall enjoy academic freedom. The State shall create scholarships in arts, science and letters for specially gifted citizens.

The Ordinance appended to the 1935 Constitution also included the following provision governing education under the Philippine Commonwealth:

> Sec. 1, Par. (8). The Government of the Commonwealth of the Philippines shall establish and maintain an adequate system of public schools, primarily conducted in English language.

The 1935 Constitution was amended twice, in 1940 and in 1946. The Constitution, as amended, contained the same provision concerning education found in the original version, but these provisions are contained in Art. XIV, Sec. 5 of the amended Constitution. A new provision in the amended 1935 Constitution mandated that –

> The Congress shall take steps toward the development and adoption of a common national language based on one of the existing native languages. Until otherwise provided by law, English and Spanish shall continue as official languages (Art. IV, Sec. 3).

As part of the preparation for self-rule, the Filipinos started to take over the management of the educational system. Towards 1935 the number of American teachers had significantly decreased. During this period, it was recommended that policy-determining personnel should be Filipinos.

During this period, the main concern of education was fundamental education, citizenship, nationalism, and awareness of Philippine culture. This was an effort to redirect the cognitive and affective orientation of the people toward a new found freedom and an

independence that was almost at hand. Considering the effects of a long period of foreign domination, there was a felt need to orient the people toward love and appreciation for what is Filipino. There was also an emphasis on the development of skills necessary for self-rule like leadership and self-reliance. Citizenship training was also emphasized in preparation for the forthcoming independence.

In 1936, the National Council of Education was created, headed by Rafael Palma. It stressed 5 points:

a) elimination of illiteracy;

b) fundamental education for adults;

c) shortening the number of years of schooling;

d) emphasis on vocational instruction based on government finance; and

e) readjustment of the functions of the major divisions of the system.

To complement the role of the National Council of Education, the Joint Educational Committee of 1939, composed of members of legislative and executive bodies was created to solve the financing problem of the public schools. It also recommended curriculum revisions with emphasis on the 3 Rs, development of literate citizens, and provision for the opportunity to complete elementary school.

With the passage of the Educational Act of 1940, the elementary course was shortened from 7 to 6 years. This was in order to accommodate more children of school age. The Education Act of 1940 also provided for free elementary education and required compulsory attendance which may be waived under certain conditions.

However, the problems reported by the Monroe Survey remained unsolved during the Commonwealth period which started in 1935 when limited self-rule was allowed by the U.S. Foremost of these problems are the poor quality of teachers, financing, relevance of content and materials, and physical facilities. At the tertiary level, there was an overconcentration on liberal arts and white-collar professional areas of training. There was also little emphasis on vocational and technical training that should produce artisans, mechanics, engineers, agriculturists and the like.

2. The Japanese Regime

With World War II, the educational system suffered a setback in solving the problems identified earlier. In fact the problems even increased, thus exacerbating the situation. When the Japanese occupied the Philippines, they tried to reorganize the educational system, and geared it towards promoting cooperation between the two countries and fostering a new Filipino-Oriental culture. They also introduced the Japanese language. For some time schools

closed down and when they reopened, classes were irregular and attendance at all levels was very poor, due to lack of logistics and the resistance of the teachers, not to mention the fears and anxieties that became part of the day-to-day lives of the Filipinos.

The educational objectives during this period were largely political and oriented toward cultural development. There was an attempt to erase the vestiges of American culture in order to foster a "new" Filipino culture. Materialism was discouraged and instead love of labor or work was emphasized. Education also attempted to minimize reliance on the West thus giving importance to vocational education.

During this period, the National Education Board, under the leadership of Jorge Bocobo recommended a reorganization in education making the spirit of nationalism the inspiration of all Filipinos and the guiding force in the pursuit of educational activities. Even if the Japanese effort was resented and resisted, education took on an intense nationalistic character. Tagalog was taught in all schools and the biography of Jose Rizal was a required textbook in secondary schools. The Japanese aimed at basic re-education toward the production of fewer lawyers and politicians, and more experts in agriculture, industry and business. However, despite elaborate schemes the Japanese were not able to make much progress toward their aims. After the Japanese occupation, the educational problems identified by the Monroe Survey persisted, and these were compounded by the effects of war.

3. Post–War to 1960s

In 1946, the government of the Philippine Republic was established within the framework of the 1935 Philippine Constitution. Although still recovering from the war, the Republic directed its efforts towards rebuilding and revitalizing the school system. Schools expanded using various schemes to meet the needs of large numbers of pupils as a result of the disruptions and delays caused by the war. Aside from improving the physical aspect of education, priority was also given to curriculum revision, school administration and establishment of schools, particularly in agriculture, trade/technical, business and teacher education.

The change of leadership in 1949 and the gradual recovery of the country after the war brought about a change of direction in education. The social orientation of Philippine education was evident. Thus the goals of education were directed toward the improvement of the various spheres of Filipino life, i.e., improving health conditions, upgrading family income, training for occupation, training for citizenship, developing sound character, providing wholesome recreation and conservation of the Filipino heritage. In short, educational efforts were directed towards the development of the person and improving the community where he lives.

The administration's thrust under President Magsaysay in the mid 50's was mainly in social and economic development. Education was utilized primarily to improve the quality of life, especially in the rural areas. Thus education was to help in the development of progressive rural communities through eradicating illiteracy, elevating home life, improving health and sanitation, increasing recreational activities and raising production. The subject matter and curriculum content were geared toward actual situations at home and in personal life. Community experiences and problems were also integrated in academic subjects.

The Elementary Education Act of 1953 restored Grade 7 but for lack of funds, Grade 7 could only be implemented in some better funded private schools.

In 1954, R.A. No. 1124 created the Board of National Education (BNE). The BNE served as the highest body charged with the formulation of objectives of education, the revision of the curriculum and the coordination of offerings, and activities and functions of all institutions. In 1957, it formulated the fundamental objectives of education, which were used until the 70's. These objectives were:

a) To inculcate moral and spiritual values inspired by an abiding faith in God;

b) To develop an enlightened, patriotic, useful and up right citizenry in a democratic society;

c) To instill habits of industry and thrift and to prepare individuals to contribute to economic development and wise conservation of the nation's natural resources;

d) To maintain family solidarity, to improve community life, to perpetuate all that is desirable in our national heritage, and to serve the cause of world peace; and

e) To promote the sciences, arts, and letters for the enrichment of life and the recognition of the dignity of the human person.

In the above objectives, there seems to be an emphasis on the development of moral, spiritual and nationalistic values, knowledge, skills and habits which will eventually prepare the individual for life. The development of a complete man imbued with the desired values is the main aim of education.

During the late 50's to the early 60's, the Filipino First Policy was advocated by the national leadership under President Garcia. This meant the promotion of Filipino ideals and interests toward a nationalistic policy. Thus the goals of education were geared toward the development of intelligent citizenship and love for the Filipino culture.

A change of leadership toward the mid-60's meant the launching of a massive socio-economic development program. Education started to take a turn towards the development of manpower skills and the continuity and development of Filipino culture and

technical education. Also, textbooks in the different subject areas were oriented to Filipino culture. Notable among the accomplishments during this period was the initial step at improving and promoting new methods and new curricular materials and tools, especially in science and math.

During the late 60's education was oriented to national development. Thus further efforts at developing the country's manpower were exerted. Education was concerned mainly with tapping human resources and providing free primary education. Education also aimed to strengthen the vocational and technical school system in order to carry out this aim.

4. Philippine Education at the Turn of the 1970s

It was, however, during the late 60's that the clamor for restructuring the educational system reached its peak. At this time the educational system was seen by many as irrelevant and unresponsive to the requirements of economic growth and development. Students took to the streets to protest what they claimed to be colonial education that pursues colonial ends. They demanded that it was time for education to be oriented to nationalistic goals.

In the education sector, the problem manifested itself in high dropout rates, poor quality of graduates, lack of quality materials, and a mismatch between manpower supply and demand. The widening gap between the rich and poor, moral degeneration, alienation from one's cultural identity and the passivity of the people were more marked than ever. At this time too, education took a big slice of the national budget, (28%–30%) and yet utilization of manpower came only to 52% (Primer on Education for National Development). With these problems, a rethinking of the philosophical, political, economic and social premises of Philippine education was deemed necessary.

5. The PCSPE Findings and Recommendations

It is in this context that the Philippine Commission to Survey Philippine Education (PCSPE) came about. This commission was to undertake a comprehensive survey of the educational system and to define the specific ills and problems that plagued the education sector. It was also tasked with giving recommendations and presenting alternatives to solve or alleviate these problems, and to correct deficiencies.

The PCSPE aimed to assess the capacity of education to meet human resources development goals including manpower requirements for social and economic growth (PCSPE Report). Consultants, resource persons and researchers analyzed specific areas like manpower and human resources, curriculum, higher education, vocational/technical education, educational administration, educational finance, educational logistics, teacher education, and science education.

The results of the survey revealed that the Filipino people maintained an unusually high regard for education which is considered a strength of the system. On the other hand, basic weaknesses within the system were found, foremost of which were that:

a) There is a dearth of vocational and technical manpower against an over production of white-collar graduates which the offices cannot even absorb.

b) The drop-out incidence in both the elementary and high school levels is high. For these drop-outs, chances to find employment are nil.

c) Elementary and secondary education are deficient, especially in Science and Math. Secondary education was found to be the weakest link in the educational levels.

d) The educational system did not have a comprehensive national development plan and also lacked operational objectives.

e) A large percentage of children from rural and low-income families are barred from higher educational opportunities.

f) Population has increased beyond the capability of the existing educational resources.

g) Formal schooling is mainly geared to those of normal age and not to those in the labor market.

h) Many of those with low educational attainment are in traditional employment — agriculture and unpaid family employment — where productivity is low.

On the basis of these findings, the Commission strongly recommended new directions through achievable aims; new structures to systematize educational policy-making and administration and to make management responsive to national, regional and local needs; and planned evaluation and innovation to maximize effectivity and efficiency.

II. EDUCATIONAL POLICIES. OBJECTIVES AND REFORMS

The 1973 Constitution along with the recommendations of the Presidential Commission to Survey Philippine Education served as the basis for the objectives and reforms in elementary and secondary education from 1970 onwards. Two major educational acts were adopted during this period, namely: the Educational Development Act of 1972 or Presidential Decree 6–A, and the Education Act of 1982.

1. The Educational Development Act of 1972

This Act set the objectives of education as follows:

a) Provide for a broad general education that will assist each individual, in the peculiar ecology of his own society, to (1) attain his potential as a human being; (2) enhance

the range and quality of individual and group participation in the basic functions of society; and (3) acquire the essential foundation for his development into a productive and versatile citizen;

b) Train the nation's manpower in the middle level skills required for national development;

c) Develop the high-level professions that will provide leadership for the nation, advance knowledge through research, and apply new knowledge for improving the quality of human life; and

d) Respond effectively to changing needs and conditions of the nation through a system of educational planning and evaluation.

Objective (a) is for both elementary and secondary education while objective (b) is for secondary and post-secondary education.

In addition, the Educational Development Act of 1972 ordered the formulation of a 10-year national education development program to upgrade facilities, adopt cost-saving instructional technology, training and re-training of teachers and administrators, upgrade academic standards and democratize access to educational opportunities. To finance it, a foreign education loan not exceeding $100 million was authorized.

Accordingly, a Ten-Year Educational Strategy Program was formulated, the first phase of which was included in the nation's Four-Year Development Plan, 1974–1977 and in the Five-Year Philippine Development Plan, 1978–1982. The specific strategies of the educational program under this short-term national plan were:

a) democratizing access to educational and training opportunities;

b) upgrading standards in educational and manpower development;

c) integrating public and private educational institutions through coordination and complementation of efforts;

d) strengthening linkages with other sectors;

e) developing Filipino culture, language, and art;

f) establishing a national infrastructure on research and development;

g) improving and developing the machinery for planning, management, implementation and evaluation;

h) emphasizing physical fitness and sports development;

i) developing financing schemes;

j) promoting teachers' professional capabilities and welfare; and

k) rationalizing manpower export: Brawn and Brain Drain.

Specific to elementary education is the objective "to provide basic literacy and numeracy skills that will enhance learning capabilities and enable Filipinos to become self-reliant, productive, versatile and civic-minded citizens.

Secondary education is aimed at reinforcing general education acquired at the elementary level and providing individuals the necessary basic skills for possible employment and/or necessary preparation for students to qualify for tertiary education.

Since quality education would be the main thrust of the two national education development plans, the end results expected were progressive reduction of dropout rates and increase in the retention, cohort survival and cohort completion rates.

2. Batas Pambansa Blg. 232 or the Education Act of 1982

This Act reinforced the objectives of the Educational Development Act of 1972 and reformulated the objectives of elementary and secondary education, thus:

Objectives of Elementary Education (Sec. 21):

a) To provide the knowledge and develop the skills, attitudes and values essential to personal development and necessary for living in and contributing to a developing and changing social milieu;

b) To provide learning experiences which increase the child's awareness of and responsiveness to the changes in and just demands of society and to prepare him for constructive and effective involvement;

c) To promote and intensify the child's knowledge of, identification with, and love for the nation and the people to which he belongs; and

d) To promote work experiences which develop the child's orientation to the world of work and creativity and prepare himself to engage in honest and gainful work.

Sec. 22 of the Education Act of 1982 requires secondary education to:

a) continue to promote the objectives of elementary education; and

b) discover and enhance the different aptitudes and interests of the student to equip him with skills for productive endeavor and/or prepare him for tertiary schooling.

With the foregoing policies, objectives and reforms set for the period covered by this study, the MECS launched the Program for Decentralized Educational Development

(PRODED) for elementary education, funded by a loan of $100 million from the World Bank. It is a four-year (1982–1985) comprehensive program addressed to raising the overall quality and efficiency of elementary education, improving the management capabilities of the educational system especially at the regional and sub-regional levels, and reducing the disparities among and within regions in service delivery and resource allocation.

PRODED aims to achieve the following specific objectives:

a) improve pupil achievement

b) decrease dropout rates

c) raise participation rates

d) increase pupil-teacher ratio.

III. A FRAMEWORK FOR EVALUATION

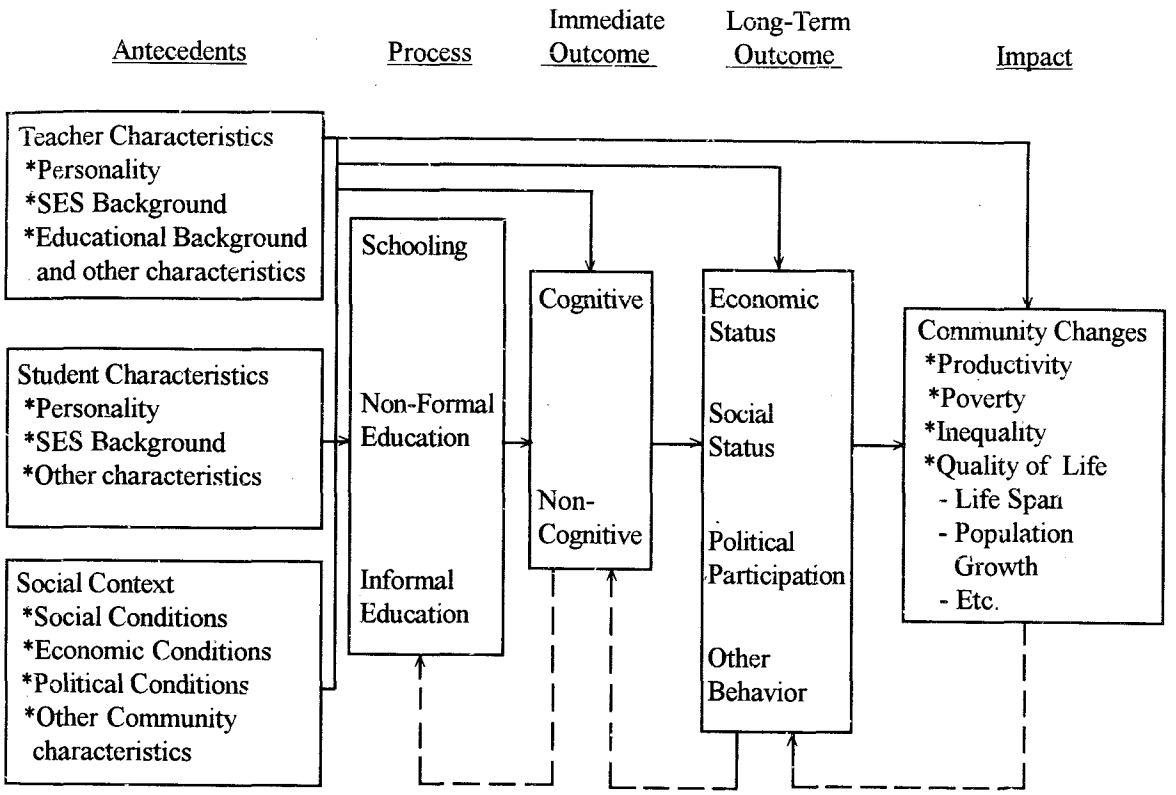
Elementary and secondary education in the Philippines constitute this country's basic education requirements for citizenship and for the individual's intellectual, psychological and physical development. This is implied in the pertinent educational provisions of the Philippine Constitution of 1935, 1973 and 1987, although stated differently in each, which require that all educational institutions shall teach the duties and obligations of citizenship, inculcate patriotism and nationalism, foster love of country, strengthen ethical and moral values, develop moral character and personal discipline, encourage critical and creative thinking, broaden scientific knowledge, and promote vocational efficiency.

The goal of universal primary education has been the main thrust of elementary education pursuant to the 1935 Constitution. Free public elementary education became a constitutional mandate under the 1973 Constitution while free public secondary education became mandatory under the 1987 Constitution.

This evaluation study focuses on the performance of elementary and secondary education *vis-a-vis* the educational provisions of the 1973 Constitution and the objectives and targets of the national educational plans pursued during the period covering the years from 1970 to 1985. The theoretical model that guided the evaluation is shown in Figure 1. The model recognizes that the long-term outcomes and impact of schooling are difficult to ascertain in view of the many extraneous factors that determine and shape individual characteristics and behavior after schooling and the overall changes occurring in the community. But the general assumption underlying the model is that schooling does make some difference in the life of individuals and society. In line with these theoretical propositions, three general questions may be asked about the performance of elementary and secondary education as follows:

Figure 1

The Antecedents, Causes, Consequences and Interactions of Education: A Paradigm for Conceptualizing Educational Research Problems.[1]



[1] An adaptation from "Determinants of School Achievement in Developing Countries: The Educational Productive Function, "by L. Alexander and J. Simmons, IBRD Staff Working Paper No. 201, March 1975 and IDRC, A Review of Teacher Effectiveness, etc., Nov. 1979.

1. What have been the immediate outcomes of elementary/secondary education on the cognitive and non-cognitive learnings of pupils?

2. What are the perceptible long-term effects of elementary/secondary education on the economic, social and political lives of Filipinos who had gone through these levels of education?

3. What are the perceptible effects of elementary/secondary education on the educational attainment of the Philippine population, on the community's physical quality of life index (PQLI) and economic characteristics such as levels of productivity, rates of unemployment, poverty and inequality index?

These are mainly school outcome and impact questions. A more meaningful evaluation of elementary or secondary education should, in addition to ascertaining school effects, examine the schooling process itself to determine not just what school factors account for what outcomes, but more importantly how the outcomes were produced and under what conditions. However, in view of the time limit imposed on this project, the evaluation was confined to elementary and secondary school system performance, measured in terms of efficiency and effectiveness indicators derived from data/statistics contained in official records and publications of the Department of Education, Culture and Sports (formerly MECS), Bureau of Census, National Educational Testing Center (NETC), NEDA, UP Population Institute, and other relevant research reports. Relying on and assuming the accuracy of these data, re-analyses of these secondary data were carried out to examine specific issues and generate answers to key evaluation questions raised concerning a particular issue. The evaluation focused on the following issues and key questions:

1. Issue of Coverage. To what extent has elementary/secondary education during the period of study provided services to all those who have the constitutional right to education? Who benefited from and who paid for the cost of education in elementary education? In secondary education?

2. Issue of Resource Allocation and Resource Use: Internal Efficiency. What and how much financial, human and material resources were mobilized for elementary and secondary education during the period? How economical and rational was elementary/secondary education in utilizing these resources? Has the elementary/secondary school system been reasonably efficient in bringing students to successful completion? What is the degree of wastage involved in such phenomena as cohort survival rates, cohort completion/graduation rates, and failure rates?

3. Issue of Quality and Equity: Effectiveness. What has been happening to student/pupil achievement in academic subjects? In non-cognitive learnings?

How equitable has the elementary/secondary school system been during the period under study in providing access to education in ensuring comparable quality of services, and in performing the necessary selection without prejudice to rural-urban residence, region, and social or income groups? Did elementary/secondary education have any positive perceptible effect on the educational characteristics of the total population and on the educational attainment of the employed/unemployed labor force?

IV. ELEMENTARY SCHOOL EDUCATION

1. Introduction

An evaluation of the elementary system of formal education in the Philippines must relate logically the objectives of the system to the expected outputs. Official documents emanating from the Department of Education, Culture and Sports (formerly known as the Department of Education) reveal that the main objective of elementary (basic) education in the Philippines is to "provide basic literacy and numeracy skills that would enhance learning capabilities and enable Filipinos to become self-reliant, productive, versatile and civic-minded citizens." To achieve this major objective, the former Department of Education revised the curriculum of elementary education in 1970. After about ten years, the same department, now renamed Department of Education, Culture and Sports (DECS) made another revision of the existing curriculum and implemented a new elementary school curriculum in 1982. The aforementioned government agency implemented specific strategies to: (1) encourage enrolment, (2) increase participation rates, (3) reduce drop-out rates, (4) increase cohort-survival rates, (5) decrease repetition rates, (6) increase completion rates, (7) increase achievement rates, (8) improve the teacher-pupil ratio and (9) improve the pupil-textbook ratio.

To what extent has the Department of Education, Culture and Sports achieved the objectives set forth, for the years 1970 to 1985?

2. The Elementary School Curriculum of 1970 and 1982: A Comparison

To gain a better perspective of this evaluation project, one needs to know the curriculum of the elementary school that was being implemented during the 15-year period covered by the study. Actually, two curricula were implemented during this period, the first one having a duration of eleven years and the second one still being implemented at present.

Table 1 presents the subject areas/learning areas of the two curricula. Also shown are the weekly time allotment for each subject area.

How do the two curricula differ? Basically, they differ in the number of subject areas covered and the time allotment for each area. The scope of subject matter does not differ

TABLE 1
Elementary School Curriculum of 1970 and 1982: Subject Learning Areas and Time Allotment (minutes per week)

Subject Areas (Learning Areas)	I		II		III		IV		V-VI	
	1970	(1982)*	1970	(1982)*	1970	(1982)*	1970	(1982)*	1970	(1982)*
1. Character Education/ Character Bldg. Act	100	(100-150)	100	(100-150)	100	(100)	100	(100)	100	(100)
2. Language Arts-Vernacular (Reading)	200			200						
Pilipino (Language and/or (Reading)	300	(300)	300	(300)	300	(300)	300	(300)	200	(300)
English (Language and/or (Reading)	200	(300)	200	(300)	300	(300)	300	(300)	400	(300)
3. Social Studies	150		150		150		200		200	
Civics and Culture (History/Geography/ Work Ethics)		(200)		(200)		(200)		(200)		(200)
History/Geography/ Civics										
4. Elementary Mathematics	150		150		150		150		200	
Mathematics		(200)		(200)		(200)		(200)		(200)
5. Health and Science	150		150		150		---		---	
Science and Health						(200)		(200)		(200)
6. Science	---		---		---		150		200	
7. Music and Arts	150		150		150		150		150	
Arts and Physical Education						(200)		(200)		(200)
8. Work Education					200		300		400	
Home Economics and Livelihood Education								(200)		(300)
9. Physical Education	100		100		100		150		200	
TOTAL	1,500	(1,100-1,500)	1,500	(1,100-1,150)	1,600	(1,500)	1,800	(1,700)	2,050	(1,800)

*All Figures in parenthesis refer to the 1982 curriculum.

Source: MECS Statistical Bulletin, 1970 and 1982.

fundamentally for each, but one realizes that the 1982 curriculum has built upon the content and strategies embodied in the 1970 curriculum.

The 1970–1971 curriculum, also known as the Revised Elementary Education Program, consisted of nine subject areas. On the other hand, the 1982 curriculum, or the New Elementary School Curriculum (NESC) is composed of eight learning areas. This is due to the combination of Arts and Physical Education into one area in the latter.

It should be noted that some subject areas in the 1970 curriculum have been renamed in the 1982 version, for instance, what used to be called Social Studies was renamed Civics and Culture in the first three grade levels and History/Geography/Civics in the last three years. While Health and Science was a subject taught in the first three grade levels in the 1970 version, this was deleted from the 1982 version. Instead, it was renamed Science and Health and came to be taught only in grades four to six. Changes were also made in the number of minutes allotted to some subjects. With the changes made, it was assumed that the 1982 curriculum was an improvement over the 1970 version. It was expected to meet the changing needs of elementary school children who were growing up in the eighties, a time of social changes as well as technological and scientific advances. Most importantly, both curricula served to achieve the objectives of basic elementary education as presented in the 1935, 1973, and 1987 Constitutions of the Philippines.

3. Coverage of Elementary Education

In this study, the measures of coverage include:

1. Percentage share of elementary school age population of the Philippine population
2. Absolute growth rates of elementary school age population during the period covered by the study, both nationally and regionally
3. Increase/decrease in the number of elementary schools nationally and regionally
4. Increase/decrease in elementary school enrolment

In the 1935 Constitution of the Philippines, the government was mandated to establish and maintain a complete and adequate system of public education and to provide at least free public primary education. The 1973 and 1987 Constitution likewise provided for the government's maintenance of a system of free public elementary education, where attendance of school-age children is compulsory.

Elementary education in the Philippines covers grades one to six for children belonging to the age group 7–12 years old. Two types of elementary schools exist, the public schools which are maintained by the government and the private schools which are owned by either private citizens (non-sectarian) or by religious groups (sectarian). This study focused on the

elementary education offered by the public elementary schools, by far the much bigger number in comparison with the private elementary schools.

Statistics for the elementary school age population are available only for the years 1978 to 1985 (Table A.1). In 1978, the total elementary school-age population was slightly over seven million (or 7,209,736). This population increased to over eight million (or 8,442,293) in 1985. This indicated a 17 percent increase over the same period. It also represented an absolute growth of one million (or 1,237,557), an average increase of 154,070 per year (MECS Bulletin, 1989).

In 1978, a total of 30,221 elementary schools had been established throughout the country. This number increased slightly during these years and in 1985 reached a total of 31,817. This registered an absolute growth of 1,596 for the given period, or an average increase of 199.5 schools per year (see Table A.2).

The regional distribution was generally in consonance with the proportion of school-age populations in each region. The exceptions appear to be Region II (Cagayan) and Region VIII (Eastern Visayas). Both these regions had among the smallest share of the total elementary school age population but appear to have much bigger shares of the available elementary schools.

Statistics on the growth of enrollment are shown in Table A.3. From a total enrolment among elementary school age children of 7,078,179 in 1978, it grew to 8,392,103 in 1985. The figures reveal an absolute growth of 790,988 or an annual absolute growth of 98,873. The enrolment steadily increased from year to year, and no fluctuation was registered for any two consecutive years.

For the period under review, 1978 to 1985, the regions in Luzon had the biggest share of students enrolled in the elementary schools with the smallest share found in the regions located in the Mindanao area.

4. The Share of Elementary Education in the Nation's Budget for Education

How much of the nation's budget for education went to elementary education? Data on this are available only for the years 1979 to 1985 (See Table A.3). During this period, the share of elementary education was 67.8 percent in 1979, 72.6 percent in 1980 and 73 percent in 1985. These figures were obviously much bigger than those for secondary education.

An examination of the distribution of the total national budget for elementary education shows that Region IV (Southern Tagalog) was consistently given the largest share. This is logical since it has the biggest share of elementary school age children enrolled. A similar justification can be given for the amounts allotted to Region III (Central Luzon) and Region

VI (Western Visayas). These two regions have the next two biggest shares of the enrolment of elementary school age children.

Based on the available data, it appears that the total national budget for elementary education was proportionately allotted to the thirteen regions based on their respective gross enrolment data.

5. The Performance of Elementary Schools

What performance indicators can be used to evaluate elementary education in the Philippines during the period under consideration? In this study, two sets of performance indicators were identified, namely, efficiency and effectiveness indicators.

Efficiency is the extent to which the goals of the system are attained with the resources available to the system. With this as a frame of reference, six indicators of efficiency appear relevant. These are as follows:

1) participation rate

2) cohort survival rate

3) cohort completion rate

4) dropout rate

5) repetition rate

6) graduation rate.

The effectiveness of elementary education is revealed in the extent to which its learning goals and objectives have been achieved, as measured by students' performance in achievement tests administered nationwide, as well as in the observable changes in the characteristics of the population. The indicators of effectiveness are the following:

1) Achievement scores in the nationwide tests of the SOUTELE, EEEP, PREEM and NESC;

2) Literacy rates of the population;

3) Educational attainment of the population;

4) Educational attainment of the labor force.

5.1 Efficiency

Of the six indicators of efficiency, only five had substantive data available for the period covered by this study. These are the participation rates, cohort survival rates, dropout rates, repetition rates and graduation rates. The data available for the cohort completion rates were

only for two years, i.e., 1984-1985 and 1985–1986. Inasmuch as the curriculum for both years are the same, there would be no firm basis for comparing data for the two years.

a. Participation Rates

The participation rates of elementary school pupils can be studied both nationally and by region. Data presented in Table 2 show the national participation rates for each of the entire 15-year period covered in the study. The participation rates of children in the elementary schools were about 89 percent in 1970-71, peaking at approximately 95 percent in 1979–1980, and then fluctuating between 86 and 93 percent during the past six years. It appears that the decade between 1970 and 1980 produced slightly higher participation rates in contrast to the first six years of the succeeding decade.

TABLE 2
National Participation Rates of Elementary School
(1970-1985)

School Year	Rate
1970-1971	88.96
1971-1972	89.40
1972-1973	89.70
1973-1974	90.30
1975-1976	90.75
1976-1977	90.44
1977-1978	91.45
1978-1979	92.84
1979-1980	95.30
1980-1981	85.82
1981-1982	91.66
1982-1983	93.08
1983-1984	87.91
1984-1985	89.60
1985-1986	88.90

Sources: Report on Educational Development in the Seventies, 1970-1980, p.34, MECS and MECS Statistical Bulletin.

The data presents a discouraging situation due to the fact that about 10 percent of the school-age children were out of school in the period covered by this study. This group became an additional burden to society and a yearly drain on the national economy.

Data available for the participation rates of elementary school pupils by region are for the more recent years covered by the study, i.e., 1980 to 1985. Table 3 presents a summary of these data. When participation rates are arranged from highest to lowest, the region with the highest participation rate over the six-year period appears to be Region I (Ilocos). It has consistently maintained its participation rates at a high level, beyond 94 percent on the average. Region XII (Central Mindanao) also appears to have kept its participation rates at slightly above 90 percent level. Except for Region XII in Mindanao, the rest of the regions with high participation rates are located in Luzon. What is puzzling, however, is that the National Capital Region (NCR) appears to have the lowest participation rates during the period covered by the study. On the average, the participation rate over the six-year period is approximately 76 percent. This is quite low compared with those of the other regions.

b. Cohort Survival Rates

Over the six-year period from 1979, 1981–1985, the cohort survival rates of the elementary school-age children in the National Capital Region (NCR) were the highest, followed by those of Region I (Ilocos), Region III (Central Luzon) and Region IV (Southern Tagalog). Among those with the lowest survival rates were Region XII (Central Mindanao), Region IX (Western Mindanao) and Region VIII (Eastern Visayas).

When one refers to Table 3 showing the participation rates by region during the same period, it is interesting to note that Region I (Ilocos) had the highest participation rate, and as shown in Table 4 also had one of the highest cohort survival rates. The schools in Region I (Ilocos) appear to have succeeded in keeping the children in school once they are admitted. The opposite appeared to be true for Region XII (Central Mindanao). While apparently the latter region had maintained one of the highest participation rates, its survival rates leave much to be desired.

Data in Table 4 further suggests that the schools in two regions in the Visayas, i.e., Central and Eastern Visayas, as well as two regions in Mindanao, i.e., Western and Central Mindanao, were not quite successful in their effort to keep the children continously enrolled once they are admitted. This phenomenon has serious implications, inasmuch as these regions make up almost a third of the total number of regions. So many children appear to have been affected.

c. Dropout Rates

Table 5 presents the dropout rates of elementary pupils by region and by year. When one examines the data summarized by region, one sees that the regions in Mindanao and in the

TABLE 3
Participation Rates of Elementary School Pupils by Region and by Year (1980-1985)

Region/Year and Rank	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	Average	Rank
NCR	72.3 (13)	75.4 (13)	72.8 (13)	71.7 (13)	79.9 (13)	79.7 (13)	76.5	(13)
I. Ilocos	88.7 (4)	97.4 (3)	98.0 (4)	94.5 (1)	92.7 (3)	92.8 (2)	94.0	(1)
II. Cagayan	90.7 (2)	93.4 (2)	97.3 (5)	88.1 (11)	91.8 (5)	92.3 (4)	93.1	(3)
III. Central Luzon	83.3 (11)	95.4 (6)	102.1 (1)	90.9 (6)	91.4 (6)	90.9 (8)	92.3	(6)
IV. Southern Tagalog	91.9 (1)	88.8 (11)	88.6 (12)	89.9 (8)	93.3 (2)	92.4 (3)	90.8	(5)
V. Bicol	89.2 (3)	93.4 (8)	94.0 (9)	93.0 (3)	92.4 (4)	91.8 (5)	92.3	(4)
VI. Western Visayas	84.2 (9)	96.7 (5)	100.9 (2)	88.7 (10)	91.3 (7)	85.5 (10)	91.2	(8)
VII. Central Visayas	80.0 (12)	88.8 (12)	88.8 (11)	79.9 (12)	82.4 (12)	80.9 (12)	83.4	(12)
VIII. Eastern Visayas	83.7 (10)	97.0 (4)	95.9 (8)	93.6 (2)	85.6 (11)	84.6 (11)	90.1	(9)
IX. Western Mindanao	87.1 (5)	91.2 (9)	93.4 (10)	90.3 (7)	89.0 (10)	91.4 (7)	90.4	(10)
X. Northern Mindanao	85.2 (7)	89.5 (10)	96.8 (6)	88.8 (9)	91.1 (8)	89.6 (9)	90.2	(11)
XI. Southern Mindanao	85.8 (6)	94.0 (7)	96.2 (7)	92.4 (4)	90.7 (9)	91.5 (6)	91.8	(7)
XII. Central Mindanao	84.8 (8)	99.5 (1)	99.5 (3)	91.0 (5)	94.7 (1)	94.0 (1)	93.9	(2)

Sources: MECS Statistical Bulletin, 1980-81
DECS Statistical Bulletin, 1985-86

TABLE 4
Cohort-Survival Rates for Elementary School Pupils by Region and by Year (1979-1985)

Region/Year and Rank	1979-80	1981-82	1982-83	1983-84	1984-85	1985-86	Average %	Rank
NCR	97.5 (1)	88.3 (1)	85.2 (1)	82.2 (2)	84.5 (1)	86.9 (1)	87.4	(1)
I. Ilocos	79.9 (2)	78.3 (3)	83.7 (2)	82.6 (1)	77.1 (2)	78.4 (2)	80.0	(2)
II. Cagayan	64.7 (5)	63.6 (6)	61.4 (7)	60.2 (7)	61.0	60.5 (6)	61.9	(6)
III. Central Luzon	74.4 (4)	80.2 (2)	77.4 (3)	76.1 (4)	76.5 (3)	76.5 (3)	76.9	(3)
IV. Southern Tagalog	74.4 (4)	78.0 (4)	76.7 (4)	77.6 (3)	74.8 (4)	74.8 (4)	76.5	(4)
V. Bicol	63.6 (6)	65.5 (5)	66.8 (5)	58.6 (9)	62.6 (5)	63.3 (5)	63.4	(5)
VI. Western Visayas	58.3 (10)	62.3 (9)	62.6 (6)	61.3 (5)	62.4 (6)	60.0 (7)	61.0	(8)
VII. Central Visayas	63.4 (7)	55.3 (10)	58.0 (10)	57.6 (10)	56.3 (10)	55.9 (10)	57.7	(10)
VIII. Eastern Visayas	53.7 (11)	53.3 (11)	54.4 (11)	52.3 (12)	54.0 (11)	54.8 (11)	53.7	(11)
IX. Western Mindanao	49.3 (12)	49.7 (12)	50.6 (12)	48.0 (13)	49.2 (12)	47.8 (12)	49.1	(12)
X. Northern Mindanao	58.9 (9)	62.8 (7)	60.6 (3)	60.5 (6)	59.4 (8)	56.8 (9)	59.4	(9)
XI. Southern Mindanao	63.9 (8)	62.7 (8)	60.2 (9)	59.8 (8)	57.8 (9)	59.0 (8)	60.4	(7)
XII. Central Mindanao	48.7 (13)	48.2 (13)	48.6 (13)	54.2 (11)	43.9 (13)	44.4 (13)	48.2	(13)

Sources: MECS Statistical Bulletin, 1980-86

TABLE 5
Cohort-Survival Rates for Elementary School Pupils
by Region and by Year
(1979-1985)

Region/Year and Rank	1974-75	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	Average	Rank
NCR	3.9	2.6	1.8	1.7	1.5	1.2	1.3	2.4	1.1	1.1	1.9	1
I. Ilocos	3.8	4.3	2.7	3.1	2.2	2.2	2.1	2.0	1.3	0.9	2.5	3
II. Cagayan	5.9	4.3	3.4	3.2	3.3	2.2	2.3	2.2	1.6	2.0	3.0	5
III. Central Luzon	4.0	2.9	2.9	2.4	2.2	1.9	1.5	1.5	1.3	1.3	2.2	2
IV. Southern Tagalog	5.2	3.7	3.2	3.0	1.7	2.2	2.1	1.9	1.7	1.6	2.6	4
V. Bicol	7.2	4.5	4.4	4.2	4.0	3.1	2.4	2.4	2.4	2.2	3.7	3
VI. Western Visayas	6.5	7.4	8.5	5.1	4.7	3.6	3 4	3.2	2.8	2.7	4.8	10
VII. Central Visayas	9.6	8.2	8.3	6.5	6.0	4.4	5.0	5.2	1.0	1.0	5.6	12
VIII. Eastern Visayas	8.6	7.9	7.0	6.1	7.6	4.4	4.6	3.4	3.4	3.0	5.6	10
IX. Western Mindanao	5.3	4.6	5.4	3.8	4.6	3.2	3.4	3.4	3.3	3.1	4.0	8
X. Northern Mindanao	6.6	4.6	4.0	3.6	3.2	2.7	2.9	3.0	2.5	2.2	3.6	6
XI. Southern Mindanao	9.3	6.5	4.5	4.1	4.1	3.9	2.3	2.8	2.4	2.3	4.3	9
XII. Central Mindanao	9.7	8.0	7.1	4.6	5.0	2.4	3.9	3.6	2.2	4.1	5.1	11
TOTAL	6.6	5.4	4.9	3.8	3.6	2.9	2.8	2.7	2.0	2.0	3.7	7

Sources: MECS Statistical Bulletin, 1980-86
MECS Annual Report 1983-85
DECS Statistical Bulletin 1985-6

Visayas had among the highest dropout rates, while the National Capital Region and the other regions in Luzon had among the lowest as early as 1974–75. Over the 10-year period covered in the study, the same pattern has been maintained.

The dropout rates for each region during the same period (1974–1975 to 1985–1986) did not register consistent decreases. Fluctuations appear to be common from one year to the next. However, when one compares the figures between 1974–1975 and 1985–1986, there appears to be a dramatic decrease registered for all regions.

The National Capital Region appears to have consistently maintained very low dropout rates. On the other hand, Region VII (Central Visayas), with one of the highest dropout rates in 1974–1975, managed to bring it down to only 0.95 for the last two years.

When averaged over the 10-year period and then ranked from highest to lowest, the National Capital Region maintained the lowest dropout rate, followed closely by Region III (Central Luzon) and Region I (Ilocos). The region that had the highest dropout rate was Region VIII (Eastern Visayas), closely followed by Region VII (Central Visayas).

d. Repetition Rates for Elementary Education

The repetition rates of elementary school pupils on the national level are available only for the six-year period 1979–1980 to 1984–1985. As presented in Table 6, the repetition rate in 1979–1980 was slightly more than two percent of the entire population of elementary school-age children enrolled. After fluctuations from year to year, it decreased by almost 50 percent in 1984–1985, down to 1.3 percent. This speaks well of lot of factors, e.g., the teachers, the ability of the pupils, and the curriculum.

During the same six-year period, similar low repetition rates were registered among the twelve regions and the National Capital Region. What is quite obvious is that there is a decline over the years for more than half of the 13 regions. However, while Regions XII (Central Mindanao), VI (Western Visayas) and III (Central Luzon) were able to reduce their repetition rates by almost 50 percent, three other regions showed an increase in their respective repetition rates. These were Region I (Ilocos), from 1.3 in 1979–1980 to 2.0 in 1984–1985; Region IX (Western Visayas), from 2.0 in 1979–1980 to 2.4 in 1984–1985; and Region II (Cagayan), from 1.3 in 1979–1980 to 1.6 in 1984–1985.

e. Graduation Rates

Data summarized in Table 7 show that over the 15-year period covered in the study, the graduation rates of elementary school pupils bordered at the 90 percent level.

The trend appears to be fluctuating from year to year. What might have caused the four percent decrease in 1981-1982? Why did the rates level off at about 90 percent during the last

Table 6
Repetition Rates of Elementary School Age Pupils by Region and by Year

Region/Year	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985
NCR	1.6	1.8	1.6	1.5	1.4	1.2
I. Ilocos	1.3	2.0	1.9	1.8	1.7	2.0
II. Cagayan	1.3	1.8	1.8	2.5	2.5	1.6
III. Central Luzon	1.0	1.0	1.1	1.3	1.4	0.6
IV. Southern Tagalog	2.2	2.7	1.9	2.2	2.1	1.8
V. Bicol	3.0	3.1	2.9	3.1	3.1	2.4
VI. Western Visayas	3.2	3.2	2.7	2.7	2.7	1.7
VII. Central Visayas	4.5	4.7	3.6	3.6	4.6	3.4
VIII. Eastern Visayas	2.4	2.6	2.2	2.4	2.6	2.1
IX. Western Mindanao	2.0	3.0	2.4	2.9	2.8	2.4
X. Northern Mindanao	2.6	2.2	2.2	2.9	2.7	2.2
XI. Southern Mindanao	1.9	2.2	2.1	2.0	2.0	1.6
XII. Central Mindanao	1.6	1.9	1.4	1.5	1.1	0.9
AVERAGE	2.2	2.5	2.1	2.3	2.3	1.8

Sources: Annual Report, 1980 Part II Table 11 p.122
MECS Statistical Bulletin, 1980 Table 5, p.35
MECS Statistical Bulletin, 1981-1982 to 1984-1985

TABLE 7
National Graduation Rates of Elementary School Pupils by Year

Year	Rates
1970 - 1971	90.7
1971 - 1972	89.5
1972 - 1973	91.4
1973 - 1974	90.8
1974 - 1975	90.9
1975 - 1976	90.5
1976 - 1977	91.0
1977 - 1978	91.1
1978 - 1979	89.4
1979 - 1980	91.7
1980 - 1981	93.7
1981 - 1982	89.8
1982 - 1983	90.5
1983 - 1984	90.5
1984 - 1985	90.5

Source: MECS, Philippine Education Indicators, 1965 - 1985, Manila, p.33

three years? What factors prevent a dramatic increase in graduation rates? What about the 10 percent of the pupils in grade six during each year studied who failed to graduate with their classes? Do they re-enroll the following year? If they do not, what provisions exist to cater to this group of individuals?

5.2 Effectiveness: Achievement Scores in the Nationwide Tests

In this study, three measures were used as achievement indicators of the performance of elementary school-age pupils for the period covered. All used valid and reliable tests administered to two different sets of pupils at two different points in time. Consequently, the results can be used as indicators of effectiveness of elementary education.

The first measure is the mean percentage scores of sixth graders in the SOUTELE(Survey of Outcomes in Elementary Education) tests. These tests were on five subject areas, namely Reading, Language, Pagbasa, Wika and Mathematics. These tests were first administered in 1975 and then in 1986 (see Table 8).

A comparison of the mean percentage scores of sixth graders in the five subject areas in the two administrations of the tests, 1975 and 1986, reveals significant mean differences in all but one of the subject areas, i.e., Language. Be that as it may, it should be noted that the mean percentage scores in the 1975 results were low to start with. The gains, though statistically significant, may not possess much practical significance.

TABLE 8
Comparison of Mean Percentage Scores Grade VI
1975 and 1986 SOUTELE TESTS by Subjects Areas

Subject Areas	Mean Percentage Score 1975	1986	Mean Difference
Reading	39.5	42.6	3.1*
Language	39.2	40.8	1.7
Pagbasa	44.7	52.8	8.1*
Wika	48.1	58.2	10.4**
Mathematics	35.7	44.2	8.5**

Legend:
** p <.01
* p <.05

Source: SOUTELE - Survey of Outcomes of Elementary Education, Curriculum Division, Bureau of Elementary Education.

The fourth graders were also administered tests by the SOUTELE in 1976 and then by the PREEM in 1987 (Table 9). Again, a comparison of the mean percentage scores shows significant mean differences in the direction of the test. The same observation can be made, i.e, the mean percentage scores for the 1987 PREEM tests barely reached the fifties, with two still in the forties.

TABLE 9
Comparison of Mean Percentage Scores, Grade IV
1976 SOUTELE and 1987 PREEN Test by Subject Areas

Subject Areas	Mean Percentage Score		Mean Difference
	1976 SOUTELE	1986 PREEM	
Language	33.23	41.96	8.73
Pagbasa	42.67	52.98	10.11
Wika	47.72	46.66	1.61
Mathematics	34.27	58.55	10.83

The third measure is the set of results from the national achievement tests administered in three research studies (see Table 10). These studies were the SOUTELE (1975–1977), EEEP (Experimental Elementary Education Program) (1970–1980) and the NESC (New Elementary School Curriculum) (1983–present). The tests were in three basic areas of learning, English, Pilipino and Mathematics administered to certain grade levels in the elementary schools. From the table, where the data available are yet incomplete, gains for the fourth grade students were approximately 10 percent based on the SOUTELE and EEEP tests. For the fifth graders however, a very slight decrease occurred. As regards the comparison of mean percentage scores for the EEEP and NESC, a 17 percent increase was registered for first graders. This increase in pupil achievement may be due to a curriculum that allows more time and opportunity for the use of mastery learning strategies in teaching the three R's.

Based on the available data, it seems that elementary education is succeeding in improving the achievement of the elementary school pupils. These data, however, present only the performance of public elementary school students. Effectiveness indicators 2, 3, and 4 are presented in the portion on secondary education.

6. Conclusions

Based on the single performance indicator, the achievement level of the elementary school-age population falls way below the target performance of 75 percent. Increases in achievement scores in national achievement tests have been made in some grade levels but in

Table 10
Overall Mean Percentage Scores in National Achievements Tests in English, Pilipino and Mathematics in Three Research Studies by Grade Level

Grade Level	Overall Mean Percentage Scores		
	SOUTELE (1975-1977)	EEEP (1979-1980)	NESC (1983-Present)
I	-	39.3	56.2
II	-	44.1	-
III	-	42.9	-
IV	41.1	50.7	-
V	38.9	38.4	-
VI	-	46.2	-

Legend:

SOUTELE - Survey of Outcomes of Elementary Education
EEEP - Experimental Elementary Education Program
NESC - New Elementary School Curriculum

Source: Ministry of Education, Culture and Sports.
Philippine Education Indicators 1965-1985.
Manila. p. 35

general, such gains only underscore the need for better performance of the elementary school–age population.

V. SECONDARY EDUCATION

1. Coverage of Secondary Education

The measures of coverage include:

1. Percentage share of secondary school-age population in the Philippine population.2.
2. Absolute growth rates of the secondary school-age population during the period covered by the study, nationally and regionally.
3. Increase/decrease in number of secondary schools, nationally and regionally.
4. Increase/decrease in secondary school enrolment.
5. Share of public secondary school enrolment of total secondary school enrolment.

Secondary education in the Philippines covers the age group 13–16 years old. Until the adoption of the 1987 Philippine Constitution, the Philippine government assumed the obligation of providing and requiring compulsory education only for the age group 7–12 years old. In other words only elementary education was intended to be universal and compulsory. The policy of free and compulsory education in the elementary school level along with the rapid growth rate in population and the absence of job opportunities for the youth aged 13–16 years old tended, however, to expand the demand for secondary schooling over the years. Prior to the policy of free public secondary education which was signed into law (House Bill No. 2528) in AY 1988–89 in consonance with the 1987 Constitution, secondary education relied mainly on the private sector and local governments for funding. In view of this, secondary schools varied widely in their resources, services and actual performance.

By source of funding, secondary schools are classified as public and private. Public secondary schools are further categorized by source of funding into national, provincial, city and barangay high schools. Private high schools are also divided in terms of ownership into sectarian and non-sectarian.

By educational program, secondary schools are classified into: comprehensive (academic-vocational) and vocational/ technical (agriculture, trade and fishery). In general, private high schools are academic high schools. Public vocational/technical, agriculture, and fishery high schools are likely to be nationally-funded schools. Proportion-wise, comprehensive and academic high schools outnumber vocational/technical high schools.

In SY 1979–1980, only 560 or 18 percent of 3,223 high schools in the country were nationally funded. The share of the national government in funding public secondary schools

remained at 18 percent in 1983–1984. This proportion increased to 22 percent in 1985–1986 (MECS Statistical Bulletin, 1980; 1983–84 and 1985–1986).

The statistics on the secondary school-age population both at the national and regional levels are available only for the years 1975 to 1985. The absolute growth in the secondary school age population from 1975 to 1985 was 763,899, or an average annual absolute growth of 76,390. The regional distribution by year is shown in Table A.4.

In 1970 the Philippines had a total number of 3,851 secondary schools, 48.7 percent public and 51.3 percent private. Five years later, this number increased to 4,844 with the public schools accounting for 58.3 percent of the total. By 1985, approximately 63 percent of secondary schools in the country was public schools (Table A.5).

The absolute growth in the number of secondary schools from 1970-1985 was 1,537 schools or an absolute annual growth of 102 high schools during a period of 15 years. The distribution of these high schools by region is shown in Table A.6.

An examination of the distribution of secondary schools by type of ownership by region provides some interesting insights (Table A.7). Secondary education in the NCR remains largely in the hands of the private sector, where 66 percent and 64.4 percent of secondary schools were privately owned in 1980 and in 1985 respectively. Region VIII appears to be the exact opposite of the NCR. Here 8 out of 10 high schools were public in 1980 and in 1985. It appears that in the relatively depressed regions, public high schools far outnumber the privately-owned high schools. This is to be expected, considering that the private sector in any venture is likely to channel investment into areas where the opportunity for realizing profit is greater. It can be surmised that private high schools in these depressed regions are likely to be those owned by religious groups or missions.

It was pointed out earlier that prior to the 1970s, secondary education was dominated by the private sector. In fact, in 1960, approximately 78 percent of high schools in the Philippines was privately-owned. But with the creation of barrio high schools under P.D. 479 in 1975, public high schools expanded rapidly, thereby reducing the role of the private sector in secondary education.

The data from 1972 to 1985 show a rapid expansion in secondary school enrolment. The absolute growth in secondary school enrolment was particularly tremendous between 1975 and 1985, reaching 1,250,143, compared to the absolute growth during an equal length of time (10 years), i.e., between 1970–1980 which was only 1,175,518 or an annual absolute growth of 117,551.8, compared to 125,143 annual absolute growth in 1975 to 1985 (Tables A.8 & A.9).

During the period from 1970 to 1985 the enrolment in secondary schools increased from 1,591,356 to 3,323,063, an absolute enrolment growth of 1,731,707 for 15 years or an absolute

annual growth of 115,447. The regional distribution of secondary schools is shown in Table A.10.

One interesting fact revealed by the data on enrolment is that, while in 1975 public secondary schools started to exceed the number of private schools, with 6 of every 10 high schools being public, the private high schools absorbed a higher proportion of the total enrolment in this level in 1975 and registered a relatively higher share of the total secondary school enrolment in relation to the number of schools in this sector. For example, while in 1980 public high schools comprised 60.5 percent of the total schools in this level, the enrolment in this sector was only 55 percent of the total while in 1985 when the public high schools constituted 63 percent of the total schools in this level, their enrolment was only 59 percent of the total enrolment in secondary education. The role of the private secondary schools, on the basis of these figures, continues to be significant.

2. The Share of Secondary Education in the Nation's Budget for Education

In the face of increasing secondary school age-population and enrolment, what can be said about the human and material resources made available to education in this level during the period under review? To what extent have these resources been efficiently utilized?

The national budget for education had been increasing in absolute figures over the years, from P829.9 million in 1970 to P8.7 billion in 1986 (Table 11). However, the percentage of the total national budget for education declined substantially from 25 percent in 1970 to 11 percent in 1975, down to 9 percent in 1980 and reaching an all time low of 8 percent in 1981. In 1984, it increased slightly to 11 percent. How much of this budget went to secondary education? Available data on this are only for the years 1979 to 1985. During this period, secondary ducation's share of the national budget was about 11 percent (Table A.13).

The distribution of the total national budget for secondary education among the thirteen regions in 1980 and 1985 shows some interesting patterns. The NCR received the smallest share of the total budget – 1.2 and 1.1 percent during these two years – while Region I (Ilocos) received 14 percent of the total budget for secondary education during the same years. The regions that received a relatively bigger share of the national budget for secondary education were, in addition to Region I, Region II (Cagayan), Region IV (Southern Tagalog), Region VI (W. Visayas) and Region VIII (Eastern Visayas). The allocation of the budget did not appear to be based on school-age population nor on enrolment, since relatively speaking, Region IV – Southern Tagalog, which registered a much bigger school-age population than Ilocos – got a smaller share of the budget. Likewise, compared to Region VIII with a smaller secondary school age population, Region IV received almost the same share of the budget in 1980 and only a slightly bigger share of the budget as Region VIII in 1985. It appears that Regions I and VIII during the period under review enjoyed a relatively bigger share of the national budget for education in the secondary level than all the other regions that had bigger

TABLE 11
Budget of the Ministry of Education, Culture and Sports as a Share of the National Gevernment Budget (1970-1986)

Year	National Budget	MECS Budget	Share in National Government Budget (in percent)
1970	3,323,698,915	829,945,302	25.0
1971	3,716,215,837	1,004,394,189	27.0
1972	4,169,732,780	1,093,620,009	26.2
1973	7,941,154,696	1,296,695,883	16.3
1974	8,711,148,500	1,496,355,000	17.2
1975	14,499,714,500	1,643,183,000	11.3
1976	22,399,000,000	1,681,387,000	7.5
1977	27,390,000,000	2,040,000,000	7.4
1978	28,681,493,000	3,195,276,000	11.1
1979	32,226,067,000	3,447,234,000	10.7
1980	37,894,032,000	3,414,378,000	9.0
1981	50,319,957,000	3,827,280,000	7.6
1982	57,090,994,000	4,387,012,000	7.7
1983	53,450,490,000	5,471,935,000	8.8
1984	53,450,490,000	5,613,082,000	10.5
1985	58,328,941,000	6,145,907,000	10.5
1986	67,409,044,562	8,712,162,000	12.9

Source: Philippine Statistical Yearbook 1986, NEDA.

secondary school-age populations. It seems that these two regions, being closely identified with the ruling power during that period (Marcos and Romualdez), enjoyed preferential treatment (Table 12).

Since only about 11 percent of the national budget for education went to public secondary education from 1970 to 1985, the local governments had to shoulder the bulk of the total expenditures for public secondary education. The data show that in 1980 only 560 (18 percent) of 3,112 public secondary schools were nationally funded. This percentage increased to 22 per cent in 1985. It must also be noted that inasmuch as approximately 4 out of every 10 high school students were enrolled in private schools, a substantial amount of the total expenditures for secondary education was borne by the students' families and by private schools.

The per capita appropriation of the national government for secondary education tended to be much smaller than that for elementary education. On the average, the national government's per capita appropriation for secondary education from 1979–1985 was P289.40 compared to P364.63 for elementary education during the same period (Table 13).

TABLE 12
Percentage Distribution of the National Budget for Secondary Education by Region (1980 and 1985)

Region	1980	1985
NCR	1.2	1.1
I. Ilocos	14.3	14.0
II. Cagayan	11.6	10.4
III. C. Luzon	5.6	7.4
IV. S. Tagalog	10.8	11.8
V. Bicol	7.0	7.7
VI. W. Visayas	12.4	15.2
VII. C. Visayas	5.0	1.5
VIII. E. Visayas	10.8	9.5
IX. W. Mindanao	5.7	5.6
X. N. Mindanao	7.2	6.1
XI. S. Mindanao	4.6	6.1
XII. C. Mindanao	4.0	3.3
Total %	100.0	100.0
Total	P 316,057,000	P 703,813,000

Sources: MECS Statistical Bulletin 1980.
MECS Statistical Bulletin 1982-83 to 1984-85.
General Appropriations Act of 1980, Batas Pambansa Blg. 40.

TABLE 13
Per Capita Appropriation of the National Government for Elementary and Secondary Education (1979-1985)

Year		Secondary	Elementary
1979	Pesos	377,004,827	2,339,230,000
	Enrolment	1,489,959	7,817,450
	Per Capita	P 253	P 299
1980	Pesos	316,057,000	2,480,731,002
	Enrolment	1,614,554	7,931,164
	Per Capita	P 195	P 312
1981	Pesos	450,899,000	2,763,535,000
	Enrolment	1,721,159	8,073,290
	Per Capita	P 283	P 342
1982	Pesos	499,082,000	3,238,270,000
	Enrolment	1,721,159	8,164,061
	Per Capita	P 289	P 396
1983	Pesos	608,426,000	3,753,366,000
	Enrolment	1,844,174	8,228,554
	Per Capita	P 329	P 456
1984	Pesos	612,379,000	3,979,357,000
	Enrolment	1,957,444	8,269,825
	Per Capita	P 312	P 481
1985	Pesos	703,813,000	4,482,765,000
	Enrolment	1,949,542	8,392,103
	Per Capita	P 361	P 534
Average	P 289	P 364	

3. The Performance of Secondary Education

The assumption of this study is that secondary education may be assessed against two sets of performance indicators, namely efficiency and effectiveness indicators. Efficiency is the extent to which the system targets are attained with its given resources. Efficiency indicators include the following:

1) participation rate

2) cohort survival rate

3) cohort completion rate

4) dropout rate

5) transition rate

6) graduation rate

The effectiveness and impact of secondary education may be measured by the extent to which its learning goals and objectives have been attained, as measured by pupils' performance in achievement tests and by its discernible effects on the educational characteristics of the population. The indicators of effectiveness are therefore the following:

1) Achievement scores in the NCEE

2) Percentage of qualified examinees in the NCEE

3) Literacy rates of the population

4) Educational attainment of the population

5) Educational attainment of the labor force.

The effects of secondary education on non-cognitive learning may be determined by qualitative studies and assessments on this subject.

The only indicators of efficiency that this evaluation study could derive from the available data on secondary education are participation rates, cohort survival rates, dropout rates and graduation rates.

3.1 Efficiency

a. Participation rates

Participation rate is defined as the proportion of the relevant school-age population accommodated in schools. In the secondary level this means children belonging to the age group 13–16 years old during the year. The secondary school participation rate increased by 28

percent between 1965 and 1971, decreased by nine percent between 1971 and 1975 and rose again by 60 percent between 1975 and 1980 (Table 14). In other words, participation rates in the secondary level from 1965 to 1980 did not show a consistent pattern. It must be noted that the participation rate in the secondary level appears to be dependent on the participation rate in the elementary level. When the participation rate in the elementary level was 109 percent in 1965, a substantial increase in participation rate was recorded in the secondary level six years later, in 1971. When the participation rate in the elementary level dipped to 88.96 percent in 1971, a corresponding decrease of 9 percent in the secondary level was recorded in 1975; and when in 1975 the participation rate in the elementary level increased to 90.25 percent, an increase of 6 percent was registered in the secondary level in 1980.

TABLE 14
Participation Rates by Level of Education, Public and Private (1961-1980)

School Year	Elementary (7-12 yearsold)	Secondary (13-16 years old)	Tertiary (17-20 years old)
1960-61[1]	91.6	26.6	13.1
1964-65[1]	108.6	35.4	17.5
1970-71	89.0[2]	63.6[2]	NA
1974-75	90.2[2]	54.2[3]	NA
1979-80	95.3[2]	60.3[3]	24.0[4]

Source: [1]PCSPE. 1970 p. 34. Table 1.4.
[2]MECS. Report on Educational Development in the Seventies. 1970-1980. p. 34.
[3]MECS. Statistical Bulletin. 1979 & 1970 Planning Service.
[4]This figure is for 1978. Schief. Educational Financing in Developing Country. (Ottawa, IDRC.) pp. 152-154.

The variations in participation rates in government secondary schools reveal some very interesting insights (Table 15). Compared to the national average, the participation rates in public secondary schools in the different regions varied widely, with Region I (Ilocos) showing the highest participation rate of 54 percent and Region IX (Western Mindanao) the lowest at 10 percent in 1983–1984. In 1985–1986, the NCR had the highest participation rate of 45 percent while Central Visayas showed the lowest at 14 percent. Region I (Ilocos) was next to NCR with a participation rate of 42 percent. The national average for the school-age participation rate in 1985–1986 was 29 percent in public high schools. Only two regions in

TABLE 15
Participation Rates of Government Secondary Schools
By Region, SY 1983-84 to SY 1985-86

Region	SY 1985-86	SY 1984-85	SY 1983-84
NCR	45.5	44.5	36.2
I. Ilocos	41.7	41.1	53.8
II. Cagayan	25.5	29.4	22.1
III. Central Luzon	26.1	26.8	26.1
IV. Southern Luzon	30.5	31.3	27.3
V. Bicol	24.3	27.4	25.2
VI. Western Visayas	32.3	36.1	34.4
VII. Central Visayas	13.9	16.6	17.4
VIII. Eastern Visayas	23.5	25.5	27.9
IX. Western Mindanao	21.3	21.9	10.3
X. Northern Mindanao	23.1	24.7	20.4
XI. Southern Mindanao	26.1	26.5	22.8
XII. Central Mindanao	27.5	28.1	23.2
T O T A L	28.7	30.1	27.8

Sources: DECS Statistical Bulletin, 1985-86, Table 28, p.28.
MECS Statistical Buletin 1984-85.
MECS Annual Report 1984.

addition to the NCR and Ilocos had participation rates above the national average in that year. These are Region IV (S. Tagalog) and Region VI (Western Visayas). This means that public high schools are not reaching a large percentage of the secondary school age-population.

A number of possible causes such as the peace and order situation and the low socio-economic conditions may have accounted for these low figures. Dropouts and elementary school failures are other factors connected with low participation rates.

b. Cohort Survival Rates.

For every 100 students that entered Grade 1 in 1964–1965, only 41 percent entered first year high school and 27.55 percent reached fourth year high school. The cohort survival rate improved for pupils that entered Grade 1 in 1969–70. For this group, 35 percent reached fourth year high school. Similarly, of every 100 students that started Grade 1 in 1974–75, 41 percent reached fourth year high school. In short, the performance of secondary education in terms of the national cohort survival rate has improved (Table 16).

However, an examination of the cohort survival rates in public secondary schools in the thirteen regions shows a pattern of increase and decrease during a period of three consecutive years, 1984–1986 (Figure 2). Furthermore, the cohort survival rates ranged from 31.4 in Region II (Cagayan) to 59.9 in Region VI (Western Visayas) in 1983–1984. During the schoolyear 1984–85, the cohort survival rates went up in all the regions, ranging from 65.1 in Region VIII (Eastern Visayas) to 104.6 in Region XII (Central Mindanao). In SY 1985–86, the cohort survival rates in all the regions decreased, with Region IX (Southern Mindanao) recording the lowest figure of 60 and Region XII (Central Mindanao) reporting the highest survival rate of 102.3. How Region XII obtained cohort survival rates of more than 102 per cent requires explanation, in the same way that participation rates exceeding 100 percent have to be explained. It is possible that the calculation was based on total number admitted or enrolled, but some of the enrolees did not belong to the relevant school age group of 13–16 years old,

TABLE 16
Cohort Survival Rates in Government and Private Schools (Secondary)

For every 100 students entering Grade I in:	First Year	Fourth Year
1964 - 65	40.6	27.6
1969 - 70	45.8	35.0
1974 - 75	55.3	41.3

Source: DECS Statistical Bulletin SY 1986-87, Table 21, p. 47

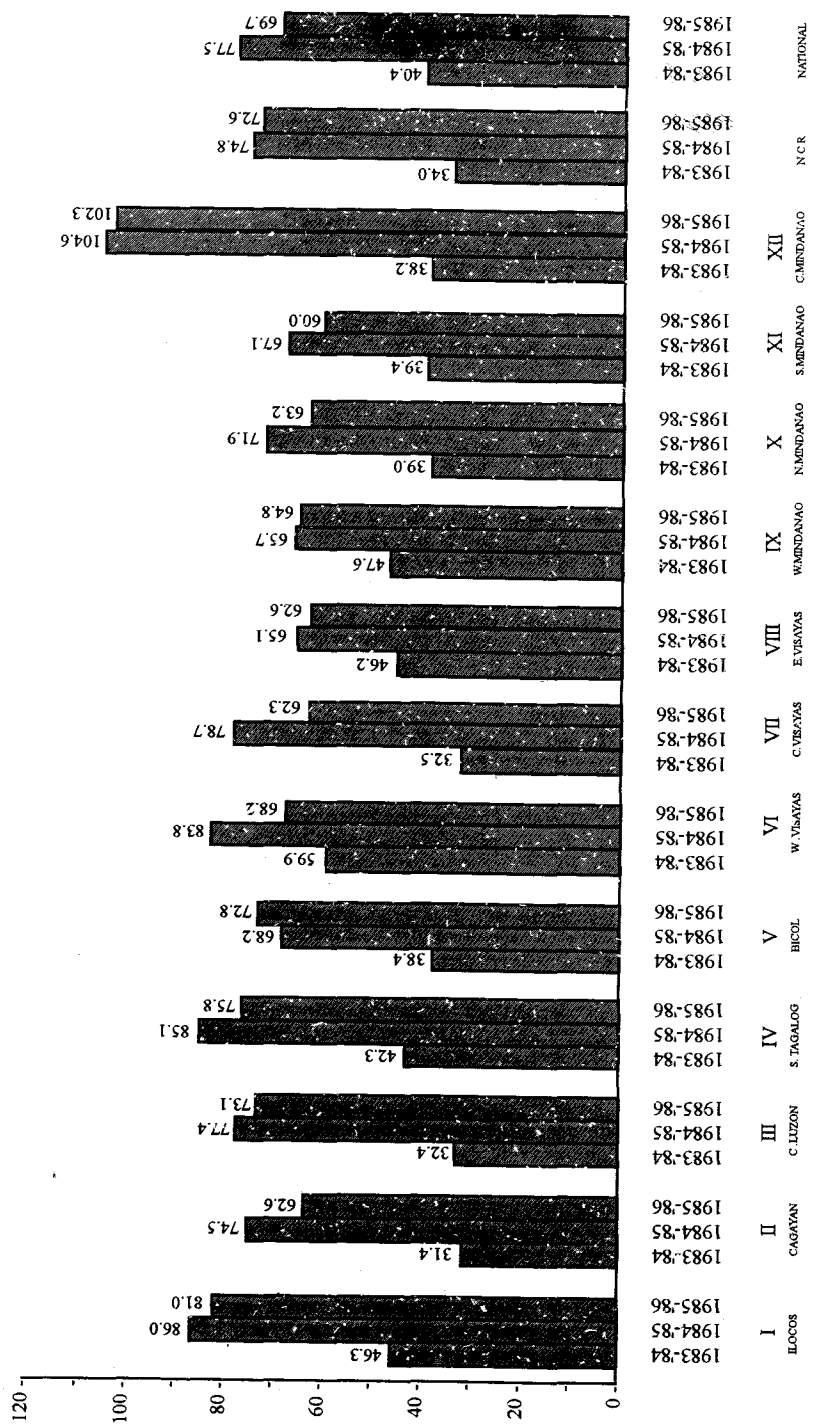


FIGURE 2. COHORT SURVIVAL RATES BY REGION IN GOVERNMENT SECONDARY SCHOOLS, 1983-'84 TO 1985-'86

SOURCES: DECS STATATISTICAL BULLETIN 1985-'86; MECS STATATISTICAL BULLETIN 1984-'85;
1984 MECS ANNUAL REPORT - DATA ON COHORT SURVIVAL FOR 1983-'84.

i.e., they were underaged or overaged. Also, additional students admitted as transferees during the year were included in the calculation of cohort survival rates. The very high increase in survival rates in 1984–1985 relative to the previous year needs further study. Could this improved performance be due to either better graduates from the elementary school, improved teaching, or greater availability of learning materials? Or had there been a more liberal promotion policy in secondary schools? If the increase in cohort survival rates during this year was on account of increase in cohort survival rates during this year was on account of improved pupil learning, then it is reasonable to expect a better performance of the graduates of public secondary schools of 1984–1985 who took the NCEE that year. This conjecture, however, finds no empirical support in Figure 3, which shows that the percentage of qualified examinees in the NCEE from all the regions decreased in 1985 compared to 1980 and 1975.

c. Dropout Rates

The term dropout rate refers to the proportion of students who left school during the year to the total enrolment of the school in that same year. The dropout rate in government secondary schools dropped from 13.0 percent in 1971–72 to 6.3 percent in 1983–1984. However, the dropout rates in the thirteen regions ranged from 6.6 percent to 19.7 percent in 1971–1972 with Region VI (Western Visayas) having the highest dropout rate and Region I (Ilocos) the lowest. Although the national average shows a decrease of 6.3 percent the dropout rate increased to 9.0 percent in that year from 8.6 percent in 1971–72. This figure was the highest registered in all regions. The lowest was 4.0 percent in Eastern Visayas (Table 17).

d. Graduation Rates

In general, government secondary schools posted very high graduation rates during the period under study, ranging from 81.5 percent to 95.5 percent. The yearly graduation rates however from 1971 to 1985 did not follow a regular pattern (Table 18).

In ascertaining the effectiveness of secondary education during this period, there is a need to examine the Revised Secondary Education Curriculum of 1973, which was the curriculum being followed during the period of this study. This revised curriculum aimed to: a) continue the general education in elementary education; b) prepare students for a vocation; and c) prepare students for college.

A detailed description of the 1973 Revised Secondary Education Curriculum is shown in Table 19. It will be noted that 23 units of the total 36 units required to complete a 4–year high school education are assigned to academic subjects covering Communication Arts in English, Communication Arts in Pilipino, Social Studies, Science and Mathematics. The remaining 13 units are distributed among vocational or practical arts, elective (vocational or academic), and CAT (Citizen Army Training).

TABLE 17
Drop-out Rates for Secondary Schools (Government) 1971-72, and 1983-84

Region	Year 1971-72	1983-84
I. Ilocos	6.6	4.1
II. Cagayan	11.8	5.4
III. Central Luzon	12.5	5.7
IV. Southern Tagalog	12.6	6.0
V. Bicol	14.0	8.8
VI. Western Visayas	19.7	6.3
VII. Central Visayas	7.5	7.0
VIII. Eastern Visayas	12.9	4.0
IX. Western Mindanao	14.5	7.3
X. Northern Mindanao	14.0	6.4
XI. Southern Mindanao	10.8	6.9
XII. Central Mindanao	8.6	9.0
NCR	-	5.0
Total (Average)	13.0	6.3

Sources: Philippine Statistical Yearbook 1977, NEDA
1984 MECS Annual Report

TABLE 18
Graduation Rates in Secondary Education
(Government and Private)
SY 1970 - 1985

Year	Rates
1970 - 1971	87.1
1971 - 1972	81.5
1972 - 1973	91.8
1973 - 1974	92.1
1974 - 1975	93.6
1975 - 1976	95.7
1976 - 1977	94.6
1977 - 1978	95.0
1978 - 1979	93.2
1979 - 1980	92.0
1980 - 1981	90.6
1981 - 1982	95.8
1982 - 1983	90.8
1984 - 1985	90.8

Source: Philippine Education Indicators 1965-1985, MECS 1986, p. 33.

TABLE 19
The 1973 Secondary Curriculum

Subjects	No. of Minutes/Week				Unit credits				Total
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	
Communication Arts English	300	180	180	180	2	1	1	1	5
Communication Arts Filipino	180	180	180	180	1	1	1	1	4
Social Studies	180	180	180	180	1	1	1	1	4
Science	180	180	300	300	1	1	2	2	6
Mathematics	180	180	180	180	1	1	1	1	4
Practical Arts or Vocational Course	300	300	300	300	1	1	1	1	4
Elective[1] (Academic/ Vocational)		180 300	300 300	300 300	-	1	2	2	5
YDT (I-III) CAT (IV)	300	300	300	300	1	1	1	1	4
TOTAL	1,620	1,680 1,800	1,920 2,220	1,980 2,220	8	8	10	10	56

[1]If elective is Practical Arts and in shop or field work, it should be one unit for 300 minutes/ week or one hour/day for five days a week. If elective is academic, it should be one unit for 180 minutes or one hour/day for three days a week.

The content of the 1973 Secondary Education Curriculum was consistent with the objectives of basic education which then Minister Jaime Laya succinctly stated as, educating individuals who are "better at the basics of reading, writing and arithmetic; their values must be those that we want Filipinos to possess; they must have greater facility in science, mathematics and technology" (*Education and Culture Journal.* Vol. 1, No. 3, Vol. 2, Nos. 1 & 2, April-December 1985, p. 5).

To what extent have the objectives of secondary education been achieved during the period under study? A study of the effectiveness of secondary education based on the indicators mentioned earlier gives the following results:

a. Achievement Scores in the NCEE

The NCEE covers five areas, namely; reasoning ability, mathematical ability, verbal ability, reading comprehension and General Scholastic Aptitude. The results of the NCEE for 1981–1985 reveal that the mean scores for each of the areas mentioned above during the five-year period do not show a definite trend both at the national level and across the thirteen regions (Table 20). The scores fluctuated up and down. What is noticeable is that the NCR consistently topped the NCEE every year.

The NCEE data show that low scores were usually obtained by regions in the Visayas and Mindanao. In Luzon, only Regions V and II appear to be consistently among the lowest scoring regions. The areas of weakness differed among the regions, although according to Anacleto (1987) the whole country is low in mathematical ability. Furthermore, Anacleto noted that in all regions the variations of students' scores in mathematical ability are greatest compared to the variations of the scores in the other areas. She attributes this to the fact that mathematical ability is a special talent.

The students' scores in the NCEE from the different regions also show that only three regions tended to consistently score above the national mean. In 1975, these regions were Region IV (S. Tagalog) which included NCR, Region VII (Central Visayas) and Region V (Bicol). In 1980, the regions whose scores were above the national mean score were the NCR, Region III (C. Luzon) and Region IV (S. Tagalog). Region V which was one of the top ranking regions in 1975 plunged way below the national mean score in 1980 and from thereon.

b. Percentage of Qualified Examinees in the NCEE

From 1975 to 1977 when NCR was still a part of Region IV, Region VII consistently ranked number one among all the regions in the percentage of qualified NCEE examinees. But from 1979 to 1985 when the NCR became a separate region, the NCR obtained the highest

TABLE 20
Regional Mean in Comparison with National Mean from 1981 to 1985 for Reasoning Ability

Region	1981			1982			1983			1984			1985		
	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank
I	492.6	-	7	489.5	-	6	489.6	-	6	489.2	-	8	489.6	-	8
II	493.5	-	6	486.5	-	11	489.6	-	7	490.6	-	7	492.9	-	5
III	493.8	-	5	498.9	-	4	501.2	+	4	497.2	-	4	504.6	+	4
IV	496.8	-	4	504.4	+	2	502.6	+	2	503.3	+	3	508.5	+	2
V	488.1	-	10	488.1	-	7	487.9	-	8	483.7	+	10	484.8	+	12
VI	488.3	-	8	486.9	-	10	481.8	-	9	487.2	-	12	491.4	-	6
VII	497.6	-	3	500.3	+	3	501.4	+	3	505.7	+	2	506.6	+	3
VIII	483.3	-	12	487.0	-	9	476.8	-	12	480.4	-	11	484.9	-	11
IX	488.2	-	9	487.2	-	8	474.9	-	13	484.5	-	9	471.8	-	13
X	479.2	-	13	484.3	-	12	477.5	-	11	477.2	-	13	488.4	-	9
XI	498.9	-	2	495.0	-	5	495.4	-	5	492.5	-	6	491.2	-	7
XII	487.5	-	11	481.9	-	13	481.4	-	10	494.9	-	5	486.2	-	10
NCR	543.6	+	1	538.9	+	1	545.5	+	1	537.5	+	1	535.3	+	1
National Mean	499.7			499.8			499. 6			498.3			500.8		

+/- = Above/Below the National Mean

TABLE 20 (Continuation)
Regional Mean in Comparison with National Mean from 1981 to 1985 for Mathematical Ability

Region	1981			1982			1983			1984			1985		
	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank
I	486.2	-	13	489.6	-	8	495.8	-	5	498.9	+	5	492.8	-	7
II	497.7	-	6	495.7	-	7	488.6	-	8	489.6	-	9	493.8	-	6
III	491.5	-	8	503.3	+	3	498.5	-	4	494.8	-	7	506.4	+	4
IV	490.4	-	10	501.9	+	5	501.1	+	3	508.1	+	2	508.9	+	2
V	491.6	-	7	485.1	-	11	484.7	-	11	481.1	-	13	481.2	-	12
VI	488.2	-	11	483.9	-	13	481.5	-	12	482.9	-	11	485.3	-	10
VII	511.3	+	2	504.5	+	2	501.6	+	2	499.2	+	4	508.9	+	3
VIII	490.5	-	9	484.0	-	12	477.2	-	13	483.9	-	10	481.3	-	11
IX	500.6	-	4	502.1	+	4	486.4	-	9	495.8	-	6	474.8	-	13
X	487.0	-	12	497.6	-	6	491.6	-	7	481.5	-	12	491.8	-	8
XI	504.3	+	3	485.6	-	10	491.9	-	6	492.7	-	8	486.9	-	9
XII	499.5	+	5	489.6	-	9	485.4	-	10	502.6	+	3	496.9	-	5
NCR	528.0	+	1	526.8	+	1	535.1	+	1	518.7	+	1	527.7	+	1
National Mean	499.1			499.1			499.0			498.2			499.9		

+/- = Above/Below the National Mean

TABLE 20 (Continuation)
Regional Mean in Comparison with National Mean from 1981 to 1985 for Verbal Ability

Region	1981			1982			1983			1984			1985		
	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank
I	490.6	-	9	494.3	-	6	492.7	-	5	490.7	-	8	490.8	-	7
II	497.5	-	4	495.0	-	4	488.4	-	8	494.5	-	4	497.4	-	5
III	497.1	-	5.5	505.5	+	2	503.9	+	3	499.3	+	3	506.4	+	3
IV	503.3	+	2	504.1	+	3	507.5	+	2	510.1	+	2	511.2	+	2
V	495.1	-	7	493.2	-	7	490.6	-	6	498.1	-	9.5	491.1	-	6
VI	482.2	-	12	486.0	-	12	475.3	-	13	478.2	-	12	485.8	-	12
VII	485.3	-	10	490.6	-	8	490.1	-	7	489.1	-	9.5	499.8	-	4
VIII	483.0	-	11	486.8	-	10	478.6	-	10	482.5	-	11	488.0	-	8
IX	497.7	-	3	494.5	-	5	478.4	-	11	494.0	-	5	482.1	-	13
X	474.7	-	13	487.2	-	9	475.4	-	12	476.0	-	13	486.1	-	10
XI	497.1	-	5.5	486.8	-	11	494.9	-	4	491.4	-	7	488.1	-	8
XII	493.4	-	8	484.2	-	13	483.6	-	9	491.6	-	6	486.2	-	10
NCR	541.1	+	1	530.2	+	1	545.9	+	1	528.9	+	1	534.2	+	1
National Mean	499.7			499.4			499.7			498.3			501.2		

+/- = Above/Below the National Mean

TABLE 20 (Continuation)
Regional Mean in Comparison with National Mean from 1981 to 1985 for Reading Comprehension

Region	1981			1982			1983			1984			1985		
	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank
I	488.5	-	8	492.1	-	6	492.7	-	5	500.9	+	5	492.8	-	5
II	493.9	-	5	496.7	-	4	488.2	-	7	479.5	-	9	488.8	-	6
III	491.0	-	7	496.3	-	5	502.3	+	2	510.1	+	3	506.9	+	3
IV	495.2	-	4	500.1	+	3	501.7	+	3	511.0	+	2	507.8	+	3
V	491.8	-	6	491.5	-	7	487.2	-	8	493.1	-	7	486.2	-	7
VI	485.3	-	9	485.3	-	11	480.2	-	9	467.5	-	10	438.3	-	8
VII	500.7	+	2	501.4	+	2	494.4	-	4	505.7	+	4	505.2	-	4
VIII	484.2	-	10	489.7	-	9	479.6	-	10	487.0	-	8	480.3	-	11
IX	481.4	-	11	479.6	-	12	473.8	-	12	462.9	-	12	464.6	-	13
X	477.2	-	13	485.5	-	10	477.0	-	11	452.3	-	13	480.9	-	10
XI	495.4	-	3	491.5	-	8	490.3	-	6	498.3	-	3	481.0	-	9
XII	478.9	-	12	477.8	-	13	472.1	-	13	464.6	-	11	474.6	-	12
NCR	554.4	+	1	541.7	+	1	552.1	+	1	538.6		+	549.5	+	1
National Mean	499.1			499.6			499.5			499.7			500.3		

+/- = Above/Below the National Mean

TABLE 20 (Continuation)
Regional Mean in Comparison with National Mean from 1981 to 1985 for Scholastic Aptitude

Region	1981			1982			1983			1984			1985			Average
	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Mean	+/-	Rank	Rank
I	489.6	-	10	491.5	-	6	492.8	-	6	495.1	-	5	491.6	-	6	6.8
II	495.8	-	5	493.6	-	5	488.8	-	7	490.2	-	7	493.3	-	5	5.8
III	493.5	-	6	501.1	+	3	501.6	+	3	500.5	+	3	506.2	+	3	3.6
IV	496.6	-	4	502.7	+	2	503.3	+	2	508.2	+	2	509.2	-	2	2.4
V	491.8	-	8	489.6	-	9	487.7	-	8	486.9	-	9	486.0	-	11	9.0
VI	486.5	-	11	485.7	-	12	479.8	-	11	476.8	-	12	486.6	-	10	11.2
VII	498.8	-	3	499.3	-	4	497.0	-	4	497.4	-	4	505.2	+	4	3.8
VIII	485.9	-	12	487.0	-	11	478.2	-	13	483.6	-	11	483.8	-	12	11.8
IX	492.1	-	7	491.0	-	7	478.5	-	12	484.4	-	10	473.4	-	13	9.8
X	479.6	-	13	488.8	-	10	480.5	-	10	471.9	-	13	486.9	-	8	10.8
XI	498.9	-	2	489.8	-	8	493.3	-	5	493.9	-	6	486.9	-	7	5.6
XII	489.9	-	9	483.5	-	13	480.7	-	9	488.5	-	8	486.6	-	9	9.6
NCR	541.9	+	1	534.5	+	1	544.8	+	1	531.1	+	1	536.8	+	1	1.0
National Mean	499.7			499.6			499.6			498.8			500.7			

+/- = Above/Below the National Mean

Source: Guidance Division, NETC, MECS.

percentage of qualifiers every year. Regions II and IV alternately vied for the 2nd and 3rd places, except in 1982 when Region IV dropped to the 10th position. Region VII tended to rank among the top 4 regions, except in 1980 when it dropped to 6th place. The regions that appear to perform very poorly in the NCEE, ranking 10th, 11th, 12th and 13th from 1979–1985, were Regions VI, VIII, X and XII, with Region VI placing either 12th or 13th during this period. The regions that fluctuated from top to bottom places during the period 1979–1985 were Regions II and IX. Based on these data, it is obvious that the more economically well-off regions tend to have the highest percentages of qualifiers in the NCEE, while the relatively depressed regions are likely to have the lowest percentages of qualifiers (Table 21; see also Figure 3).

c. Literacy Rate

One of the expected impacts of formal education is the expansion and enhancement of literacy among the country's population, particularly those belonging to the school-age groups and above. The 1939 Census registered a 51.1 percent illiteracy among the population 6 years old and over. This rate dramatically declined to 17.3 percent among the same group in 1980. Literacy rates among the same age group increased from 48.8 percent in 1939 to 82.7 percent in 1980 (Table 22). At first glance this is quite an achievement. However, when compared with the progress of literacy among the population, age 15 years and over, achieved by other ASEAN neighbors between 1970 and 1980, it will be noted that the gross rate of increase in the Philippines has been the lowest:

	1970 %	1980 %	% difference
Indonesia	54.0	67.0	13.0
Malaysia	59.5	69.8	10.3
Philippines	81.8	89.2	7.4
Thailand	79.0	87.3	8.7
Singapore	68.9	79.1	10.2

Source: UNESCO. *Educational Development in Asia and the Pacific.* 1984, p. 4.

d. Educational Attainment

The percentage of the Philippine population 6 years old and over who attended elementary school but did not complete any grade has declined from 57.8 percent in 1939 to only 18.9 percent in 1970. However, the percentage of those that completed elementary schooling increased gradually from 37.5 percent in 1939 to 59 percent in 1970. It must be noted that when the basis for calculation was changed to the population belonging to the age group 7

TABLE 21
Percentage of Qualified NCEE Examinees by Region
1975 - 1985

Year	National Average	Region I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	NCR
1975	69.8	63.8	60.5	67.9	76.9	68.7	66.0	79.0	61.1	61.1	63.0	67.9	61.7	*
		7	12	5	2	3	6	1	10	11	8	4	9	
1976	72.5	67.5	64.1	72.0	78.4	72.5	67.6	79.3	68.5	71.1	66.3	70.9	63.4	*
		8	11	4	2	3	9	1	7	5	10	6	12	
1977	78.6	70.5	69.9	73.3	72.6	67.9	67.8	77.5	68.1	69.0	64.5	71.4	64.2	81.4
		5	6	4	2	9	10	1	8	7	11	3	12	
1978							VOI DED							
1979	65.6	62.2	56.2	71.7	71.3	58.2	55.3	68.1	56.1	58.6	52.8	58.6	56.7	81.0
		5	10	2	3	8	12	4	11	7	13	6	9	1
1980	67.3	61.2	67.2	76.1	73.7	62.5	54.9	63.0	60.7	63.5	53.7	61.7	57.6	81.2
		9	4	2	3	7	12	6	10	5	13	8	11	1
1981	65.6	66.3	67.7	72.3	74.6	66.0	60.6	70.6	63.9	66.9	58.2	68.2	63.5	83.0
		8	6	3	2	9	12	4	10	7	13	5	11	1
1982	68.2	66.3	66.3	73.4	62.9	65.0	60.8	70.9	63.6	66.5	62.4	64.3	61.5	81.8
		6	4	2	10	7	13	3	9	5	11	8	12	1
1983	58.1	54.6	53.3	60.0	62.8	51.9	46.2	58.7	47.2	47.4	48.3	54.8	48.4	76.8
		6	7	3	2	8	13	4	12	11	10	5	9	1
1984	58.0	54.9	54.3	59.1	64.3	50.4	48.0	58.4	49.9	53.6	50.0	52.8	50.8	72.7
		5	6	3	2	10	13	4	12	7	11	8	9	1
1985	59.5	53.9	57.6	63.5	66.3	51.3	51.0	64.0	53.0	45.3	53.9	51.6	51.2	72.4
		6	5	4	2	10	12	3	8	13	7	9	11	1

*Figures for NCR this year are included in Region IV.
The number below the yearly percentage of qualified examinees represents rank.

Source: Research and Guidance Division, NETC, MECS

TABLE 22
Literacy Rate of Population 6 years old and over

Censal Years	Total Population	Literate	%	Illiterate	%	Not Stated Reported
1939[1]	10,903,879	5,316,146	48.8	5,574,254	51.1	
1948[1]	13,300,961	7,960,050	59.8	5,024,482	37.8	316,429
1960[1]	18,145,872	13,073,748	72.0	5,072,124	28.0	
1970[2]	29,400,453	22,459,368	76.4	6,941,085	23.6	
1980	33,681,424	27,861,191	82.7	5,820,233	17.3	

[1]10 years old and over
[2]6 years old and over

Sources: 1939 Census of the Philippines. Summary for the Philippines and General Report for the Census of Population and Agriculture Vol.II, Manila. Table 1, p.286.

1948 Census of Population and Agriculture, Summary and General Report Vol.III, Bureau of Census and Statistics, Manila. Table 1, p. 243

1960 Census of the Philippine Population and Housing. Department of Commerce and Industry: Bureau of Census and Statistics, Table 10, p. 11.

1970 Census of Population and Housing NCSO Manila. Table III-4.

1980 Census of Population and Housing (Vol.2) National Summary, Table 6, p.69.

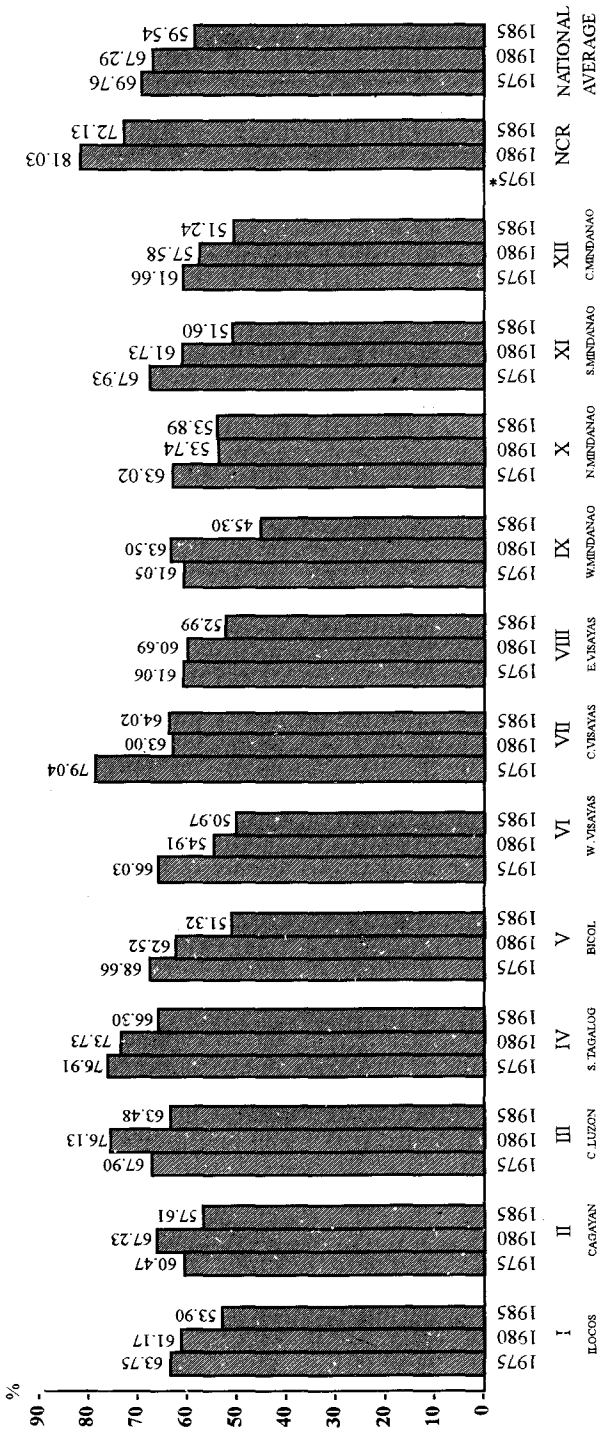


FIGURE 3. PERCENTAGE OF QUALIFIED NCEE EXAMINEES BY REGION, 1975, 1980, 1985

*FIGURES FOR NCR ARE INCLUDED IN REGION IV (1975)

SOURCE: RESEARCH AND GUIDANCE DIVISION, NETC, MECS

years and over, those with no grade completed declined from 11.1 percent in 1975 to 9.5 percent in 1980; while those who completed elementary education declined from 59.8 percent in 1975 to 56.3 percent in 1980. On the whole, the pattern has been consistent from 1939 to 1980, i.e., the educational attainment of the great majority of Filipinos 6 or 7 years and older has not gone beyond the elementary level. The small proportion that succeeded in moving up the educational ladder likewise indicates a substantial attrition rate, for only 4.7 percent of the population 7 years and older in 1980 have succeeded in completing a college degree (Table 23).

The figures in the regional level in 1980 reveal that the region with the highest proportion of college graduates is the NCR (12 percent), while Western Mindanao has the lowest (2.3 per cent). Similarly, the NCR has the lowest proportion of its population with no grade completed (2 percent), while Central Mindanao and Western Mindanao have the highest proportions of their populations with no grade completed (28 percent and 23 percent, respectively). In general, the Visayas and Mindanao regions registered higher percentages of no grade completed compared to regions in Luzon (Table 24).

e. Educational Attainment of the Employed Labor Force.

Another measure of the impact of the country's educational effort is the educational attainment of its labor force. It is logical to expect that a rapid expansion of the school system would result in a marked improvement or increase in the educational attainment of the country's work force. It will be noted that on the measures of growth – e.g. increase in enrolment, participation rates, number of schools and teachers – elementary and secondary education have expanded tremendously. Is this rapid expansion reflected in the educational attainment of the population?

A study of the highest grade completed of the employed labor force for four different years – 1977, 1981, 1982 and 1988 – reveals that the percentage of the employed labor force with no grade completed declined by only 2.9 percent between 1977 and 1988 (Table 25). This group accounted for about 4.3 percent of the total employed labor force in 1988. During the years above mentioned the percentages of the labor force with secondary education or better registered gradual but rather small increases. The biggest percentage increase between 1977 and 1988 is shown among the labor force that completed high school (5.7 percent), while the smallest increase was among the college graduates (1.2 percent). It is also noteworthy that the per centage decrease among the labor force with 1st-5th grade education between 1977 and 1980 was 6.3 percent. This trend indicates a slight improvement in the educational attainment of the labor force but it also suggests that the majority of the Philippine labor force are less than high school graduates, which means that our labor force is largely unskilled or semi-skilled. In fact this contention is supported by the 1988 statistics on the educational

TABLE 23
Educational Attainment of Population 6 years Old and Over by Census Years (1939, 1948, 1960, 1970 and 1980)

Educational Attainment	1939[1]	1948[1]	1960[1]	1970[1]	1975[2]	1980[2]
No Grade Completed	57.8	43.5	29.1	18.9	11.1	9.5
Elementary	37.5	47.3	55.6	59.0	59.8	56.3
High School	3.9	7.4	11.0	15.0	18.6	21.9
College	0.8	1.8	4.3	7.1	5.2	7.2
Academic Degree Holder	NA	NA	NA	NA	3.5	4.7
Not Stated	NA	NA	NA	NA	1.7	0.3
Total School Age Population	12,388963	15,673,582	21,557,572	29,609,044	32,929,465	37,606,278

[1] % of population 6 years old and over
[2] % of population 7 years old and over

Sources: "Literacy and Educational Attainment" in Population in the Philippines Country Monograph Series #5, ESCAP, Bangkok, Thailand, p. 234.
1980 Census of Population and Housing Vol. II, National Summary NCSO, NEDA, Table D.

TABLE 24
Educational Attainment of Population 7 years Old and Above by Region, 1980

	Region						
	NCR	I	II	III	IV	V	VI
Total Population by Region	4,810,584	2,831,659	1,717,440	3,783,337	4,765,543	2,663,999	3,549,167
No Grade Completed	92,384	243,913	162,764	194,486	328,723	214,406	314,405
Percent	1.9	8.6	9.5	5.1	6.9	8.0	8.8
Elementary	1,710,255	1,563,529	1,068,178	2,249,638	2,852,225	1,780,384	2,149,732
Percent	35.5	55.2	62.2	59.4	59.8	66.8	60.6
High School	1,657,442	683,269	330,475	899,851	1,065,763	466,774	706,360
Percent	34.4	24.1	19.2	23.8	22.3	17.5	20.0
College	740,352	210,509	96,342	264,133	304,294	119,727	222,035
Percent	15.4	7.4	5.6	7.0	6.4	4.5	6.2
Academic Degree	579,250	121,869	52,686	160,256	199,379	75,908	147,577
Percent	12.0	4.3	3.0	4.2	4.2	2.8	4.1
Not Stated	30,901	8,570	6,995	14,973	15,159	6,802	9,058
Percent	0.6	0 .3	0.4	0.4	0.3	0.2	0.2

Source: 1980 Census of Population and Housing, Vol. 2, National Summary NCSO, Table 5, pp. 41-67.

TABLE 24 (Continuation)
Educational Attainment of Population 7 years Old and Above by Region, 1980

	Region						
	VII	VIII	IX	X	XI	XII	National Average
Total Population by Region	2,995,364	2,175,212	1,933,931	2,129,903	2,554,694	1,695,445	
No Grade Completed	375,889	249,813	457,406	170,820	299,145	474,519	
Percent	12.5	11.5	13.6	7.8	11.7	12.0	8.5
Elementary	1,852,528	1,414,234	1,046,147	1,283,466	1,448,821	765,568	
Percent	61.8	65.0	54.1	60.2	56.7	45.1	56.3
High School	467,287	349,626	289,279	465,216	552,930	301,148	
Percent	15.6	16.1	15.0	21.8	21.6	17.7	21.9
College	171,956	96,124	92,035	134,883	159,809	97,320	
Percent	5.7	4.4	4.7	6.3	6.2	5.7	7.2
Academic Degree	122,310	59,446	44,417	70,182	88,439	48,999	
Percent	4.1	2.7	2.3	3.3	3.4	2.9	4.7
Not Stated	5,394	5,972	4,647	5,636	5,550	7,901	
Percent	0.2	0.3	0.2	0.3	0.2	0.5	0.3

Source: 1980 Census of Population and Housing, Vol. 2, National Summary NCSO, Table 5, pp. 41-67.

TABLE 25
Number and Percent of Employed Persons by Highest Grade Completed (1977, 1981, 1982 and 1988) (in thousands)

Highest Grade Completed	4th quarter[1] 1977		4th quarter[1] 1981		4th quarter[1] 1982		1988[2]		% increase between 1977 and 1988
	No.	%	No.	%	No.	%	No.	%	
No Grade Completed	1,043	7.2	1,122	6.3	1,133	6.1	909	4.3	-2.9
1st to 5th grade	4,201	29.3	4,968	27.9	5,014	26.9	4,869	23.0	-6.3
Elementary Graduate	3,447	24.1	4,382	24.6	4,582	24.6	4,900	23.18	-.83
1st to 3rd Year High School	1,688	11.8	2,240	12.6	2,377	12.8	2,782	13.1	1.3
High School Graduate	1,608	11.2	2,073	11.6	2,251	12.1	3,579	16.9	5.7
Some College	961	6.7	1,355	7.6	1,484	8.0	1,916	9.1	2.4
College Graduate	1,309	9.1	1,660	9.3	1,763	9.5	2,179	10.3	1.2
Not Reported	65	0.4	11	0.1	11	0.1	8	.03	-0.4
National	14,323	100.0	17,810	100.0	21,141	100.0			

Sources: [1]Integrated Survey of Household Bulletin, No. 51, pp.94-96; 202. NCSO.
[2]Family Income and Economic Survey. NCSO, NEDA, 1985.

characteristics of the Philippine labor force by occupation group which show that 78 percent is employed in agriculture and related activities, production/transport and service occupations, occupations requiring unskilled or semi-skilled labor.

IV. SUMMARY AND CONCLUSION

This evaluation study of elementary and secondary education in the Philippines covered a 15-year period, from 1970 to 1985. It proceeded on the assumption that the performance of these two levels of the formal school system may be assessed against their avowed objectives stated in the national policies, national educational plans and the curricula adopted and implemented during the said period.

Specifically, the study was guided by the following questions: (1) what are the intended and desired outcomes of elementary and secondary education? (2) to what extent have these intended outcomes been manifested in the cognitive and non-cognitive learnings of pupils? (3) what perceptible improvements have occurred in the performance of elementary and secondary education as sub-systems? (4) have there been improvements in the literacy rates and educational attainments of the Philippine population? have there been improvements in the educational attainment of the employed labor force?

Answers to these questions were generated mainly from a re-analysis of data and information collected from the records and publications of the Department of Education, Culture and Sports, National Census and Statistics Office, NEDA, National Education Testing Center, UP Population Institute, and from published and unpublished research reports.

1. Summary of Findings on Elementary Education

The elementary school-age population during the period under study consistently expanded over the years. However, the growth of this population age group differs from year to year and from region to region. In general, a big percentage of this population was concentrated in the regions where urban centers are located such as the NCR, Region IV (Southern Tagalog), Region VI (Western Visayas) and Region I (Ilocos). The regions in the Visayas and Mindanao had the lowest growth in school-age population.

A natural consequence of the growth in school-age population was the increase in enrolment and in the number of schools. The enrolment pattern was in consonance with the population growth pattern, as well as with the increase in the number of elementary schools.

The data show that elementary education has received its fair share of the nation's budget for education. In allocation provided for the 13 regions, it also appears that such has been equitably distributed over the years.

Although there had been increases in achievement scores in national achievement tests administered during the period covered by the study, the achievement levels which were close to 50 percent, fell way below the target performance of 75%.

1. Summary of Findings on Secondary Education

The secondary school-age population, 13–16 years old recorded an average annual absolute growth of 76,390 between 1975–1985, but this was unevenly distributed among the thirteen regions of the country. The regions in Luzon accounted for about 45.5 percent of this school-age population in 1985 while Visayas and Mindanao had 23.6 percent and 23 percent of the total, respectively. In that year, Region III and the NCR alone accounted for 44.4 percent of the total school-age population in Luzon, and about 20.0 percent of the country's secondary school-age population.

The absolute increase in secondary school enrolment between 1975 and 1985 was 1,250,143, or an average annual absolute growth of 125,014.3 during a ten-year period. In other words, the increase in enrolment in secondary schools was relatively much bigger every year than the yearly increase in the relevant school-age population.

The response of secondary education to the rapid expansion in enrolment was a gradual increase in the number of secondary schools, which grew from 4,844 in 1975 to 5,388 in 1985, the annual absolute increase between these two years being 544 schools or 54.4 schools yearly, or one secondary school for every 2,298.9 yearly increase in students.

The period from 1970 to 1985 witnessed a consistently growing share of the public high schools in the country's total secondary education enrolment which increased from 42.2 percent in 1970 to 58.9 percent in 1985. The increase in public secondary schools was due primarily to shifting of enrolment from private to public schools especially in Regions V and XII.

The effectiveness of secondary education measured in terms of achievement scores in the NCEE and percentage of qualified examinees in the NCEE during the period under review did not show a marked improvement over time. In fact scores in the NCEE behaved like a pendulum. Moreover, more regions obtained mean scores below the national mean score in the 1975, 1980 and 1985 NCEE. The regions that consistently scored above the mean were Regions III, IV and the NCR; those that appear to score very much below the national mean were the more depressed regions in the country, e.g., Regions V, VI, VIII, X, IX and XII.

The composition of the total population by level of educational attainment showed some improvement. There was a decline in the percentage of those without schooling or with elementary education only, and an increase in the percentage of those with secondary education. In other words, there were more Filipinos, 7 years old and over who had a high

school education in 1970 compared to 1980, and a smaller percentage of Filipinos with no grade completed, from 18.9 percent in 1970 to only 9.5 percent in 1980. The picture in the regions, however, showed marked variations, especially when we compare the percentage of population with no grade completed among the thirteen regions. The NCR had no more than 1.9 percent of its population with no grade completed while Central Mindanao (Region XII) and Western Mindanao (Region IX) had 28.0 percent and 23.6 percent respectively. The data show that populations with more schooling tend to concentrate in relatively developed and urbanized regions such as the NCR, Region I (Ilocos), Region III (Central Luzon), Region IV (Southern Tagalog), Region VI (Western Visayas), and Region VII (Central Visayas).

3. Conclusion

Before making recommendations based on the findings of this evaluation study, it is necessary to take note of some of the problems encountered in the process of collecting and assembling the existing data/statistics needed for the study. Among these are the following:

1. There are discrepancies between the data/statistics on the same variables for the same period from the records and publications of the Department of Education, Culture and Sports and those from the National Census and Statistics Office. This problem was resolved by relying on the records of the office that provided the more complete record on a particular variable for the period covered by the study.

2. Data/statistics on the same variable, e.g. participation rates, enrolment data, cohort survival rates for both the national and regional levels, are not available for every year covered by this evaluation. Thus very little trends analysis was possible.

3. The age group for calculating literacy rates which was 10 years old and over for the Census years 1939, 1948 and 1960 was changed to 6 years old and over for the 1970 Census, but was again changed to 10 years old and over for the 1980 Census.

4. No explanation is available in the records and published reports for participation and cohort survival rates exceeding 100 percent.

On the basis of the results of this evaluation study, it appears that there is a need to adopt a national policy for a more equitable distribution of the nation's budget and resources for education. In fact, it seems that there is a moral justification for adopting a policy of "positive discrimination" which will make possible the allocation of more resources and the deployment of more qualified teachers and school administrators to schools in the relatively more depressed communities in the country in order to make up for the scarcity of learning resources available in their communities.

The consistently more efficient and effective performance of the more affluent and developed regions such as the NCR, Regions III, IV and VII strongly indicates that the improvement of elementary and secondary education is dependent on both school and non-school variables.

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TABLE A.1
School Age Population and Number of Schools by Region and by Year

Region	CY 1978 School Age Population	Percent	1978-79 Number of Schools	Percent	CY 1979 Number of Schools	Percent	1979-80 Number of Schools	Percent	CY 1980 Number of Schools	Percent
NCR			442	1.5			443	1.5		
I. Ilocos	518,660	7.2	2,819	9.3	522,195	7.1	2,833	9.4	519,740	7.0
II. Cagayan	325,535	4.5	2,115	7.0	327,344	4.5	2,128	7.0	329,090	4.4
III. Central Luzon	735,708	10.2	2,305	7.6	745,726	10.2	2,328	7.7	755,603	10.2
IV. Southern Luzon	1,621,606	22.5	3,526	11.7	1,657,661	22.7	3,636	12.0	1,693,287	23.0
V. Bicol	563,572	7.8	2,706	9.0	563,202	7.7	2,721	9.0	562,766	7.6
VI. Western Visayas	631,616	8.8	2,943	9.7	609,014	8.3	2,950	9.7	626,272	8.4
VII. Central Visayas	550,647	7.6	2,469	8.1	553,054	7.6	2,504	8.3	555,394	7.5
VIII. Eastern Visayas	402,188	5.6	3,072	10.2	398,815	5.4	3,102	10.2	395,648	5.3
IX. Western Mindanao	416,576	5.8	1,815	6.0	425,740	5.8	1,865	6.2	435,044	5.9
X. Northern Mindanao	433,033	6.1	2,160	7.2	454,814	6.2	2,184	7.2	466,818	6.8
XI. Southern Mindanao	553,252	7.7	1,972	6.5	575,102	7.9	1,993	6.6	597,697	8.1
XII. Central Mindanao	447,343	6.2	1,886	6.2	459,686	6.3	1,624	5.4	472,091	6.4
TOTAL	7,209,736	100.0	30,221	100.0	7,311,653	99.7	30,311	100.0	7,409,316	100.0

TABLE A.1 (Continuation)
School Age Population and Number of Schools by Region and by Year

Region	1980-81 School Age Population	Percent	1981-82 Number of Schools	Percent	CY 1982 Number of Schools	Percent	1982-83 Number of Schools	Percent	CY 1983 Number of Schools	Percent
NCR	451	1.5	440	1.4	860,940	11.4	434	1.4	885,174	11.5
I. Ilocos	2,840	9.4	2,836	9.3	534,828	7.1	2,827	9.1	537,014	7.0
II. Cagayan	2,153	7.1	2,164	7.1	351,985	4.6	2,237	7.2	356,362	4.6
III. Central Luzon	2,335	7.7	2,335	7.6	760,240	10.0	2,371	7.7	771,833	10.1
IV. Southern Luzon	3,663	12.0	1,673	12.0	976,525	12.9	3,727	12.0	995,617	13.0
V. Bicol	2,722	9.0	2,733	8.9	565,906	7.5	2,735	8.8	563,216	7.4
VI. Western Visayas	2,954	9.8	3,057	10.0	705,087	9.3	2,972	9.6	708,905	9.2
VII. Central Visayas	2,513	8.3	2,498	8.2	588,142	7.8	2,514	8.1	594,519	7.8
VIII. Eastern Visayas	3,018	10.0	3,008	9.8	445,345	5.9	3,034	9.8	447,710	5.8
IX. Western Visayas	1,875	6.5	1,399	8.2	410,721	5.4	1,951	6.3	414,301	5.4
X. Northern Mindanao	2,154	7.4	1,237	7.3	447,935	5.9	2,349	7.5	455,063	5.9
XI. Southern Mindanao	1,975	6.5	2,002	6.6	548,649	7.2	2,038	6.6	560,793	7.3
XII. Central Mindanao	1,649	5.4	1,676	5.5	375,316	5.0	1,788	5.8	376,453	4.9
TOTAL	30,272	100.0	30,561	100.0	7,571,619	100.0	30,946	100.0	7,671,960	100.0

TABLE A.1 (Continuation)
School Age Population and Number of Schools by Region and by Year

Region	1983-84 School Age Population	Percent	CY1984 Number of Schools	Percent	1984-85 Number of Schools	Percent	CY 1985 Number of Schools	Percent	1985-86 Number of Schools	Percent
NCR	438	1.4	819,852	10.0	448	1.4	857,965	10.2	442	1.4
I. Ilocos	2,827	9.0	588,838	7.2	2,847	9.0	596,696	7.1	2,833	8.9
II. Cagayan	2,123	6.8	397,348	4.8	2,139	6.8	406,972	4.8	2,147	6.8
III. Central Luzon	2,381	7.6	832,212	10.1	2,369	7.5	852,365	10.1	2,371	7.4
IV. Southern Luzon	3,712	11.8	1,082,337	13.2	3,075	11.7	1,117,387	13.2	3,740	11.8
V. Bicol	2,770	8.8	650,127	7.9	2,741	8.7	666,984	7.9	2,305	8.8
VI. Western Visayas	2,990	9.5	788,326	9.5	3,003	9.5	803,867	9.5	3,121	9.8
VII. Central Visayas	2,515	8.0	632,504	7.7	2,530	8.0	648,002	7.7	2,543	8.0
VIII. Eastern Visayas	3,089	9.8	510,043	6.2	3,083	9.8	516,397	6.1	3,183	10.0
IX. Western Visayas	2,068	6.6	451,080	5.5	2,088	6.6	463,069	5.5	2,181	6.8
X. Northern Mindanao	2,295	7.3	483,302	5.9	2,340	7.4	496,808	5.9	2,305	7.2
XI. Southern Mindanao	2,039	6.5	582,019	7.1	2,090	6.6	598,239	7.1	2,146	6.7
XII. Central Mindanao	2,184	7.0	406,037	4.9	2,187	6.9	417,542	5.0	2,000	6.3
TOTAL	31,431	100.0	8,225,225	100.0	31,570	100.0	8,442,293	100.0	31,817	100.0

TABLE A.2
Total Enrolment, and Number of Schools in Government Elementary Schools by Level and Region

Region	1978 - 1979				1978 - 1979			
	Enrolment	Percent	Number of Schools	Percent	Enrolment	Percent	Number of Schools	Percent
NCR	667,175	8.8	442	1.5	681,340	8.7	443	1.5
I. Ilocos	580,074	7.6	2,819	9.3	592,335	7.6	2,833	9.4
II. Cagayan	375,549	4.9	2,115	7.0	380,169	4.9	2,128	7.0
III. Central Luzon	779,138	10.2	2,305	7.6	792,497	10.1	2,328	7.7
IV. Southern Tagalog	975,623	12.8	3,526	11.7	994,622	12.7	3,636	12.0
V. Bicol	653,664	8.6	2,706	9.0	659,439	8.4	2,721	9.0
VI. Western Visayas	777,410	10.2	2,943	9.7	776,316	9.9	2,950	9.7
VII. Central Visayas	-		2,460	8.1	586,132	7.5	2,504	8.3
VIII. Eastern Visayas	480,314	6.3	3,072	10.2	481,504	6.2	3,102	10.2
IX. Western Visayas	394,480	5.2	1,815	6.0	410,147	5.2	1,865	6.2
X. Northern Mindanao	446,555	5.9	2,160	7.2	465,115	6.0	2,184	7.2
XI. Southern Mindanao	557,665	7.3	1,972	6.5	569,070	7.3	1,993	6.6
XII. Central Mindanao	390,533	5.2	1,886	6.2	428,764	5.5	1,624	5.4
TOTAL	7,601,115	93.1	34,221	100.0	7,817,450	100.1	30,311	100.0

TABLE A.2 (Continuation)
Total Enrolment, and Number of Schools in Government Elementary Schools by Level and Region

Region	1980 - 1981				1980 - 1982			
	Enrolment	Percent	Number of Schools	Percent	Enrolment	Percent	Number of Schools	Percent
NCR	680,179	8.6	451	1.5	697,625	8.6	440	1.4
I. Ilocos	589,467	7.4	2,840	9.4	597,349	7.4	2,836	9.3
II. Cagayan	382,365	4.8	2,153	7.1	384,872	4.8	2,164	7.1
III. Central Luzon	811,854	10.2	2,335	7.7	823,207	10.2	2,335	7.6
IV. Southern Tagalog	1,010,859	12.7	3,633	12.0	1,030,036	13.0	3,676	12.0
V. Bicol	662,057	8.4	2,722	9.0	655,359	8.1	2,733	8.9
VI. Western Visayas	801,017	10.1	2,954	9.8	814,558	10.1	3,057	10.0
VII. Central Visayas	600,017	7.6	2,513	8.3	610,079	7.6	2,498	8.2
VIII. Eastern Visayas	473,660	6.0	3,018	10.0	494,105	6.1	3,008	9.8
IX. Western Visayas	431,779	5.4	1,875	6.2	427,040	5.3	1,899	6.2
X. Northern Mindanao	481,796	6.1	2,154	7.1	493,821	6.1	2,237	7.3
XI. Southern Mindanao	569,242	7.2	1,975	6.5	575,995	7.1	2,002	6.6
XII. Central Mindanao	436,872	5.5	1,649	5.4	449,244	5.6	1,676	5.5
TOTAL	7,931,164	100.0	30,272	100.0	8,073,290	100.0	30,561	100.0

TABLE A.2 (Continuation)
Total Enrolment, and Number of Schools in Government Elementary Schools by Level and Region

Region	1982-1983 Enrolment	Percent	Number of Schools	Percent	1983-1984 Enrolment	Percent	Number of Schools	Percent
NCR	688,906	8.4	434	1.4	703,504	8.6	438	1.4
I. Ilocos	600,097	7.4	2,827	9.1	601,382	7.3	2,827	9.0
II. Cagayan	383,997	7.1	2,237	7.2	392,322	4.8	2,123	6.8
III. Central Luzon	830,965	10.2	2,371	7.7	827,928	10.1	2,381	7.6
IV. Southern Tagalog	1,063,367	13.0	3,727	12.0	1,094,203	13.3	3,712	11.8
V. Bicol	659,988	8.1	2,735	8.8	668,874	8.1	2,770	8.8
VI. Western Visayas	827,495	10.1	2,972	9.6	826,968	10.1	2,990	9.5
VII. Central Visayas	613,258	7.5	2,514	8.1	593,712	7.2	2,515	8.0
VIII. Eastern Visayas	486,564	6.0	3,034	9.8	491,469	6.0	3,089	9.8
IX. Western Visayas	440,710	5.4	1,951	6.3	441,943	5.4	2,068	6.6
X. Northern Mindanao	499,664	6.1	2,318	7.5	505,209	6.1	2,295	7.3
XI. Southern Mindanao	601,227	7.4	2,038	6.6	614,581	7.5	2,039	6.5
XII. Central Mindanao	467,843	5.7	1,788	5.8	466,459	5.7	2,184	7.0
TOTAL	8,164,061	100.0	30,946	100.0	8,228,554	100.0	31,431	100.0

TABLE A.2 (Continuation)
Total Enrolment, and Number of Schools in Government Elementary Schools by Level and Region

Region	1984-1985 Enrolment	Percent	Number of Schools	Percent	1985-1986 Enrolment	Percent	Number of Schools	Percent
NCR	693,434	8.3	448	1.4	709,095	8.4	440	1.4
I. Ilocos	596,947	7.2	2,847	9.0	604,836	7.2	2,828	8.9
II. Cagayan	393,848	4.8	2,139	6.8	406,297	4.8	2,147	6.8
III. Central Luzon	821,616	19.9	2,369	7.5	833,907	19.9	2,371	7.5
IV. Southern Tagalog	1,094,315	12.2	3,705	11.7	1,117,420	13.3	3,739	11.8
V. Bicol	668,443	8.1	2,741	8.7	680,406	8.1	2,803	8.8
VI. Western Visayas	840,396	10.2	3,003	9.5	818,171	19.8	3,119	9.8
VII. Central Visayas	613,038	7.4	2,530	8.0	614,825	7.3	2,541	8.0
VIII. Eastern Visayas	502,669	6.1	3,083	9.8	502,362	6.0	3,179	10.0
IX. Western Visayas	446,950	5.4	2,088	6.6	470,619	5.6	2,180	6.9
X. Northern Mindanao	513,714	6.2	2,340	7.4	518,993	6.2	2,300	7.2
XI. Southern Mindanao	612,503	7.4	2,090	6.6	632,996	7.5	2,146	6.8
XII. Central Mindanao	472,252	5.7	2,187	6.9	482,176	5.8	1,997	6.3
TOTAL	8,269,825	100.0	31,570	100.0	8,392,103	100.0	31,790	100.0

TABLE A.3
Regional Budget for Elementary Education

Region / Year	1979	1980	1981	1982	1983	1984	1985
NCR	P204,641,000	P214,510,154	P251,022,846	P 282,947,923	P 323,953,694	P359,656,153	P400,676,154
I. Ilocos	218,271,000	225,122,154	250,457,846	293,948,923	330,006,694	350,347,153	390,602,154
II. Cagayan	104,140,000	123,753,154	129,971,846	150,712,924	180,453,694	190,356,154	219,017,154
III. Central Luzon	225,406,000	234,127,154	253,322,846	295,577,923	340,478,694	367,344,154	408,000,154
IV. Southern Tagalog	298,494,000	304,098,154	345,560,846	402,477,923	465,249,693	506,523,154	573,686,154
V. Bicol	189,383,000	192,137,154	217,461,846	251,335,923	292,207,693	315,978,154	354,343,154
VI. Western Visayas	253,262,000	258,023,154	295,438,846	373,576,923	434,562,693	426,156,154	478,351,154
VII. Central Visayas	186,475,000	197,262,154	217,832,847	255,188,923	289,737,692	297,160,154	340,048,154
VIII. Eastern Visayas	168,842,000	176,109,154	192,817,847	223,366,923	252,689,692	265,651,154	295,728,154
IX. Western Mindanao	118,351,000	134,990,154	142,789,846	165,419,923	192,490,691	201,002,154	238,516,154
X. Northern Mindanao	123,690,000	138,315,154	155,246,846	179,366,923	208,363,691	221,407,154	249,255,154
XI. Southern Mindanao	137,312,000	151,248,154	169,265,846	195,402,923	237,488,689	260,980,154	290,370,153
XII. Central Mindanao	115,263,000	131,035,154	141,349,846	168,945,923	205,682,690	216,866,154	243,071,153
TOTAL	P2,339,230,000	P2,480,731,002	P2,763,535,000	P3,238,270,000	P3,753,366,000	P3,979,357,000	P4,482,765,000

Sources: DECS Statistical Bulletin, 1985-86
MECS Statistical Bulletin, 1984-85
MECS Statistical Bulletin, 1983-84
MECS Statistical Bulletin, 1982-83
MECS Statistical Bulletin, 1981
MECS Statistical Bulletin, 1980
MECS Statistical Bulletin, 1979

TABLE A.4
Percentage Distribution of Secondary School Age Population by Region, Rank, and Years (1975-1985)

Region	Year 1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
I. Ilocos	7.5 (5.5)	7.5 (5.5)	7.5 (5.5)	7.4 (5)	7.3 (5)	7.2 (5)	-	7.1 (6.5)	7.0 (8)	7.5 (7)	7.4 (7)
II. Cagayan	4.5 (12)	4.6 (12)	4.6 (12)	4.6 (12)	4.7 (11)	4.7 (12)	-	4.6(13)	4.6 (13)	4.7 (12.5)	4.7 (13)
III. Central Luzon	10.3 (2)	10.5 (2)	10.6 (2)	10.6 (2)	10.7 (2)	10.7 (2)	-	10.0 (3)	10.0 (3	10.4 (3)	10.3 (2)
IV. Southern Tagalog	22.8 (1)	23.3 (1)	23.5 (1)	23.6 (1)	23.7 (1)	23.8 (1)	-	12.8 (1)	13.0 (1)	13.0 (1)	13.1 (1)
V. Bicol	8.1 (4)	8.2 (4)	8.2 (4)	8.2 (4)	8.1 (4)	8.1 (4)	-	7.3 (5)	7.4 (6)	8.0 (5)	8.0 (5)
VI. Western Visayas	9.2 (3)	9.2 (3)	9.0 (3)	8.8 (3)	8.7 (3)	8.6 (3)	-	9.3 (4)	9.3 (4)	9.6 (4)	9.6 (4)
VII. Central Visayas	7.5 (5.5)	7.5 (5.5)	7.4 (6)	7.3 (6)	7.2 (6)	7.1 (6)	-	5.7 (9.5)	7.8 (5)	7.7 (6)	7.7 (6)
VIII. Eastern Visayas	6.0 (8)	6.1 (8)	6.1 (8)	6.0 (8)	6.0 (8)	6.0 (8)	-	5.7 (9.5)	5.6 (10)	6.3 (9)	6.3 (9)
IX. Western Mindanao	5.4 (10)	5.3 (11)	5.2 (11)	5.2 (11)	5.2 (10)	5.2 (11)	-	5.3 (11)	5.4 (11)	5.2 911)	5.3 911)
X. Northern Mindanao	5.6 (9)	5.7 (9)	5.8 (9)	5.8 (9)	3.7 (12)	5.9 (9)	-	5.9 (8)	5.9 (9)	5.7 (10)	5.7 (10)
XI. Southern Mindanao	6.3 (7)	6.5 (7)	6.6 (7)	6.6 (7)	6.7 (7)	6.8 (7)	-	7.1 (6.5)	7.2 (7)	6.8 (8)	6.9 (6)
XII. Central Mindanao	5.3 (11)	5.4 (10)	5.5 (10)	5.5 (10)	5.6 (9)	5.6 (10)	-	4.7 (12)	4.7 (12)	4.7 (12.5)	4.8 (12)
NCR	*	*	*	*	*	*	-	11.8 (2)	11.7 (2)	10.0 (2)	9.8 (3)
Total School Age Population	4,299.0	4,299.5	4,370.5	4,443.2	4,516.7	4,591.2	NA	4,847.0	4,886.4	4,904.6	4,992.9

( ) Rank

* Figures for this region were included in S. Luzon.

Sources: MECS Statistical Bulletin, SY 1985-86, 1984-1985, and 1983-84.
MECS Statistical BUlletin, CY 1975,1976, 1977, 1978, and 1979.

TABLE A.5
Number of Government and Private Schools by Level of Education and Selected Years

School Year	Elementary			Secondary			Tertiary		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
1959-1960	20,296	574	20,870	376	1,328	1,704	41	366	407
1964-1965	21,972	792	22,764	468	1,541	2,009	36	463	499
1969-1970	21,911	961	22,872	1,876	1,975	3,851	37	584	621
1974-1975	29,745	1,015	30,760	2,825	2,019	4,844	85	606	691
1979-1980	30,311	1,183	31,494	3,112	2,032	5,144	290	707	997
1984-1985	31,570	1,221	32,791	3,383	2,005	5,388	360	818	1,178

Sources: NEDA. Philippine Statistical Yearbook, 1984. Table 10.1, pp. 488-489.
MECS. Statistical Bulletin. SY 1984-1985. Planning Service.
NEDA. Philippine Statistical Yearbook, 1986. Table 10.1, pp. 446-447.

TABLE A.6
Percentage Distribution of Secondary Schools by Region and Rank (SY 1979-80 to 1985-86)

Region	Year						
	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986
I. Ilocos	12.8	13.0	12.5	12.0	12.0	11.6	11.7
II. Cagayan	5.2	5.1	5.1	5.3	5.2	5.2	5.0
III. C. Luzon	8.1	10.3	8.3	8.4	8.4	8.3	8.5
IV. S. Luzon	14.6	14.8	14.4	15.0	14.6	15.2	14.0
V. Bicol	7.9	7.7	7.7	8.1	7.7	7.8	7.9
VI. N. Visayas	9.8	9.8	10.1	10.4	10.4	9.6	9.8
VII. C. Visayas	6.2	6.2	6.3	6.8	6.7	6.8	6.7
VIII. E. Visayas	6.8	6.9	6.5	6.6	6.6	6.5	6.7
IX. W. Mindanao	3.7	4.1	4.2	4.1	4.2	4.3	4.5
X. N. Mindanao	6.8	6.7	6.5	6.8	6.7	6.8	7.0
XI. S. Mindanao	6.7	6.8	6.5	6.1	6.8	6.5	6.6
XII. C. Mindanao	4.6	4.2	4.7	4.6	4.6	4.8	4.8
NCR	6.3	6.0	6.8	4.6	6.0	6.0	6.3
TOTAL	5,144	5,156	5,354	5,327	5,430	5,475	5,375

TABLE A.7
Total Number of Secondary Schools, Public and Private
by Region and by Selected Years

Region	SY 1978-1979			SY 1979-1980			SY 1980-1981			SY 1981-1982		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
NCR	88	232	320	111	216	327	111	200	311	128	238	366
I	474	210	684	455	208	663	455	211	666	460	211	671
II	156	107	263	158	109	267	159	107	266	164	109	273
III	234	178	412	230	190	420	243	189	432	253	192	445
IV	397	271	668	431	323	754	440	326	766	447	325	772
V	258	123	381	280	127	407	275	126	401	282	130	412
VI	359	147	506	360	149	509	362	145	507	397	147	544
VII	149	167	316	152	167	319	155	167	322	170	167	337
VIII	277	75	352	278	73	351	280	76	356	277	73	350
IX	123	67	190	125	66	191	144	69	213	160	69	229
X	207	142	349	209	142	351	207	141	348	213	137	350
XI	160	145	305	192	157	349	193	158	351	199	152	351
XII	252	131	383	131	105	236	137	80	217	148	106	254
TOTAL	3,134	1,995	5,129	3,112	2,032	5,144	3,161	1,995	5,156	3,298	2,056	5,354

TABLE A.7 (Continuation)
Total Number of Secondary Schools, Public and Private by Region and by Selected Years

Region	SY 1982-1983			SY 1983-1984			SY 1984-1985			SY 1985-1986		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
NCR	116	129	245	117	212	329	117	212	329	119	221	340
I	426	215	641	426	215	641	429	210	639	422	211	633
II	168	118	286	164	115	279	171	115	286	156	114	270
III	259	189	448	259	201	460	264	194	458	260	196	456
IV	466	336	802	463	330	793	478	355	833	474	281	755
V	296	136	432	285	133	418	288	140	428	287	140	427
VI	399	155	554	404	161	565	383	146	529	382	149	531
VII	199	166	365	200	166	366	210	166	376	197	167	64
VIII	282	73	355	287	74	361	284	74	358	289	74	363
IX	153	69	222	164	67	231	173	67	240	173	68	241
X	227	139	366	226	141	367	225	152	377	226	152	378
XI	206	156	362	213	157	370	204	155	359	202	155	357
XII	145	104	249	146	104	250	173	90	263	170	90	260
TOTAL	3,342	1,985	5,327	3,354	2,076	5,430	3,399	2,076	5,475	3,357	2,018	5,375

Sources: MECS Statistical Bulletin, 1979; 1980-81; 1981-82; 1982-83; 1983-84; 1984-85.
DECS Statistical Bulletin, 1985-1986.

TABLE A.8
Enrolment in Pre-School, Elementary, Secondary and Tertiary Level Both Government and Private (Selected Years)

School Year	Elementary			Secondary			Tertiary		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
1959-1960	3,970,750	179,993	4,150,743	200,164	411,380	611,544	39,095[1]	261,477	300,572
1964-1965	5,330,234	247,567	5,577,801	318,498	643,061	961,559	NA	NA	NA
1969-1970	6,521,143	334,358	6,855,501	675,840	915,516	1,591,356	94,627[2]	534,171	628,798
1974-1975	7,067,248	386,083	7,453,331	939,033	1,133,887	2,072,920	118,450[3]	646,275	764,725
1979-1980	7,817,450	409,905	8,227,355	1,489,959	1,276,915	2,766,874	NA	NA	NA
1984-1985	8,269,825	523,948	8,793,773	1,957,444	1,365,619	3,323,063	NA	NA	1,127,968

Source: NEDA. Philippine Statistical Yearbook, 1986. Table 10.4, pp. 452-453; table 10.5, pp. 454-455.

[1]UNESCO-PAEF, 1953 and Carson, 1961.
[2]PCSPE,1970
[3]NCSO. Philippine Yearbook, 1978. This figure is for 1975-1976.

TABLE A.9
Total Enrolment in Secondary (Public & Private)
National SY 1972-73 to SY 1985-86

School Year	Public	% Increase	Private	% Increase	Total	% Increase
1972-1973	863,326		1,011,686		1,875,012	
1973-1974	913,342	5.8	1,044,706	3.2	1,958,048	4.4
1974-1975	975,356	6.7	1,136,820	8.8	2,112,176	7.8
1975-1976	1,061,731	8.8	1,229,976	8.1	2,291,707	8.4
1976-1977	1,205,434	3.5	1,303,085	5.9	2,508,519	9.4
1977-1978	1,319,898	8.4	1,376,562	5.6	2,696,460	7.4
1978-1979		DATA NOT AVAILABLE				
1979-1980	1,489,957	-	1,276,195		2,766,874	-
1980-1981	1,614,554	8.3	1,404,014	9.9	3,018,568	9.1
1981-1982	1,591,510	-1.4	1,344,222	-4.2	2,935,732	-2.7
1982-1983	1,721,159	8.1	1,353,060	.6	3,074,219	4.7
1983-1984	1,844,174	7.1	1,360,377	.6	3,204,551	4.2
1984-1985	1,957,444	6.1	1,365,619	.4	3,323,063	3.7
1985-1986	1,949,542	-.40	1,319,892	-3.3	3,269,434	-1.6

Sources: MECS Statistical Bulletin, 1979, Planning Service SY 1972-1973 to SY 1977-78.
*1980 MEC Statistical Bulletin/MECS Statistical Bulletin, 1982.
MECS Statistical Bulletin, 1983-84/MECS Statistical Bulletin, 1982.
MECS Statistical Bulletin, 1984-85.

TABLE A.10
Number of Enrolment in Secondary Schools by Region
SY 1979-1980 to SY 1985-1986
(in thousands)

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
SY 1979-1980														
Public	261	158	59	125	171	101	187	64	86	60	83	96	40	1,490
Private	191	113	54	182	211	82	75	117	39	33	51	85	45	1,277
Total	452	271	113	307	382	183	262	181	125	93	134	181	85	2,767
SY 1980-1981														
Public	268	174	72	130	173	119	203	66	99	64	90	96	61	615
Private	305	11	60	173	193	87	82	116	37	34	68	87	47	1,404
Total	573	290	132	303	366	206	285	182	136	98	158	183	108	3,019
SY 1981-1982														
Public	255	161	63	139	191	123	197	63	97	67	81	97	61	1,592
Private	217	113	57	183	209	74	83	117	36	41	75	92	47	1,344
Total	472	274	120	322	400	197	280	180	133	108	156	189	108	2,939
SY 1982-1983														
Public	256	174	66	146	206	124	238	79	98	68	90	111	65	1,721
Private	214	113	62	186	225	65	35	115	37	42	73	83	49	1,349
Total	470	287	128	332	431	189	323	194	135	110	163	194	114	3,070
SY 1983-1984														
Public	264	189	72	153	229	141	238	89	107	79	96	115	73	1,345
Private	224	104	63	220	224	65	71	108	37	40	67	82	55	1,360
Total	488	293	135	373	453	206	309	197	144	119	163	197	128	3,205
SY 1984-1985														
Public	265	193	80	167	244	145	250	96	113	81	99	121	103	1,957
Private	204	113	61	209	237	61	78	116	38	41	72	85	50	1,366
Total	469	306	142	376	481	206	328	212	151	122	171	206	153	3,323
SY 1985-1986														
Public	274	198	72	171	243	155	235	82	109	81	97	123	110	1,950
Private	194	109	61	209	234	39	79	108	37	41	72	86	51	1,320
Total	468	307	133	380	477	194	313	190	146	122	169	209	161	3,270

Sources: MECS Statistical Bulletin, 1981, 1982, 1982-83, 1983-84, and 1984-85.
DECS Statistical Bulletin, 1985-86.

TABLE A.11
Enrolment in Government Secondary Schools by Region and by Source of Fund

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
1982-1983														
Nationally Funded														
Gen. Compre. Science	6,634	46,325	31,995	15,780	46,227	44,751	48,739	1,767	13,763	10,500	28,738	15,399	18,699	329,323
Technical/Vocational	1,858	32,782	6,342	13,759	19,474	7,532	31,840	16,262	26,655	2,893	8,281	10,654	4,223	182,555
Locally Funded														
prov'l/city/municipal	240,931	28,410	2,242	60,093	41,681	12,087	82,236	20,470	12,249	6,743	16,713	29,307	18,533	571,615
barangay	856	59,121	20,823	55,635	95,986	47,802	66,989	39,983	40,445	41,354	33,870	52,368	19,368	574,600
1983-1984														
Nationally Funded														
Gen. Compre. Science	6,834	50,302	34,831	16,514	51,293	50,768	48,377	1,991	14,990	12,166	30,707	15,963	21,489	356,725
Technical/Vocational	1,914	35,597	6,904	14,400	21,608	8,546	31,930	18,322	29,032	3,350	8,348	10,994	4,853	193,348
Locally Funded														
prov'l/city/municipal	248,173	30,849	2,441	62,890	46,248	13,622	82,469	23,063	13,341	7,808	17,858	30,386	20,486	599,634
barangay	882	64,197	22,668	58,224	106,505	54,230	67,180	45,049	44,051	47,887	36,190	54,296	21,409	622,768
1984-1985														
Nationally Funded														
Gen. Compre. Science	4,816	82,059	20,030	38,675	63,948	45,659	106,274	1,780	16,528	16,438	32,540	20,447	26,197	475,291
Technical/Vocational	1,816	17,520	25,591	13,044	34,697	12,782	34,363	11,447	34,960	15,556	10,283	13,340	6,233	231,632
Locally Funded														
prov'l/city/municipal	253,951	15,342	7,709	44,709	37,695	14,168	35,053	21,120	12,593	6,386	20,399	30,408	23,695	523,218
barangay	1,051	69,472	18,379	62,385	93,819	57,656	63,372	44,507	45,799	37,435	34,504	53,541	23,451	605,370
1985-1986														
Nationally Funded														
Gen. Compre. Science	5,013	83,492	21,309	33,513	78,348	52,806	102,362	7,257	16,994	16,387	32,324	21,269	28,068	499,142
Technical/Vocational	4,764	18,244	24,583	13,779	21,704	8,888	31,375	12,159	32,737	16,087	9,847	15,572	7,305	216,774
Locally Funded														
prov'l/city/municipal	258,623	15,633	7,601	52,274	29,957	15,448	33,401	22,623	11,006	6,354	21,159	31,677	25,389	531,145
barangay	1,620	70,329	18,723	64,089	104,200	61,502	60,235	39,831	45,124	36,824	32,226	50,469	25,126	610,298

Sources: MECS Statistical Bulletin, 1982-83, Table 12, p. 12.
MECS Statistical Bulletin, 1983-84, Table 5B, p. 15.
MECS Statistical Bulletin, 1984-85, Table 9C, p. 14, Table 9E, p. 16.
DECS Statistical Bulletin, 1985-86, Table 12, p. 12.

TABLE A.12
Summary of Secondary School Growth Indicators
(1970-1985)

Indicators	1969-1970	1974-1975	1979-1980	1980-1985
1. Secondary School-Age Population *	3,617	4,229	4,591	4,993
Growth Index	100.0	116.9	126.9	138.0
2. Secondary School Enrolment *	1,591	2,072	2,766	3,323
Growth Index	100.0	130.2	173.8	208.8
2.1 Enrolment in Public Secondary Schools	675.8	939.0	1,489.9	1,957.4
% of Total	42.4	45.3	53.8	58.9
2.2 Enrolment in Private Secondary Schools	915.5	1,133.8	1,276.9	1,365.6
% of Total	57.5	54.7	46.1	41.1
3. Total Number of Secondary Schools	3,851	4,844	5,144	5,388
Growth Index	100.0	125.7	133.5	139.9
3.1 Number of Public Secondary Schools	1,876	2,825	3,112	3,383
% of Total	48.7	58.3	60.5	62.8
3.2 Number of Private Secondary Schools	1,975	2,019	2,032	2,005
% of Total	51.3	41.7	39.5	37.2

*In hundred thousands

Source of data for:

1. School Age Population -- Population of the Philippines, Country Monograph Series No. 5, ESCAP, Table 179, p. 246.
   MECS Statistical Bulletin, SY 1985-86.

2. No. of Secondary Schools -- NEDA, Philippine Statistical Yearbook, 1984, Table 10.1 and 1986, pp. 416-447.

3. Secondary School Enrolment -- PCSPE, Report, 1970, and NEDA, Philippine Statistical Yearbook, 1986, pp. 452-453; 454-455.

TABLE A.13
Percentage of Elementary and Secondary Budget of National Education Budget, 1979-1985

Year	MECS Budget/ National Educational Budget	Elementary Budget	%	Secondary Budget	%
1979	P 3,447,234,000	P 2,339,230,000	67.8	P 377,004,827	11.0
1980	3,414,378,000	2,480,731,002	72.6	316,057,000	9.3
1981	3,827,280,000	2,763,535,000	72.2	450,899,000	11.8
1982	4,387,012,000	3,238,270,000	73.8	499,082,000	11.4
1983	5,471,935,000	3,753,366,000	68.6	608,426,000	11.1
1984	5,613,082,000	3,797,357,000	70.9	612,379,000	11.0
1985	6,145,907,000	4,482,765,000	73.0	703,813,000	11.4

Source: Philippine Statistical Yearbook, 1986. Table 10.8, MECS Statistical Bulletin 1980 to 1984-1985.

THE SOCIOECONOMIC AND DEMOGRAPHIC ASPECTS OF ELEMENTARY EDUCATION IN THE PHILIPPINES

Cayetano W. Paderanga, Jr.

I. INTRODUCTION

The economic and social development of a country depends critically on how it prepares its citizens for participation in national life. At first blush, the Philippines seems to be doing well as far as formal education and training is concerned. It enjoys one of the highest literacy rates in the world[1] and possesses a broad-based system of education at all levels. However, its educational system has also been criticized for producing a large pool of educated, unemployed workers and for being of low quality in some respects.

The proper approach to the gross mismatch created by the educational system has been studied by various researchers. This study will concentrate on some aspects of the quality of education by looking at the progress of educational services at the elementary levels of education.

The Philippines grew from a country of 19 million in 1948 to 55 million in 1985. The age profile of the country also became younger over the years. As a result, educating the children became a much bigger job. The elementary age population alone increased by 128 per cent during this period. The sheer increase in numbers strained our ability to provide adequate elementary education. Was our educational sector able to respond to this increased need? How did it do so?

The average annual increase in population was 2.9 per cent; for elementary school-aged children, the increase was 2.6 per cent. During the same period, total enrolment increased by 2.4 per cent annually: public elementary (school) enrolment[2], by 2.4 per cent.

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[1]Eighty-seven per cent (87%) of the population 15 years and over in 1980. **Ministry of Education, Culture and Sports**, "Study of the Literacy Situation in the Philippines: Final Report" (1981).

[2]Only public elementary school enrolment available for 1948.

The public sector's capacity to expand enrolment is largely dependent on the fund outlays available to the Department of Education, Culture and Sports (DECS). The share of these outlays have shown an erratic pattern over the years. Education was a high priority in some years, in some years, it was a low priority. Table 1 summarizes the 37-year period by indicating the budget for census and other selected years. The expansion in enrolment noticed earlier is impressive considering the inconsistent emphasis given to education. From 1965 to 1985, for example, the share of the national budget allocated to DECS decreased from 28 per cent to 14 per cent, a decrease of 50 per cent. This de-emphasis may have had an effect on access to educational services or quality. In real terms, the budget for DECS increased by 4.6 per cent annually from 1948 to 1985. The real expenditure per pupil also increased by 1.6 per cent per annum for publicly enrolled pupils/students during the period. However, from 1965 to 1985, this decreased by 11.8 per cent every year.

II. SCHOOLING PERFORMANCE: THE ROLE OF HOUSEHOLD AND COMMUNITY CHARACTERISTICS

The effectiveness of the school system in meeting the needs of our society cannot be effectively measured without considering the influence exerted by factors beyond its control. Among these factors are household and community characteristics. For example, while the efficiency and recruitment efforts of the school are important in the family's decision to send a child to first grade, the household's own characteristics - its income, composition, aspirations and other factors - may be crucial.

The effects of household and community factors are also of interest because conclusions from such a study may indicate with greater clarity the role that can be realistically played by educational policies. We may obtain insights into how ostensibly non-educational policies affect educational outcomes. In the design of educational policy, it is helpful to know up to what point educational inputs can be relied upon to deliver improvements in outcomes and in which areas it may be profitable to rely on indirect policies.

It is customary to discuss educational outcomes in the context of household, community and school characteristics. The major question addressed in this section is: what are the factors that determine schooling achievement and attainment? Two measures were utilized: number of years of schooling achieved by those who were old enough to be in the last elementary year (12-year-olds) and the score achieved by students in selected subjects and a general achievement test.

It would have been preferable to use 13 year-olds (those old enough to have graduated). However, the participation rate for 13 year-olds drops to 88 per cent from the 94 per cent rate for 12 year-olds. Since the use of school characteristics was important for the analysis, a higher percentage of the 13-year old sample would have had to be dropped. To avoid possible statistical problems in the analysis, the 12-year old sampling was used. Table 2 shows the participation rate for different age groups.

TABLE 1

Budget of the Department of Education and State Universities and Colleges (SUCs)

	1948	1960	1965	1970	1980	1985
National Budget	374,562,000	899,675,800	2,102,363,873	3,323,698,915	37,894,032,000	58,328,941,000
Total DECS Budget	76,157,000	247,386,570	555,250,130	829,945,302	3,414,378,000	6,145,907,000
% of National Budget	20.3	27.5	26.4	25.9	9.0	10.5
Budget at 1972 Prices	221,386,628	564,809,52	829,970,299	998,730,809	1,194,339,583	1,187,385,4
% of Annual Increase	-	8.1	8.0	3.8	3.6	-0.1
Budget per Student	62.54	132.65	137.07	106.94	122.74	112.17
% of Annual Increase	-	6.5	0.7	-4.8	2.8	-1.8

TABLE 2

Frequency of Enrolment by Age Group (Household-School Matching Survey)

	Number of Children in the Sample		
Age	**Total**	**Enrolled**	**% Enrolled**
7	401	400	99.8
8	706	703	99.6
9	824	811	98.4
10	777	748	96.3
11	825	790	95.8
12	836	783	93.7
13	747	657	88.0
14	714	575	80.5
15	711	510	71.7
16	652	455	69.8
Total	**7193**	**6437**	**89**

*Using Implicit GNP deflator for government expenditures

Sources: 1965-1985 Philippine Economic Indicators. A Survey of Philippine Public Schools, 1960
1986 Philippine Statistical Yearbook, NEDA.

1. Determinants of Years of Schooling

1.1 General Framework

The number of years of schooling completed by the child is the result of the household's demand for education coupled with the available schooling services provided by the school. The actual attainment is also affected by the basic characteristics of the child and community conditions that bear upon the relative efficiency of his or her study efforts. The community exerts additional influence by determining the norms that the households are expected to satisfy. All of these influence the number of years of schooling that is finally attained by the child.

The various variables can be classified into four groups: child characteristics, household characteristics, school characteristics, and community variables. The interactions of the variables can be visualized as acting through the two sides, supply and demand, of the schooling market. A rough characterization would divide the variables into those that influence the supply side and those that influence the demand side.

The household may be seen as primarily affecting the demand for educating the child. Its demand in turn is affected by community norms that the household may try to fulfill. Thus, household and community characteristics act primarily by increasing or decreasing the demand for schooling.

The school on the other hand, is seen as the main instrument for translating demand into actual school completion and achievement. School factors determine the efficiency with which high demand is transformed into realized output. The school is visualized as the supplier of schooling services and its characteristics can be seen as increasing or decreasing the supply of schooling output.

The child is the raw material which is transformed into the finished product. This influences the modelling of child variables. For example, a more intelligent child increases the efficiency of "producing" schooling, thereby increasing the supply of school completion and achievement. In conjunction with some household characteristics, he also increases the material and psychic returns for the household from investments in the child. These are expected to increase the demand for schooling. In most cases, as in this one, the effects go in the same direction. No ambiguity results.

a. Household Characteristics

Household characteristics have various effects. In some cases, (as in the amount of parent's education) the effect of household characteristics would be to increase the taste for

education. This leads to an increase in the expected years of schooling. Thus, other things being equal, we would expect more educated parents to be more interested in giving education to their children. Higher parent's education may also have an indirect effect through higher household income.

Higher household income has two effects. First, it increases the household's ability to finance a child's studies. Richer parents can more easily afford to send their children to school, further enhancing the demand for education. Second, higher income also enables the household to purchase more commodities for its members. Since education can also be thought of as one other commodity that a household may want for its members, higher income will also result in higher demand for schooling. We expect richer households to buy more clothes for their children. We can also expect them to buy more schooling. Higher income directly increases the demand for education. Extending this reasoning, higher parent education by increasing income also has an indirect increase in demand for schooling.

Mother's wage rate, for example, increases household income, increasing the demand for education. At the same time, it increases the opportunity cost of staying at home to assist in ancillary activities to children's education like homework preparation, decreasing the demand for education. The final result in the empirical study would depend on which effect is stronger.

b. Community Variables

Community variables influence the years of schooling by providing norms and conditions that influence the household's demand for education. They also indicate the level of modernization and technique as well as levels of wages and living costs, all of which influence the education provision and the supply curve. The presence of electricity in the community, for example, increases the ease of learning. It also increases the potential study period for the child and the work period for the mother enabling her to substitute for the children in minor housework. All of these increase the demand for education, increasing the expected completed years of schooling.

Other community variables may also move supply and demand in different directions, however, and need to be discussed in context. For example, the family's perception of whether the community looks down on illiterate individuals is expected to increase its demand for schooling. The influence of differences in media exposure also incorporates complicated mixtures of perceptions and social processes which have to be disentangled.

c. School Factors

In contrast to the previous groups of variables, school factors mainly influence the supply side of schooling achievement. The level of technology and competence in the schools strongly

affects the provision of schooling services. Thus, school variables mainly affect completed years of schooling through the resulting shifts in the supply curve.

For example, with all other factors unchanged, improvements in teacher quality will increase the expected years of schooling of a child by raising his studying efficiency. This would be manifested in our model by an increase in the supply of schooling services, increasing the expected completed years of schooling.

All of the material aids for learning like the number of desks available for student use, number of textbooks per student (general and reference), physical condition of the buildings (primarily as an indicator of other physical aids that would be available) and the number of science kits, are all expected to ease the learning process for the child. These increase the supply of schooling services and may be hypothesized to increase educational completion and achievement.

d. Child Variables

Child characteristics are influential because they determine the expected utility of education to the household and the efficiency of service supplied by the school. As discussed earlier, a more intelligent child would imply an increased usefulness of schooling for the household because more of what is taught would be retained by the child. A likely outcome would be the higher level of income expected. At the same time, it would have the equivalent effect of increasing the supply of school services by increasing the efficiency of schooling production. Thus, variables that increase a child's absorptive ability would increase both the supply and demand for schooling, leading to an increase in realized schooling.

Higher drive and interest in schooling may be seen as an increase in the demand for education by the child and are expected to increase the expected years of schooling completed and achieved.

1.2 An Exploration on School Quality and Differences between Public and Private Schools

For a more meaningful analysis of the results on the determinants of the years of schooling, it was deemed necessary to carry out a study of the factors affecting the quality of schools. The results are discussed here to guide us in identifying later those school variables influential in determining the educational attainment of children and in interpreting the results' estimates.

An obvious finding of this analysis is the marked difference between public and private schools in the sample. This is evident in the differrence in the quality of the two types of

schools as shown by indicators of school achievement. These indicators are the average scores of 20 randomly chosen grade-four children for each sample school in tests in Mathematics, English and Pilipino. (See Table 3)

TABLE 3

Average Score of Public and Private School Students in Selected Subjects

Subject	Public	Private
Math	41.1	51.5
English	42.3	60.2
Pilipino	48.2	61.3
Average of Above	43.9	57.5
No. of Schools in the sample	477	90

Source: Household-School Matching Survey

To test for statistical significance and at the same time show the difference between the overall scores (average of the three subjects) of students, a simple regression was run. This regression tried to explain variations in the dependent variable, the average score of the sample students in three subjects, in terms of differences in the explanatory variable. The explanatory factor used as binary variable had a value equal to one if the school is public, otherwise, the variable value is zero.

The result of this regression is shown in Table 4. The intercept is 57.2. This is the average overall score if the value of the independent variable is zero (i.e., if the school is private). This agrees with the average score for private schools in Table 3. If the value of the explanatory variable is one (i.e., if the school is public), we deduct the value of the estimated coefficient, -13.2. This would make the average public school's score equal to 44, which is virtually the same as in Table 3. Our simple regression shows this difference to be statistically significant at the .0001 level. (That is, the chances are .0001 that this difference was accidental.)

TABLE 4

School Quality Difference Between Public and Private

Variable	Parameter	t value
Intercept	57.163	60.265
Whether School is Public	-13.208	-12.773
Adjusted R square = 0.2170		
F value (1,584) = 163.139		

Given this difference, the data were examined for systematic differences between public and private schools in those factors that school administrators and researchers think determine school quality. Data were available on educational aids, financial information and physical arrangements in schools.

Table 5 shows that there are systematic differences between public and private schools. Among other things, differences between these two types of schools are evident in the total expenditure per student by various types of cost, in the number per student of various educational aids, in the location of schools (as measured by distance from homes of students) and the type and length of training of the teachers. There was, however, a surprising similarity in the size of the average public and private schools.

Instead of testing the difference in means between public and private schools for each variable reported by the data, a multiple linear regression was used to analyze whether the selected set of variables could be used to discriminate between the two types of schools. This is essentially an analogue for the more precise, but more expensive, probit or logit methods which discriminates between groups by using an empirically estimated formula based on a set of factors.[3]

[3]Empirical tests in other situations show that the linear probability model gives essentially the same results as those given by probit and logit estimates.

TABLE5

Means of Selected Variables

Variable	Private		Public	
	N	Mean	N	Mean
No. of Students: Average	82	843.3	487	842.2
Average Age of Teachers	85	31.0	480	39.1
Percent of Teacher with MS, PhD Units	0		464	0.416
Average Length of Teaching Experience	85	8.7	479	15.2
Frequency of PTA Meetings	79	4	482	5.3
Total Floor Area Per Student	79	2.5	484	2.2
No. of Textbooks Per Student	63	4.6	457	3.4
No. of Reference Books Per Student	71	3.8	484	0.5
Expenditures on Personnel Per Student	63	588.3	395	455.86
MOE Less Text Expenses Per Student	63	148.22	303	35.45
MOE Per Student	64	177.70	304	42.58
Total Expenditure Less Text Per Student	65	713.88	425	448.96
No. of Desks Per Classroom	78	63.9	472	17.8
No. of Students Per Class	81	42.1	485	36.4
If School is in Rural Barangay	92	0.16	492	0.50
Daily Wage Rate of Unskilled Adult	92	16.97	459	14.01
If Barangay School is Located has Electricity	92	0.95	492	0.74
All or Most Teachers had Training	93	0.83	493	0.81
Teacher's Mean Score in Exams	78	54.85	479	52.50
Household Income	88	7744.59	473	5867.41

The method consists of estimating a function that is then used to predict whether a particular school is public or private based on selected characteristics. If the formulation is successful, the empirically estimated function will predict well. Turning the argument around, if the function predicts well, then we conclude that a systematic difference exists between the two types of schools as far as the selected characteristics are concerned.

The results of the multiple regression are shown in Table 6. The results give quantitative support to the commonly held beliefs about differences between public and private schools. The intercept in this case has no independent meaning. It merely provides a starting point to which estimated coefficients associated with selected characteristics are added or subtracted to arrive at a prediction whether a school is public or private. If the estimated value of the function is zero or close to it, the particular school is probably private. If it is closer to one, the school is probably public. Because the method being used is just an approximation, the estimated value can be below zero in which case it is set equal to zero, or it can be above one in which case it is set to one.

TABLE 6

Probability that a School is Public or Private

Variable	Parameter Estimate	t value = 0	Prob > T
Intercept	0.857739	11.482	0.0001
Total Expenditure less Text	4.4906808	2.892	0.0040
No. of Times Visited by Supervisors	0.003263037	2.213	0.0273
Average Classroom Size	-0.000313705	-1.007	0.3145
Percent of Teachers with PhD Units	0.078649	3.792	0.0002
Average Length of Teaching Experience	0.007597198	4.727	0.001
Frequency of PTA Meeting	0.002087892	0.831	0.4061
No. of Science Kits Owned	-0.00214699	-4.875	0.0001
Number of Desks	-0.000692148	-3.387	0.0008
No. of Textbooks Per Student	-0.00574067	-2.257	0.0244
No. of Reference Books Per Student	0.0004097884	0.137	0.8910
No. of Desks Per Classroom	-0.000729971	-4597	0.0001
If School is in Rural Barangay	0.079604	4.006	0.0001
What Degree Was This?	-0.00153214	0.177	0.8595
Whether School is Multilevel	-0691170	-19.829	0.0001
Physical Conditions	0.028177	-1.706	0.0885
Distance of Majority of Homes	-0.26998	-3.332	0.0009

Adjusted R square = 0.6540
F value (17,566) = 65.809

The characteristics used to discriminate between public and private schools may be classified into four broad groups: indicators of the level of material inputs into the educational process; indicators of the quality of teaching and school administration; location of the school; and, other variables. Some variables on material inputs are direct measurements such as the number of desks and the number of textbooks per student. Another indicator used was the total cost less textbook expenses per student to indicate the level of support for day-to-day items. The major portion of this cost is personnel salaries.

Differences between public and private schools start with the level of material inputs. Public schools typically spend less money per student on all components of school costs, and have fewer desks, textbooks and reference books per student (Table 5).

This difference shows up in the estimated prediction function (Table 6). The number of science kits owned, number of desks, number of textbooks per student and the number of desks per classroom all have negative coefficients. Negative coefficients tend to lower the estimated value of the prediction function toward zero, indicating that increases in the values of these variables decrease the probability that a specific school is public. High values of these indicators of material inputs are, therefore, identified with private schools.

Another variable was used to represent the physical condition of the school. This was used as a broad indicator of the condition and quality of the material inputs, as well as the availability of other education aids. Once these variables indicating direct measurements are controlled for, the estimated coefficient for total expenditures less textbooks per student is positive.[4]

This indicates that once we have standardized all schools to have equal levels of directly measured material inputs such as science kits and desks, higher educational costs are identified with public schools.

The foregoing variables are all statistically significant from zero as indicated by their t-statistics, the ratios of the estimated coefficients to their own standard errors. The chances that the estimated values are different from zero merely by accident are less than some acceptable level is measured by that statistic. In conventional practice the acceptable level is 10 per cent. The estimated coefficient number of reference books per student was not significantly different from zero. However, this may be because its effect has already been included with that of number of textbooks per student.

[4]An alternative estimation breaking down total costs into personnel and overhead and maintenance costs is less statistically significant but shows basically the same result.

The other main input into the education process is the level and quality of teaching and administration. Five indicators are available for this group of inputs: average length of teaching experience, per cent of teachers with M.S. or Ph.D. units, frequency of supervisory visits, educational attainment of the school head, and average quality of teacher as indicated by scores achieved in Math, English and Pilipino. Here public schools seem to have the edge. Their teachers have more experience in teaching and a greater proportion of them had earned graduate credits. Supervisory visits were also more frequent in public schools. Teachers quality and frequency of PTA meetings do not seem to be good discriminators between the two types of schools

The locational patterns of the two types of schools are also different. The coefficient of variables indicating whether the school is rural is positive while average distance from the majority of students' homes is negative. Both coefficients are statistically significant. Two interpretations are possible. One is that public schools are probably located close to the homes of their target population. The other is that because of higher out-of-pocket costs, the target population of private schools is sparser and they allow for this by locating structures in urban areas. Consequently, distance from the majority of students' homes is higher than that for public schools.

The overall picture that is presented by the data is of virtually two systems with different characteristics. The implications of these differences in school quality are explored in the next section.

1.3 Quality Differences Between Public and Private Schools

The results from the previous section indicate systematic differences between public and private schools in material inputs to the educational process, teacher characteristics, and other aspects. Additionally, the data show a difference in the way that these schools allocate their resources. Private schools concentrate more resources on material inputs like books and desks. Public schools, on the other hand, tend to spend more for personnel salaries and maintenance and overhead expenses after material inputs have been standardized (i.e., conceptually made equal). The raw data indicate that personnel and maintenance costs per student are less in public schools than in private schools. Whether these differences are intentional or unintentional results of policies will be examined at a later phase.

This section tries to examine the influence of these differences between public and private schools on school quality. The indicator of school quality used in this section is the average of the scores of the twenty sample grade-four pupils in Mathematics, English and Pilipino. This is the dependent variable whose variations are explained by a set of factors made up mostly of those characteristics used to discriminate between public and private schools. If successful, the

analysis will show which of these characteristics are important determinants of school quality. As a by-product, it will also show which characteristics are responsible for the observed difference in quality between the two types of schools.

In the conceptual framework, it was shown that school achievement and attainment result from a complex interaction of motivations and markets that involves variables belonging to four major groups: community characteristics, family and household characteristics, child variables, and school variables. While we are interested in explaining school quality, the indicator used is merely an average of a sample of individual achievements. The analysis should, therefore, include family and individual characteristics to the extent that these differ systematically by communities or by groups of children representing particular schools.

At this level of analysis, the unit of observation is the school. Individual and family characteristics cannot be included. Our exercise is anchored on the belief that differences in household characteristics cancel out for each observation. For example, suppose that school achievement is strongly influenced by socioeconomic status (SES) and that family income is a good indicator of SES. If average student income varies considerably by schools, then this would be reflected in the average score that we use as an indicator of school quality. However, if each school had roughly the same dispersion in student incomes as the other schools then income differences would cancel out within each observation. The average achievement score in the grade-four sample would not be affected and including this variable would be unnecessary. This analysis proceeds on the expectation that individual and family characteristics do cancel out this way.

The school variables have been divided into the same broad groups used in the analysis of school difference. Essentially the same variables used there are used here. Average household income for the barangay was included to test whether community incomes affected the dependent variable. Aside from testing whether school quality was dependent on community income, this variable was added to control for socioeconomic status just in case this was representative of average student income of the school found in that barangay. The presence of electricity in the barangay was included because an earlier analysis (Paqueo, 1985) found this to be a very strong influence on school attainment.

Table 7 presents the estimated coefficients of the function used to explain variations in the indicator for school quality, the average score of sample students in Mathematics, English and Pilipino. Based on results of the multiple regression, the F-value for the estimated function is 11.8 indicating that there is only a .0001 probability that variations explained by this function are accidental.

TABLE 7

Factors Influencing School Quality

Variable	Parameter Estimate	t value = 0	Prob > t
Intercept	38.590690	10.697	0.0001
No. of Times Visited by Supervisors	-0.014948	-0.258	0.7862
Average Classroom Size	0.00319658	-0.260	0.7947
Percent of Teachers with MS, PhD Units	-1.626217	0.999	0.0461
Average Length of Teaching Experience	-0.061016	0.947	0.3439
Frequency of PTA Meetings	-0.174768	-1.750	0.0807
No. of Science Kits Owned	0.012982	0.763	0.4456
Number of Desks	0.003092036	3.955	0.0001
No. of Textbooks Per Student	0.105562	1.010	0.3131
No. of Reference Books Per Student	0.457962	3.839	0.0001
Expenditures on Personnel Per Student	0.0007379488	1.437	0.1513
MOE Less Text Expenses Per Student	0.005572602	1.662	0.0971
No. of Desks Per Classroom	0.001351416	0.219	0.8269
No. of Students Per Class	0.027893	1.191	0.2340
If School is in Rural Barangay	-2.603179	-2.803	0.0052
Teacher Quality Score	0.175899	4.128	0.0001
What Degree Was This? Degree of School Head	0.171402	0.482	0.6300
Physical Conditions	0.607415	0.938	0.3489
Distance from Majority of Homes	0.450566	1.387	0.1660
Region 1	-3.8441523	-2.212	0.0274
Region 2	-2309063	-1.283	0.2001
Region 3	-0244425	-0.144	0.8854
Region 4	-0.857881	-0.491	0.6238
Region 5	-2.017788	-1.091	0.2757
Region 6	-7.518403	-4.412	0.0001
Region 7	-7446036	-4.574	0.0001
Region 8	-8.363203	-4.351	0.0001
Region 9	-9.593719	-5.477	0.0001
Region 10	-5.963486	-3.406	0.0007
Region 11	-7.931196	-4.833	0.0001
Region 12	-8.112635	-4.253	0.0001
Electric	-0.243046	-0.220	0.8257

Most of the results are expected. Material inputs such as number of desks, number of reference books per student and maintenance less textbook expenses have positive estimated coefficients implying that higher levels of these variables tend to lead to higher school quality. These coefficients are all statistically significant at the 10 per cent level. Expenditures on personnel, number of science kits owned and the number of textbooks per student both have the expected positive sign but are not statistically significant. Thus, in those variables where each type of school has an edge - expenditures per student for public schools and direct inputs for private schools - the implied decisions seem to be correct. They do enhance school quality.

In the quality of teaching and administration, the results are not so straightforward. The quality of teachers as measured by average test scores is highly significant and positively influences school quality. The percent of teachers with MS and Ph.D. units is inversely related to school quality (once teacher scores are standardized).Average length of teaching experience and frequency of supervisor visits also have negative signs but are insignificant.

A tentative hypothesis, which has to be verified, is that teachers who are not so competent tend to go for further training. So once actual teacher scores are allowed for, graduate units may actually indicate lower teacher quality. The estimated coefficients on the frequency of PTA meetings may also be explained along these lines.

2. Determinants of Schooling Attainment: Findings

One of the main objectives of PRODED is to increase the level of schooling attained. Consequently, the determinants of school achievement are of intense interest in the HSMS follow-up study. Here variables with a significant influence on the level of schooling attained by 12-year-old children, specially those which can be influenced by PRODED inputs, are examined. PRODED-related variables mostly involve the enhancement of school and teacher quality through increases in material inputs in school and by changing the rewards to teachers.

The study aims to capture the effects of the PRODED-related variables while controlling for the influence of other types of measures. PRODED variables are discussed together with these other influences. The discussion follows the format of the previous sections where the other groups are discussed first. The effects of school and teacher quality measures are examined in the light of this background.

The estimated function reported in Table 8 has an F-value of 2.927 which is significant at the .0002 level.

TABLE 8

Determinants of Educational Attaiment

Variable	Parameter Estimate	T For HO Parameter = 0	Prob > T
Intercept	3:74096	10.940	0.0001
Calculated Household Asset	-0.00046	-1.972	0.0499
Has Perceived Borrowing Capacity	0.03483	1.715	0.0579
Distance of Community to Nearest Public School	-0.01490	-0.841	0.4011
Mothers Rating of Child's IQ	0.23493	3.526	0.0095
Index of Unskilled Job Availabiltiy: Child	0.00028	0.023	0.9815
Expected Peso Rate of Return to Elementary Education	-0.66996	-2.184	0.0391
Expected Peso Rate of Return to College Education	0.00006	1.328	0.1856
Urban Rural Classification	0.05603	0.734	0.4637
Child Sex	0.00521	0.083	0.9336
Daily Wage Rate: Unskilled Child Labor	0.01473	2.136	0.0339
Overall RS Score: Percent	0.00380	0.988	0.3245
Frequent of PTA Meetings	-0.00914	-1.029	0.3045
Number of Desks	-0.00004	-0.571	0.6036
No. of Reference Books Per Student	0.00577	0.621	0.5355
Expenditures on Personnel Per Student	-.00008	-2.665	0.0153
No. of Students Per Class	0.00222	0.540	0.5896
Teacher Quality	0.00407	0.824	0.4108

Adjusted R-square = 0.1216
F value (17,210) = 2.927

2.1 Child Variables and the Schooling Level

Two measures of child characteristics were used in the final estimating equation. The child's sex and the mother's rating of the child's IQ. Child's sex was not significant. However, mother's rating of the child's IQ was highly significant and positive. Paqueo (1986) hypothesizes that this may be the "Pygmalion effect" whereby the mother's expectation of good work induces the desired behaviour in the child. Still, the next stage of research disentangling the effect of superior native ability from the Pygmalion effect would be very important for formulating educational methods and policies.

2.2 Household Characteristics

Only two household variables were included in the final estimation: the peso amount of household assets and the borrowing capacity of the household. These were mainly indicators of socioeconomic status. But other effects may be incorporated in these variables. Measures of mother's and father's level of schooling were included in the early estimates but were consistently insignificant. They were dropped so we could concentrate more on the remaining variables. The number of siblings in the family was dropped for similar reasons.

The borrowing capacity of the household had a positive but statistically insignificant effect on the level of schooling attained. The estimated sign is expected but the effect does not seem to be very precise. Value of household assets had an unexpectedly negative effect but was still statistically insignificant.

2.3 Community Characteristics

Community variables in the final estimating function included distance of the community to the nearest public school, job availability for children, urban or rural classification of the barangay, rates of return to both the elementary and college education, and the child's wage rate in the community. Only the rate of return to elementary education and the child's wage rate were statistically significant.

The rate of return to elementary education and college education tends to raise the household's demand for schooling and expected to positively affect the level of schooling. The rate of return to college education has the expected sign but it is statistically insignificant. The rate of return to elementary education is statistically significant but has a negative sign. This unexpected result may be due to the way that the indicator was designed.

The measure used is the average rate of return for completing the sixth grade. It was computed by comparing the lifetime expected wage income of a worker with completed elementary education to one who has no education. Suppose that the highest increase in

expected wages occurs between the second and third grades (when the child acquires functional reading and writing skills), a child would tend to stop after the third grade. Thus, the probability of stopping after the third grade would be highest where the rate of return to elementary education is also the highest. An indicator that roughly uses the rate of return to completed elementary education would capture this high rate of return to third-grade completion. But it would not be able to incorporate the effect of stopping after that grade. It would, therefore, show a negative effect because the probability of attaining grade four or higher decreases as the rate of return to elementary education increases. A more refined measure of the rate of return to elementary education in the succeeding stages of empirical work would be able to examine this issue more closely.

2.4 Teacher and School Quality

Half a dozen variables indicating teacher and school quality used in the estimating function included the number of reference books per student, number of students per class, average score of the school's teachers in a diagnostic test, frequency of PTA meetings, number of desks, and expenditures on personnel per student. The first three variables showed a positive influence on the level of schooling attained but were statistically insignificant. The last three showed negative effects but only expenditures on personnel per student was statistically significant.

The results are best interpreted in the light of the analysis of the determinants of school quality in the previous section. Because school and teacher variables affect school quality in various ways, no general rule as to what directions are expected can be used. The statistically significant variable in this section, expenditures on personnel per student, is interpreted in this light. It emerged as a significant determinant positively affecting school quality. Hence, it is interpreted as a representative of variables which tend to increase school quality. The other variables may also be interpreted with the same reference to the estimated results on school quality. But because of the absence of statistical certainty about their results, they are best reserved for the stage when more precise estimates can be used.

Expenditures on personnel per student has a statistically significant and negative effect on the level of schooling. This result supports the hypothesis that better quality schools tend to have stricter standards. Therefore, the probability that the child will be retained at whatever grade he is in, increases with school quality. However, since this finding has significant implications on educational policy, it should be used with caution until more detailed analyses in the later research stages could examine all its ramifications. In the meantime, it can perhaps be taken as indirect corroborating evidence that PRODED-related measures affect school quality, as concluded in the previous section on the determinants of school quality.

TERTIARY EDUCATION AND THE LABOR MARKET IN THE PHILIPPINES: INDIVIDUAL RATIONALITY AND SOCIAL MYOPIA

Cayetano Paderanga, Jr.

I. INTRODUCTION

One of the most pressing problems of the Philippines today is unemployment. The number of unemployed workers has been estimated at 2.003 million as of October 1988, the most recent period for which the information is available. This is 8.5 percent of a total labor force of 23.5 million. At the same time, the underemployment rate was measured at 35 percent for 1986 representing a worsening from 1956 when labor force surveys started, when unemployment was measured at 14 percent and the underemployment rate was 21 percent.[1] (Table A.1) By any standard, finding a long–term approach to employing its labor force is an urgent task for the country.

One feature of the Philippine employment problem is the large amount of educated unemployed. Of the unemployed, 40 percent have complete or incomplete tertiary education. The unemployment rate for those with college education is 2.7 percent (Table A.2). This is not a recent phenomenon. For example, the data for 1976 show a similar level of under–utilization for highly educated workers. Yet, the influx of students into institutions of higher learning continues unabated. Since the Second World War, the number of tertiary level schools has increased by 90.6 percent (Table A.3), and enrolment has grown from 154,223 to 1,115,832, an increase of 86 percent (Table A.4). It would seem that the level of unemployment and the poor prospects of even those with higher learning have not registered in the consciousness of students.

Finding the roots of this problem is important because this is a potential point of dissatisfaction dangerous for political stability, and because continued expenditure, both public and private, in higher education is a heavy cost that may be avoidable to some extent. Finally, the phenomenon may be a manifestation of more deep–seated flaws in our pattern of development, with serious implications for public policy.

The problem of labor under-utilization can be divided into two parts: structural and conjunctural. The latter was what would be eliminated with appropriate monetary and fiscal

[1]The rates are not directly comparable because the 1956 figures include those 10 to 65 years old in the labor force , with the past week as the reference period. After 1976, the labor force was redefined to include only those 15 to 65 years old and the past quarter as the reference perid. More comparable but much earlier information for 1976 give the unemployment and underemployment rates as 5 and 10 percent, respectively.

policies. The former was the large residual of unutilized labor traceable to the structure of the economy. Trying to climb out of the recession of 1984 and 1985, the government could go for a "quick fix" that would immediately solve conjunctural labor under–utilization. However, this would increase the cost of later modifying its industrial structure, in order to solve structural under–utilization. The alternative was to start modifying the industrial structure, which would require more deliberate choice and, therefore, would mean slower resuscitation of industries. This would avoid the extra cost of reviving industries that would disappear with more appropriate policies anyway.

The economic recovery in 1987 and 1988 has decreased the open unemployment from 11.1 percent in 1986 to 8.5 percent at the end of 1988. During that period, underemployment has remained high, fluctuating between 36 percent and 33 percent. The remaining high levels of open unemployment indicate that a major portion of the Philippine employment problem may be conjunctural. One corroboration is in the pattern of educated labor utilization. In the following sections, the character of the labor utilization problem for educated labor in the Philippines and its relationship to tertiary education will be explored.

II. PRODUCTION AND EMPLOYMENT OF TERTIARY GRADUATES

1. The Tertiary Education Sector[2]

The tertiary education sector in the Philippines is dominated by privately managed, privately funded institutions, although public institutions have had relatively rapid growth in the past fifteen years. Because of this, the sector supplies a large "quantity" of education at low cost to the public treasury. Almost all secondary school graduates enter some kind of post–secondary programs and about 35 percent of the age cohort is in college, approximately the same rate as in most European countries and Japan. In contrast to many other developing countries, the participation rate is as high for females as for males. Females constitute over 50 percent of almost all college and university enrolments.

One of the system's main strengths is its diversity in content, quality, and price; but most programs are job–oriented, with heavy concentration in business, engineering, teaching or nursing. Both non–degree courses of one or two years' duration and four–year bachelors' degree courses are available, with curricula offering transition from the former to the latter if students are able to pass the NCEE. Part–time as well as full–time programs are offered and the system provides easy reentry, second chances and second choices. As a result, the system offers a wide array of choices to students with varying backgrounds, preferences and financing capabilities. It is flexible enough, for example, to allow a student with little means to acquire an inexpensive college degree, work at a low–paying job and enroling part–time in his preferred course.

[2]Largely based on World Bank (1988).

The weaknesses are related to its advantages, that is to its being mostly privately funded. Quantity is offered often, at the expense of quality: college faculty are poorly paid and trained, only a minority having any graduate training. Libraries and laboratories are non–existent or ill–equipped in most institutions, and expensive products such as science education, graduate training and research are only minimally provided. It also means that potential students from low–income families cannot afford higher education; those who can attend the lowest-cost, lowest–quality institutions.

As mentioned earlier, the system is dominated by the private sector. Eighty–five percent of all college and university students attend private institutions which are run with virtually no subsidy from the government (Table 1). Both for–profit and non–profit private schools are permitted. And the paucity of slots in public educational institutions combined with a high private rate of return led to an excess demand for higher education, making it a profitable industry for private investment during much of the period since independence.

The rest of this section presents, first, the differences between the public and private sectors in such variables as size, product mix, cost, quality, price, student background, and future labor market experience.

1.1 The Private Sector

There are two types of private institutions, nonprofit and for–profit. Nonprofit schools are not permitted to distribute dividends or sell shares of ownership. They are predominantly religious in origin, but a substantial group of secular nonprofits exists. For–profits are permitted to distribute dividends (but not all avail themselves of this opportunity and in many cases the profits are small). In the Philippines, the nonprofits are called non–stock corporations while the for–profits are called stock corporations (whose shares are sometimes traded on the stock exchange) or proprietary businesses. This terminology will be adopted in the rest of this paper.

Because they largely depend on tuition and fees, private schools are vocation–oriented. Over 90 percent of all enrolments are in vocation–oriented programs. Most popular are business and engineering, which together attract over half the student body. Only 4 percent of all students major in the humanities, social science, natural science and mathematics. Moreover, many private schools teach engineering cheaply, as a theoretical subject. Engineering graduates are perceived to be generally book–oriented, attuned more to solving textbook rather than practical problems.

Faculty salaries are low, with most faculty members receiving less than the national poverty line.[3] Although firm information is not available, data from the Private Education Retirement

[3] As a qualification, the national poverty line measures the needs of a family, which typically includes more than one income earner.

TABLE 1

Enrolment in Public and Private Tertiary Education: SY 1965–66 to 1984–95 (in 000s)

Year	Public		Private		Total
	Number	Percent	Number	Percent	
1965–66	59	11.2	468	88.8	527
1966-67	61	11.0	493	89.0	554
1967-68	62	10.3	539	89.7	601
1968–69	62	9.9	565	90.1	627
1969–70	65	10.2	573	89.8	638
1970–71	67	10.3	584	89.7	651
1971–72	72	10.5	614	89.5	686
1972–73	76	10.2	667	89.8	743
1973–74	89	11.2	702	88.8	791
1974–75	98	13.8	614	86.2	712
1975–76	106	13.7	666	86.3	772
1976–77	114	14.3	685	85.7	799
1977–78	123	14.8	710	85.2	833
1978–79	152	13.5	977	86.5	1129
1979–80	184	15.2	1025	84.8	1209
1980–81	185	14.7	1069	85.3	1254
1981–82	179	13.7	1128	86.3	1307
1982–83	194	14.4	1155	85.6	1349
1983–84	211	15.1	1180	84.8	1391
1984–85	230	15.3	1274	84.7	1504

NOTE: No data available for SY 1985–86, for SY 1986–87 the total enrolment is 1,115,832.

Source: MECS, Philippine Education Indicators, 1965–85.

Annuity Association and discussions by World Bank authors with several institutions indicate that monthly salaries range between P/1,400 and P/5,000 with most clustered below P/2,000. Most faculty members (71 percent) have only a bachelor's degree.[4] There are very few PhDs in private schools and a large portion of these hold graduate degrees in education. The very low rate of graduate training for faculty members is related to their low salaries and the absence of subsidies to graduate programs. Faculty members will acquire costly graduate degrees only if their training is subsidized or if a sufficient wage premium is paid to cover the costs. Both of these are minuscule or absent in the private sector.

Labor costs are lowered further by hiring part–time faculty. They are cheaper because they are typically paid less per course and are not entitled to fringe benefits. The student–faculty ratio is also higher in proprietary institutions than in the public sector, as is the student–administrative staff ratio, with the non–stock institutions in between. Since size has been constrained by government regulations, heavy teaching loads (20–30 hours per week in the private sector) are used to attain their high faculty–student ratio. These two factors contribute to less commitment by the faculty to their students, and very little research and further training.

Vertical integration is another characteristic of higher education in the Philippines (Table 2). Two–thirds of all tertiary schools (which are predominantly private) has affiliated elementary and secondary schools which share their buildings and facilities, and most others (mainly proprietary institutions) offer only non–degree post-secondary vocational courses. Only 15 percent of the institutions is degree–granting schools with no affiliated schools.

Through the various methods described above, private schools, especially proprietary institutions, lower their costs. Additional economies are achieved with respect to supplies and other current expenditures. As a result, labor cost per student is only one third as high in private as in public tertiary schools, while current cost per student is only 40 percent as high and can be covered by the tuition fee, which averaged P/1,418 per year (WB Annex Table A4.11).

1.2 The Public Sector

The public sector is subdivided into several categories: the University of the Philippines (UP) established in 1908 to provide high quality higher education to a select few and, since expanded, to become a system with nine autonomous campuses; the more recently chartered public institutions established as a political response to the popular demand for mass higher education with a statutory base that gives them considerable autonomy; and the unchartered colleges and community colleges that are directly supervised by the DECS.

[4]This is for the whole tertiary education system. Only 4 percent have a Ph. D. and they are heavily concentrated at the University of the Philippines and a few other chartered state institutions.

TABLE 2
Vertical Integration

	Number of Institutions of Higher Learning (IHLs) offering:					
	HS[a] and nondegree voc–tech	Nondegree voc–tech only	Elem. and HS and BS/BA[b]	HS and BS/BA[b]	BS/BA only[c]	Total
Public						
Chartered	0	0	29	42	7	78
Nonchartered	66	19	5	74	18	182
Total Public	66	19	34	116	25	260
	(25)	(7)	(13)	(45)	(10)	
Private						
Catholic	1	4	107	36	28	176
Protestant	3	0	13	7	5	28
Secular nonprofit	7	40	34	20	28	129
Total Nonprofit	11	44	154	63	61	333
	(3)	(13)	(46)	(19)	(18)	
Stock	11	62	59	53	40	225
Proprietary	3	77	23	18	18	139
Total For–Profit	14	139	82	71	58	364
	(4)	(38)	(23)	(20)	(16)	
Total Private	25	83	236	134	119	697
	(4)	(26)	(34)	(19)	(17)	
GRAND TOTAL	91	202	270	250	144	957
	(10)	(21)	(28)	(26)	(15)	

[a]HS = high school

[b]Virtually all of these schools also offer nondegree vocational technical courses.

[c]Most of these IHLs also offer graduate degree programs.

Note: Figures in parentheses are row percentages.

Source: World Bank (December 1988), Annex Table A4.7.

Within the public sector, there also exists a diversity in programs. The University of the Philippines has a large graduate component (21 percent), while the unchartered institutions have a heavy non–degree component (40 percent). This is consistent with the origin and intended consumers of these institutions. UP was established as a high–quality selective university while the newer public colleges are nonselective, catering to a mass rather than an elite clientele. The evidence points to a lesser ability by public tertiary schools compared to their private counterparts to produce graduates at low cost (Table 3). While the private sector dominates higher education, 20 percent of all enrolments are in the public sector, which spends about half of all funds spent in tertiary education (Table 4).

All studies show large variations within the public sector. The University of the Philippines is at the top of the hierarchy, enrolling 10 percent of the students and receiving one–third of the total budget of the entire system, with an average operating expenditure per student of P/21,000 in 1986. At the lower end, several schools spend less than one–tenth of this amount. The newer state colleges tend to spend much less per student, take in a student body from poorer family backgrounds and with lower NCEE scores. Their graduates also tend to earn less in the future (Arcelo and Sanyal, 1987).

Many state colleges have substantial secondary programs, often sharing buildings and facilities with college courses. Overall, 32 percent of their enrolment is at the elementary and secondary levels. In many instances, this exceeds 50 percent. While this may mean lower costs through fuller utilization of facilities, it may also downgrade the quality of higher education. These state colleges also tend to be small, many with fewer than 1,000 students. While economies of scale have not been investigated for public schools, evidence from selected private schools in Metro Manila suggests that colleges with this number of students may be sub–optimal.[5]

1.3 Comparing the two sectors

The difference between the two tertiary education sectors can be briefly summarized as follows: the private sector through low salaries, use of part–timers and teaching loads resulting in high student–faculty ratios produce graduates at much lower cost than the public sector. The latter, at least among its higher quality institutions, concentrate on the basic courses such as the humanities and physical sciences more than private institutions, which tend to emphasize vocation–oriented courses.

2. Tertiary Graduates and their Employment

Two indicators often used to measure graduates' performance in the labor market are the gross rate of unemployment and the rate of "mismatch" between their training and their actual

[5]World Bank (1988): 90.

TABLE 3

Expenditure, Tuition and Assets per Tertiary Student 1984–85

	Expenditures per student on personnel	Total current expenditures per student	Capital outlays per student	Total assets per student: Manila	Total assets per student: outside Manila	Tuition per student	Tuition expenditures per student
Public							
Chartered	2,618	3,627	908	n.a.	n.a.	570	0.2
Unchartered	2,228	3,096	875	n.a.	n.a.	208	0.1
Total Public	2,530	3,492	899	n.a.	n.a.	478	0.1
Private							
Sectarian nonprofit	1,135	2,005	934	2,700	1,200	1,842	0.9
Secular nonprofit	671	1,160	688	1,100	2,100	1,164	1.0
For–profit	680	1,120	380	1,300	500	1,245	1.1
Total Private	839	1,418	603	1,600	900	1,418	1.0
GRAND TOTAL	1,098	1,748	649	n.a.	n.a.	1,278	0.7

n.a. = not available.

Source: World Bank, (December 1988), Annex Table A4.11.

TABLE 5
Ratio of Change in Employment by Highest Grade Completed to Total Tertiray Graduates: SY 1977-1978 to SY 1986-1987

School Year	Tertiary Graduates Graduates	Additional Employment	Change in Employment Tertiary Graduates
1977-78	103,625	167,000	1.61
1979-80	111,884	...	
1981-82	163,577	42,000	0.26
1982-83	167,084	118,000	0.71
1983-84	166,081	104,000	0.63
1984-85	254,899	76,000	0.30
1986-87	191,362	189,000	0.99

Sources NEDA, Philippine Statistical Yearbook, various issues.
DECS, Bureau of Higher Education.

work or profession. The former demonstrates their general acceptability to the final "users" of education, the employers.[6] A secular, persistent trend can be discerned even with complications by different phases of the business cycle. Mismatch, for some denotes the ability of the education sector to respond to demands by the labor market. The volume of mismatches is taken as a sign that the educational system is not training the right kind of workers. There is also waste in the form of unused training or further training of the worker in his new field

The data on employment of tertiary graduates show that the level of unemployment has not changed much over the last decade and a half (Table A.2). Data on the number of tertiary graduates for selected years from 1978 to 1987, the year with the most recent data, show that the labor market is absorbing only a small portion of the additional workers with college degrees and beyond (Table 5).

[6]This uses a narrow description of benefits from education and is used to portray what some sectors consider to be the main use of formal schooling.

TABLE 6

Classification of Male Household Heads by Occupation by Place of Residence and Utilization Using Education-Occupation Compatibility Test

Occupational Groups	UTILIZATION				
	Utilized		Under utilized	Total	
	U + %	U %	-U %	(N)	%
URBAN					
Professionals	11.1	82.2	6.7	(540)	100.0
Gov't. Off. & Admin.	22.2	77.8	-	(36)	100.0
Proprietors, Managers	42.1	13.5	44.4	(532)	100.0
Clerical Workers	39.6	14.8	45.6	(676)	100.0
Sales	53.3	6.5	40.2	(368)	100.0
Transport	48.2	10.6	41.2	(680)	100.0
Craftsmen	41.3	18.6	40.1	(1,396)	100.0
Manual Workers	55.1	2.0	42.9	(196)	100.0
Service Workers	28.7	29.9	41.5	(656)	100.0
Miners & Quarrymen	50.0	-	50.0	(24)	100.0
Farmers	52.1	13.8	34.2	(960)	100.0
Total	40.7	22.0	37.3	(6,064)	100.0

The other measure of the educational system's adequacy in responding to the labor market is the amount of "mismatch" between the training and actual occupation of workers (Table 6). Domingo (1974) indicates that in some occupations the percentage of workers with training geared for "higher" occupations (under–utilized) plus workers with training geared for "lower" occupations (over–utilized) can be as high as 86 percent. This is true for proprietors, managers, and farmers, for example. The fact that miners and quarrymen have a total of 100 percent over–and under-utilized may be due to absence of specific training for this occupation. This points to the weakness of this kind of analysis but that will be discussed later.

TABLE 6 (Continuation)
Classification of Male Household Heads by Occupation by Place of Residence and Utilization Using Education-Occupation Compatibility Test

RURAL					
Professionals	–	100.0	–	(192)	100.0
Gov't Off. & Admin.	20.0	80.0	–	(60)	100.0
Proprietors, Managers	34.8	30.4	34.8	(276)	100.0
Clerical Workers	28.6	14.3	57.1	(252)	100.0
Sales	33.3	22.2	44.4	(324)	100.0
Transport	36.1	30.6	33.3	(432)	100.0
Craftsmen	47.5	16.2	36.2	(960)	100.0
Manual Workers	47.6	4.8	47.6	(252)	100.0
Service Workers	40.7	7.4	51.8	(324)	100.0
Miners & Quarrymen	37.5	12.5	50.0	(96)	100.0
Farmers	41.7	19.0	39.3	(14,244)	100.0
Total	40.9	20.0	39.1	(17,412)	100.0

Source: Domingo (April 1974), Table IV.62.

Another published study[7] bearing on the issue of mismatch is Arcelo and Sanyal (1987). That study found that at least a third of all graduates obtain work outside their fields. However, it also arrived at the following conclusions:

a) The students' expectations with respect to income, employment, waiting period and returns to education were impressively realistic. Their experiences in the labor market also confirmed expectations. This realism is indicative of the merit and effectiveness of an informal word–of–mouth communication network.

b) The facts that the waiting period is much shorter (only two months in HELMS II compared to 6.3 months in HELMS I 1978 survey), and that income and the return to education are higher show that there have been some improvements in the labor market situation for college graduates.

c) The empirical data do not lend support to the much talked about problem of the educated unemployed and the frustration of graduates. If graduates are the source of social discontent, it is not because of the economic variables discussed here, viz. employment, income and other related variables. The reason must lie outside this domain.

III. INTERPRETATION AND RECOMMENDATION

The educational picture in the Philippines is mixed. On the one hand, we have one of the highest literacy rates in the world, comparable with developed countries like the United States and the United Kingdom. On the other hand a large portion of our labor force is unemployed or underemployed. In the education sector itself, we see two diverging trends. First, data show that a bigger and bigger proportion of our children are going to school and that more of them are going on to finish grade six and graduate from high school. The proportion going to college is also increasing. The second trend is discouraging. Data going back to the years before World War II indicate that scores on standardized tests by grade school children have been dropping. The data do not form one unbroken series, but there is enough continuity and overlap between the different types of tests to indicate that the seventies and eighties show a little recovery, although we seem to have much ground to make up for.

The most immediate problem that is said to confront the educational sector nowadays is the large pool of unemployed, highly skilled workers. These are products of the system and are,

[7]Some tracer studies on some graduates of various programs may have been done or may be in process by some agencies in connection with funding requirements, but these are not yet readily available, nor do they apply to other skill classes. For example, the tracer studies made by the National Manpower and Youth Council (NMYC) refer to graduates of their post-secondary vocational programs.

therefore, indications of its failure. The system, it is said does not produce the types of skills and workers that the economy requires.

Various solutions have been proposed. Two stand out. Belonging to the first type are proposals that call for national or sectoral manpower planning. Typically, these suggest that the economy's future needs for all types of workers be forecast and the schools allocate the number of graduation slots to fill the predicted demand. My rendition is probably an unfair over-simplification, but it captures the thrust of these proposals. However, experience with programs like these all over the world has not been good. Students have not been docile enough to funnel into the preferred occupations of the planners. They have been too independent for these types of programs (except, perhaps, in the centrally planned economies). Perhaps for good reason, because demand forecasts of planners have most often been wrong.

The other solution, which probably shares the philosophy of the first type of proposal, is to limit the number of students going on to college. In the Philippines, we have initiated this with the requirement that college entrants pass the National College Entrance Examination (NCEE). In the last few years, the entrance requirement has been progressively raised so that it now effectively keeps out significant portions of college hopefuls.

My thesis is that these two proposals, especially the second which is being practiced now, do not address the basic problem and will not solve it. For all its usefulness in transmitting to hopefuls their probable fate in college, the NCEE will not solve the problem of skilled unemployment and is practically useless in that sense. Instead of saving on resources, as it professes, the NCEE wastes resources by preventing substandard high school graduates from benefitting from extra years of incremental skills in college (no matter how substandard that college may be). As a result, unqualified workers are let loose in the labor market even before they are ready. A few more years in college could have made them better prepared for economic participation. The resulting restriction on choices and its implication on our freedom is too high a price to pay for results that are vaguely beneficial at best and may even be harmful.

The main reason that proposals to correct skilled unemployment in the educational sector will not work is that the defect is somewhere else, in the industrial structure. It just manifests itself in the phenomenon of unemployed college graduates. The solutions to the problem, therefore, lie in the industrial structure. Until this is addressed, all proposals pertaining to the educational sector will remain ineffectual. The reasons can be briefly traced.

At the start of our independence – by bits and pieces, and perhaps in some parts not wholly by design – we embarked on an industrialization strategy that emphasized the substitution of previously imported commodities with domestic goods, which were initially protected by tariffs and other arrangements. The idea behind this strategy was that domestic producers needed the early headstart in order to acquire some familiarity in the production of those goods. After the familiarization period, our producers would be able to compete on an even basis with foreigners.

At that time, we would benefit because we would not need to export other goods in order to buy those products from abroad.

This strategy is commonly accepted and most of our neighbors which have developed economically since then – Taiwan, Singapore and Korea, for example – have followed this tack. The difference is that in those countries, the protective phase was short lived, typically around five years. Within a decade government policy in these countries gradually removed the protection and transformed them into subsidies (sometimes hidden) for exports. These moves forced their producers to strive for efficiency and to exploit the beneficial effects of a wider market and mass production. Increased efficiency ultimately became available even to their domestic consumers.

In the Philippines, our industrialization moves got mired in a morass of administrative inefficiency and corruption, starting with import controls and reparations in the early 1950s to congressional lobbying and self–interested policy–making in the sixties and seventies. As time went on, our protected manufacturers became lazy and fat, prefering to concentrate their efforts on administrative and congressional lobbying rather than the nitty–gritty of increased efficiency on the factory floor. Our industrial policy–making, in turn, became self–conscious, insecure and inward–looking, focusing on the domestic market rather than ambitiously looking abroad. This attitude dictated the pattern of policy–making over the rest of that forty–five year period up to now.

The series of events and policies left an indelible imprint on the character of our industrial structure. By the end of the fifties, our manufacturing industries could be generalized as being import–substitution, import–dependent, capital–intensive and capital–biased. As an extension, our industrial policies and industries were also urban–biased. Stated briefly, in order to maintain this structure, our policies basically penalized our export and agricultural sectors in the form of lower prices for their commodities and higher prices for their inputs (than would be under an alternative system) These policies were also biased against labor usage.

All of the policies created a dual structure with a pampered, inefficient manufacturing sector with very high monopoly returns, which was unable to create the employment needed by an increasing labor force and penalized the rest of the economy with much lower economic returns. In the labor market, this dualism was reflected in higher than normal salaries in the protected manufacturing sector and low, sometimes subsistence, wages in the penalized sectors. This wage differential could not disappear because government policies artificially preserved it.

The rational student, therefore, was confronted with two choices. He could remain in the large, unprotected sectors and earn low wages. Or he could try to enter the working force of the protected industries with their high salaries. The drawback was that employment slots in these industries were few, and he may remain unemployed for substantial periods.

A substantial number chose the second option and endured the initial unemployment period. Anyway they could be rewarded when they finally got into the protected sector. This is the "queuing" phenomenon. In the meantime, a student could increase his chances of employment by increasing his credentials. One way was by amassing higher and higher degrees. Thus, a student just went on to higher and higher years of schooling. It accomplished two things: it kept him occupied, and it could decrease the period of unemployment. However, the unemployment period did not disappear.

With this background, it is apparent that skilled unemployment is just a manifestation of the response of rational students to the signals sent by a dualistic industrial sector. Any policy that leaves this basic structural arrangement intact will not make a dent on the unemployment phenomenon. That is why the NCEE should not be expected to solve the unemployment problem. That is not, of course, the main issue of this discussion; but with the information that it does not save resources, and with its implications on our freedoms, the NCEE as a screening device loses its appeal.

The main recommendation, in this brief recapitulation, is to refrain from trying to solve the skilled unemployment problem in the educational sector. It just raises false hopes, has bad side-effects, and will not work. The solution is in the industrial sector, through a redesigning of our industrial structure. That is where the work should begin.

TABLE A.1

Labor Force, Employment, Underemployment and Unemployment: 1956–88

	Labor Force	Employ-ment	Under-employment	Unemploy-ment	Employ-ment	Under-employment	Unemploy-ment
	(In Thousands)				(As percentage of the Labor Force)		
1956	8561	7702	1832	859	90.0	21.4	10.0
1957	8829	8199	...	630	92.9	...	7.1
1958	8976	8329	1921	647	92.8	21.4	7.2
1959	9116	8575	1614	540	94.1	17.7	5.9
1960	9116	8539	1996	577	93.7	21.9	6.3
1961	9713	9095	2380	618	93.6	24.5	6.4
1962	10266	9603	2413	662	93.5	23.5	6.5
1963	10233	9764	2855	469	95.4	27.9	4.6
1964	11296	10572	2937	724	93.6	26.0	6.4
1965	10764	10101	2486	663	93.8	23.1	6.2
1966	11757	10936	2681	821	93.0	22.8	7.0
1967	11776	10867	3062	909	92.3	26.0	7.7
1968	11371	10471	2797	900	92.1	24.6	7.9
1969	12046	11235	2289	811	93.3	19.0	6.7
1970	12297	11358	...	939	92.4	...	7.6
1971	13233	12534	1800	699	94.7	13.6	5.3
1972	13294	13217	1502	77	99.4	11.3	0.6
1973	13472	13262	1657	210	98.4	12.3	1.6
1974	15204	14479	1460	725	95.2	9.6	4.8
1975	15161	14517	1925	644	95.8	12.7	4.2
1976	16244	15427	1624	817	95.0	10.0	5.0
1977	15002	14334	2685	668	95.5	17.9	4.5
1978	16811	16101	3345	710	95.8	19.9	4.2
1979	16945	16233	...	712	95.8	...	4.2
1980	17308	16434	3565	874	95.0	20.6	5.0
1981	18422	17452	4403	970	94.7	23.9	5.3
1982	18473	17371	4711	1102	94.0	25.5	6.0
1983	20311	19212	6053	1099	94.6	29.8	4.4
1984	20969	19673	7633	1296	93.8	36.4	6.2
1985	21318	19801	4733	1517	92.9	22.2	7.1
1986	21578	20595	5524	2396	88.9	25.6	11.1
1987	22880	20795	5034	2175	90.9	22.0	9.1
1988	23506	21503	5547	2003	91.5	23.6	8.5

Sources: Canlas (1987), Table 7.
DOLE, Employment Report, 1988.
For underemployment rate: PSSH, series # 3–11 for 1956–62; Yearbook of Labor Statistics, 1973 for 1963–70; Paderanga (1988, Table 23) for 1971–80 and Employment Report, 1988 for 1981–87.

TABLE A.2

Number of Employed and Unemployed Persons by Highest Grade Completed: 1977–88 (in 000)

Year	Total	No Grade Completed	Elementary Total	Elementary 1st–5th grade	Elementary Grad.	High School Total	High School 1st–3rd year	High School Grad.	College Total	College Under-grad	College Grad.	Not Reported
1976												
Employed	14238	943	7725	4173	3552	3017	1588	1429	2443	1217	1226	110
Unemployed	780	18	288	118	170	264	133	131	202	111	91	8
1977												
Employed	14334	983	7698	4231	3467	3277	1663	1614	2291	1024	1267	85
Unemployed	668	17	260	112	148	225	113	112	163	93	70	3
1978												
Employed	16118	1048	8549	4640	3909	3918	1998	1920	2545	1111	1434	59
Unemployed	693	21	270	112	158	222	108	114	176	107	69	3
1980												
Employed	16434	1051	8584	4601	3983	4020	2001	2019	2726	1195	1531	53
Unemployed	874	33	306	149	157	299	137	162	230	140	90	7
1981												
Employed	17452	1051	9164	4850	4314	4271	2153	2118	2941	1304	1637	25
Unemployed	970	32	323	141	172	336	161	175	279	163	116	1
1982												
Employed	17371	945	8979	4717	4262	4344	2129	2215	3081	1402	1679	21
Unemployed	1102	32	335	164	171	378	161	217	356	201	155	1
1983												
Employed	19366	1078	9883	5171	4712	5035	2565	2470	3355	1558	1797	15
Unemployed	1003	15	268	122	146	360	134	226	359	207	152	1

TABLE A.2 (Continuation)

Number of Employed and Unemployed Persons by Highest Grade Completed: 1977–88 (in 000)

1984												
Employed	19632	1056	9897	4979	4918	5192	2475	2717	3474	1573	1901	12
Unemployed	1548	23	393	146	247	576	228	348	555	309	246	1
1985												
Employed	19801	979	9859	5015	4844	5403	2469	2934	3554	1577	1977	4
Unemployed	1517	16	330	131	199	621	204	417	551	296	255	–
1986												
Employed	20595	1007	10191	5036	5155	5791	2650	3141	3596	1627	1969	9
Unemployed	1472	25	327	128	199	529	193	336	588	286	302	2

Sources: DOLE, Yearbook of Labor Statistics, various issues.
DOLE, Employment Report 1988.

TABLE A.3
Number of Public and Private Schools (Tertiary Level): SY 1945–46 To 1986–87

School Year	Total	Public	Private
1945–46	110	5	105
1946–47	89	12	77
1947–48	225	12	213
1948–49	309	13	296
1949–50	377	14	363
1950–51	416	15	401
1951–52	426	15	411
1952–53	425	15	410
1953–54	405	16	389
1954–55	382	26	356
1955–56	379	28	351
1956–57	388	31	357
1957–58	279	38	241
1958–59	387	38	349
1959–60	407	41	366
1960–61	384	45	339
1961–62	400	45	355
1962–63	435	36	399
1963–64	470	36	434
1964–65	499	36	463
1965–66	527	87	440
1966–67	669	111	558
1967–68	715	47	668
1968–69	705	110	595
1969–70	689	94	595
1970–71	634	37	597
1971–72	591	37	554
1972–73	613	44	569
1973–74	628	44	584
1974–75	646	85	561
1975–76	754	126	628
1976–77	817	168	649
1977–78	938	229	709
1978–79	947	333	614
1979–80	997	290	707
1980–81	1016	294	722
1981–82	1038	316	722
1982–83	1063	324	739
1983–84	1157	319	838
1984–85	1175	359	816
1985–86	1078	293	785
1986–87	1169	351	818

Source: NEDA, Philippine Statistical Yearbook, 1980 and 1987.

TABLE A.4

Enrolment in Government and Private Schools (Tertiary Education): SY 1954–55 to Sy 1986–87

School Year	Tertiary		
	Total	Government	Private
1954–55	154,233	...	154,233
1959-60	239,525	...	239,525
1964–65	381,439	...	381,439
1969–70	638,000	65,000	573,000
1970–71	651,000	67,000	584,000
1971–72	686,000	72,000	614,000
1972–73	743,000	76,000	667,000
1973–74	791,000	89,000	702,000
1974–75	712,000	98,000	614,000
1975–76	772,000	106,000	666,000
1976–77	799,000	114,000	685,000
1977–78	833,000	123,000	710,000
1978–79	1,129,000	152,000	977,000
1979–80	1,209,000	184,000	1,025,000
1980–81	1,254,000	185,000	1,069,000
198–82	1,307,000	179,000	1,128,000
1982–83	1,349,000	194,000	1,155,000
1983–84	1,391,000	211,000	1,180,000
1984–85	1,504,000	230,000	1,274,000
1985–86	...	...	...
1986–87	1,115,832	...	...

Sources: NEDA, Philippine Statistical Yearbook, 1974 and 1988.
DECS, Philippine Education Indicators, 1965–85.

TABLE A.5
Number of Employed and Unemployed Persons by Highest Grade Completed: 1977–78
(in percent)

Year	Total	No Grade Completed	Elementary			High School			College			Not Reported
			Total	1st–5th grade	Grad.	Total	1st–3rd year	Grad.	Total	Undergrad	Grad.	
1976												
Employed	100.00	6.62	54.26	29.31	24.95	21.19	11.15	10.04	17.16	8.55	8.61	0.77
Unemployed	100.00	2.31	36.92	15.13	21.79	33.85	17.05	16.79	25.90	14.23	11.67	1.03
1977												
Employed	100.00	6.86	53.70	29.52	24.19	22.86	11.60	11.26	15.98	7.14	8.84	0.59
Unemployed	100.00	2.54	38.92	16.77	22.16	33.68	16.92	16.77	24.40	13.92	10.48	0.45
1978												
Employed	100.00	6.50	53.04	28.79	24.25	24.31	12.40	11.91	15.79	6.89	8.90	0.37
Unemployed	100.00	3.03	38.96	16.16	22.80	32.03	15.58	16.45	25.40	15.44	9.96	0.43
1980												
Employed	100.00	6.40	52.23	28.00	24.24	24.46	12.18	12.29	16.59	7.27	9.32	0.32
Unemployed	100.00	3.78	35.01	17.05	17.96	34.21	15.68	18.54	26.32	16.02	10.30	0.80
1981												
Employed	100.00	6.02	52.51	27.79	24.72	24.47	12.34	12.14	16.85	7.47	9.38	0.14
Unemployed	100.00	3.30	33.30	14.54	18.76	34.64	16.60	18.04	28.76	16.80	11.96	0.10

TABLE A.5 (Continuation)
Number of Employed and Unemployed Persons by Highest Grade Completed: 1977–78
(in percent)

1982												
Employed	100.00	5.44	51.69	27.15	24.54	25.01	12.26	12.75	17.74	8.07	9.67	0.12
Unemployed	100.00	2.90	30.40	14.88	15.52	34.30	14.61	19.69	32.30	18.24	14.07	0.09
1983												
Employed	100.00	5.57	51.03	26.70	24.33	26.00	13.24	12.75	17.32	8.05	9.28	0.08
Unemployed	100.00	1.50	26.72	12.16	14.56	35.89	13.36	22.53	35.79	20.64	15.15	0.10
1984												
Employed	100.00	5.38	50.41	25.36	25.05	26.45	12.61	13.84	17.70	8.01	9.68	0.06
Unemployed	100.00	1 49.	25.39	9.43	15.96	37.21	14.73	22.48	35.85	19.96	15.89	0.06
1985												
Employed	100.00	4.94	49.79	25.33	24.46	27.29	12.47	14.82	17.95	7.96	79.8	0.02
Unemployed	100.00	1.05	21.75	8.64	13.12	40.94	13.45	27.49	36.32	19.51	16.81	--
1986												
Employed	100.00	4.89	49.48	24.45	25.03	28.12	12.87	15.25	17.46	7.90	9.50	0.04
Unemployed	100.00	1.70	22.21	18.70	13.52	35.94	13.11	22.83	39.95	19.43	20.52	0.14

Sources: DOLE, Yearbook of Labor Statistics, various issues.
DOLE, Employment Report 1988.

TABLE A.6

Budget of the Department of Education, Culture and Sports Share of National Government and GNP: 1956–57

Year	Amount	Percent of National Budget
1956	178,668,605	29.68
1957	198,383,485	31.53
1958	208,718,340	26.95
1959	224,659,635	25.18
1960	247,386,570	27.50
1961	306,879,520	28.08
1962	352,029,968	29.59
1963	404,771,350	29.27
1964	507,155,150	25.72
1965	555,250,130	26.41
1966	596,211,624	29.77
1967	646,123,570	31.16
1968	688,909,856	30.26
1969	780,265,341	26.86
1970	829,945,302	24.97
1971	1,004,394,189	27.03
1972	1,093,620,009	26.23
1973	1,296,695,883	6.33
1974	1,496,355,000	17.18
1975	1,643,183,000	11.33
1976	1,681,387,000	7.51
1977	2,040,000,000	7.45
1978	3,195,276,000	11.14
1979	3,447,234,000	10.70
1980	3,414,378,000	9.01
1981	3,827,280,000	7.61
1982	4,387,012,000	7.68
1983	5,471,395,000	8.85
1984	5,613,082,000	10.50
1985	6,145,907,000	10.54
1986	8,712,162,000	12.92
1987	12,321,912,000	15.53

Sources: NEDA, Philippine Statistical Yearbook, 1988.
NEDA, National Income Accounts, various issues.

TABLE A.7

Private Costs of Higher Education Per Student Per Semester, 1987

	Tuition fees	Books & Supplies	Transport & other	Total	Tuition as % of total
Public					
UP	1,077	429	823	2,329	46
Others	429	368	700	1,497	29
Private					
Catholic	2,039	526	809	3,374	60
Protestant	1,204	448	704	2,356	51
Secular non–profit	899	379	526	1,804	50
For–profit	1,223	468	809	2,500	49
Average	1,227	457	775	2,459	50

Source: World Bank (December 1988), Annex Table A4.13.

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PART IV

ECONOMIC AND SOCIAL IMPACTS OF DEMOGRAPHIC TRENDS

POPULATION PROCESSES AND PHILIPPINE SOCIAL INSTITUTIONS: THE IMPACT OF FERTILITY AND MIGRATION ON THE FAMILY, THE POLITICAL INSTITUTION, AND THE CHURCH

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I. INTRODUCTION

International concern over the constricting effects of population growth on Third World economic development in the 1960s and '70s triggered a barrage of demographic research in the Philippines. Reflecting the availability of external funds earmarked for population control and the overall worldwide 'explosion' in population-related literature, this period produced a plethora of local studies aimed at contributing to the formulation of appropriate family planning programs and policies.

While mortality and migration as demographic processes had a share of the literature produced during this period, the bulk of the researches focused primarily on fertility. Mortality remained the limited concern of medical researchers and epidemiologists until the mid-70s and the '80s when health became a social science issue to be explored in relation to, and apart from, fertility. Even at present, those who conduct studies on child mortality, foetal loss, tropical diseases, and so forth, constitute a minority of demographers and social scientists, compared with nearly every demographer, sociologist, and communication researcher who dabbled in fertility-related research during the heyday of population studies in the '70s.

Migration research in the Philippines can be traced to a slightly different developmental route. As in other countries, concern with internal migration was an offshoot of the problems accompanying urbanization and decentralized planning, while sporadic interest in external migration in the '60s and '70s was spurred by brain drain and the one-way movement of Filipino migrant labor to specific areas where their services were demanded: Hawaii and California in the early decades of the century; Kalimantan, Indonesia, Vietnam, Thailand, and Guam in the 1960s; and for professionals, the US and Canada from the '50s to the '70s (Arcinas, Bautista and David 1986).

The growth in the literature on the temporary migration of overseas contract workers in the 1980s, however, resulted from: (1) the rising demand for such labor in the Gulf region, Europe, Japan, Hongkong, and Singapore; (2) the many tales of exploitation at each phase in

the odyssey of migrant laborers which need systematic documentation; and (3) the policy of encouraging the export of Filipino labor to generate revenues for the state and to mitigate the problem of unemployment.

A review of Philippine population studies indicates not only the preponderance of fertility-related researches but also an emphasis on antecedent conditions and determinants of population processes relative to their impact and consequences. Many of the studies conducted in the Philippines have tried to analyze, through multiple regression techniques, the various sociological, psychological, economic and demographic influences on fertility levels and differentials (Ruprecht and Jewett 1975).

Herrin (1982) notes this state of affairs in his own review, particularly the limited number of quantitative studies on the consequences of demographic changes in the Philippines. He attributes this to: (1) the lack of adequate and reliable data that would allow such analysis; and (2) the "persuasive rhetoric of the 1960s regarding the adverse consequences of rapid population growth." Since government was already convinced of the need to support fertility reduction policies and programs, there was little reason to conduct detailed studies that would show the presumed adverse consequences of high fertility levels on the national and family well-being.

It should be noted that the relative neglect of impact studies is not unique to the Philippines. Berelson's review (1976) of the research needs raised by various authors, working within and outside international organizations, reveals that unlike our knowledge of socioeconomic and cultural factors influencing demographic change, the state of knowledge on the consequences of population processes is grossly inadequate. McNicoll (1984) provides a partial explanation for this. He states that one of the reasons for the little attention given to "consequence" studies is that "the subject is not quite part of demography proper but rather of other fields concerned with understanding social, economic and environmental change."

1. The Focus of the Review

To assert that the effects of demographic variables on socioeconomic and cultural factors are not well specified does not mean that the existing literature has nothing to say about some of these effects. A few studies draw attention to the impact of population changes on specific sectors or on substantive areas of interest (e.g., assessments of effects of fertility changes on family structure, functions, dynamics and on women's status). Some of the consequences of such changes can also be abstracted from researches which are mainly concerned with determinants of demographic processes and from state-of-the-art papers on women, the family, the church, and migration.

This paper aims to describe the sociocultural and economic impact of population processes. It specifically focuses on the consequences of changes in fertility and migration since those of mortality are straightforward. The literature is organized along impacts on specific Philippine social institutions. Ideally, these institutions would include the family, economy, the political, educational, religious and military. But in the absence of literature on the impact of fertility and migration on the military and inasmuch as both the economy and education are covered by other papers in this volume, this review of the literature focuses on the consequences of fertility and migration for the family, the political institution, and the church.

An institutional analysis, which is often under-utilized, sensitizes the researcher to particular structures and processes which may not be deemed important by social scientists operating only at the macro or micro levels within specialized areas of expertise. It provides a way by which concrete insights into structures and processes, generated at the micro level from individuals, households, or specific geographic communities, can be linked to more abstract and macro level entities like the national political configuration or the national economy. It can subsume and combine analyses of individuals, households, and communities with a more sectoral perspective, e.g. women, labor, etc. Furthermore, institutional analysis can easily incorporate subjective factors like values into discussions of objective dimensions (e.g. organizational structure). Without a clear idea of the complexity of structures and processes within and between societal institutions, policy options are bound to be extremely limited.

The paper attempts to examine the impact of fertility and migration on specific institutions, based on existing literature and making use of the following operational dimensions of each of the specified institutions. These dimensions do not exhaust all possibilities but they provide a good start.

The assertions on the impact of demographic processes on the three key institutions in the paper subsume the implications of these processes for specific sectors. The discussion of the consequences of fertility and migration for the family includes a special sub-discussion on women while that for the political and religious institutions revolves around implications for the urban poor, ethnic tribal groups and grassroots organizations.

Institution	**Some Institutional Dimensions**
Family	Family Structure nuclear or extended patriarchal or matriarchal matrilocal or patrilocal inheritance structure Family Welfare Variables health and nutritional status Economic dimensions income level labor and time allocation of members consumption and expenditures assets and liabilities Family Processes and Levels of Cohesion decision-making in the home child rearing husband-wife relations parent-child relations sibling relations relations with members outside the family Values and Norms Related to the Family
Political	Political Structure formal and informal organizations (community and sectoral at local and national levels) Political Processes policy formulation and decision making level and forms of participation/ resistance and potentials for conflict Political Values and Norms
Religious (Church)	Structure types and organization Processes Internal dynamics and social cohesion Policy formulation and decision–making Religious Values and Norms

2. Limitations of the Paper

This paper has at least two major limitations. Because of the current state of the literature, the three institutions could not be discussed comprehensively. For instance, the discussion on the impact of demographic variables on the church is confined to the Catholic Church and only to the ideological and policy aspects of the institution. The statements on the impact of fertility and migration on the structure and processes of the family are limited. Furthermore, the discussion of the effects on the political institution concentrates on implications for the social organizations of specific sectors like the urban poor and peasants. The political structure and dynamics are left out.

The second limitation has to do with the fact that the literature generally glosses over impacts on institutional or community levels. Hence, there is very little effort on the part of the researchers to link individual, household, and community variables to each other and to the institutional level. The lack of sensitivity to theoretical and empirical links among the different levels of analysis results, on the whole, in disjointed and fragmented studies which could not, as a collection, substantiate insights into demographic impacts on institutions. By integrating the existing research findings around institutional impacts, the authors may be guilty of an ecological fallacy, i.e., making assertions about one unit of analysis based on the examination of other units.

3. Organization of the Paper

The paper is organized into three sections: The first presents a synthesis of substantive research findings on the impact of fertility-related variables on the family and women, community-based organizations, the urban poor, ethnic groups and the church while the second looks at the effects of migration variables on the same institutions and sectors. Finally, the third section concludes the paper with a brief assessment of the trends and gaps in the literature and a presentation of proposals for policy direction and research agenda.

II. THE IMPACTS OF FERTILITY ON THE FAMILY, THE POLITICAL INSTITUTION, AND THE CHURCH

A. Impact of Fertility on the Family

1. Introduction

Sometime during the 1970s, economists and demographers became interested in assessing the impacts of fertility on the family. These researches used either "parity analysis" or "life cycle analysis" (see Ruprecht and Jewett 1975) or a combination of both in approaching the subject matter.

Parity analysis examines the level of certain economic, health, and social variables for various family sizes, parities, or birth orders. "What it seeks to discover is how the level of certain crucial variables – such as consumption nutrition, savings, labor force participation, education and health, change as the numbers and spacing of children change." Analysis consists of sorting the data and tabulating them according to family size. The resulting tabulations are then examined to determine the relationship between family size and the selected variable.

Studies on malnutrition in India and the Philippines illustrate this approach. These studies reveal that as family size increases, the daily per adult protein and calorie intake decreases. Per capita expenditures for food, medical care, and housing are also found to have declined with larger families while health problems and mortality increased with family size (cited by Ruprecht and Jewett 1975:4).

Studies using the life cycle approach examine the economic position of the family at various points in time over its life cycle using data obtained from detailed longitudinal studies. The economic position of the family is viewed as a function of its consumption needs and productive performance. Thus, in the early years of the family, consumption needs increase as children are born and grow. Family production also rises and continues to rise until the middle years of the family cycle. In the later years, both consumption and production diminish as children leave to establish new households.

The impact of fertility on the family can be abstracted directly or indirectly from family researches undertaken by sociologists, psychologists and anthropologists. Revolving for the most part around issues and changes in family structure and relationships in the face of increasing modernization, this research stream was not significantly affected or influenced by the increasing emphasis on population and demographic issues. Thus, parity and life cycle analysis hardly figured in their discussion of changes in family structure and processes.

On the basis of what they have to say about the impact of fertility on aspects of the family, these researches are of two types: the more traditional family studies summarized in Sevilla's (1982) state-of-the-art review and later discussions of family studies linking family sociology with demographic concerns.

The first type, consisting of descriptive studies on structure, composition, welfare situation of the family in the rural, urban, regional settings of varying socioeconomic situations, the health and nutritional status of children in particular, adolescent sexuality, marital instability, and family relationships among the very poor, do not explicitly mention the specific effects of fertility on family life and relationship although frequent references are made to the adverse effects of poverty, particularly in the urbanized areas of the country.

The second type reflects the intersection between family sociology and demography. Most of the researches under this category were done around the late 1960s and through the 1970s. The main interest, however, was in ascertaining the family-related determinants of fertility as these bear on women's labor force participation, a significant factor associated with fertility. Other researches such as those on family decision- making, processes of attitude formation and change, marital relations, communication between spouses, were undertaken since these related to population and were deemed important in helping plan effective population programs (Torres 1987).

The following discussion on the effects of fertility on the family is based on the demographic studies utilizing either parity or life cycle analysis, and on the family studies.

2. Effects on Family Welfare: Consumption Patterns, Health and Nutrition

An earlier review by Herrin (1982) presents the findings of Peek (1974) and Mangahas (1974) on family size impacts on income, expenditure, and savings. From the Philippine Statistical Survey of Households (PSSH) data of the Bureau of Census and Statistics (BCS) surveys of 1961, 1965 and 1971, Peek examined the effects of household size on savings (defined and per adult equivalent savings). Among the conclusions drawn were:

1. Gross dependency burden (not taking into account the contribution of the dependents on the family income) has a negative impact on the savings rate which is only to a small extent offset by economies of scale in consumption; and
2. There is a negative life cycle effect on savings and in terms of expected dependency burden, which more than offsets the positive economies of scale effect of savings (Herrin 1982:313).

Herrin points out the limitation of Peek's study, namely, the lack of explicit consideration of family size effects on family income. This effect is, however, taken into account in the Mangahas study. Mangahas considered both the relationship between family size and the number of working family members (family size affects family income, and consequently family expenditures) on one hand, and the relationship between family size and number of adult-equivalent consumers in the family on the other. This last variable (consumers in the family) and family income both determine family expenditures.

The interrelationships suggested are summarized by Herrin (1982:314): "increases in family size lead to increases in the family labor force and, in turn, to increase in the number of working members, which, in combination with the age of the household head, the education of the wife and (in urban areas) the labor force participation of the wife, then determine family income. In the second process, family size determines the number of equivalent-adult members in the family. In combination with family income, this, in turn, determines the consumption levels of the family."

In an earlier study, Power (1971) using the same data sets (1957, 1961 and 1965), also notes the influence of family size on expenditures and on saving-income ratio, particularly in the rural areas.

Tan and Tecson's (1974) later analysis of consumption patterns (adding the PSSH and BCS surveys of 1971) assesses the effects of family size on level and composition of expenditures among families belonging to different income classes and types. Results reveal significant coefficients of size for all items – positive for food, cereals, clothing, education and negative for transport and miscellaneous expenditures, alcohol and tobacco, housing and medical care. Some specific findings show that as family size increases, protein- rich foods become a luxury, particularly among blue-collar families. Education also becomes a luxury except for urban blue-collar families "whose elasticities for bigger-sized families are generally lower than those of smaller-sized households."

They also observe that, unlike in the United States where expenditures for necessary items increase with increasing family size, in the Philippines, the intercepts for some consumption items fall as size increases. This implies that for Philippine families, standards of living decline with increase in family size and a substitution of some items occur, specially those considered as luxury, with those deemed absolutely necessary.

Moreover, they also point out that, insofar as housing is concerned, the number of rooms occupied by households is determined mainly by income, not size of households. The number of rooms does not vary with size of households, specially if variations are examined for each income class.

This observation is also supported in Castillo's (1977) review which reveals that more than half of households have all family members sleeping together in one place/mat. Some variations of this pattern include sleeping in different mats, or sleeping separately but in the same room. Where there are grown-up daughters and the house has another room, daughters may sleep in a separate room. Given the low levels of income of majority of Philippine households, Castillo concludes that the larger the family size, the lower the quality of life.

Another study conducted by an interdisciplinary group of researchers from the University of the Philippines seeks to provide more information on the rural households' nutritional status, work participation and demographic behavior. The study, conducted in Laguna, consists of 576-household surveys in 1975 followed by intensive interviews in 1976, with a subsample of 99 households focusing on dietary intakes and time allocation (Evenson, Popkin and Quizon in Binswanger, *et al.* 1980).

The study discloses the following specific impacts on health and nutrition of the family members:

1. Family size affects significantly nutrient adequacy ratios: mother's education and time spent on food preparation has positive effects on nutrient intakes, holding food expenditures constant.

2. The effect of mother's employment on the quality of diet is negative, but income, wealth and mother's education are all positively associated with nutrient intake (Herrera 1977 cited by Evenson 1980). Engagement of mothers in income-generating activities was associated with decreases in the child's nutritional status.

Battad's (1977) analysis also reveals a negative effect of number of children less than six years old on children's nutritional status (particularly 2-4 years old) as measured by the ratio of the child's actual weight to the standard weight for age and sex. The nutritional status of children 6–23 months old was not affected by an additional preschooler in the family, indicative perhaps of the priority attention given to the youngest offsprings.

Studies on health and morbidity (Layo 1977) also document the important effect of family size on total illness in the household particularly the number of household members 0–5 years old and the number of older members aged 45 and over, controlling for such factors as education, per capita income, rural-urban residence, quality of drainage and ventilation and of water health beliefs and knowledge. For acute illness, the best predictors are demographic variables particularly the number of household members 0–5 years old.

Castillo (1979:140) cites studies of the Food and Nutrition Research Institute (FNRI) and the Philippine Business for Social Progress (PBSP) on the relationship between childbearing

and nutrition. According to the FNRI study, the mother suffers most from malnutrition, which is most acute when she is pregnant or nursing. It is usually the father and the children who have the largest share of food at mealtimes. Each pregnancy leads to further dissipation of the mother's supply of nutrients, thus making "the incidence of malnutrition more common among women with more than three children." Poor nutritional status of mothers leads to higher mortality rates of the fetus (due to abortion, miscarriage and stillbirth) and among infants/toddlers. PBSP studies from 1973–1976 corroborate this: of the 970 women with preschool children in three urban and three rural low-income communities, 522 or 54 per cent have experienced foetal loss or infant toddler mortalities. Urban women have had twice as many miscarriages and abortions than rural women who, however, have experienced more toddler deaths.

3. Effects on Parents and Children

3.1 Effects on Parents

3.1.a Health Effects

The literature on the health effects of fertility are based mainly on studies done in the West. Nevertheless, the findings of these studies are also relevant to the Philippines. Researches in the United States (Jaffe and Polgar 1964) on maternal deaths from 1951–1961 show the steady increase of maternal mortality with advancing age (5.1 per 10,000 live births for mothers under 20 years of age to 34.3 for women 40 years old and over). For all age groups except 40 and above, maternal mortality has also increased with parity [cited in International Planned Parenthood Federation (IPPF) 1970].

In Africa, Guttmacher (in IPPF 1970) shows that anemia associated with fertility is a major factor affecting maternal deaths. Frequent childbearing does not allow the woman to build up hemoglobin, which she can only do by resting between births. The lack of hemoglobin may lead to heart failure during late pregnancy or during delivery. Akesheh (in IPPF 1970) also found that multiparity increases the risk of rupture of the uterus, postpartum hemorrhage, pre-eclamptic toxemia, accidental hemorrhage, placenta praevia, disproportion and anemia, among mothers. As a general rule, maternal mortality is more common among older women than among younger women, among "worn-out women of high parity and low socioeconomic status, than among those with low parity" (IPPF 1970).

3.1.b Labor Force Participation

Having many children puts pressure on the parents and influences both parental activity and division of labor. Studies in industrialized societies (Clausen and Clausen 1973) indicate the higher frequency of moonlighting husbands with larger families, to augment family income.

The mother of several children, on the other hand, is less likely to take a job during the early years of the life cycle.

Other studies, such as those on time allocation by households (Smith 1970) indicate that as the number of young children increases in the family, the number of hours men work per year also increases but the number of hours women work decreases. With respect to labor force participation, college women stop working to a significantly greater extent than other educational groups when they start having children (De Tray 1972).

The effects of family size on parents' and children's time allocation are demonstrated in the Evenson *et al* (1980) survey *cum* intensive case studies of households in Laguna which were cited earlier. A number of analytical papers and reports relevant to this discussion was published from this survey.

Focusing on the effects of children on parental time and allocation. Boulier shows that children of all ages in the family stimulate fathers to work longer hours in income-generating activities at the expense of leisure. This was also true of mothers with older male and female children who could take over child care. The presence of older children not only increased their working hours but their leisure time as well. In contrast, mothers with younger children had to reduce the time they allocate for both income-generating activities and leisure.

Illustrations of the magnitudes of these changes are disclosed in the regression analyses which were undertaken. For instance, Boulier (1976:19-20) claims that:

"Each additional infant reduced a mother's work time by about four hours per week and leisure by more than six hours per week. Child care time increases by more than nine and one-half hours per week and home production time by one hour per week. Other pre-school children increase child care time by five and one-half hours per week and increase home production by about two hours per week, both at the expense of leisure, with a slight increase in work time. The influence of older children tend to substitute for mothers' work time... Older female children, on the other hand, reduce mothers' home production time by three and one-half hours per week, resulting in increased work time (except for 13– 15 year old females) and a large increase in leisure..."

Although the overall regression results for economic and demographic variables in small families (1–3 children) and large families (4 or more children) did not differ significantly, it was interesting to note that the impact of a young child on a mother's child care time differed quantitatively. In small families, an additional child raises child care time by about 11.2 hours per week and an older preschool child by 5.6 hours. For large families, the increases are 6.1 and 4.5 hours per week, respectively. Mothers' leisure hours decrease more in small families

than in large families. Boulier (1976) explains this in terms of "economics of scale" and older children's contributions to the parents. On the other hand, this time differential may be indicative of the level of attention (in psychological terms) mothers give to another child in a smaller family.

The conclusions of other studies are consistent with the Evenson *et al.* findings. Layo (1977) notes, for instance, that during the early years of marriage (the first nine years in her study), relatively few married women work, for childbearing have kept them busy and homebound. Miralao's (1980) study of women and men's participation in the development process further indicates that urbanization increases the time required for female household tasks (i.e., cooking, laundry, child care) but reduces time required for typically male domestic activities (i.e., provision of water and fuel for the households).

It is important to note, however, that despite the limitations imposed by children on women's time relative to men, children are generally valued and the restrictions they impose on work activities are the least of the perceived disadvantages of having them. Bulatao's 1980 cross-national survey on the Value of Children (VOC) undertaken in nine countries with varying levels of fertility reveals that only three per cent of Philippine wives-respondents mentioned 'work restrictions' as a disadvantage, compared with eight per cent of Singaporeans and eight per cent of Americans. Compared with other countries, the Philippines also has less women who consider children as 'tying them down.'

It is also interesting to note that in the VOC study, "work restrictions" are not mentioned at all by Manila respondents and 'being tied down' is least salient among wives in Manila (only two per cent mentioned this). The presence of an extended kin network or the availability of domestic help for some Filipino families partly explains the low proportion of women who disvalue children for restricting their work activities or tying them down.

Lest these findings create the picture of women who are not conscious of opportunity costs, the same study showed that when asked whether having children prevents them from doing other things they want to do, 74 per cent of Filipino wives has responded positively. A little over half (59 per cent) of Manila respondents but majority of Bicol wives (84 per cent) have responded, "yes."

3.1.c Relationship Between Husband and Wife

Studies in the West mention some of the following negative impacts of family size on husband-wife relationship: considerable constraints on the freedom and mobility of parents specially of the mother; less opportunities for companionship on spheres other than the home due to economic pressure (Bloode and Wolfe 1960); greater interference with sexual activities with increasing number of children.

Although housekeeping and childrearing are central concerns of Filipino women, family companionship is equally valued by them. Women in the Philippines particularly prefer to share time with husbands and children. One study reveals that wives prefer to be with their children (38 per cent) or with their husband and children (36 per cent) or with their husbands (26 per cent). Husbands on the other hand, prefer to spend time with their wives (70 per cent) than with friends (Bulatao 1978 in Sevilla 1985). The above finding suggests a relative diminution in time spent with the spouse and even in the value associated with sharing time alone with the husband. The discrepancies in who each spouse wants to spend time with has implications for marital discord.

Poverty and its attendant problems further exacerbate the effects of family size on husband-wife relationship. Overcrowding in many households and the ensuing lack of privacy not only interfere with husband-wife sexual activities but also inhibit communication between them. Studies substantiate these effects. Castillo (1979) and Lozare (1976) disclose the usual sleeping practice in households with very limited physical space. As noted earlier, the studies reviewed by Castillo show that more than half of all households have family members sleeping together in one place. Lozare's study gives a lower, albeit significant figure. He asserts that based on his survey, 20 per cent of households reports that husband, wife and children all sleep in the same bed and 28 per cent sleeps in different beds but in the same room. Both the physical congestion and the economic pressures caused by more children among the poor led to a number of marital breakups.

3.2 Effects on the Children

3.2.a Health Effects

A number of medical studies have highlighted the following main effects on health and physical development:

1. perinatal mortality increases with maternal age and parity of birth (IPPF 1970) – it is the highest among those in the lower social classes, supporting the hypothesis of an inverse relationship between socioeconomic status and rates of perinatal loss (McCallister *et al.* 1970);
2. prematurity correlates with high parity and short birth intervals (Yerushalmy *et al.* 1956 and Butler and Bonham 1963 as cited in IPPF 1970);
3. malnutrition rises with increasing family size;
4. the rate of physical growth is also inversely correlated with family size (IPPF 1970);
5. in general, prematurity and its attendant problems increase in frequency with increasing parity of birth (Clausen and Clausen 1973).

Moreover, large families tend to utilize routine health services rather poorly compared with smaller families.

3.2.b Intellectual and Mental Growth

Clausen and Clausen's review (1973) notes one of the most consistently reported findings related to the negative effects of family size on IQs: IQs decline as number of children increases. Even with social class held constant, the declines are still "far from negligible." Some factors accounting for the decline include: dietary deficiencies, poorer parental care, and poorer housing and schooling. Several studies also suggest that the differences in tested intelligence are particularly big in the area of verbal skills.

Another study (Gregory 1962) reveals an "excess of observed over-expected incidence of psychiatric disorders among the youngest children of families composed of four or more members." He suggests the following reasons for this relationship between psychiatric behavior and position in the family: (1) advanced ages of the parents at the time of birth of the youngest; (2) termination of the parents' marriage shortly after the birth of the youngest through death or separation; and (3) the likelihood of the youngest child being unwanted and rejected.

3.2.c Personality and Social Adjustment

Clausen and Clausen (1973) also cite many studies supportive of the effects of family size on children's personalities. Describing his problems as a child in a family with a dozen children, Rene Durel (1971 in Clausen and Clausen 1973) wrote: "The scramble for attention in a large family often means that the only person one ever really listens to is one's self... It was not really an unpleasant life, but a gradual sense of privation is inevitable, in a large family..."

One would logically expect that the larger the family, the less attention one child is likely to receive from parents. Studies in child and social psychology have sought to relate family size and sibship with: adolescent self-esteem/self-image/self-concept, and other personality measures. Some relevant findings suggest: higher self-esteem among children from smaller families (particularly among males – Rosenberg's 1965 study); poorer self-concept of boys and girls coming from large families (Sears 1970); and tendencies to have problems of adjustment, exhibit feelings of inferiority and to daydream are highest in families with five or more children.

What many of these studies show is that "characterization of the large family as a closely knit, warmly accepting group producing happy, competent persons are not to be taken as descriptions of the typical large family. Such happy families do, indeed exist, but a greater proportion of large families appear to have more than their share of persons who have difficulties in the competitive realms of school and work" (Clausen and Clausen, 1973: 200).

A similar review of studies in the Philippines focusing on the differences between small and large families in terms of children's cognitive and personality development will be most useful and meaningful. This is so because the Philippines is a highly familistic society where children are "most desired and enjoyed" and considered divine blessings.

Some leads are provided by a study of poor families in a depressed area of Metro Manila. Decaesstecker's (1978) research on an urban slum community, for instance, provides glimpses of the internal dynamics of the family under disadvantaged conditions. Despite overt expressions by respondents of their favorable attitude toward children, her data and analysis show the ill effects of continuous pregnancies on the mothers' health, the quality of childcare and the emotional closeness between spouses. She points out that: "Parents are acutely aware of their inadequacy in meeting their many children's needs. Most of their efforts are directed toward breadwinning and childnursing, with little emphasis on their growing children's cognitive, social, and emotional needs" (Sevilla 1982:111).

A study of Oshima (1982) of the Filipinos' child-rearing practices and their impacts on worker productivity also provides important insights and interesting leads. His findings disclose that unskilled workers who have been rated as highly productive by their supervisors appear to have had a childhood marked by specific rules on proper behavior, a division of household chores where the individual was given certain responsibilities, competition with siblings in games, innovativeness in making their own toys and parents who helped in their schoolwork (Sevilla 1982:41). An extension of the analysis to include family size variables as they relate to specific child-rearing practices could provide clues if not definitive answers to the questions of family size impact on children's personality and behavior. In fact, most of the studies on women and the family, and most surveys, for that matter, include the above-mentioned demographic information with such detail that a reanalysis could easily provide leads to these questions.

The effects of specific childcare practices and parental attitudes on children's personality have been studied by psychologists here and abroad (Fe Domingo 1952 and the Classic Whiting Studies). Family size, however, has not been systematically looked into as a context variable. Bossard and Boll's (1956) study is illustrative of the kind of socio-psychological analysis that may be pursued. In their study, they find that in larger families, parents tend to place high valuation on organization and leadership and stress cooperation and conformity from their children. There is delegation of responsibility to older children for the care and control of younger siblings. Parents are also less possessive and demanding but more authoritarian because of the need to maintain order.

3.2.d Occupational Careers and Social Mobility

This is another area which has been researched and the usual expectation is that children from small families achieve high occupational attainment more often than those from large families. Svalastoga (1959) has studied this quite thoroughly and has found a greater frequency of downward mobility from the occupational level of fathers from large families, and greater upward mobility among those from small families.

In terms of discipline, studies show that parental control tends to be more decisively exercised in larger families. Parents are more often seen as autocratic or authoritarian and less inclined to give explanation for the rules they invoke (Elder, 1962; Bowerman, 1963).

One major finding in Bulatao's survey is that Filipinos value children for: (a) instrumental reasons – for help in house work, help in old age, and financial or practical help; (b) for socio-emotional reasons – children provide companionship for parents, bringing love and happiness, providing play, fun and distraction from worries; (c) for psychological rewards – children bring incentive for success and work, a sense of fulfillment to one's life; (d) for cementing the marital bond; (e) for coping with social pressures; and (f) for family and kin preservation. The first two reasons are most salient. Urban residents value children more often for the socio-emotional rewards they bring and rural residents emphasize children's help in housework and in financial and practical spheres. To urban residents, children also mean old-age support.

Filipinos cite financial costs, non-economic difficulties of childbearing, childbearing problems particularly with respect to discipline, and children falling ill as disvalues. While disvalues increase as couples have more children, the costs seem to be outbalanced by benefits. Studies, for instance, corroborate the economic contributions of children

Are these perceived values and costs of children supported or corroborated by household and family behavior? The Laguna survey reveals that children contribute "surprisingly little time" to crop cultivation and livestock-raising in the farm, but they spend about half of their income-earning time on wage-earning jobs including working on the farms of others for wages and about one-fifth of their time in income-earning home production activities. Another portion of their time is spent on non-income home production (30 per cent of time) and on child care (25 per cent).

The economic time benefits are also more pronounced among the poorer households – the poorer the households, the more time children allocate to income earning activities or production for the market and less to home production, including child care (Navera 1978).

The economic contributions of children to the family are well documented, indeed. Ibarra's (1978) study of domestic helpers shows that young girls from the provinces move to Manila to earn a living to help their families. This has been explicitly mentioned by over a third of the domestic helpers whose average age is 22 years and are still single (91 per cent). A majority (51 per cent) come from large families (with 7–9 children), 32 per cent has 4–6 other siblings and 11 per cent, 10-12 siblings. Only six per cent comes from families with 1-3 children. In terms of birth order, one-third of these female domestic helpers is either the eldest or second in the family and another one-third is third or fourth in the family.

Feranil (1984) and Guerrero (1987) also provide additional evidence for the thesis that children probably constitute the family's most important economic resource. An interesting finding in the aforementioned studies is not the economic support that children provide their families, but the fact that this necessity "to help the family" delays marriage among the young female workers. Feranil's longitudinal studies of export processing zone (EPZ) workers in Bataan show that employment tends to delay marriage. This effect is greater among those who were working primarily to help their families. However, those whose families have higher incomes or whose fathers are still economically active, or who come from smaller families and are working to provide for their own future needs, tend to marry earlier than their less favored counterparts. The mean age at marriage of these EPZ workers is 23.6 years compared with 22.6 for an equivalent sample of female crafts and production workers in Domingo's 1973 study.

One might view this as a self-corrective or adjustive mechanism within the family in light of the perceived costs as against the economic value of children. Some other unanticipated consequences are revealed in Guerrero's (1987) study of a similar group of EPZ workers. Case studies of workers' families substantiate the instrumental role and assistance of children. The unmarried children's contribution to family support is emphasized by parents as a major impact of the zone. However, the mother-respondents express some apprehensions about their daughter's increasing reluctance to marry and start their own families. The EPZ workers themselves reveal their desire to continue helping the family. To some of them, marriage can wait for better times. They feel that when one works, one learns to enjoy life, to follow one's wishes and whims and not remain housebound which happens when one gets married.

Clearly, the policy implication is not a simple reduction in family size since on the level of individuals, children have a significant role to play although increased fertility is dysfunctional to the wider structure. To change perceptions at the individual or family level requires alterations in the structure of opportunities which will no longer require reliance of families on the economic and psychological benefits of more children. This will be elaborated on in the summary and conclusion of this paper.

B. Impact of Fertility on The Political Institution

Apart from general statements regarding the growing pressure of increasing Third World populations on their countries' resources, very few local studies systematically assess the political implications of fertility. Most of the articles relating fertility to political institutions are confined to sectoral studies. Because of the state of the literature, this section will then be compared to the previous discussion. It will, therefore, explore the effects of population increase on the actual or potential participation of women and peasants in political, community-based organizations.

1. Marital Status, Fertility and Women's Community/Organizational Participation

The literature on women and fertility intersected in the 1970s. In fact, early social science studies on women as a sector was stimulated by the need to look into the effects of women-related variables on fertility decisions. Most of the studies, however, treated fertility as the dependent variable (See Appendix A).

In time, studies citing the effects of fertility on the division of labor between the sexes began to appear. However, while a few studies zero in on the implications of marital status and fertility on community participation, most studies do not mention fertility at all. They are confined to women and their level of participation in community affairs whether as members or leaders of organizations which is usually low (Castillo 1979 and Nyamutale 1978 both cited in Pineda 1981; Saz 1981) except in some areas where women actively participated as leaders of irrigated rice communities (Illo 1985) or labor unions (del Rosario 1987).

A review of the usual explanations for the generally low participation of women reveals some factors which can be traced indirectly to fertility as reflected in childrearing and household responsibilities. Available studies show that married women's participation in community organizations largely depends on how much time is left for them to attend to matters other than their domestic functions. Miralao (1980), for example, notes that women, unlike men, are already saddled with domestic work and hence have very little time left for them to get involved in community affairs. However, if the women are gainfully employed, their membership in organization substantially increases. When they work and remain unmarried at the same time, they become the most active participants in community organizations.

Makil (1981) further substantiates Miralao's contention. She asserts that the root cause of unequal participation of men and women in community activities is their unequal share of employment opportunities. For Makil, the determinant of organizational members is participation in the market. If this finding is linked to the Evenson *et al.* study in the previous section, which posited a relationship between family size and time alloted by women to outside

employment, then family size affects community participation indirectly. Such an indirect relationship should be measured, however, for a more accurate conclusion to be made.

A study conducted by Alcid in 1982 on women aged 18 and above representing every age group, educational attainment, leadership and non-leadership role in the community, and various occupations showed that the women view their basic function in society within the framework of the home despite their economic contribution. They could not get involved in community and organizational activities because of their domestic responsibilities. The 1969 Department of Labor study also shows that only 13 per cent of labor federations had female members and only 24 per cent for independent labor unions. Among the reasons given for women's low participation are that their family responsibilities (as homemakers and mothers) barred them from engaging in union activities. Much of their time were consumed by housekeeping and childrearing, leaving them little time for work.

2. Population Increase and the Political Participation of Peasants

Unlike women, peasants have not been studied for purposes of assessing the effects of family size or fertility on their participation in organized activities as a sector. However, the effect of population increase on the revolutionary potential of this group has been alluded to in the literature.

Accounts of peasant struggles and the history of land consolidation following the expansion of export markets in the 19th and early 20th century reveal that struggles were weakest and lands easiest to consolidate in areas with sparse populations. It is hypothesized, for instance, that the haciendas were easily established by Iloilo capitalists in Negros Occidental because it was a land frontier while the population concentrations in Tarlac and Pampanga and the history of struggles in these provinces prevented the formation of such types of plantation-like sugar haciendas. Instead, tenanted lands prevailed under a hacienda administration (Bautista 1983).

In recent history, Fegan (1983) noted the growing inability of peasant households to provide funds to allow additional children to establish themselves in the same way their peasant parents were able to. He cites the landlessness of additional children as population increase bears on the limited resources in agrarian communities. Other studies show how the bargaining power of peasants who hire labor vis-a-vis the growing population of landless has grown and resulted in various institutional arrangements between employers and the lucky agricultural workers who manage to obtain hired farm employment (Ledesma 1983).

The organizational potential of the growing landless population is difficult to assess since there are many intermediate variables to consider. However, there are more peasants without productive assets to recruit into political organizations or struggles at this time compared with an earlier period when this population was still small. Given the structure of employment opportunities in the countryside, the implications of population increase for revolutionary potential are not negligible.

3. Issues on the Political Implications of Fertility and Population Change

It is obvious from the above discussion that the literature is relatively silent with respect to the political effects of fertility or populations increase. By extending the arguments in some studies, however, one can infer as was shown in this section the implications of number of children on the structure of power and distribution of resources. So far, however, most of the studies cite gender inequalities or peasant differentiation. What is needed is a research which assesses the varying effects of fertility/family size on participation in decision making in the family, community work environment among different sectors (e.g., women, peasants, urban-based communities and levels). It can hypothesize for instance that for specific sectors without economic opportunities, family size/fertility eroded their potential participation in political processes and activities. In other words, if the focus is women, the study should be able to specify which women are adversely affected by fertility/family size. What variables mediate the political effects of fertility? Only when specific conclusions are reached can programs be developed which can make people value participation and participate enough to consider the opportunity cost of an additional child.

C. Fertility and the Church

The decades of the '60s and the '70s brought into the world's consciousness the phenomenon of a rapidly increasing population in the face of dwindling resources. To alleviate this problem, efforts were geared toward checking population growth by whatever means of birth control, natural or artificial. The impact of population growth on the institutional Church is manifested in its ideological response to the growing concern over increasing fertility in the Third World.

In 1968, the Catholic Church took an official stand on the issue of population control in the form of an encyclical known as the *Humanae Vitae*. The encyclical stated in no uncertain terms the Church's opposition to the use of artificial forms of contraception, arguing that (artificial) contraception ran counter to the teachings of the Bible. Moreover, it is said to defeat the primary purpose of marriage which is procreation.

In the Philippines, the Catholic hierarchy issued a pastoral letter in October 1968 endorsing the *Humanae Vitae*. The pastoral letter called on the clergy and the laity to accept the word of the Holy Father on the issue of regulating birth. It strongly exhorted its constituents "to seriously study this creed (the Encyclical), and to adhere to it faithfully in spite of the lures of new Christianities and new gospels..." (Healy 1973).

Despite the pronouncements of the Church, however, the Philippine government, representing a population composed mainly of Catholics, issued a population policy that ran contrary to the exhortations of the Catholic Church. The country's policy was embodied in its Population Act of 1971, later revised by Presidential Decree No. 79, endorsing all means of birth control except abortion.

In 1973, the Church issued another pastoral letter, decrying the tendency of the government's population policy to emphasize external means of birth control over the more important control and mastery of man's behavior. The letter endorsed instead responsible parenthood and the use of natural methods of birth control.

Despite her declared official stand, however, the Catholic Church here and abroad suffered much critique and dissent from both clergy and laity. Not only did dissent take the form of theoretical arguments, more significantly, it was manifested in the attitudes and behavior of Catholics throughout the world who not only favored but practiced artificial birth control measures.

The core of the dissent seems to lie in the inability of the Catholic Church to read the signs of the times. Hence, while the Catholic Church remains to be a powerful institution in society, it seems to have made little impact on the behaviors of its constituents, at least where family planning is concerned. Both clergy and laity have manifested attitudes and practices toward population control radically deviating from the official position of the Church.

Reviewing the results of four surveys conducted among Catholics during three different time periods (October 1967; April-May 1970; and January-March 1971), Lynch (1971) noted the consistent approval of family planning among majority of the Catholics interviewed. In the Baguio Religious Acculturation Conference (BRAC) 1967 Filipino Family Survey, 63 per cent of the Catholics surveys approves of family planning (FP). Ironically, those who approved of FP are closer to the Church than those who disapproved. Closeness to the Church is measured in terms of regular attendance at Sunday Mass, willingness to consult one's pastor on family problems, and knowing the Pope's position on family planning among others. In a follow-up of the BRAC survey, findings also show a high percentage approval of family planning among Catholics (65 per cent). A third survey, the IPC/POPCOM 1971 Mass Media Study, also

registers similar results. Seventy-six per cent of the Catholics surveyed approved of family planning. Similar findings result from another survey contracted for the Bureau of Agricultural Economics (BAECON). A great majority (78 per cent) of the Catholic surveyed have approved of family planning.

More recent studies show the same results. De Guzman (N.D.), using data from the 1978 Republic of the Philippines Fertility Survey (RPFS), found that 48.6 per cent of Catholic married women is using contraceptives. Moreover, only 21.2 per cent of the Catholic respondents who were in their childrearing years at the time of the survey, said that they intend never to use contraceptives.

Evidence from these surveys further indicates that these Catholics have approved of family planning not for any reason related to religion, but more for economic considerations. Moreover, those who disapproved of family planning tend to be less close to the Church, leading Lynch and Makil to conclude that the anti-contraception attitudes of these people cannot be attributed to the influences of the Church. Makil's (1979) study confirms Lynch's conclusion and notes that the negative attitude of Catholics toward family planning cannot be accurately traced to the influence of the Church.

It would appear that contrary to its claim, the Catholic Church's hold over its contituents is weak, at least where family planning is concerned. Lynch, in fact, concluded that the Philippine Catholic Church has chosen to maintain a laissez faire attitude toward family planning, "teaching little or nothing officially about family planning or about many other folk and folk-Catholic moral questions that are in conflict with official Catholic doctrine." This would, perhaps, explain the failure of the Church to influence its constituents' attitudes toward family planning and artificial contraception.

The manifest gap in theory and practice existing within the Church reflects a verbally articulate but behaviorally inactive Catholic Church. As this problem is related to the seeming absence of actual collective consensus within the Church, there is greater urgency for the Church to review her real position *vis-a-vis* the actual practice of her constituents regarding Church teachings.

Healy (1973) could not have put it more aptly when he said, "The problem is crucial; the hour is late...a decade may be too late...we should strive now to read the signs of the times." Now, more than ever, the Church will have to "put its act together" if it is to maintain its stature in society as one of the more powerful and influentical institutions in society.

III. IMPACT OF MIGRATION ON THE FAMILY, THE POLITICAL INSTITUTION, AND THE CHURCH

The materials selected for inclusion in this section have been drawn from various disciplines: anthropology, sociology, economics, psychology, and urban and regional planning. Except for the impacts of temporary overseas migration, which have been the focus of many recent studies, the impacts of internal migration had often to be extracted from peripheral studies as the focus of these studies was not migration per se but descriptions of regions and their disparities, communities and their local history as well as a documentation of changes and consequent problems among communities and groups. Most of these studies are descriptive, infrequently statistical, and, therefore, have provided qualitative data where conventional migration research literature has, in contrast, provided quantitative data.

The literature cited here is limited and does not exhaust all the materials on the topic for discussion and may not be representative of the rest of the materials not covered for the review. Regardless of this limitation, however, the findings are presented as an initial step toward a better understanding of the relatively unexplored area of the impacts of migration.

A. Impact of Migration on the Family

1. Migration and Family Structure

Jimenez *et al.*. (1986) describe the household size of urban poor communities which are predominantly composed of migrants as characteristically large, ranging from 3–14 members with an average family size of six. They noted that the majority of the urban poor households are nuclear rather than extended.

David and Angangco (1976) also find a similar pattern in their earlier review of studies of Philippine urban poverty. Their data show that the family and household sizes in urban poor communities ranged from 4 to 14 members. As in Jimenez *et al.*, their data show that most slum families are nuclear rather than extended in nature. On the average, families have from six to eight members. They noted, however, that the higher the family goes up the educational ladder, the less children it tends to have.

The Share and Care Apostolate for Poor Settlers (SCAPS) study of five urban communities in Metro Manila showed different results. Three communities have exhibited the nuclear pattern (Barangay Service Road in Bagong Barrio, Caloocan, Barangay Solid Mills in Sucat, Muntinlupa, and Barangay 102, Magsaysay Village, Tondo). Two other communities have more extended families (Barangay North Bay Boulevard, Navotas and Barangay 220, Tondo). The average household size of these communities ranges from five to seven members.

The common observation in the above studies that migrant households in urban areas are generally nuclear, albeit large, is not corroborated by other studies. Analyzing several Philippine studies on household structure, Castillo (1979) reveals that, except for one study done in Malate, Manila, households are consistently found to be nuclear rather than extended in structure. However, urban households tend to be more extended than nuclear. The 1973 National Demographic Survey (NDS) showed 77 percent nuclear family households in rural places and 60 per cent in urban areas. However, Metro Manila, the most urbanized sector reported the lowest percentage (59 per cent) of nuclear house holds and the highest incidence of extended households (41 per cent).

This last finding runs counter to the theoretical expectation of household nuclearization with increasing urbanization which is supported by Jimenez, et al. (1986) and David and Angangco. (1976). Carroll *et al.* (in Castillo 1979) offers a plausible explanation for this. He asserts that the tendency of kinsmen to gravitate toward the more affluent members leads to the possible flow of rural family members to the urban areas, either to study or to work. They seek their kinsmen and join the the latter's household, resulting in extended urban households. This is further corroborated by Eslao in her study which showed high proportions of extended households in Malate, Manila. Relatives from the provinces seek their kinfolk in the city, reside with them and contribute to household expenses in cash, in kind or services.

The positive role that the family plays in migration has been well documented in many studies in the Third World. One frequent consideration in the choice of place by the migrant is, to some extent, the presence of relatives and friends (Lopez and Hollnsteiner 1976, Laquian 1971, Guerrero 1972, and Pernia 1978). Kinfolk help with the initial adjustment and provide continuing support and assistance in times of economic need.

Decaesstecker's (1978) study of 100 impoverished families in La Loma, Quezon City depicts the plight of migrants who are attracted to the metropolis with the promise of a better life. Her research reveals that 78 per cent of her subjects is migrants, having come from 34 different provinces in the country. Their reasons for moving to Manila are: to seek a job and improve their life (43.5 per cent), to try their "luck" in the city (20.0 per cent), join relatives in the city (15 per cent) and family breakdown in the province (12.3 per cent). However, they almost always end up in the city slums and squatter areas, unemployed or sporadically employed or self-employed, forever engaged in the daily struggle to survive but ever optimistic that tomorrow will be better (Guerrero 1971, David and Angangco 1976).

2. Migration and Family Size

Mowat (1977) noted that migrants had a larger family mean size than the non-migrants. Hendershot (1971), however, noted the opposite. His data, testing the Social Mobility Model, showed that: (1) migrants have lower fertility than natives, (2) in general, the fertility of

migrants who are younger (under 30) and those who have been married for a relatively short period of time (less than 10 years) is higher than that of similar natives, but at older ages and longer marriage durations, the fertility of migrants is low, and (3) in general, the greater the urbanism of the destination, the more likely are migrants to possess characteristics related to high mobility and potential, implying that rural-urban migration is selective of socially mobile persons.

Pernia, on the other hand, provides empirical support for the Migration Cycle Model using data from the 1973 NDS. He uses the Migration Cycle Model, which posits a non-linear (U-shaped) migration-fertility relationship whereby fertility is observed to fall on account of economic and psychic hardships caused by displacement following migration, and then is observed to rise during the period of adjustment as childbearing becomes easier. The cycle extends from the time before migration until the time the migrant family is fully adjusted to the place of destination. His findings challenge the common view that migration invariably leads to lower fertility. While previous models have found support in certain studies, Pernia notes that these models considered only one migration interval, thus focusing on only one (linear) segment of the migration cycle. Pernia's findings imply that while migration may temporarily alleviate the fertility problem, in the long run, it will tend to aggravate the problem. What this suggests for policy is to quicken the period of adjustment for migrants so that sustained fertility decline can occur sooner than otherwise. Pernia also calls for more research on the model with longitudinal data on other countries as well.

Finally, Juan (1977) shows evidence that household sizes are related to migration types. In general, the more mobile migration types have smaller household size compared with the least mobile migration types. The higher cost of moving larger households than smaller ones may explain this particular relationship, according to Juan.

3. Migration and Family Labor and Employment

Migrants, in general, have difficulties in finding jobs or in obtaining well-paying jobs. (Hollnsteiner 1973, Herrin 1982). If they do, they often land in the service sector because of inadequacy or absence of skills and the limited number of urban industries that can absorb them (Jimenez *et al.* 1986). Because of this problem of unemployment and underemployment, migrants are plagued by low income. Their total family income is often below the poverty line and seems to worsen over the years (Jimenez *et al.* 1986, David and Angangco 1976). As a result of this financial problem, migrant households characteristically have more than one income earner in the family. Apart from working longer hours to augment their income, it is not uncommon to find women and children actively engaged in tertiary types of occupation to augment total family income (Ibid.).

Hollnsteiner notes that while the migrants may have similar employment as the natives, the migrants are disadvantaged in that they receive less earnings. Ulack points out, however, that the longer a migrant stays in the city, the more able he is to land a stable job and earn a higher income.

Herrin (1980b), based on a review of several studies, find that migrants who raise their occupational status and incomes as a result of migration are positively selected in terms of age, education, and income. Those who are negatively selected, on the other hand, tend to end up with low paying, unskilled, intermittent jobs, thereby exacerbating their initial poverty at the place of origin.

Bacol-Montilla and Stinner (1975) shows that sons from high farm origins maintain the highest entry rate to nonmanual status and vice-versa with respect to the sons from low farm origins. The high status sons succeed in transferring their high status to the urban milieu irrespective of education. In contrast, the sons from low farm origins are prevented by their lack of education from surmounting their previous low status in the city. Bacol-Montilla and Stinner offer the conclusion that elite stabilization exists despite migration from agricultural areas to urban settings.

4. Migration and Family Welfare

Negatively selected migrants usually end up living in slum or squatter communities (David and Angangco 1976, Lopez and Hollnsteiner 1976). These areas are characterized by dilapidated living structures, congestion, poverty, absence or lack of basic infrastructure and social services, and an unsanitary environment (Jimenez *et al.* 1986, David and Angangco 1976, Catapusan and Catapusan 1954, Filipinas Foundation 1976).

These areas are also characterized by poor health conditions as a result of their unsanitary environment. The children particularly suffer from the high incidences of morbidity, and malnutrition (Jimenez *et al.* 1986). Nutrition has been shown to be affected by low purchasing power, low educational level and large family size which are common characteristics of migrant families in urban setting (see Burk 1977, Intengan 1979, and Magallanes 1984). Often, needs such as children's education, medical care and clothing are sacrificed in favor of expenditures for food and shelter (Jimenez *et al.* 1986). Household possessions are often limited in number and modern items i.e., store and cabinet were found much less frequently among the squatters than among the non-squatters (Hollnsteiner 1973).

5. Migration and Women

Strongly evident in migration streams and dominantly emergent from the 1960s onward, female migration rates seem to show that economic pressures have weakened the cultural

barrier to female employment (Todaro 1976), to long-distance movement of females, and to the independence of single females.

While migration shows women to be more active in terms of occupation, the status of migrant women remains low compared with native women who occupy high prestige occupation. The gap is sharper in Metro Manila where migrant women occupy service occupations such as housekeepers, cooks, maids and the like (Eviota and Smith 1979 in Herrin 1982). The gap is sharpest when female migrants are compared to males. The observation Danielsen made in 1966 that unemployment was high in Metro Manila specially among females is still true even up to more recent times. Compared with educated male migrants who tended to occupy white collar and craftsmen occupations, relatively educated women occupied lower-ranking service-sector occupations. Even if 75 per cent among the female migrants who had some college education were in white-collar employment, still, these were mainly in clerical and sales categories. There was still about 20 per cent with college education who worked in the service sectors (Eviota and Smith 1979 in Herrin 1982).

The impact of migration on women is often discussed in terms of its fertility control possibilities. The migration of single females is shown to postpone the age at marriage (Filipinas Foundation 1976, Feitosa 1975, Hugo 1982, and Simmons 1982). Migration is also seen to effect large birth intervals and increased celibacy (Simmons 1982).

6. Migration and Changes in Values and Norms

Very few migrants return to their place of origin despite the hardships that they encounter in their place of destination. Many of them express satisfaction and contentment about their life in their new residence or area of work (Arcinas 1987, Jimenez *et al.* 1986, David and Angangco 1976, Hollnsteiner 1973).

The perception and experience of unity which Laquian (1983) attributes to close kinship ties as well as the common experience of poverty among the community residents help the migrants adjust to their new communities. Migrants also express their desire to stay in their new environment because it offers far better opportunities (no matter how lean and limited) than their places of origin. It is in their new places of destination where their socioeconomic aspirations can be attained (David and Angangco 1976, Hollnsteiner 1973, Jimenez *et al.* 1986). In terms of aspirations, material aspirations (desire to own a house, "get rich," get a job), education for their children as well as hopes for physical and emotional well-being were expressed by the migrants (Guerrero 1973, Hollnsteiner 1973).

Studies present varying views regarding the impact of migration on family ties. Earlier, close family ties were described to affect and to result from migration (Traeger 1981). However, studies by Catapusan and Catapusan (1954), Hugo (1982), Mowat (1977), Hollnsteiner 1973 and Arcinas (1987) show the opposite, and mention the loosening of family ties, infidelity or breakup of families as results of the separation created by migration.

B. Impact of Migration on the Political Institution

This particular section will focus on the following topics: government policies as both independent and dependent variable related to migration, political participation as consequence of migration, and revolutionary potentials created by migration through the maintenance of regional imbalances and the continuation of urban problems.

Boulier (1977) noted that spatial differences in economic opportunity stimulate migration. In turn, migration flows alter geographical patterns of economic activity. Pernia (1977) concurs by arguing that pronounced intersectoral disparities in socioeconomic conditions are, in a dynamic sense, both the cause and the consequence of population flows between sectors.

Migration flows have been biased toward regions which have been considered highly developed such as Metro Manila, Southern Luzon, and Southern Mindanao. Correspondingly, regions experiencing heavy net losses of migrant labor (such as Bicol, Central and Eastern Visayas) have been ranked among the lowest in the regional development profiles (Dequina 1977). The volume and directional pattern of interregional migration point to the significance of regional socioeconomic levels of development and changes influencing population movement. The interregional migration pattern before and after the 1960s showed the continued exodus to the Mindanao area of pioneering types of flows in areas of frontier settlement, and the emergence of a new system of metropolitan-to-suburb flow accompanied by an accentuated tempo of urbanization as seen in the rapid development of the areas peripheral to Manila (Dequina 1977).

The age and sex characteristics of migrants are also influenced by regional imbalances. Young, unmarried males prefer to migrate to frontier settlement while unmarried females move to the metropolis and urban areas where factory and service-related occupations abound. In general, therefore, levels of regional development can affect the size, composition, and characteristics of the labor force of the country (Dequina 1977, Ruiz n.d.). The regional distribution of migrant work, on the other hand, can exacerbate the existing regional disparities on two levels: (1) migration selectivity drains the better labor resources from the areas of origin (this shall be discussed more lengthily in the next section), and (2) migration creates population pressures on limited economic opportunities and welfare services in the areas of

destination. This has been dramatically observed in the case of Metro Manila. While its primate position has rendered advantages to the area and her populace in terms of income, economic opportunities and welfare services, it is also in Metro Manila that the greatest concentration of urban problems – unemployment, income disparities, squatter housing, inadequacy and insufficiency of services and facilities, traffic congestion, pollution, etc. – are spatially located (Apacible 1981, Beltran 1984).

Laquian (1973) points out that certain government policies and programs actively encouraged migrations. The Homestead Act as well as the National Resettlement and Rehabilitation Administration (NARRA) settlement schemes facilitated the massive migration from Luzon and the Visayas to Mindanao.

The increase in government services that followed population movements has itself created the attractions for further migration into areas where high levels of access to services and facilities exist (Lamberte 1983).

The poverty that ensued as a result of land concentration (Boglosa 1983, Cariño 1975) as well as other government economic policies caused migration from poor regions to more developed ones which led Abueva (1972) to note that the problems of Metro Manila reflect national ills and are intricately related to the problems of rural regions. Many contemporary problems in various regions of the Philippines are reflections of the existing disparities among these areas.

Government policies and programs, on the other hand, are usually viewed as dependent variables corresponding to population and demographic trends, not independent variables (as was shown in an earlier discussion) that may influence these trends themselves (Ocampo 1972, Laquian 1973). The influx of migrants and consequent urban problems have created political and administrative demands. De Guzman and Pacho (1973) point to possible significant areas for political research as follows: (1) the relationship between urban and rural-based politics; (2) changes in the composition of political elite as a result of the shift in the base of power; (3) components and channels of citizen participation; (4) continuing social and economic gap between the cities and the rural areas, which causes grave repercussions in the political development of the country; and (5) power concetration in the hands of "God-kings." They noted that creative and destructive forces are so locked in with the movements of accelerated urbanization that discreet judgement should be exercised in forging public policies affecting it. They also suggested that the impact of rapid urbanization on the administrative process be examined using three approaches, namely: its effect on (a) the administrative structure; (b) fiscal management; and (c) administrative aspects of urban planning.

The response of the urban government toward the slum and the squatter problem should be mentioned here. From the late forties up to the present, the government, particularly in Metro Manila, adopted the policies of outright eviction, relocation and resettlement, slum upgrading, provision of sites and services programs. They have also extended to a limited extent, livelihood assistance to marginal communities and individuals. Despite these approaches, however, the slum and squatter problems remain unresolved (Jimenez *et al.*, 1986).

2. Political Participatin and Migration

As a result of government policies to resolve the slum problem (see Sebastian 1977, Santiago 1977, Guerrero 1977, Hollnsteiner 1977 and Laquian 1971 for the discussion of these policies), the slum dwellers themselves have learned to organize and to fight for their right to be heard and listened to in the definition and the solution of what to them is a structurally created slum problem. Some of these recent urban poor organizations include the Pagkakaisa ng mga Maralita sa Lungsod (PAMALU), Samahang Maralita Para sa Makatao at Makatarungang Paninirahan (SAMA-SAMA), and the National Coalition of Urban Poor Organizations (NACUPO). Many studies report the presence of highly organized and politicized grouping in urban poor, migrant communities (Hollnsteiner 1977, Guerrero 1981, Jimenez *et al.* 1986).

Participation in community organizations by urban poor residents is related to some factors as: long durations of community residence, better working arrangements, high level of education, and availability of child care assistance (Jimenez *et al.* 1986). Early adjustment to migration may have caused the respondents in the study of Arcinas and Angangco (1971-1972) to opt not to join any organization. Simmons (1982), however, also noted that migrants are not political activists and are the opposite of the politically active community participants presented earlier.

3. Revolutionary Potentials of Migration

Prior to moving, the migrant would have anticipated a net balance of favorable consequences for himself. Sometimes, however, things do not come up to his expectations, and frustrations will provoke him to return to his place of origin or seek some other place. He experiences pangs of loneliness resulting from impersonal and contractual relations which lead a few to alienation.

Net out-migration may have several important consequences for an area. On the positive side, it may relieve it of population pressure and cause the average level of wage and salary income to rise. There would be a gain per capita gross national product. On the other hand,

out-migration areas suffer the loss of the investment made to raise and educate children who spend their productive years elsewhere. Migration is selective of the young or those with potential to participate in the labor work force. Areas of out-migration, as a result, have few young adults relative to the number of children and aged persons (Herrin 1982). Some of these areas lose their most intelligent and best educated persons, and often, the more conservative people remain behind. Brain drain results and acts as a brake on economic and cultural development (Morado 1981, Pernia 1977). In addition, there is an increased demand for manpower in the out-migration areas and consequently, a rise in wages. Also, the less demand for space creates a downward trend of land values. Reduced food production results as farm workers leave for better paying jobs in the cities (Salas 1982).

The opposite occurs at the in-migration areas. In certain parts of the country such as Mindanao and Palawan, migration has precipitated the development of the rich and fertile lands that were previously unsettled and uncultivated (Plameras, 1977). If the in-migration area is definitely underpopulated, the resultant population increase may help to achieve economies of scale (by reduction in the cost of goods obtainable through increasing the scale of production and marketing), and thus raise the general standards of living. On the other hand, migration of the rural people to urban areas increases the pressure and demand for housing, transportation systems, jobs, schools, health services, and other community services (Apacible 1981, Abueva 1972, Paderon 1970). There is a greater dissatisfaction among people in migration areas as the government is not usually capable of satisfying their needs. Political instability may usually occur as a consequence. Influx of working and aged people lowers the wages and contributes to unemployment and underemployment (Morado 1981). The increased demand for space creates an increasing trend in land prices. Resentment is felt on the part of the urban people as migrants deprive them of some jobs and cause the increase in land values (Thomas 1961).

While there is a rather high proportion of young adults, they will also have a rather heterogenous and non-conforming population since in-migrants come from diverse cultural backgrounds. As a result, the city is likely to become the center of disorganization and social problems like crime and juvenile delinquency, alcoholism, drug addiction, squatters and slums, prostitution, poverty and pollution (Asia-Pacific Population Programme News 1980).

The inability of the government to resolutely solve urban problems as well as that of poverty and underdevelopment among the people and among cities and regions may erode the confidence of the people in it. Increasing marginalization and impoverishment, specially in the urban areas where kinship support is observed to be declining, may lead the urban populace, specially the poor migrants, to organize and to claim for change peacefully (Guerrero 1977).

However, should peaceful efforts fail to bring about much-needed meaningful solutions, the urbanized populace may resort to violent methods or else may opt ultimately for a radical change in government. A similar scenario can be expected to take place in the disadvantaged regions and among the marginalized, poor rural populace.

Loss of confidence in the national government has been discerned among tribal groups opting for autonomy for their regions. The claim for self-determination by the Mindanao and Cordillera movements has been precipitated by the influx of dominant Christians into their ancestral lands.

The Muslim and the Cordillera movements for self-determination can be traced historically to the various policies of the governments under the colonizers and their Filipino successors that encouraged massive migration flows to these areas. [Tribal Filipino Lecture Series Collated Papers (TFSCP), 1983]. The colonizers successfully assimilated and christianized some 20 or so ethnolinguistic groups which became dominant and became known as the Filipino majority. In general, these areas of dominant land and resource exploitation are areas frequently owned by the remaining ethnolinguistic groups who maintained the greatest links with their indigenous cultural heritage and who are subsequently defined as "cultural" or "national minorities."

C. Impact of Migration on the Church

This third and last section will discuss the various consequences of the Christian migration within the Philippines. It will conclude with a brief discussion of the action taken by various religious groups toward migration-related problems..

1. Religious and Ethnic Conflict and Migration

A number of writers have argued that the intermingling in space of disparate ethnic groups may help to erode regional or tribal loyalties and speed up intergroup cultural diffusion (Deutsch 1961, Bogue 1959 in Costello *et al* ., 1982). Such view has been raised to the level of theory in the form of "social homogenization" which is "a process by which such factors as migration, diffusion, borrowing and others bring about an intermingling of populations, social patterns, and cultural traits and thereby create a greater heterogeneity in the composition of society in each given locality while at the same (time they) are reducing the differences between any two segments of the given society" (Smith and Zopf, 1970 in Costello *et al.,* 1982). Social homogenization is essentially an integrative process reducing regional isolation and differentiation and bringing about a greater convergence, nationwide, of social behavior and attitudes.

The Philippine experience, however, manifests the contrasting trend toward ethnic diversification and conflict. As Smith (1977) had observed correctly, "some of the more urgent of the nation's contemporary problems and issues stem from...population transfers into...fertile but unsettled areas."

The Muslim and the Cordillera movements for self-determination are two real examples of ethnic and religious conflict emanating from migration and consequent problems attached to massive movements of Christians.

Loss of lands, shifts in types of economy, changes in economic activities, displacement from areas of birth, resettlement to other areas or even upland migration, transformation in religion, custom, and tradition, loss of political control not to mention intense violent conflicts, have resulted from the migratory flows of dominant Christians into previous ancestral areas of the "minority" ethnic groups (cf. Mansmann 1983, Wulff 1980, Oracion 1983, Cadelina 1983, Costello 1981, TFLSCP 1983, Anti-Slavery Society for the Protection of Human Rights Reports 1983, Espinosa 1985, Schlegel 1986, and Tribal Forum 1987).

Demographically speaking, these indigenous tribes constitute about 12 to 16 per cent or 6.5 - 7.5 million of the country's 50 million population in 1980 (Tribal Forum 1987, TFLSCP 1983). Their perceived numerical insignificance has actually been the result of migration and assimilation processes that have disadvantaged them but have empowered the dominant Christians. (This is true for the case of the T'boli - see Mansmann 1983, or the Negritos in Southern Negros - see Oracion, 1983, or the Muslim - see O'Shaughnessy 1975):

1. A low standard of public health and sanitation facilities that led many to die of malnutrition, TB and malaria;
2. Their resistance to the government's policy on ultimate integration led to death and loss or power; and
3. The competition between Christian Filipinos who moved to Muslim or Mindanao areas and the Muslims massive resettlement resulting in its decreasing proportion.

2. Responses of Religious Groups to Migration-Related Problems

As noted above, the minority ethnic and religiuos groups have banded together and have asserted their separate political will, using both peaceful and violent methods, toward self-determination. The Muslim groups have been openly known to receive international assistance from other Muslim governments for its struggle for self-determination.

On the local scene, a considerable number of non-government institutions including church-related groups has been extending assistance (to both urban and rural groups) in community organization, housing and land tenure, information dissemination, fund raising, generation of livelihood opportunities and promotion of health care (Jimenez *et al.* 1986). The emergence and proliferation of the Basic Christian Communities (BCC) specially in the Mindanao areas and other poverty-stricken areas in the Philippines may be taken as an indirect response of the various churches to help solve the problem of population pressure and the ensuing inequality, poverty, and disempowerment on the part of the majority of the Filipinos.

D. Impact of International Migration

Although occasional mention shall be made on the consequences of international migration of Filipinos to other areas, the focus of this section will be on the consequences of overseas migration, specially to the Gulf Region. The immediate reason for this lies in the growing significance of labor migration to the Gulf Region which, in recent years, has considerably increased relative to the other emigration flows to the Americas, Africa, Europe, and Asia. Since 1975, the Middle East has become the recruiter of Filipino Labor. Temporary contract workers bound for this region accounted for 87 per cent of the 1981 land-based work placements (Arcinas 1987). In the light of the need for more systematic research and clearer policy on labor migration to the Gulf Region, this section pays particular attention to the consequences of this specific movement, that appear in selected literature. This attempt is not exhaustive nor conclusive. At the very least, it provides an initial attempt to explore and to integrate the various consequences on particular institutions that are incidentally mentioned in many of the write-ups about temporary overseas migrants to the Gulf Region. Unless otherwise stated, the data from this section are taken from the research of Arcinas, Bautista and David (1986).

1. Impact on the Family

1.1 Employment Before and After Migration

Majority of the workers were employed prior to their overseas employment, with a number of them having more than one job before migration. More than half of the returnees did not have any job upon their return and at the time of the study (October 1984 to January 1985). Either they could not find available jobs (47 per cent) or they considered the remuneration too low (36 per cent).

Close to 50 per cent of the respondents switched jobs upon their return. Most of them have held on to only one job upon their return regardless of the sectors they were in. Significantly, family members helped the migrant in obtaining employment after his overseas stint.

1.2 Income and Remittances

Overseas migration accounted for the tremendous increases in income. Sixty per cent of the workers earned above P80,000 or $4,500 while about 12 per cent earned less than P40,000 or $2,200. More of the professional, technical, administrative and clerical workers had higher incomes. Those who worked in Saudi Arabia had higher incomes than those who worked elsewhere. About three out of four workers in the study sent remittances in dollars as frequently as once a month, frequently to spouses (73 per cent) or to parents (21 per cent). The total amount of remittances varied with the nature and duration of the last overseas job. While in general, the remittances were welcome relief augmenting family income, remittances also created much dependence of the remaining family members on the work and earnings of the overseas migrant.

Very few invested these remittances in productive assets. Only seven per cent bought machinery and equipment. About 17 per cent bought vehicles. Most of those who did so worked in the transportation sector in the host country. Business investments were made by only one out of ten respondents. There were more construction workers who invested in small-scale business (retail stores) which employed one or two people. About half of the respondents invested in the education of their children. Some became money-lenders.

Overseas migration, however, does not propel all into higher levels of living. Reports of prospective overseas migrants cheated by illegal recruiters find themselves and their families tottering on the brink of subsistence as a result of loss of land and other assets due to the debts incurred through usurious loan agreements. Some children end up being sent to work as domestic helpers receiving no wages whatsoever as their work is considered substitute payment for interest on loan made by parents for overseas migration. Many families find themselves at the mercy of usurious loan sharks from whom they borrow short-term cash when remittances are delayed.

1.3 Family Welfare

In general, overseas migration ushered in higher levels of living and changed lifestyles for the migrant families. Changes in consumption patterns were observed with increases in the amount of basic food items consumed. There was a marked increase in the consumption of essential over non-essential items. Migrant families were able to put more children to school. Many became houseowners. There were many also who spent their earnings on improving their houses. Many spent their earnings on consumer durables while only a few spent on productive assets as discussed earlier.

1.4 Changes in Norms and Values

Generally, proletarianization of the workers in the host country as well as bourgeoisification of family members was markedly observed with overseas migration. In one sense, while the workers may have had positive changes in values (e.g., became more thrifty, more appreciative of work, more aware of the need to know global events), the members of their families imbibe a highly materialistic culture. The materialist culture, which prevails among some migrant families, is also being imbibed by members of the community who aspire to land Middle East jobs which could be their passport to a better life. Taken in this light, it is not unusual to see "Saudi" communities in Cavite and Pampanga, for example, that sprouted as a result of overseas migration.

The indicators of changes in lifestyle among the families of migrant laborers reflect their notion of what it means to move up in society. The improved, beautiful homes, the conspicuous consumption of consumer items like electronic gadgets, and the occasional splurge of money for a child's baptism or wedding are among the status symbols the workers aspire for. There is a tendency among some of the respondents to flaunt what they acquired and to discuss what each has in his home. Even children have imbibed this consumer culture. They feel that their social status has improved relative to peers whose parents are not migrant workers (Go, Postrado and Jimenez in Arcinas 1987).

Some have dropped out of school seeing that a good education is not that important for getting a good job abroad. Many young grade schoolers now dream of becoming a migrant overseas worker (Arcinas 1987).

Ongoing, longitudinal studies of the impact of temporary overseas work are presenting evidences of certain negative effects such as selling of assets and the discontinuation of the education of children. Apparently the "biglang-yaman" syndrome is as transient and as fleeting as the brief duration of overseas employment. Unable to save and to productively invest much of their earnings and remittances, the migrant and his family are now experiencing the effects of dwindling or else loss of resources.

Negative consequences have also been observed in the quality of relationship among family members of migrant workers. Absence of one spouse and temporary separation has occasionally resulted in cases of infidelity or even in a reported suicide of a wife. In some cases, separation and complete breakup of the family have taken place. Conflict has also been observed between parents and the remaining spouse, or else between the remaining spouse and the children. Although temporary overseas migration tended to make the migrant worker more family-oriented, and more determined to provide better opportunities for children, there are reports of negative behavior on the part of children (such as becoming unruly, withdrawn, or spoiled or their schooling adversely affected), highlighting the need for migrants themselves to seriously weigh these non-economic costs.

2. Impact on Women

Reports of overseas migration of women, specially domestic helpers, entertainers, and the so-called mail-order brides to various parts of the world, have focused on sexual abuses, psychological stresses, and social degradation experienced by the migrant women. Feminists have decried the deepening process of commodification as a result of this international movement of women (See Cooke 1986).

Whether positively or negatively viewed, overseas migration seems to have imposed more burden on the shoulders of the multiple-role overworked and low-status Filipina. Single women migrants often bear unreasonable working conditions not to mention their psychological stresses just to help support their parents or brothers or sisters. Although the wife has been generally shown to have ably coped with the added household responsibility of single parenthood and the financial management of the household, reports on women who worry about their responsibility as single parents to their children or about being good financial managers, or cases of infidelity and of women spending their husband's hard-earned wages on their lovers or on extravagant shopping sprees, or finally, reports of rifts between the worker's wife, his mother or his mistress over his remittances underline the negative consequences of overseas migration for women. Women's low position is sustained or is even further lowered by overseas migration.

3. Impact on Polity

3.1 Government Policies and International Migration

Overseas migration has been created both by the internal requirements of the host and sending countries. Demand for labor by host countries and the desire of the sending country to alleviate unemployment and to earn much needed foreign exchange to support an ailing economy illustrate the important role of government policies in international migration.

International political controls have regulated the movement, the volume, the quality as well as the work and, and sometimes, even the social conditions of overseas migration. Policies toward international migration have encouraged the political and economic linkages of involved countries.

The substantial increase in the volume of overseas migrants has, in turn, resulted in the promulgation of government policies and programs toward recruitment, consular assistance to migrants in host countries, readjustment of migrants upon return to the home country, among others.

Reacting to observed massive brain-drain in the country, several Philippine government policies directed attention to creating opportunities and conditions to lure highly qualified manpower to remain in or to return to the country.

3.2 Political Participation

As a result of their volume, the overseas migrants have requested for a sectoral representative to the newly elected Philippine legislative body. Various organizations involving returning migrants or their families or involving parties interested in the conditions of migrant workers, have also increased. Radio and TV programs have been aired directed toward the "Saudi" group.

The results of the survey by Arcinas *et al.* (1986), confirm migrants' lack of interest for organizational affiliation whether in professional associations (only 15 per cent), clubs (14 per cent), and trade unions (only seven per cent). The fact that countries in the Gulf regions are perceived to frown upon all forms of organizations among contract workers has reinforced this reluctance to join organizations and has effectively kept Filipino contract workers from articulating their demands for better terms and conditions of work.

Data from the same source showed that three respondents out of four were not interested in politics before migration. Only eight per cent of them joined political parties before working abroad. Of this number, only two per cent said they were active members at the time of the study. Their stint abroad, however, did not change their outlook in politics. The number of respondents who joined political parties even dropped to four per cent. However, a large 63 per cent discussed politics during their stay abroad. Apparently, the migrants did not equate participation in discussion about government and its policies with a manifestation of interest in politics.

An impressive 87 per cent of the respondents preferred a democratic form of government to prevail in the Philippines, followed by "free press" and then "by active trade union." Eight out of ten contract workers claimed they are concerned about the actions of Filipinos abroad. According to Arcinas *et al.* (1986), this may be an indication of sensitiveness to criticism as a people on the part of the contract workers since the Filipino's principal norm is the desire for social acceptance. The concern for the reputation of the country as a whole may perhaps further reflect a sense of nationalism.

Finally, while the migrants professed interest in world affairs prior to their migration, their number increased after living and working abroad for some time. The professional, technical, administrative and clerical workers showed the highest proportion of respondents who became interested in world affairs while the construction workers showed the lowest

proportion. While working abroad did not change their perception of the global situation, most of those who experienced a change of perception expressed the need for the Philippies to develop.

3.3 Revolutionary Potentials of International Migration

Political laws related to international migration may create political tensions and conflicts among and between countries as well as between countries and their nationals. Arcinas notes, for example, that many Filipinos have gone to jail for incidents such as bumping another car, considered minor in the Philippines but punishable by "automatic imprisonment" in Qatar. Nurses who suffer abuse and rape have nowhere to go for help as there is no Philippine diplomatic office to assist them in Qatar.

Arnold and Abad (1985) present examples of tension resulting from circumstances of political controls over international migration. As examples, the presence of large numbers of Bangladeshis in India has been a source of recent tension. Illegal immigration to "magnet" centers such as the United States or Malaysia has continued unabated and has created political problems as well.

The recent drop in oil revenues and the new domestic goals in the Middle East have affected their demand for labor. The suddenness and extent of the Saudi government's economic and budgetary review, for instance, have caused bankruptcy which is expected to ultimately result in job abandonment, worker retrenchment, cost-cutting, non-payment of wages, deterioration of working and living conditions, contract substitution and, in general, restiveness among workers. There is a rise in complaints and welfare cases involving contract workers (Arcinas 1987).

Most of the complaints and welfare cases of the contract workers, however, remain largely unattended to. This was particularly true of the previous regime which ironically eagerly pursued a manpower export program because of its foreign exchange earning capacity but conspicuously neglected to respond to attendant problems of the program, specially of the migrants and their families.

Significantly, distrust in the government was expressed by a large 60 per cent of the respondents in the study of Arcinas *et al.* Their political discussions in the Gulf regions often focused on the workers' grievances against the relative indifference of some embassy personnel to their plight as well as against so-called restrictive government policies, e.g. forced remittance of their earnings through legitimate channels in exchange for passport renewal.

Erosion of confidence in the present government may continue for as long as the plight of overseas migration remains unattended to or is allowed to continue to fall on deaf ears. Any decrease in the demand for Filipino overseas migration can aggravate the present politically and economically unstable situation in the Philippines. The ranks of the unemployed will rise, the number of impoverished families will increase, urban problems will accelerate. As most overseas migrants tend to prefer residing in the urban areas after their stint, more demands for effective and efficient government service will be registered, more dissatisfied people will clamor and organize. The escalation of problems will certainly be a likely scenario in the event of a drastic decrease in overseas manpower demand. An extreme scenario would take the form of chaos and violence resulting from the need of organized Filipinos for a responsive and effective government that can effect their much-awaited meaningful relief from their economically burdened lives.

On the other hand, Jocano (1970) presents a more optimistic scenario for the successful Filipino immigrants in the American society. Observing that Filipinos have successfully broken into the upper social strata of the Hawaiian social world, occupying prominent positions in both the government service and in private establishments, he predicts an even brighter prospect for the Filipinos. According to him, by sheer numbers, Filipinos can wield strong political power in Hawaiian politics, if they unite. Considering that their number is certainly significant throughout the United States, it may not be farfetched to extend Jocano's prediction to see united Filipinos in top American political positions in the future.

4. Impact on Religion

4.1 Religious and Ethnic Conflict and Overseas Migration

The predominantly Christian Filipino workers find themselves in a disadvantaged position when they migrate to non-Christian countries. Especially in fundamentalist Moslem countries of the Middle East, reports of religious service disruption, desecration or confiscation of religious objects, and forced conversion have been experienced by Filipino Christian migrants. In Japan, female entertainers have expressed their guilt for infrequent attendance at religious services due to the absence of a Catholic church in their area of work.

Interestingly, some migrants in the Middle East resorted to conversion in an effort to improve their personal situation in host countries. This act reflects the reality that wage structure, work and living conditions vary by nationality groups. Three general payrolls are maintained in the Middle East: the American and European payroll, the local payroll for the countries' own nationals, and a payroll for Third World Nationals which include Filipinos and those from other Asian countries.

Jocano (1970) notes similar disparities in Hawaii. Other ethnic groups looked down upon the non-professional Filipinos as "inferior." Because of this unfavorable stereotype of being Filipinos, an ethnic-denial mechanism evolved. He observes, however, that more and more second-generation Filipinos were becoming proud of their Filipino ancestry as a result of higher education and increasing responsible positions assumed by Filipinos in Hawaii.

4.2 Responses of Religious/Ethnic Groups to Overseas Migration-Related Problems

Filipino "ghettoes" have sprouted in various host countries as a response not only to work-related discrimination but to interpersonal and social needs as well. Migrants themselves gave varied reactions when asked if they noticed any change in their perception and practice of religion (Arcinas *et al.*, 1986). Majority said they did not experience any change in their religiosity in the host country. Only 10 per cent said their perception of religion changed while 12 per cent said their religous behavior changed. Migrants become more religious and prayed more often despite the presence of very few religious facilities for Christians in host countries. Conversion was an exceptionally extreme and rare response resorted to by a few migrants and often, for economic not necessarily religious reasons.

The creation of makeshift chapels and resorting to secret charismatic group meetings were mentioned specially by the construction workers in the Middle East (Arcinas *et al.*, 1986). Tapes of religious songs and even services were sent by remaining family members to their migrant relatives.

IV. CONCLUSION: GAPS IN THE LITERATURE AND PROPOSED POLICY AND RESEARCH DIRECTIONS

The previous discussion attempted to synthesize fertility and migration studies in the Philippines along their explicit or implicit formulations about the consequences or impact of the two demographic processes on the family, the political and the religious institutuions. While the impact of fertility and migration could have been assessed for individuals, households, communities and regions, the choice of an institutional assessment rests on the belief that policymakers should be enlightened by an understanding of how these demographic processes affect and in turn are affected by the interplay of key institutions.

Since researches are hardly conceptualized along institutional variables, the discussion in the previous sections has been limited to dimensions touched on in foreign and in most local studies. Figure 1 summarizes the relationships established in the literature and synthesized in this paper. Moreover, it highlights at a glance several limitations and gaps in the literature which have implications for future research and policy directions.

Figure 1

Summary of the Variables in the Existing Literature on the Impact of Fertility and Migration on the Family, Political Institution, and the Church

Institutional Dimensions Affected by Demographic Processes

Fertility
(family size)
(frequency of child-bearing) →

Family Welfare

- health and nutrition of parents, children and women
- intellectual and mental growth of children
- social adjustment of children

Economic Dimension

- labor force participation and time allocation of parents and children

Family Processes

- husband-wife relations

Values and Norms

- values of children to parents

Political Variables

Processes

- forms of resistance and potentials for conflict (focus on the peasant sector)
- levels of participation in organizations of women as a sector

Religious Church

Processes

- formulation of policy

Migration

Internal Migration →

Family

Family structure
- nuclear or extended
- family size

Family labor and employment

Family Welfare
- housing, health and nutrition
- women

Political Processes
- policy responses to migration-related problems
- political participation (urban poor) and revolutionary potential

Church Processes
- religious and ethnic conflict
- policy responses to migration-related problems

International Migration →

Family

Family Size

Family Labor and Employment

Family Welfare
- levels of living, education, leisure

Values and Norms

Women as a sector

Political Processes
- policy responses to international migration problems
- foreign relations
- political participation and revolutinary potential

Religious Processes
- religious and ethnic conflict
- religious and ethnic response to overseas migration-related problems

First, because the researches are not planned to address consequences and impacts at the institutional level, the literature does not have anything to say about the effects of fertility and migration on other critical dimensions of each institution. As a result, the discussion of the impact of the two processes on each institution is incomplete and, therefore, fragmented. This is related to a second limitation.

Second, there is hardly any effort to relate the dimensions to each other. The fact that some dimensions are left out completely in the literature makes it extremely difficult to abstract possible conclusions on some of the relations among them. These relations, however, are important to identify because variables representing some dimensions mediate the effects of fertility and migration. For instance, the nature of participation of an increasing number of peasants in political organizations and struggles as a result of population increase in Philippine villages depends on their family's access to productive assets and on a host of other factors.

Third, the relations of institutions to each other are also neglected. Some of the responses of the church to migration-related problems (e.g., the strengthening of Basic Christian Communities), for example, can be translated into political pressure on the state.

Fourth, there are very few attempts in the literature to link the demographic processes themselves to one another. Conflicting views about linkages between internal and international migration have to be settled by more empirical studies on the subject (Arnold and Abad 1985, Appleyard 1970). There are also very few assessments of the interrelations between migration and fertility.

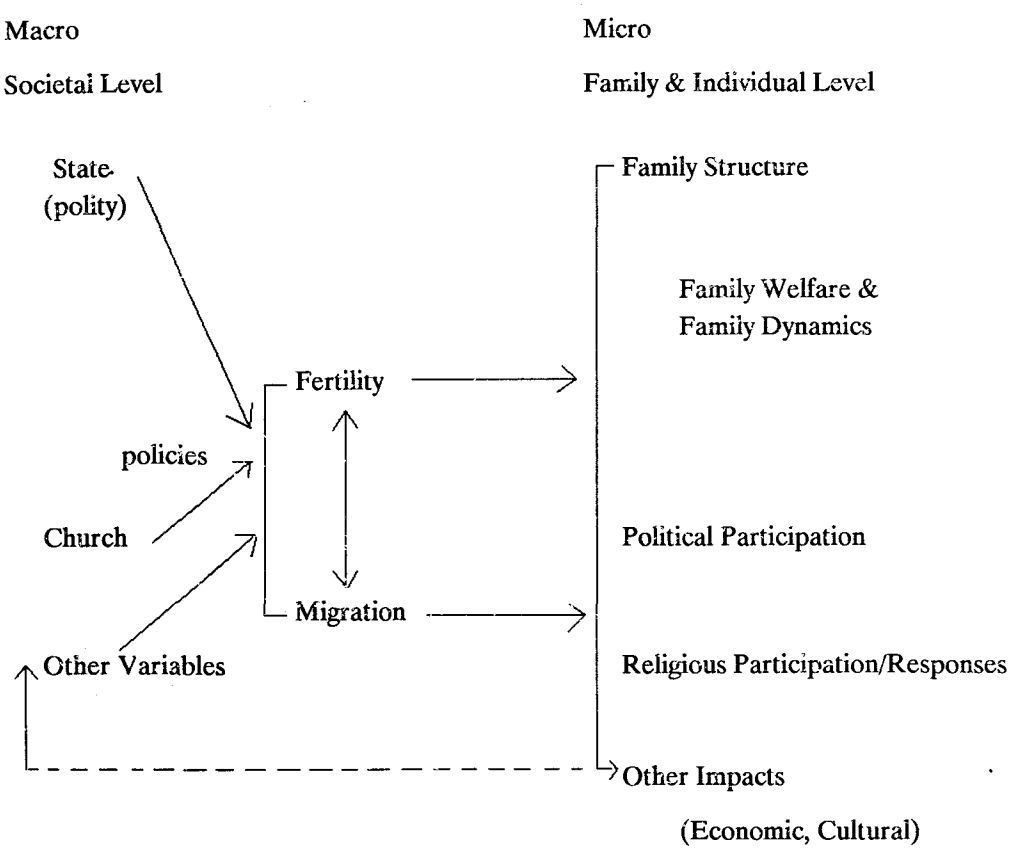
Finally, there is an urgency to study both the impact and determinants of the two processes on societal institutions within the broader context of the development policies and efforts of a given society.

Given the above limitations, it is necessary to substantiate a guiding framework for assessing the institutional impacts of demographic processes which reflect the interrelations among institutions and dimensions of specific institutions. Figure 2 provides a preliminary scheme of demographic impacts on the institutional level. The figure is confined to fertility and migration and a few institutions although it could be expanded eventually to include mortality and the institutions excluded in this paper.

Figure 2 is far from being directly useful for identifying specific components of a research agenda. The variables and arrows have to be worked out. However, it sensitizes the researcher to some institutional-level variables. Furthermore, it emphasizes the need to substantiate the relations reflected by the arrows. Such substantiation should include the specification of institutional variables which mediate the effects of the two demographic processes on the other institutions.

Figure 2

Preliminary Scheme Showing the Effects of Fertility and Migration on Selected Institutions, the Interactions among Institutions and between Institutions and the Two Demographic Processes.



Asserting the significance of describing the interactions among demographic processes on one hand, and institutions, on the other, opens a whole gamut of methodological problems, ranging from units to methods of data collection and analysis. The following points deal with some of the methodological challenges confronting researchers who wish to provide a stable information base for adequate policy intervention.

First, institutional analysis requires a multi-level approach which includes individuals and households as well as aggregate levels. A community-level analysis of fertility and migration, for instance, can provide information for evaluating a typology of patterns of the two processes and their impacts. Apart from obtaining data for geographic communities, strategic sectors should also be identified in order to explore additional angles on institutional impacts.

Second, there is a need to develop creative methods of assessing the impact of fertility and migration which combine macro and micro-levels of analysis. The relative neglect in the literature of impacts in general, and institutional factors in particular, is partly due to the fact that methodological frameworks and tools which contributed tremendously to the systematic study of determinants do not apply as easily to the variables involved in impact studies. While the usual survey and quantitative analysis can shed light on the relations between demographic processes, on one hand, and some dimensions of socioeconomic institutions, on the other hand, they fail to provide an understanding of processes, given the current state of the technology. Furthermore, unless a survey is enligthened by field observations, it can tend to gloss over significant variables which can be discovered serendipitously in the course of using qualitative field methods.

A multiplicity of methods is called for, given the types of information needed to develop appropriate policies. Other methodologies have to be explored. Studies on the impact of migration on institutions, for instance, can gain from the exploration of other methodologies like life histories of cases. Qualitative methods can also be developed for aspects of impact studies which could not feature meaningfully into multivariate, multilevel, interactive models. This is in recognition of the importance of specific aspects which are often dropped from the research agenda of economists and demographers because they could not yet be incorporated into quantifiable models.

A multi-approach, multi-method set of researches can provide more insights into the varying impacts of fertility and migration on different groups. These groups are sometimes identifiable only literatively, *i.e.*, while the researchers are actually in the field. The insights can contribute to the development of a non-universal, multipronged policy which has greater promise of effectiveness compared with a one-shot population policy intended for a homogenous population. While studies aimed at evaluating specific population-related policies should be part of our proposed research agenda, the fact that problems persist implies either the failure or inadequacy of existing policies. This inadequacy is partly brought about by the inability of researchers and policymakers to identify varying types of population targets and provide comprehensive qualitative and quantitative description of the impact of demographic process on the subgroups.

APPENDIX A
DEMOGRAPHIC PROCESSES AND WOMEN'S STATUS

The active promotion of the ideology of popular participation in development in the decades of the 1960s and 1970s signalled a shift in the implementation of development programs and in the orientation of researches that accompanied these interventions. This shift was evident in women's studies and in family planning research conducted on or about the late 1960s and through the 1970s. For example, Torres (1987: 7) noted that to help plan effective population control program "social science researchers were given grants to undertake baseline studies on decision-making, processes of attitude formation and change, marital relations, fertility behavior, migration, and other topics relevant to population concerns. Since family planning involved women as a principal actor, these researchers lent information on the Filipina's social-psychological makeup."

In addition, other researches were conducted to assist in the integration of women into the development process, with emphasis on their economic participation. Known as Women in Development (WID) Studies, they sought to analyze further the various dimensions of women's participation particularly in the labor force.

Women's groups and population (family planning) advocates and implementors appeared to have found common cause in promoting women's labor force participation (LFP) as a means of reducing fertility (at given income thresholds) and improving women's status *vis-a-vis* men. Studies were thus undertaken in the 1970s to further explore these potentials and/or test hypotheses on how these predicted changes can be achieved. Greater LFP was expected to raise family incomes, expenditures and consumption levels and further stimulate economic growth, and to lower fertility as well as increase participation of women in other societal spheres with the end in view of raising their status.

Other feminist groups, however, objected to the inordinate emphasis on productivity gains. They asserted that accompanying radical structural and cultural changes are necessary to bring about greater equity between men and women. They argued that development pursued under a scheme globally promoted by trans-national corporations based on an export-oriented strategy which exploits cheap labor in Third World countries will only intensify women's oppression and exploitation (del Rosario 1987).

While the LFP-fertility relationship as discussed above seems quite simple, researches done on the subject suggest otherwise. The nature and direction of the relationship include a complete array of factors and variables as place of residence (whether rural or urban), location of work (within or outside the home), level of education, type of occupation, household structure, family

support systems, cultural values and orientations. And admittedly, research results also presented varied directions for policy, since some findings were not clear, consistent and definitive.

Review of the Literature

In her study in 1972, Concepcion noted the possible significant relationship between fertility and two other variables, namely, type of work, and compatibility of two different roles (i.e., housekeeping and non-household unemployment). This observation was borne out by the 1958 PSSH data on 6,500 ever-married women analyzed by Concepcion in 1963. Her study revealed that working wives aged 45–64 in urban areas exhibited lower fertility than those from the rural areas. While rural women were also employed, their fertility remained high because their occupations were home-based thus allowing them to keep an eye on the household.

Pascual, in a 1971 report, supported the 1963 findings of Concepcion. Analyzing data on women 35–54 years of age included in the May, 1968 National Demographic Survey, she found out that the employed women in urban areas who belonged to the 35–44 age group reported lower average number of children ever born than those who were not employed. In contrast, employed rural women aged 45–54 registered a reverse trend. Regardless of place of residence, however, the professional women had the lowest average number of children.

Using the same survey, Pullum (1971) reported that the not-employed women consistently showed the highest fertility, particularly in contrast with those under the "employed with pay category." Per year of marital exposure, the youngest women reported about one-fifth more births if they were not employed than if they were employed.

For further examination of the fertility-employment hypothesis, Pullum considered the differences between working and non-working women with respect to age, schooling, husband's education and occupation in both rural and urban areas. The data disclosed that employed women were older than the unemployed. Within urban areas, working women were, on the average, four years older than their unemployed counterparts. In the rural sector, the difference was one year in favor of the unemployed. In terms of schooling, more wives than husbands in both urban and rural areas claimed to have attended school. With respect to the selected characteristics presented, differentials by labor force status were evident although the differences between urban and rural areas were also significant, in the case of proportions of husbands in white-collar jobs and of wives attending school for both working and non-working women.

While employed women married one to two years later than non-working women, neither residence status nor employment status showed very little relation to the age at marriage – 2.2 years for rural areas and 4.5 years for urban areas. The residence differentials were smaller – 1.5 years for working women and 3.8 for those unemployed. Finally, when duration of marriage

was controlled, the differences in fertility by employment varied from 15 to 40 per cent in favor of the unemployed as one went from village to city. On the other hand, rural fertility was 6 per cent less than the urban among the employed but 14 per cent more among the unemployed.

As mentioned earlier, non-working women in both rural and urban areas have attended school in greater proportions than working women. Controlling for education, the differentials between employment status and age at marriage and marital fertility still persisted. In fact, the difference among unschooled rural women was almost 5 years in favor of the employed. In the urban area, the differential by school attendance was apparent only among the non-workers. Irrespective of residence, schooling and employment appeared to be related to fertility as the differences in mean live births ranged from 5 to 15 per cent per 100 years of marriage. But even more noteworthy was the fact that those with schooling produced more live births than those without from both urban and rural areas. It will also be seen that the reversal in live births for employed women in urban areas is explained by the contribution to fertility of the unschooled urban employed.

From the above data, one can understand the difficulty of merely accepting any generalization about female employment and fertility as earlier noted by Concepcion (1972). The controversy does not only involve the verification of the existence of the relation between employment and fertility, the direction of the assumed relation, and the explanation for such a relationship; the problem requires the clarification of the nature of the intervening variables between female employment and fertility. Given these unresolved issues, policy direction was definitely left unclear. The only clear path was to continue with more studies that would hopefully present more conclusive findings and resolutions regarding the relationship of female employment and fertility.

Thus, more research on the topic was carried on from 1972 onward. But despite a display of a progressively developing quantitative methodology (multivariate and log-line analyses), research findings remained just as inconclusive about the relationship of female employment and fertility.

More variables were added to the list of factors influencing fertility and female labor force participation. Encarnacion (1972), for example, using 1968 National Demographic Survey data, suggested that the marginal effects of family income and of educational level may be positive or negative depending upon whether these variables fall below certain critical threshold levels. Canlas confirmed the presence of these thresholds of income and education in his 1978 thesis where he stated that below the threshold, the effect of an increase in income and education in fertility was positive; above the threshold, the effect was negative.

Engracia and Yun (1979) provided further evidence of a threshold level of income whereby fertility becomes positively related with income. Data obtained from the 1972 Fertility Survey of

the Philippines showed that women in families receiving less than P1000 annual income have less children born to them than women belonging to the income bracket P1000–2999. Such a finding seemed to show that extreme poverty in itself can be a regulation of fertility by rendering women less fecund than they otherwise are. Their data also showed that at very low levels of education, a positive correlation existed between the number of children and the level of education of women. Particularly at ages nearing the end of the reproductive period, the uneducated women displayed higher number of children ever born than the elementary educated women did.

Other new variables suggested included the earnings of both working spouses (Teston 1982), regularity or irregularity of employment (Taclob 1979), history of unemployment, nature of employment (industrial or agricultural) and regional variation in the responses to female labor participation (Feranil 1985). Herrin (1980) presented a model illustrating the factors that determine the relationship between female work participation and fertility. These factors include biological, sociological, socio-psychological, economic and demographic factors which define the circumstances of the woman, the family and the labor market at any given time.

Data analyzed from a survey of 1,926 once married women of child-bearing ages currently living with their husbands in Misamis Oriental Province, Southern Philippines suggested that the relationship between female work participation and fertility was spurious, whether the variables were viewed in the cumulative, current or birth interval contexts. In general, cumulative work experiences generally did not appear to significantly affect fertility, nor did cumulative fertility significantly affect the extent of work participation. According to Herrin, the correlation between these two variables in each of the contexts analyzed in the study could be explained by their dependence on a set of common determinants. The significance of these determinants, however, varied among different age cohorts, different parities, and different birth intervals of women.

Among the significant determinants were the potential earnings of both husband and wife. The variables generally tended to reduce completed or current fertility and to increase the birth intervals of the higher order births of women of high parities. They have opposite effects, however, on female work participation with husband's potential earnings generally reducing female participation while the wife's potential earnings generally increasing such participation.

Another set of significant determinants were the socio-psychological variables, specially the normative orientations of the household as reflected in the husband's attitude toward female work. This variable consistently tended to reduce current female work participation either by age cohorts or by previous parity. The effect of work commitment, husband-wife dependent variables tended to be less consistently significant, however, than husband's attitude although these exhibited the expected signs.

Finally, the effect of time conflict (role) was positive with respect to work participation suggesting that where there is a conflict between work and fertility, child-bearing women tend to work less in order to have current births rather than postpone or stop childbirth in order to work. Hence, increasing role conflict (time wise) will tend to raise fertility and reduce female work participation, rather than vice-versa.

Herrin concluded that the tentative results of his study suggest that policies and programs to expand female employment in settings like Misamis Oriental may probably have little discernible direct contribution to fertility reduction. Likewise, the effect of increasing employment opportunities that conflict with childbearing and rearing such as fixed working hours away from home, may prevent rather than induce large numbers of women from seeking such employment, all things being equal.

Herrin's findings for Misamis Oriental, however, could only be, at best, tentative, as he himself acknowledges. It may be, Herrin concludes, that in a dynamic setting not adequately captured by the present models, female employment could ultimately affect fertility via the substitution effect of increased family income from female contribution as well as via its effect on the gradual change in normative orientations regarding female roles. Only further studies, however, could examine these indirect mechanisms. Such a tentative conclusion, once again, offers very unclear and indefinite directions for policy.

The studies conducted from 1972 onward are not without merit, however. Independent studies showed common variables that were significantly related to female employment and fertility. Consistently, place of residence affected fertility. In general, urban employed women tended to have less children than their rural counterparts (Concepcion 1974, Layo 1978, Matura 1982, del Fierro 1983, and Cabigon 1985). Education and age at marriage are significantly correlated with fertility (Concepcion 1974, Layo 1978, Corwell 1981, Cabigon 1985 and Feranil 1985).

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SAVINGS, PRODUCTIVITY, AND POPULATION: NOTES ON THE MACROECONOMICS OF POPULATION CHANGE

Dante B. Canlas

I. INTRODUCTION

One of the objectives of macroeconomic analysis is to account for differences in levels and growth rates of output across countries and over time. Into the ensuing analysis, we want to incorporate the widely observed fact that countries at different levels of development also exhibit variations in levels and growth rates of population. To what extent are the explanatory powers of existing macroeconomic models improved by explicitly incorporating demographic factors in the analysis?

We begin our search for answers to this question with a brief sketch of some familiar issues in sources of growth accounting and how population changes may affect the different economic factors behind output growth. We also briefly discuss aspects of household behavior that affect population growth.

Insofar as improvements in total factor productivity are embodied in the choice of capital stock, it is useful to begin an inquiry into the macroeconomic implications of demographic changes with an analysis of consumption and saving behavior. What are the likely impacts of demographic variables like crude birth rates, infant mortality rates, and migration on consumption and saving? To get some answers, we try to estimate an aggregate consumption function based on a permanent-income hypothesis (see Friedman, 1957).

The paper is organized as follows: Section II briefly reviews the main ideas in sources-of-growth accounting. Section III discusses three major factors affecting population growth. Section IV carries out an empirical analysis of an aggregate consumption function. Section V makes concluding remarks.

II. SOME PRELIMINARIES

1. Sources of Labor Productivity

Using a growth accounting framework, it is possible to identify two basic sources of output growth. These are the growth of factor supplies, and of total factor productivity or technical progress. With a production function as an analytic device, it can be shown that the growth rate

of output can be partitioned into a share-weighted growth of capital and labor inputs and a residual category associated with total factor productivity. With a slight modification, we can express growth rate of output per worker or labor productivity as the sum of the change in the capital-labor ratio and total factor productivity.

Increase in the capital-labor ratio depends on society's ability to generate savings over time. The saving rate determines the proportion of output that is saved and invested so that the capital stock can grow. It is clear that the saving rate, by financing capital accumulation, is one of the important determinants of output growth.

Some empirical studies done in industrial economies like the United States have shown that a large proportion of the growth in output is due to total factor productivity. Robert Solow (1957) for instance, estimated its contribution to be about 80 per cent.

As a result of these studies, several economists have been motivated to investigate the factors behind total factor productivity or the residual in sources-of-growth estimation (see, e.g., Denison, 1983). One of the important components is advancement in knowledge. Here, the roles of education, training, and research are well indicated. The investments in education and training that individual workers make determine the amount of skills or human capital that they bring to the work place. These skills, in turn, affect their ability to adapt to the new techniques of production.

Another important component of total factor productivity comes from efficiency gains derivable from improved allocation of resources. This can come about in a variety of ways. For example, improvements in information gathering or more broadly, an improved organizational setup within the firm, can bring about a better matching of workers to jobs. It is well recognized that production entails a number of tasks requiring specific skills and it would be beneficial for the firm if workers are assigned to tasks where they have a comparative advantage. A related example concerns improvements in job-worker matches afforded by a mobile labor force. Through job search, poor job-worker matches are dissolved while better matches are formed. Self-employed farmers, for instance, leave farm work in favor of high-paying jobs in the industrial sector with a positive effect on output. In a similar manner, Filipino workers quit domestic jobs for better-paying jobs in the Middle East.

Other factors or phenomena linked to human resource development that have been identified as affecting total factor productivity include the changing demographic composition of the labor force and the use of incentives to motivate workers. The former is treated here in the section on population issues, but the latter is beyond the scope of this paper.

2. Some Facts

The average growth rate of real gross national product (GNP) per worker or labor productivity exhibits a marked slowdown within the period 1973–1983. Table 1 shows that for 1955–1965, the average yearly growth of labor productivity is 1 per cent, and 2.5 per cent for 1966–1972. For 1973–1983, it drops to 1.5 per cent. If we include the negative growth rate of 10 per cent for 1983–1984, the average annual growth rate falls further down to .45 per cent.

TABLE 1

Average Annual Growth Rate of Labor Productivity

Period	Growth Rate (in per cent)
1955-1965[a]	1.0
1966-1972[b]	2.5
1973-1983[b]	1.5
1983-1984[b]	(10.0)
1973-1984[b]	.45

[a]See Table 7 of Robert Lampman (1967)

[b]Estimated from National Census and Statistics data.

III. POPULATION ISSUES

To achieve a steady-state growth under a growing population, it is necessary that capital, output and employment grow by the same amount as the population growth rate to keep per capita levels constant. Net saving and investment must be positive so that capital can be provided to new members of society. At the household level, parents must carry out positive saving so that they can pass on new capital to their children. The larger the number of children in a given household, the greater is the need to increase savings so that capital per child remains the same across generations. It is a fact that average saving rates in the Philippines are relatively low and to raise them at all levels of income requires some policy reforms, say, by maintaining a positive real interest rate. Barring these reforms, extra efforts have to be exerted to achieve a significant reduction in the population growth rate. By reducing the average family size, the dependency

ratio is lowered. At a given level of income, a lower dependency ratio eases the pressure on household consumption, thereby exerting a positive effect on household saving.

In low-income countries like the Philippines, high population growth rates are usually accompanied by high infant mortality rates and short life expectancies. This phenomenon can influence adversely the saving rate. If individuals perceive their life expectancies to be short, their life-cycle decisions may lean toward concentrating consumption in the present period at the expense of saving for the future. In other words, when expected lifetimes are short, rational individuals, at any given interest rate, may be less inclined to postpone present consumption for later.

In terms of the effects on total factor productivity, a high population growth rate leads to an age distribution that is highly concentrated at the younger age cohorts. Holding the level of education and training fixed, this distribution tends to depress the average skill of new entrants into the workforce. This influences labor productivity negatively.

Another variable that goes down as a result of a high rate of population increase is land per worker. With less land to work with, the pressure to open up marginal lands for cultivation mounts. As a result labor productivity growth slows down or ceases.

In the drive toward lower population growth rates, an understanding of some aspects of fertility, mortality, and migration is useful.

1. Fertility

The economic analysis of fertility emphasizes the role of incentives in affecting household fertility behavior. Starting from the usual notion that households are rational, in the sense that they choose a most preferred bundle of commodities which includes child quality and quantity subject to time and money constraints, households' demand for quality and quantity of children become functions of shadow prices which are weighted averages of the prices of market goods and services, and wage rates or the opportunity costs of time. It has been hypothesized that wage rates, specially of women, exert negative relative price effects on the demand for children. As the woman's wage rate goes up, the opportunity cost of her time goes up. This raises the relative price of household activities which are intensive in the use of her time. Time-intensive activities become less attractive. Meanwhile, working in the market at the offered wage rate that has risen becomes an attractive option. Child care is normally female-time intensive. A rising female wage tends to have dampening effects on desired number of children. At the same time, an increase in the woman's wage leads to an increased demand for higher-quality children. Child quality is held to be income elastic, that is, more of quality is demanded with a rise in income. With an increase in her wage, all other things held constant, household income will rise. Quality of children is usually thought of in terms of more investments in schooling, health, and nutrition. It has been pointed

out that these types of investments in human capital generate long-term economic benefits by increasing the productivity of children when they assume their adult role as workers.

The demographic transition that has occurred in more modern economies has been explained in terms of the role of rising female wage rates. It is useful to note that the drop in fertility rates is also associated with rising female labor force participation rates.

2. Mortality

It is a fact that a positive correlation exists between fertility and infant mortality rates. One explanation rests on a replacement motive. A high infant mortality rate increases the likelihood that not all live births survive to adulthood, creating an incentive to replace. In other words, a high infant mortality rate tends to shift household demand for number of children, so that at any given commodity prices and wage rates, more children are desired.

If the casuality runs from infant mortality to fertility, efforts to reduce the former can help achieve population growth targets.

3. Migration

Migration can be viewed as a form of investment in human capital. If the present value of the stream of expected income in the place of destination exceeds the present value of income in the current place of residence, then the decision to move is a sound investment. Viewed in the context of job search, any unemployment resulting from migration can be regarded as voluntary.

However, there is one aspect of migration in the Philippines that is perceived to be counter to population and development objectives. The rural-urban migration is putting heavy pressure on city budgets, brought about by rising claims on social services like education, health, transportation, and housing. These developments create an urban bias in the allocation of resources.

In terms of labor-market effects, rapid rural-urban migration contributes to the growth of a low-wage informal sector consisting of low-skill occupations like hawking, and scavenging. Normally, activities carried out in this sector are illegal, opening up the need to police and regulate them. This expands urban bureaucracies without increasing marketable output. Rapid urbanization also raises the supply of urban workers. In the absence of an accompanying rise in labor demand, real wage rates decline.

Some figures on interregional migration are suggestive of these labor-market effects. Table 2, for example, shows volume of migration for 1975–1980 and 1980–1985. It is observed that the National Capital Region, which includes Metro Manila, is the preferred destination of majority of migrants. In Table 3, we note that the national capital has the highest number of unemployed persons. Finally, in Table 4, we observe a sharp decline in the real wage rate index for skilled and unskilled laborers in Metro Manila in the seventies.

TABLE 2
Inter-regional Migration Volumes: Philippines
1970–75 And 1975–80

REGION	Intercensal Period					
	1970–75[a]			1975–80[b]		
	In–Migrants	Out–Migrants	Net–Migrants	In–Migrants	Net–Migrants	Out–Migrants
National Capital Region	310,824	155,737	155,087	393,722	213,403	180,319
I. Ilocos	35,655	92,867	–57,212	38,703	91,530	–52,627
II. Cagayan Valley	29,868	35,985	–6,117	35,526	37,988	–2,462
III. Central Luzon	82,287	81,044	1,243	106,997	96,342	10,655
IV. Southern Tagalog	127,449	125,795	1,654	187,684	119,800	67,884
V. Bicol	40,513	82,118	–41,605	39,532	103,134	–63,602
VI. Western Visayas	62,386	70,026	–7,640	35,405	109,232	–73,827
VII. Central Visayas	60,913	110,581	–49,668	54,243	119,181	–64,938
VIII. Eastern Visayas	53,171	65,643	–12,472	29,314	102,190	–72,876
IX. Western Mindanao	22,564	50,821	–28,257	29,650	38,462	–8,812
X. Northern Mindanao	94,294	53,447	40,847	94,304	58,866	35,438
XI. Southern Mindanao	94,416	63,965	30,451	91,278	64,114	27,164
XII. Central Mindanao	36,556	62,867	–26,311	57,673	39,787	17,886

[a]Based on a 5 per cent sample of population 5 years and over in 1975.

[b]Based on 20 per cent sample of population 5 years old and over in 1980.

Source: NCSO, 1975 and 1980 Census Data adjusted for "Not Stated."Nguiagain, Titus (1986)

TABLE 3
Number of Unemployed Persons by Region 1978, 3rd Quarter (in Thousands)

Region	Number Unemployed
National Capital Region	155
I. Ilocos	27
II. Cagayan Valley	26
III. Central Luzon	73
IV. Southern Tagalog	110
V. Bicol Region	26
VI. Western Visayas	64
VII. Central Visayas	32
VIII. Eastern Visayas	44
IX. Western Mindanao	26
X. Northern Mindanao	33
XI. Southern Mindanao	66
XII. Central Mindanao	11

Source: NCSO, Integrated Survey of Households.

TABLE 4
Real Wage Rate Index for Skilled and Unskilled Laborers
In Metro Manila: 1970-80 (1972-100)

Year	Real Wage Rate	
	Skilled	Unskilled
1970	114.4	111.6
1971	105.1	104.1
1972	100.0	100.0
1973	92.4	90.0
1974	75.6	72.8
1975	72.7	72.9
1976	71.2	72.3
1977	72.9	70.4
1978	76.1	68.3
1979	70.8	60.7
1980	63.7	53.4

Source: Central Bank, Statistical Bulletin, various issues.

Rapid rural-urban migration can also run counter to population objectives. There is evidence that rural households display a higher fertility rate than urban households. If these relatively fertile households migrate to the urban areas and fail to be employed in the high-wage formal urban sector, the economic forces that tend to reduce desired family size are not mobilized. On the average, fertility rates in the urban areas will increase as a result.

4. Population Growth and Structure

Table 5 shows the total population and its average annual growth rate from 1948 to 1980. In 1948, the population was about 19.2 million. It rose to 48.1 million in 1980. The average annual growth rate from 1975 to 1980 is about 2.7 per cent.

TABLE 5
Population, 1948-1980

Year	Total	Female	Male	Annual Growth Rate (in percent)
1948	19,234,182	9,582,987	9,651,195	
1960	27,087,685	13,424,816	13,662,869	3.06
1970	36,684,486	18,434,135	18,250,351	3.01
1975	42,070,660	20,794,436	21,276,224	2.78
1980	48,098,460	23,969,705	24,128,755	2.71

Source: Census of Population

The rapid growth rate of the population creates an age distribution that is heavily concentrated in the junior age cohorts. Table 6 shows the distribution of the population by age group. The average proportion in age group 0–14 years is 43 per cent.

TABLE 6
Population by Age Group (in Percent)

Age Group (Year l)	1960	1970	1980
0-14	45.7	45.7	42.0
15-64	51.6	51.6	54.6
65 and over	2.7	2.8	3.4

Source: Census of Population

IV. CONSUMPTION, SAVINGS, AND POPULATION GROWTH

As of now, the debate on the effects of population growth on savings in less developed countries (LDCs) seems unsettled. Those in favor of slowing down high population growth rates cite the depressing effect on savings of high population growth rates, with adverse consequences on the growth of output (see, e.g. Ansley Coale and E.M. Hoover, 1958). An empirical study by Nathaniel Leff shows that dependency ratios have a negative effect on savings rates. However, some of the people are less pessimistic about high population growth rates (see, e.g., Colin Clark, 1973 and Julian Simon, 1976). Clark, for example, notes that historically, population has been associated with larger, and not with smaller rates, of economic growth. Using a simulation model, Julian Simon shows that LDCs may be better off with medium rather than low fertility levels.

The above cited debate indicates a need to carry out more empirical research, and to marshal additional evidence about the relationship between savings and population growth. In this section, we investigate the effects on consumption of demographic variables: crude birth rate, infant mortality rate, and migration. The aggregate consumption function that we estimate is based on Milton Friedman's permanent-income hypothesis. The model is estimated using time-series data for the period 1950–1983.

1. Model

The permanent-income hypothesis of the consumption function posits that households gear their consumption spending to permanent income, not to current income. In line with the evidence presented by Simon Kuznets on the seeming constancy of the long-run average propensity to consume, the permanent-income hypothesis postulates the following:

$$(1)\ C_t = k\, Y^P_t$$

where C is personal consumption spending, Y^P is permanent disposable income, k is a positive constant between 0 and 1, and t is time period.

We use eq. (1) to build an empirical consumption function model that enables us to look at the effects on consumption of crude birth rate, infant mortality rate, and temporary international migration of labor. The latter may be thought of as capturing supply-shock effects – specifically the crude-oil price increases in 1973 and 1979 – on consumption and savings.

Equation (1) can be rewritten in the form $C_t / Y^P_t = k$. In this form, a regression model is suggested: The average (and marginal) propensity to consume out of permanent income is a constant, controlling for some demographic factors affecting household size. We build a regression model of the form:

$$(2)\ C_t/Y^P_t = B_0 + B_1X_{it} + \varepsilon_t$$

where $X_i\ t$ is a vector of demographic variables, B_0 and B_1 are the coefficients, and ε_t is a standard normal error term.

To empirically implement (2), we use data from the National Income Accounts to construct a time-series data on personal consumption expenditures, C. To operationalze permanent income, Y^P, we estimate an autoregressive model of the form $Y_t = a + bY_{t-1} + \mu_t$ where Y_t is real GNP at period t, b is the slope coefficient, and u is the normal error term. After estimating the autoregressive model, we take the predicted Y as measure of permanent income.

For the demographic variables, we use crude birth rate, BR, and infant mortality rate, MR, initially. The time-series data that we use are obtained from the estimates made by Alejandro Herrin and Vicente Paqueo (1985).

For the migration variable, we want to capture whatever effects the temporary international migration of labor has on consumption. The oil-price shocks in 1973 and 1979 enabled the oil-exporting, Middle East countries to accumulate large surpluses in their balance of payments. Some of the surpluses were disposed through public expenditures programs on, say, construction projects. With scarce labor, the Middle East countries had to import their manpower needs. This gave rise to temporary international migration.

What might be the effect of such migration on consumption? The input-price shock was a negative shock to production of oil-importing countries like the Philippines and it could have a negative impact on production. However, the temporary migrant workers were also remitting some of their foreign earnings to the Philippines, which could have led to a positive wealth effect on consumption. The net effect on consumption is, as a result, ambiguous. To test this, we use a dummy variable. The period used for the analysis is 1950–1983. We assign 0 for the years 1950–1972 and 1 for 1973–1983. The latter period saw an upsurge of temporary migrants to the Middle East.

2. Results

We now report the ordinary least squares estimates of a function with the ratio of consumption to permanent income as dependent variable. Permanent income is the predicted value from the autoregressive model below:

$$(3)\ Y_t = \underset{(2.29)}{1788.5} + \underset{(71.1)}{1.009}\ Y_{t-1} \qquad R = .99\ \ D.W. = 0.66$$

where Y is real GNP. The numbers in parentheses are t-ratios.

We estimated an equation where the dependent variable is the ratio of consumption to permanent income. The result is shown below:

$$(4)\ C_t/Y_t = .64) + .002BR_t + .00002MR_t - .089D$$
$$(16.04)\ (2.17)\ (0.09)\ (-7.29)$$
$$R^2 = 0.88 \quad D.W. = 1.056$$

The crude birth rate, BR, exerts a positive effect on C/Y. The result supports the hypothesis that the addition of children leads to a faster rise in consumption relative to income. The effect of infant mortality rate, MR, is not significantly different from zero. This may be because MR is highly correlated to BR.

The dummy variable has a negative effect on C/Y and is significantly different from zero. It is, however, difficult to disentangle the various factors behind this result. It may be due to the negative shock to output, which leads to a fall in consumption greater than the fall in income.

We also estimated the model with ln C/Y as dependent variable:

$$(5)\ \ln C/Y = -0.432 + .003\,BR_t + .00007\,MR_t - .131D$$
$$(-7.76)\ (1.96)\ (.238)\ (-4.1)$$
$$R^2 = 0.88 \quad D\text{-}W = 1.04$$

The results are essentially the same as eq. (4)

Based on this evidence, we conclude that a high birth rate leads to an increase in average propensity to consume out of permanent income, which means that households reduce their savings.

V. CONCLUDING REMARKS

Our investigation of the effects of demographic variables suggests that an increase in the crude birth rate leads to higher consumption, and consequently lower savings. This casts doubts on the assertion that with a bigger household size, family members are encouraged to work more and earn income in order to offset the additional consumption from additional children. The adverse effects on output follow unless households are able to increase savings in order to maintain capital per worker.

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DEVELOPMENT IMPACTS OF PROFESSIONAL EMIGRATION FROM THE PHILIPPINES

Benjamin V. Cariño

I. BACKGROUND AND OBJECTIVES

Migration has historically been a common response of Filipinos to various social and economic problems. Areas of outmigration in the Philippines have been characterized by high population densities, imbalance of land ownership, low agricultural productivity, frequent calamities and disasters, and high rates of unemployment and underemployment. Although most of the movements had been internal in character, many Filipinos had moved across the borders of their nation to other countries.

The Philippines is, in fact, a main source country for international migrants – those leaving home in search of a better life through temporary employment or permanent residence in another country. Even today, however, the options for permanent resettlement are few, and the opportunities that do exist are nearly all found in four Pacific Basin nations: Australia, New Zealand, Canada and the United States. Among these countries, the United States admits most of the immigrants from the Philippines.

The status of the U.S. as a major host society for Filipino immigrants can be attributed in large part to the passage of the 1965 immigration reform which eliminated the restrictive national-origins quota system and allowed entry on the basis of kinship with persons already in the United States, or on the basis of occupational characteristics. Following this realignment of U.S. policy, Philippine immigration to the U.S. grew dramatically. In turn, the massive immigration of Filipinos to the United States has important implications for the socio-economic development of the sending society.

The exact nature of these impacts is, however, difficult to determine because of the dearth of knowledge and information on various aspects of the phenomenon. Beyond very limited evidence on the magnitude of the flows, little information exists on such aspects of the problem as the employment status of the emigrants prior to departure, the human capital endowments that they embody and the extent to which these are relevant to the development needs of the country, the structural and micro-level determinants of emigration as well as the incidence and magnitude of such phenomena as return migration, remittances and other processes that influence the nature of the impacts. It is for this reason that in the Philippines as elsewhere, there is still much debate on whether the consequences of emigration are harmful or beneficial to the

sending society. Research on the trends, determinants and consequences of emigration will aid in resolving this controversy. Even more important, however, it will provide the basis for the sending country in formulating emigration-related policies.

Focusing initially on Filipino immigration to the U.S., this preliminary report is designed to fill in the knowledge and information gaps about the trends, determinants and consequences of emigration from the Philippines. Specifically, the objectives of the research are the following:

1. Document the levels and trends of Philippine immigration to the U.S.
2. Assess some of the structural determinants of the flow;
3. Identify some of the possible consequences of emigration to the sending society with particular reference to the major sources of the impacts; and
4. Document some of the emigration-related policies of the country particularly as they affect the magnitude of the flows.

The levels and trends of Philippine immigration to the U.S. will be analyzed based on data gathered from the UNESCO Statistical Yearbooks and the annual reports of the U.S. Immigration and Naturalization Service (INS). In assessing the characteristics of the immigrants, this report will rely heavily on the data gathered from the first 1,000 respondents of the immigrant Pre-Departure Assessment (IPDA) Survey, a joint research project of the East-West Population Institute, the University of the Philippines and Hanyang University.

Based upon a systematic sample of approximately 10 per cent of the 1986 immigrant visa holders aged 18-69, the main objective of the IPDA survey was to analyze in depth the profiles of the 1986 cohorts of legal immigrants from the Philippines and Korea – the two largest source countries for Asian immigration. Analysis of the results of the IPDA survey will be supplemented with a review of the influences of the international linkages that exist between the Philippines and the United States.

II. PHILIPPINE IMMIGRATION TO THE U.S.

Philippine immigration to the United States is an active phenomenon that continues a pattern which started with the recruitment of workers by sugar plantation owners in Hawaii and California in the early 1900s (Lasker, 1969: 28-32). The first major recruiting of Filipino labor occurred in 1905, and by 1929, the Filipino population in the United States was estimated at 80,000 (Pido, 1986). The flow of Filipino immigrants during this period was facilitated by the fact that until 1934, Filipinos were allowed to move to the United States freely as U.S. nationals.

When the Philippines was granted commonwealth status in 1935, immigration to the United States was virtually halted. Based on a national origins quota system, an average of no more than 100 Filipinos immigrated to the United States annually during this period (Arnold, Minocha and Fawcett, 1987; Pido, 1986). The number of Filipino immigrants rose significantly over the next two decades when the Philippines gained independence from the United States in 1946, although it did not exceed 4,000 in any given year (Arnold, 1987).

The passage of the 1965 U.S. immigration reform which eliminated the restrictive national-origins quota system and allowed entry on the basis of kinship with persons already in the United States or on the basis of occupational characteristics, had a dramatic impact on the number of immigrants admitted from Asia in general and from the Philippines in particular. Specifically, the 1965 Immigration and Naturalization Act of the U.S. recognizes two types of immigrants to the United States – those who are subject to numerical limitation of 20,000 persons per year from one country, and those who are exempt from this numerical limitation. The latter category of non-quota immigrants includes primarily the parents, spouses and unmarried minor children of U.S. citizens.

Immigrants subject to numerical quotas are admitted under a preference system (which replaced the national-origins quota system) designed to achieve three goals: to facilitate family reunification; to admit workers with skills needed by the economy; and to permit the entry of refugees (U.S. Department of Labor, 1974). Briefly, the seven preference categories are the following:

First Preference:	Unmarried adult children of U.S. citizens;
Second Preference:	Spouses and unmarried adult children of resident aliens and their children;
Third Preference:	Immigrants in the professions, their spouses and children;
Fourth Preference:	Married children of U.S. citizens, their spouses and children;
Fifth Preference:	Siblings of U.S. citizens, their spouses and children;
Sixth Preference:	Skilled workers, their spouses and children;
Seventh Preference:	Refugees, their spouses and children.

As shown above, the first, second, fourth and fifth categories are *family preference* categories; the third and sixth are *occupational* preference categories; while the seventh is a category for *refugees* and their dependents. The 1965 immigration law also places quotas on the number of immigrants that could be admitted under each admission group. In the implementation of the law, however, unused slots under one preference can be used by the next lower preference category.

After the passage of the U.S. immigration law, Asian immigration to the U.S. grew from a little more than 93,000 in the pre-amendment 1961-1965 period, to over 1.3 million in the 1981-1985 interval. In absolute terms, the sudden upsurge in the number of immigrants has been most pronounced in the case of the Philippines: immigrant flow from the country rose from less than 16,000 in the 1961-1965 period, to more than 221,000 in the 1981- 1985 interval (Table 1).

TABLE 1
Philippine Immigration to the United States, 1961-1985: Number and Per cent of Total Asian Immigration

Country/ Region	1961 1965	1966- 1970	1971- 1975	1976- 1980	1981- 1985
Asia	93,019	288,630	548,275	906,654	1,303,492
Philippines					
Number	15,929	85,636	153,254	206,962	221,166
% of Asia	17.1	29.7	28.0	22.8	17.0

Sources: INS (1969, 1970: Table 14; 1980: Table 13; 1982-84 Table 1; MM L.3: Table 1; MM 2.3)

Growth was particularly rapid during the period immediately following the abolition of the national origins quota systems (1971-1975). The data in Table 1 show that during the 10-year period 1966-1975, close to 30 per cent of all Asian immigrants to the United States originated from the Philippines. Since 1979, more than 40,000 Filipinos have been admitted to the United States as immigrants.

In terms of the preference categories, an overwhelming majority came under the relative preference categories in recent years, a pattern that continues the rapid transformation of immigrant admissions from the Philippines. During the period 1971-1975, more than half (51.5 per cent) of the Filipino immigrants subject to limitation came under the occupational preferences and virtually all of these were in the professional and highly skilled worker category (Table 2). The situation changed rapidly during the 1976-1980 interval when the proportion of immigrants under the occupational preferences dropped drastically to 19.3 per cent. It is important to note, likewise, that there has been a trend for occupational preference immigrants in recent years to bring more of their dependents to the United States.

TABLE 2
Philippine Occupational Preference
Immigrants: 1966–1980

	1966–1970	1971–1975	1976–1980
Total Immigrants (subject to limitation)	61,688	96,357	98,480
Immigrants in Professions			
Number	17,134	24,002	6,349
Per cent	22.8	24.9	6.4
Other Workers			
Number	1,327	19	2,017
Per cent	2.2	a	2.0
Dependents			
Number	12,069	25,585	10,669
Per cent	19.6	26.6	10.8
Total Occupational Preference			
Number	30,530	49,606	19,035
Per cent	49.5	51.5	19.3

Sources: 1966–1977: INS *Annual Reports* (Table 7A); INS *Statistical Yearbook* (Table 7A); 1980–1981: INS *Statistical Yearbook* (Table 5).

[a]Less than 0.05 per cent.

With regard to family preferences, the predominance of second preference immigrants from the Philippines (spouses and unmarried adult children of resident aliens and children) is noticeable (Table 3). In absolute terms, second preference immigrants in the Philippines have far outnumbered all other relative preference immigrants, although their proportions have decreased in recent years. There had been significant gains in the immigration of first preference (spouses and unmarried adult children of U.S. citizens) and fifth preference (siblings of U.S. citizens and their dependents) but their absolute numbers are still smaller than the second preference immigrants. This is probably a reflection of the growing number of Filipino immigrants who have acquired citizenship status in the United States.

Because Filipinos are currently the largest Asian immigrant group to the United States, it has been projected that they would soon edge out the Chinese as the largest Asian group in the U.S. (Table 4). Currently just over 1 million in size, the Filipino population in the United States is projected to increase to over 2 million by the year 2000 (EWPI and Operation Manong, 1985).

In terms of demographic characteristics, a major feature of the Filipino immigrant flows to the U.S. is the predominance of females, a pattern that has characterized Filipino immigration to the U.S. since 1960 (Pido, 1986). The sex selectivity of Filipino immigration to the U.S. can easily be been in the fairly even sex structure of the Philippine population when compared with the immigrant group (Table 5).

The predominance of females in immigrant flows has been attributed by Pido (1986) to U.S. immigration policies and laws which have implicitly favored the immigration of women. Pido points out that when the laws were restricted to national origins quotas for nonwhite immigrants, for example, exceptions were made for wives but not for husbands of U.S. citizens.

In more recent years, the predominance of women can be partly accounted for by the growing number of wives of U.S. citizens in immigration flows to the U.S. It should be noted that, historically, the largest group of women who were reported as wives of U.S. citizens from Asia came from Korea, Japan and the Philippines, the three Asian countries that have large concentrations of U.S. military personnel.

Unlike internal migrants to Metro Manila (Cariño, 1981), Filipino immigration to the U.S. does not seem to be selective of the young. As shown in Table 5, the age distribution of the survey sample is similar to that of the Philippine population with the immigrant group, in fact, showing greater representation in the older age categories. Immigration flows in the U.S., however, seem to be definitely selective of single persons. The discrepancy between the Philippine population and the survey sample in terms of marital status is wide particularly in the younger age groups: only 34.9 per cent of survey respondents 20- 39 years of age are married compared with a high 69.6 per cent of the country's population.

TABLE 3
Philippine Family Preference Immigrants: 1966–1980

	1966–1970	1971–1975	1976–1980
Total Immigrants (subject to limitation)	61,688	96,357	98,480
1st Preference			
Number	1,501	1,805	2,926
Per cent	2.4	1.9	3.0
2nd Preference			
Number	12,924	44,510	61,904
Per cent	21.0	46.2	62.9
4th Preference			
Number	6,891	198	3,992
Per cent	11.2	0.2	4.1
5th Preference			
Number	9,774	97	9,783
Per cent	15.8	0.1	9.9
Total Family Preference			
Number	31,090	46,610	78,605
Per cent	50.4	48.4	79.8

TABLE 4
Projections of the Asian Population in the U.S. by Ethnicity: 1980–2000

Ethnicity	1980	1990	2000
Chinese	812,178	1,259,038	1,683,537
	(23.4)	(19.3)	(17.1)
Filipino	781,894	1,405,146	2,070,571
	(22.6)	(21.5)	(21.0)
Indian	387,223	684,339	1,006,305
	(11.2)	(10.4)	(10.2)
Japanese	716,331	804,535	856,673
	(20.6)	(12.4)	(8.7)
Kampuchean	16,044	185,301	386,673
	(10.5)	(2.9)	(3.9)
Korean	357,393	814,495	1,320,759
	(10.3)	(12.4)	(13.4)
Laotian	52,887	259,674	502,599
	(1.5)	(4.0)	(5.1)
Vietnamese	245,025	858,639	1,574,385
	(7.1)	(13.1)	(16.0)
Other	95,873	261,442	448,919
	(2.8)	(4.0)	(4.6)
Total	3,466,421	6,533,608	9,850,364
	(100.0)	(100.0)	(100.0)

Source: Bouvier, L.F. and A.J. Agresta "The Future Asian Population of the United States." In James T. Fawcett and Benjamin V. Carino (eds.), *Pacific Bridges: The New Immigration from Asia and the Pacific Islands*. (New York: Center for Migration Studies), pp. 285–301.

TABLE 5
Comparative Age Sex Distribution Among Person 20–69 Years of Age: IPDA Survey Sample , and the Philippine Population, 1980

Sex/Age	Philippine Population, 1980	IPDA Survey Sample, 1986
Male	49.5	39.3
Female	50.5	60.7
Male		
20–29	38.4	32.2
30–39	25.6	26.1
40–49	17.4	14.7
50–59	11.3	13.5
60–69	7.4	13.5
Female		
20–29	39.4	38.4
30–39	24.4	22.0
40–49	17.0	12.3
50–59	11.6	15.3
60–69	7.6	12.1

Source: 1980 Philippine Population: *1980 Census of Population and Housing: Philippines.*

III. DETERMINANTS OF EMIGRATION

The volume and trend of immigration from Asian countries have generally been responsive to the changes in U.S. immigration policy. It is also evident, however, that the impact has clearly been most profound in the case of the Philippines. As will be seen in the sections that follow, other factors have apparently interacted with the policy changes to trigger the particularly large volume of population movements from the Philippines.

1. Philippine-U.S. Ties

As argued elsewhere, the Philippines is a special case among all Asian countries owing to its former colonial relationship with the United States (Cariño, 1987). Although decolonization occurred several decades ago, the formal severing of political ties does not sunder overnight the social, political and economic links that bind former colonies and mother countries and generate population movements between them.

As observed in another study (U.S. Congress, 1974:34):

> A fairly well demarcated pattern of immigration has taken place from former colonial areas, to the imperial centers. By virtue of the former colonial-imperial link, the immigrant moves into what he believes to be familiar circles. The familiarity cases the burden of transition between the essentially different cultures. The imperial tradition may also engender the feeling that by migration to an imperial center, the former colonial is moving into a superior and exciting culture.

For no two countries is this observation more true than for the United States and the Philippines. In the words of Abad and Eviota (1984), "the conditions that generate these movements of people are embedded in economic and political relationships deriving from the country's position in the global economy in general and to relations between the Philippines and the U.S. in particular."

The Philippines' colonial heritage has produced, among others, a pervasive Americanization of Philippine culture, a factor which is important in facilitating the relatively easy integration of Filipino professionals and students to the United States. An observation made by Marcelo (1984: 4-5) is probably not an exaggration:

> It is often said that the socio-economic and political advancements brought about by the American regime in the Philippines have made Filipinos think, act and/or talk like Americans. The Philippine exposure to American ways as well as taste, and more importantly, the thought of the United States as a provider, a friend and an ally after the second world war, is fundamentally the reason why the concentration of pre-departing Filipinos is heaviest in the United States of America.

Consistent with this observation of Marcelo, another writer noted that the recent graduate of a Philippine university "to a large extent patterns his expectations from life on his ideas of what his American counterpart receives" (Pirovano, 1977:74).

Beyond the Americanization of Philippine culture, the colonial status of the Philippines has also produced strong economic links with the United States. Many scholars view this economic relationship as one of dependency and inequality, a legacy of colonialism that, in many ways, has grown even with decolonization. The U.S. economic presence in the Philippines is reflected in the fact that more than 53 per cent of total foreign investments in the country in 1985 can be attributed to the United States (CRC, 1985). The United States also continues to be the Philippines' major trading partner and accounted for more than 28 per cent of total Philippine trade in the same year (NEDA, 1985).

This strong economic tie has undoubtedly contributed to the movement of professional and skilled workers between the two countries. Indeed, immigration to the United States has traditionally been tied to the demand for labor, changing with the shifts and expansion of the American economy. As noted earlier, the movement of Philippine labor to the United States started with the recruitment of agricultural workers in the early decades of the century, a period during which the United States was experiencing shortages of other Asian agricultural workers due to the effects of the country's Oriental exclusion policy.

The immigration of professionals has of course supplanted the movement of agricultural labor in more recent years, a pattern that seems to have been further facilitated by an educational system that "reflects American modes of learning, programs, and practices" (Abad and Eviota, 1984:6). The Philippines is known to be producing college graduates well in excess of the absortive capacity of its labor market and with skills not entirely relevant to the needs of an agricultural economy.

In view of the similarity between the Philippine and American educational systems, it has not been difficult for the American economy to absorb professional labor from the Philippines. It is, perhaps, for this reason that the Philippines became the largest supplier of professional immigrants soon after the U.S. immigration reform.

2. Push and Pull Factors

Beyond changes in U.S. immigration policy and close international ties, there are structural conditions that have apparently reinforced the contemporary patterns of immigration of professional and skilled workers from the Philippines. Of particular importance are the rapid population growth and the serious social and economic problems of the country.

With a population of well over 50 million living in an area of approximately 482,700 square kilometers, the Philippines still has one of the highest population growth rates in the world. Despite a massive family planning outreach program launched in the mid-1970's, the country's population was still growing at a high 2.6 per cent in 1985.

The problem of rapid population growth becomes even more serious when viewed in the context of the country's economic problems. Already severe in the past decade, these problems have taken on crisis proportions in recent years, a trend that can only trigger further immigration of professional and skilled workers in the future. The country's GNP growth has been acknowledged to be a negative 3.8 per cent in 1984 and a negative 6.8 per cent in 1985.

The poor state of the economy is further illustrated by massive unemployment and worker layoffs. In 1984, some 86,000 workers were laid off by various companies and corporations, and unemployment was conservatively recorded at 6 per cent. Along with unemployment are grave problems of poverty. In 1983, 51 per cent of families in the country was at or below an officially defined poverty threshold (Cariño, 1985).

In addition to rapid population growth, its distribution is also a problem in the Philippines. Already housing close to 15 per cent of the country's total population, Metro Manila is also growing at a much faster rate than the country as a whole. The continuing movement of people from rural areas to the metropolis has contributed to a host of familiar urban growth problems: congestion and overcrowding, strained government services, slums and squatters, and generally unsatisfactory environmental conditions.

In short, the Philippines is experiencing critical development problems: rapid population growth and increasing density, poor performance of the national economy, and problems related to urban growth. These problems have apparently worked in combination with the changes in immigration policy and the special ties between the Philippines and the United States to trigger the flows of immigration to the United States.

The social and economic problems of the country are reflected in the findings of a number of micro-level studies. Based on a survey of migrant and nonmigrant groups of U.S.-educated Filipinos, Cortes (1974) finds support to the hypothesis that the emigration of high level persons to the United States is a function of "valuations of opportunities," or the process of matching the societal and situational conditions found in the home country with one's professional, social, economic, and other goals and expectations, and "anchorage" or a person's psychological, social, economic, professional, and other ties of attachment to his home country. Card's (1974) survey of 319 Filipino graduate students in the United States basically yielded the same results. In particular, Card's conclusion is that "push" factors from the Philippine were found to be more relevant than "pull" factors that encouraged nurses to migrate to the U.S.. These factors include the opportunity for professional and personal growth, the chance for better remuneration, and the opportunity to travel.

IV. CONSEQUENCES OF EMIGRATION

1. Manpower Loss

The massive immigration of Filipinos to the United States has also meant the increasing immigration of persons with professional and technical qualifications. The volume of the flow for this type of immigrant has been particularly large for the Philippines, the number of immigrant professional workers from the country having grown from just over 1,900 in the period before the 1965 amendments (1960-1964), to over 42,000 in the 1970-1974 interval, or more than a twenty-fold increase over the fourteen-year period from 1960 to 1974 (Table 6).

TABLE 6

Immigrant Professional, Technical and Kindred Workers Entering the United States from Asia and the Philippines: Number and Ratio (per thousand) to Total Immigrants, 1960-1979

Period	Origin	
	All Asia	Philippines
1960-1964	12,381 (111)	1,916 (112)
1965-1969	53,068 (213)	16,773 (291)
1970-1974	131,972 (230)	42,634 (279)
1975-1979	117,853 (134)	32,088 (172)

Sources: INS Annual Reports (1960-1977): INS Statistical Year books (1979-1989)
Note: Ratio figures (number of workers per 1,000 immigrants) are in parentheses.

When compared with the total number of emigrants to the United States, the magnitude of emigrant professional and technical workers from the Philippines is not so staggering as when considered absolutely. Nevertheless, the rates are still very prominent for the Philippines where professional and technical workers constituted almost 30 per cent of the total immigrants in the 1965-1969 interval, the period in which revisions to the U.S. immigration law were introduced.

Results of the IPDA survey generally confirm this phenomenon. Based on responses to questions about their work in the past 12 months, a relatively high 28.1 per cent of survey respondents can be classified as professional and technical workers. The figure for the Philippine

population is a lower 6.6 per cent (Table 7). Significantly for both the Philippine population and the survey sample, a much higher proportion of females was classified as professional and technical workers, a discrepancy that can probably be explained by the preponderance of nurses and midwives in recent immigrant flows.

TABLE 7

Percentage of Persons Classified as Professional Technical and Kindred Workers: 1980 Philippine Population, and 1986 Survey Sample

	Male	Female	Both Sexes
Philippines, 1980	3.5	17.0	6.6
IPDA Survey Respondents, 1986	23.6	32.8	28.1

Source: 1980 Philippine Population, NCSO, 1980

As discussed elsewhere (Cariño, 1987), this type of selectivity could have important implications for the social and economic growth of the sending nation. From the perspective of the immigrants, however, their experience in high status occupations could be an important resource in enhancing their social and economic advance in the host society.

The extent of the brain flow from the Philippines is vividly illustrated by data on immigrant scientists, engineers and physicians. Along with India, the Philippines has been a major supplier of these professionals to the United States. The flow of scientists, engineers and physicians peaked in the years immediately following the 1965 amendments to the immigration law. Over the five-year period from 1966-1970, more than 4,300 Filipino engineers and scientists (including social scientists) and some 3,000 physicians and surgeons emigrated to the United States.

During the pre-amendment period from 1962 to 1965, only 349 immigrant physicians and surgeons and 180 scientists and engineers had been admitted to the United States. In a more recent three-year period from 1976-1978, some 2,600 Filipino engineers and scientists emigrated to the United States (Table 8). The proportion of scientists and engineers coming from the Philippines was particularly high in 1976 when the country accounted for almost 30 per cent of the total number of scientists and engineers from Asia.

TABLE 8

Immigrant Scientists and Engineers in the United States, Asia and the Philippines: 1976-1978

Region/Country	1976	1977	1978
All Asia	4,058	3,869	5,308
Philippines			
Number	1,201	778	682
% of Asia	19.6	20.1	12.9

Source: National Science Foundation (1980: Tables 6-8)
Note: Scientists include social scientists and urban planners.

The general pattern of brain drain can also be seen in the educational attainment of immigrants. Results of the IPDA survey indicate that immigration to the U.S. also seems to be selective of the more educated. For persons 25 years and over, the mean number of years of education for the survey sample is 10.6 years which is well above a high school education. Males reported a higher level of education (11.4 years) than females (10.1 years). For the country's population as a whole, only 9.5 per cent of persons 25 years of age and over have completed a high school education. For the survey sample, a much higher 67.0 per cent of individuals in the same age group have completed a high school education, and a fairly sizable proportion (30.1 per cent) finished a college education.

The brain flow problem results partly from nonreturning students in the United States. Many American schools are now vigorously recruiting students to offset their declining enrollments. Because of its special ties with the United States, the Philippines has been a major source of these students. In 1981, an estimated 2,727 students were enrolled in American universities and colleges (UNESCO, 1983). As observed elsewhere (Fawcett et al., 1985), by recruiting foreign students, American schools are also unintentionally recruiting immigrants because many students eventually find a way to stay in the United States. During the period 1982-1984, some 690 Filipino students were adjusted to permanent resident status in the U.S. (INS, 1982- 1984).

There had been as much debate in the Philippines as elsewhere on the possible impacts of professional emigration. Those concerned about the brain and skill drain point out that the departure of the economically active and productive segment of the population reduces a

country's ability to produce and, hence, reduces income. Often this argument is made in the context of the "world system" theory which, as a derivative of Marxist theory, views international migration as a movement of labor from peripheral to core nations caused by the advanced capitalist economies' search for cheap labor and their desire to perpetuate economic and political dependency relationships (Portes, 1981; Petras, 1981). This is the perspective taken by Abad and Eviota (1984) who argued that professional emigration "reproduces" the inequality that exists between the Philippines and the United States. To some extent, this views is reinforced by another study which pointed out that the departure of professional workers leads to the deterioration in the skill structure of the domestic labor market, and continued dependence on the export market for the absorption of excess domestic manpower can lead to future dislocations of the sending country's economy (Abella, 1984). Related to this argument is the more pragmatic concern that the brain drain represents lost educational investments in that the sending country bears the cost of educating this highly skilled labor but does not directly benefit from it.

These arguments are difficult to ignore. The departure of professionals does constitute a loss of expertise for the sending country. Pernia (1976) has, however, argued very strongly that the extent of the problem has to be qualified by taking into account the country's actual labor supply and the economy's capacity to absorb it. Using indicators of personnel/population ratios to reflect labor availability, and income per capita along with its rate of growth to narrow the economy's capacity to absorb additional supply, Pernia (1976: 71) concludes there is "prima facie evidence that the Philippines general brain drain problem stems from the basic inability of its economy to absorb the growing supply of certain high level skills."

The problem could be conversely viewed as a case in which the supply of professionals has obviously outpaced the economy's absorptive capacity. It is in this context that Parel (1984:2) made the observation "that migration helps to solve unemployment problems while at the same time enables the country to send out ambassadors of good will towards international understanding."

2. Remittances

Other writers point out that the harmful effects of brain drain may be offset by the amount of remittances as well as by the technology transfer that goes with return migration. When viewed in the context of the country's economy, remittances to the Philippines have been reported to be fairly substantial. A survey of Filipino immigrants in Honolulu in 1982 showed that more than three-quarters of the households surveyed sent remittances to the Philippines, with the average remittance being $599 per sending household. These repatriated earnings totaled $373,000 from 623 households over a one-year period (Cases, 1985:148).

A substantial source of repatriated earnings for the Philippines is the social security payments to Filipino veterans and retired workers, a legacy of the country's long history of military and economic ties with the United States. In 1983, monthly U.S. social security payments to recipients in the Philippines amounted to almost $7 million, or about $84 million over a one- year period. Among all countries in the world, the Philippines ranks fourth (behind Mexico, Canada, and Italy) in total number of U.S. social security beneficiaries, including spouses and children (Social Security Administration, 1984).

Remittances undoubtedly have had a favorable effect on household welfare in the Philippines. Beyond household welfare, other scholars have argued that even relatively small remittances could somehow result in net gain for the Philippine economy (Goldfarb, et al., 1980). Griffiths (1979), for instance, has observed that investments from remittances helped stimulate the growth of a local garlic industry in the Philippines. Still others point out that the benefit of repatriated earnings may be negligible in that only a small proportion of the funds are invested in productive enterprises. The same survey of Filipino immigrants in Honolulu revealed that most households sent remittances mainly for "daily needs," including food and clothing (Cases, 1985:150).

Housing and land are other common purposes for which remittances are spent – often as a testimony to the immigrants' material success abroad. In particular, the purchase of land in the Philippines has been noted to be a reflection of a desire to gain security and social status: such purchases have little production effects since no additional land is necessarily going into production. On the contrary, the increased demand for land in the face of its scarcity may result in severe local inflation of land prices, an effect that could work against the consolidation of small landholdings predicted by Griffiths (1979).

Some have argued that the worth of remittances may lie not in their initial use but in the ultimate purpose to which they are put. Although evidence suggests that a substantial proportion of repatriated earnings are destined to serve consumption needs, Arnold (1984) notes that the seller of consumption items may put the proceeds to productive investments. This argument could very well be valid; for now, however, there is as yet no evidence to substantiate it.

3. Transfer of Technology and Return Migration

The transfer of technology and skills through return migration could be an important positive impact of professional emigration. Although some return migration to the Philippines is occurring, the evidence is very fragmentary. Jasso and Rosenzweig (1982) have estimated that for immigrants who entered the United States in 1971, some 20 to 38 per cent had returned to the Philippines as of January 1979. In another study, the author reports that in 1981, 39,000 of the approximately 113,000 Filipinos who emigrated to Hawaii returned to the Philippines while 18,000 moved on to the Pacific Coast states (Kitano, 1981). Within a shorter four-year period – from

July 1935 when the Philippine Repatriation Act was signed, to December 1940 when the law expired – Arnold (1984) estimates that some 2,000 Filipinos were repatriated to the Philippines.

Proportionately, the magnitude of return migration to the Philippines in recent years appears to be smaller. Based on the results of the survey of Filipino immigrants in Honolulu, Arnold (1984:9) reports that only 16 per cent of the immigrant respondents expressed an intention to move again in the future. Among those who intended to move, however, the most popular choice was a return to their home region. It may be usefully noted that among the same informants, return visits to the Philippines are very common: a remarkable 61 per cent has taken at least one trip since they first came to Hawaii (Cases, 1985:147).

The evidence on the impacts of return migration is even more fragmentary. For instance, no studies have been done in the Philippines on whether returnees are productive workers, or mostly dependents such as retirees and the elderly. Nor is there information on whether or not return migrants bring back useful skills. Fragmentary evidence elsewhere shows that few additional skills are acquired and these skills are often unsuitable to conditions in the sending country. It has been noted that the immigrant returnees may, in fact, have an unfavorable influence on the sending society in that they bring back materialistic values and often demand imported consumer goods, thereby shifting attention away from productive investments.

4. Immigrant Activities Abroad

Filipinos in the United States have become more visible in recent years because of the political and lobbying activities of several professional Filipino-American groups. Although the memberships of these groups are small relative to the size of the Filipino-American population, their activities intensified with the 1983 assassination of opposition leader Benigno Aquino and the subsequent revolution leading to the flight of former President Ferdinand Marcos into exile and the installation of President Aquino as president.

Many of these groups disseminated information aimed at increasing the Filipino peoples awareness of the "abuses" of the previous Philippine regime and apprising them of the forms of opposition that existed. Several other lobby groups have reportedly exerted efforts to influence the nature of U.S. military and economic aid to the Philippines, while others have documented the extent to which the conduct of the political and economic affairs of the country is tied to pressures from international lending institutions such as the USAID and the World Bank (Abad and Eviota, 1984). Several underground movements have argued the withdrawal of American support from the Marcos regime and called attention to human rights violations in the country.

The extent to which the governments of the Philippines and the United States react to these pressures is of great significance to the majority of Filipinos. For now, however, the impact of

these political activities is difficult to measure because the 1986 revolution has led to changes in domestic policy that will have effects on the political and economic context.

V. PHILIPPINE EMIGRATION POLICIES

Philippine laws basically guarantee every Filipino citizen the freedom of mobility at all times. It is for this reason that the Philippine government has not adopted policies which are aimed at directly curtailing the right of any citizen to leave the country. It should be noted that some policies which may have the effect of reducing the number of departures from the country do exist. These include, among others, a travel tax on persons not travelling on official government time and auspices, and limits on the amount of foreign exchange that a person can bring out from the country. Most policies and laws set forth by the government regarding emigration, however, have been those that are either aimed at maintaining links between the Filipino immigrants and their home country, or programs and projects designed to attract and invite back Filipino immigrants for visits, investments and retirement.

Notable among these projects is the Balikbayan (Return to Country) program which is designed to encourage permanent emigrants to return with reduced fares, customs privileges and tax exemptions. A related program is the Balikbahay (Return to Home) project which envisions to assist old, indigent and retired Filipinos in the United States and other parts of the world to spend the remaining years of their life in the Philippines. The project seeks to grant an estimated 2,000 returnees similar rights as citizens to purchase home lots (Marcelo, 1984). It should be pointed out that a considerable dollar inflow is expected from these programs, thus contributing to the country's export earnings. For example, it is estimated that the Balikbahay project would yield approximately $150,000 in annual receipts to the Philippine government.

Other policies of this type have been implemented in the Philippines. These include the provision of a transportation discount package to returning immigrants who travel on the national flag carrier (Philippine Airlines), and the granting to natural-born Filipinos who are now citizens of other countries the right to purchase or be a transferee of real estate for residential or agricultural purposes. Among government employees who go on study leave abroad, an important policy is the requirement that they serve the government for three years for every year abroad.

It is important to note, however, that policy alternatives include not only direct instruments (such as the above) but also programs aimed at improving the structural conditions in the sending country (e.g., wages, employment, agricultural productivity, etc.). In this connection, one area of concern in the Philippines is the lack of articulation between the educational system and the needs of its predominantly agricultural economy. The importance of an effective training and manpower policy that is responsive not to external markets and demands but to the internal development needs of the country can not be overemphasized (see also Pernia, 1976).

VI. CONCLUDING OBSERVATIONS

We have seen in our discussion that the Philippines is one of the largest suppliers of immigrants to the United States. Although changes in U.S. immigration policy have apparently stimulated the phenomenal growth of immigration from the country, the Philippines is a special case among all Asian countries owing to its former colonial relationship with the United States. This colonial heritage has produced, among others, a pervasive Americanization of Philippine culture, and has meant close economic and political connections between the two countries. Coupled with the presence in the United States of a substantial Filipino-American population in the early decades of the century, these factors allowed for a rapid response to the 1965 changes in U.S. immigration law.

In turn, massive professional immigrant flows have important consequences for the sending country. The nature and magnitude of these impacts are, however, difficult to assess because of the dearth of information on such aspects of the problem as remittances and return migration. Additional studies on these processes are obviously needed.

Studies on brain drain should be aimed at providing a more reliable measure of the phenomenon. Previous studies on the subject have tended to focus on educational investments lost and have largely ignored the social and economic framework of the sending nation. Future research should try to assess the problem in relation to the actual supply of labor as well as in relation to the sending country's labor needs and labor absorptive capacity.

Similar studies are needed to determine the magnitude and uses of remittances and repatriated earnings. Previous researches have tended to focus on the initial use of these funds revealing, in the process, that households have little propensity to invest remittances productively and that these funds contribute little to long run development. As Arnold (1984) suggests, future studies must look into the ultimate use of these funds. Efforts must likewise be made to determine the effectiveness of various schemes designed to divert remittances to more productive uses.

Finally, information is critically lacking on the nature, magnitude and impact of return migration. Research data are needed on such matters as the timing of return migration, the characteristics and motivations of the returning immigrants, the sectors of the economy into which migrants return and their influence in changing the social and cultural attitudes of those who are left behind. For this purpose, macrolevel and microlevel data on both the sending nation and the host society would be useful.

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INTERNATIONAL MIGRATION FROM THE PHILIPPINES: POLICY ISSUES AND PROBLEMS

Benjamin V. Cariño

1. INTRODUCTION

Migration has historically been a common response of Filipinos to social and economic problems. Areas of outmigration in the Philippines are characterized by frequent calamities and disasters, high population densities, high rates of unemployment and underemployment, imbalance of land ownership and low agricultural productivity (INTERMET/IDRC, 1974; Cariño, 1987). Most of the migratory movements are internal, although significantly long distance in character, and generally to places of greater opportunity in the country. Others, however, have moved across the borders of their nation to other countries (Fleiger, 1976: Cariño, 1981). The Philippines has now, in fact, become a main source country both for temporary migrant workers and for immigrants – those leaving home in search of more or less permanent residence in another country. Although Philippine laws allow nationals of other countries to enter the Philippines as immigrants by virtue of the same privileges they grant to Filipinos, this counterstream is negligible.

Philippine scholars and policy makers alike have long been concerned about the possible development impacts of the outmigration flows. In part because of the dearth of information on the nature of the flows and on their impacts, and in part because of the country's democratic tradition which guarantees every Filipino citizen the freedom of mobility at all times, such a concern has not been translated into specific policies aimed at directly curtailing the movements. As will be discussed in the sections that follow, however, some policies do exist which may indirectly influence the flow and counterflow of Filipino migrants.

This report extends an earlier paper (see paper of this volume) and hopes to fill in the knowledge and information gaps in regard to various aspects of Philippine international migration. Specifically, the objectives of the research are the following:

1 Document the levels and trends of Philippine international migration to the various parts of the world;

2. Assess the major structural and policy determinants of the flows;

3. Identify the possible socioeconomic consequences of international migration both at the level of the house hold and the society as a whole; and

4. Examine the nature and purposes of international migration policies in the country.

This paper relied heavily on data gathered from the statistical reports of the Commission on Filipinos Overseas (for permanent immigrants) and the Philippine Overseas Employment Administration (for temporary migrant wokers). Additional information was collected from the UNESCO *Statistical Yearbooks* and the *Annual Reports* of the U.S. Immigration and Naturalization Service (INS). Relevant data gathered in the Immigrant Pre-Departure Assessment Survey of 1986 (a joint project of the East–West Population Institute, Hanyang University and the University of the Philippines) will also be presented. Moreover, important literature on Philippine international migration will be reviewed.

II. TRENDS IN PHILIPPINE INTERNATIONAL MIGRATION

1. Volume

There are today relatively few options for resettlement in a new country with the prospect of eventually gaining the rights to citizenship. Moreover, the opportunities that do exist are nearly all found in four Pacific Basin nations: Australia, New Zealand, Canada and the United States (Fawcett and Cariño, 1987). Among these, the United States receives the vast majority of Filipino immigrants. Over a 12–year period from 1975 to 1987, an overwhelming 80.1 percent of Philippine emigrants who registered with the Commission on Filipinos Overseas (CFO) was headed toward the United States (Table 1). As shown in the evidence presented, Canada (10.4 percent) and Australia (7.0 percent) received a much smaller proportion of Filipino emigrants during the same period. It is significant that Australia has, in recent years, surpassed Canada as the second most important destination of Filipino emigrants.

Also significant is the growth of the temporary migration of Filipino workers to many countries in the world. The importance of this type of migratory flow began to be noted in the latter half of the 1960s when large numbers of Filipino loggers were brought to Indonesia to work in logging camps in Kalimantan. During the same period, and as the Vietnam War escalated, many Filipino construction workers were recruited to work in Vietnam, Thailand and Guam. These labor migration streams were followed in more recent years by entertainment groups who performed in Japanese cities, in Hongkong, and in neighboring capitals of Southeast Asia (Abella, 1980).

Today, the most important destination of Filipino migrant workers is the Middle East. Ever since the overseas employment program was instituted as a major government policy in the Philippines in order to ease the problems of unemployment and tight balance of payments, thousands of Filipinos have trooped out of the country in search of better (though temporary) work opportunities in the Middle East. Within a 13–year period from 1975–1987, more than 2.7 million Filipinos have gone to work in various parts of the world (Table 2). As seen in the table

evidence presented, the Middle East is by far the most important destination of contract workers. Just as important is the growing number of sea–based contract workers.

TABLE 1

Distribution of Registered Filipino Emigrants by Country of Destination: 1975–1987

Year	USA	Canada	Australia	Others	Total
1975	12,001	1,750	601	140	14,492
1976	31,098	4,968	1,035	589	37,690
1977	31,885	5,183	1,961	422	39,451
1978	27,573	7,229	2,703	840	38,345
1979	30,458	6,102	2,925	965	40,450
1980	36,455	4,713	1,632	2,700	45,500
1981	40,307	5,226	2,752	582	48,867
1982	44,437	4,898	2,931	1,687	53,953
1983	34,794	3,946	2,608	1,133	42,481
1984	34,682	2,463	2,915	1,491	41,551
1985	38,653	2,097	3,458	1,061	5,269
1986	40,650	3,206	4,374	1,108	49,338
1987	40,813	5,757	8,983	797	56,350
TOTAL	443,896	57,583	38,878	13,515	553,737
% of TOTAL	80.1	10.4	7.0	2.5	100.0

Source : CFO, Statistical Report, 1989.

TABLE 2

Processed Landbased Contract Workers by Major World Group: 1975–1987

Year	Asia	Africa	Europe	Middle East	Oceana	America	TOTAL	T. Territories
1975	342	4,217	3,160	1,552	551	2,285	394	12,501
1976	473	5,399	2,902	7,813	133	2,165	336	19,221
1977	515	5,290	2,482	25,721	139	2,265	264	36,676
1978	1,305	9,994	1,268	34,441	80	3,369	504	50,961
1979	1,134	12,604	673	73,210	312	3,738	848	92,519
1980	1,612	1 7,708	846	132,044	165	3,706	1,313	157,394
1981	2,144	20,322	1,126	183,582	222	2,363	1,177	210,936
1982	1,098	3 1,011	1,463 21	1,003	683	3,782	1,075	250,115
1983	2,353	40,614	2,878	323,414	2,073	5,654	3,077	380,263
1984	2,146	43,385	3,724	311,517	1,027	5,832	3,434	371,065
1985	2,054	54,411	3,675	266,617	844	6,890	3,263	337,754
1986	2,072	76,650	4,225	262,758	1,129	6,595	4,258	357,687
1987	2,125	96,018	6,610	306,757	1,344	7,562	5,465	425,881
TOTAL	19,373	417,823	35,032	2,140,429	8,702	56,206	25,408	2,702,973
%	0.7	15.5	1.3	79.2	0.3	2.1	0.9	100.0

Source: Unpublished Statistical Reports of the Philippine Overseas Employment Administration (POEA).

Over the same 13–year period, more than 630,000 contract workers were processed to work on board more than 5,000 ocean–going vessels (see Table 3). The unprecedented magnitude of both land–based and sea–based workers will undoubtedly have important consequences for Philippine society.

TABLE 3

Number of Processed Seabased Contract Workers, 1975-1987

Year	Number
1975	23,534
1976	28,614
1977	33,699
1978	37,280
1979	44,818
1980	57,196
1981	55,307
1982	64,169
1983	53,944
1984	54,016
1985	51,446
1986	56,774
1987	70,973

Source: POEA, Statistical Reports, 1975-1987.

2. Migrant Characteristics

Sex. In terms of certain socio–demographic characteristics, there are similarities as well as differences in the composition of the permanent and temporary migratory flows. As can be seen in Table 4, a major feature of permanent immigrant flows from the country is the predominance of females, a pattern that has characterized Filipino immigrant flows especially to the U.S. (Pido, 1986). The female–dominant character of permanent flows can easily be seen in the fairly even sex structure of the Philippine population when compared with the immigrant group. This pattern has been attributed in part to changes in immigration policies and laws in the receiving countries which have implicitly favored the immigration of women. In the U.S., for instance, when national origin quotas for non–white immigrants were restricted, exceptions were made for wives but not for husbands of U.S. citizens. In more recent years, the predominance of women among permanent immigrants can be partly accounted for by the growing number of female professional immigrants (e.g., nurses and midwives) as well as by the growing number of wives of U.S., Canadian and Australian citizens in immigration flows. It should be noted that, historically, the largest group of women who were reported as wives of U.S. citizens from Asia came from Korea, Japan and the Philippines, the three Asian countries that have large concentrations of U.S. military personnel (Cariño, 1987).

By contrast, contract labor migration is somewhat male–dominant. As shown in Table 4, only 47.2 percent of migrant workers in 1987 was females, a proportion much lower than among permanent immigrants. Sample surveys reveal a much higher proportion of males in temporary migrant flows. As reported by Arcinas (1987), surveys show that about three out of four workers in the Middle East are males, a phenomenon which can be attributed to the high demand for men in the construction industry in the Gulf region.

Age. Similar contrasts can be observed between permanent immigrants and temporary migrant workers in terms of age distribution. Unlike internal migrants to Metro Manila (Cariño, 1981), permanent immigration flows do not seem to be selective of the young. As shown in Table 5, Filipino immigrants show relatively high representation in the 60 and above age category: 13 percent in 1986 and 11.4 percent in 1987. The information presented in Table 6 confirms the generally older age distribution of Filipino immigrants when compared to the Philippine population as a whole. Survey data on the 1986 cohort of Filipino immigrants to the U.S. show higher proportions of the immigrant group in the older age categories when compared with the entire population of the country.

Temporary migrant workers contrast sharply with the permanent immigrants. Contract workers are usually in the prime age of the work force and are younger than the permanent immigrants and the country's population as a whole. Only 25 percent of the country's labor

TABLE 4

Comparative Sex Distribution Among Persons 20–69 Years of Age: Permanent Immigrant, Temporary Migrant Workers and the Philippine Population

	N	Percent Female
Philippine Population, 1980	5,997,343	50.5
Permanent Immigrants, 1986	49,339	60.7
Temporary Migrant Workers, 1987	382,229	47.2

Sources : 1980 Census of Population and Housing, Philippines; Commission on Filipinos Overseas (CFO), 1986 Statistical Report; Philippine Overseas Employment Administration (POEA), 1987 Statisti cal Report.

TABLE 5

Distribution of Registered Filipino Emigrants by Major Age Group, 1986–1987

	1986		1987	
Age Group	Number	Percent	Number	Percent
17 and below	13,836	28.0	18,348	32.5
18 – 59	29,168	59.1	31,562	56.1
60 and above	6,334	12.9	6,440	11.4
TOTAL	49,336	100.0	56,350	100.0

Source: CFO Statistical Reports, 1987 & 1988.

force belonged to the 25 to 34 age bracket in 1980 as against 50 percent of overseas migrant workers (Stahl, 1985). Although various studies report somewhat different age distributions for contract workers abroad, such studies agree that about half of the migrant workers are between their early 20's and mid–30s (Arcinas, 1987).

TABLE 6

Comparative Age Distribution Among Persons 20–69 Years of Age: Ipda Survey Sample, and the Philippine Population, 1980

Sex	Philippine Population 1980	IPDA Survey Sample, 1986
Male		
20–29	38.4	32.2
30–39	25.6	26.1
40–49	17.4	14.7
50–59	11.3	13.5
60–69	7.4	13.5
	N = 3,035,543	N = 894
Female		
20–29	39.4	38.4
30–39	24.4	22.0
40–49	17.0	12.3
50–59	11.6	15.3
60–69	7.6	12.1
	N = 2,962,000	N = 1183

Source: 1980 Philippine Population: 1980 Census of Population and Housing: Philippines.

Reports on the average age of the migrant workers vary as well, but they all point to the fact that the workers are relatively young. The study of Stahl and Smart in 1980 reported that the mean age of the migrant workers was 33 (POEA, 1984). The 1978 Institute of Labor and Manpower Studies survey of Filipino migrant workers in Iran yielded a slightly higher mean age of 35 for the overseas workers (POEA, 1982).

Marital Status. Available information reveals that permanent immigration flows are definitely selective of single persons, a reflection of the fact that married individuals are relatively less mobile, probably because of their family ties. The discrepancy between the Philippine population and a survey sample of Filipino immigrants is wide particularly in the younger age groups: only 34.9 percent of survey respondents 20–39 years of age was married compared to a high 69.6 percent of the country's population (Cariño, 1987).

The evidence in regard to temporary migrant workers is unclear. However, studies generally show that a much higher proportion of migrant workers (when compared with the permanent immigrants) is married. One report indicates that 70.7 percent of migrant workers was married (Stahl, 1985). Another study claims that between 1975 and 1979, 86,164 or about 52 percent of Filipino migrant workers were single (Arcinas, 1987).

Education. Both permanent and temporary migrant flows seem to be more selective of the more educated. As presented in Table 7, a high 25.5 percent of all registered emigrants from the country had completed a college education, and close to 60 percent had finished at least a high school education. The high level of education of permanent immigrants is confirmed by the results of the IPDA survey which show that for persons 25 years and over, the mean number of years of education was 10.6 years which is well above a high school education. Males reported a higher level of education (11.4 years) than females (10.1 years). For the country's population as a whole, only 9.5 percent of persons 25 years of age and over had completed a high school education. For the survey sample of immigrants, a much higher 67.0 percent of individuals in the same age group had completed a high school education, and a fairly sizeable proportion (30.1 percent) finished a college education.

Similarly, the educational attainment of temporary migrant workers is well above the average Filipino. A sample survey of the Bureau of Employment Service revealed that among workers placed overseas between 1975 and 1977, a very high 80 percent had a high school education. The ILMS survey of 1981 gave a more conservative figure of 40 percent, but still much higher than the national figure (Arcinas, 1987). Moreover, studies show that about 20 percent of overseas workers had gone to college. The ILMS report indicates that among land–based workers in 1982, 45 percent had at least attended courses at the college level. The 1980 survey of the Overseas Employment Development Board (OEDB) and the Gibson study

TABLE 7

Educational Level of Registered Filipino Emigrants By Country of Festination 1987

Levels	U.S.A.		Australia		Canada		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
No Formal Education	3,733	9.1	1,340	14.9	493	8.6	133	16.7	5,699	10.1
Elementary level	6,028	14.8	1,415	5.8	1,058	18.4	63	7.9	8,564	15.2
Elementary Graduate	2,388	5.9	274	3.1	363	6.3	21	2.6	3,046	5.4
High School level	5,275	12.9	786	8.7	708	12.3	102	12.8	6,872	12.2
High School Graduate	4,462	10.9	459	5.1	536	9.3	124	15.6	5,581	9.9
College level	6,467	15.8	1,211	13.5	892	15.5	139	17.4	8,709	15.5
College Graduate	10,020	24.6	2,850	31.7	1,325	23.0	168	21.1	14,363	25.5
Vocational level	541	1.3	112	1.2	57	1.0	14	1.8	724	1.3
Vocational Graduate	1,140	2.8	293	3.3	177	3.1	25	3.1	1,635	2.9
Post Graduate level	369	9	125	1.4	75	1.3	3	4.0	572	1.0
Post Graduate	390	1.0	118	1.3	73	1.2	4	9.0	585	1.0
TOTAL	40,813	100.0	8,983	100.0	5,757	100.0	797	100.0	56,350	100.0

Source of Data: CFO, Statistical Report, 1988.

reported even higher figures. Both surveys show that at least half of the respondents had taken some college level courses.

Briefly, then, our analysis shows that there are certain socio–demographic selectivities that characterize the emigration process. Both temporary and permanent emigration flows are selective of the educated members of the society, suggesting in many ways that conditions in the receiving society demand a certain level of skills and training. There are, however, important demographic contrasts between the two migration flows. Permanent immigrants are dominated by women, reflecting the increasing demand for female professionals and workers (e.g. nurses and midwives) in such receiving countries as the U.S., Canada and Australia. On the other hand, temporary migration flows are male-dominant, a phenomenon which can be attributed to the great demand of the construction industry for male workers in the Gulf region. Permanent emigrants were also shown to be much older than the temporary migrant workers (who tend to be in their prime working ages), reflecting the work-related nature of temporary migration and the increasing number of dependents and retirees in the permanent immigration flows.

III. DETERMINANTS OF EMIGRATION

A number of "push" and "pull" factors can be identified as the principal forces that bring about the massive flow of emigrants from the Philippines. Such "push" factors as the serious development problems of the country, its relatively ineffective development and emigration–related policies, and its democratic tradition, have apparently interacted with such "pull" factors as the changes in the receiving society's immigration policies, to trigger the particularly large volume of population movement from the Philippines. These factors were discussed in an earlier paper (see Cariño, this volume).

IV. CONSEQUENCES OF EMIGRATION

The consequences of emigration on the sending society involve a wide range of social, economic, demographic, and political phenomena. They may be short–term costs or benefits, or they may emerge over a longer period. Moreover, the impact of emigration can occur at various levels: the individual, the household, the community, and the country as a whole. It is important to keep these various levels in mind, since the consequences of emigration may not be the same at all levels – that is, emigration may be beneficial for the individual and the household but less beneficial or even harmful for the community or the country at large. This paper focuses primarily on the effects of emigration at the national level, although consequences at lower levels will also be noted where appropriate.

It may usefully be noted at the outset that the consequences of more or less permanent emigration, as distinguished from temporary labor migration, could vary considerably. Although some generalizations relating to both types of movement may be justified, by its very nature and composition the effects of temporary labor migration on such matters as labor force quality, unemployment, and economic productivity are obviously different.

1. Demographic Impacts

As discussed in previous sections, international migration streams from the Philippines are characterized by age and sex selectivity. In particular, permanent emigration has been observed to be female–dominant, while temporary labor migration is male–dominant.

To the extent that they are permanent or long–term, the demographic consequences of immigrant flows characterized by heavy imbalances in sex ratios are generally straightforward. First, these immigration patterns tend to disrupt the marriage process as has been observed in the Ilocos Coast region (Smith, 1981). In turn, delayed marriage lower nuptiality, and high incidence of celibacy has almost mechanical consequences for total fertility rates and population growth.

Not so straightforward, however, are the demographic consequences of single persons' temporary absences. These consequences might be much more complex and must be seen in the context of actual life processes in a given society. Available data indicate that temporary labor migration of males is related, in many instances, to marriage plans, and the scarcity of resources available to young males may be the reason for marriage delays (Balan, 1983). Evidence in the Philippines suggests that, to the extent that temporary absences due to wage employment increase the resources available to young males, they may reinforce a pattern of early household formation. As Balan (1983) suggests, marriage and childbearing may actually occur in anticipation of resources that can be realized from migration opportunities.

Beyond demographic effects, age and sex imbalances in immigration and temporary labor migration flows may also have important implications on family relations. They could, for instance, alter household arrangements. Because of migration, the nuclear family is no longer as common a household pattern in many parts of the country; split and extended households are becoming increasingly common. Changes in the sex composition of households have also been observed in many places. In turn, these changes have affected the division of labor within families. In particular, the departure of males is one of the new pressures being exerted upon young women who are already in charge of various household activities (Cariño, 1987). The result is a "double usage of time" – that is, young women engage in household and non–household activities simultaneously, a phenomenon that should probably be reckoned with in efforts to improve the productivity of rural areas.

Available information in the Philippines also shows that the departure of some household members has not had an adverse impact on household welfare. In fact, migrant households (those with migrant members) have higher socio–economic status than stayer households (Cariño, 1987). It is conceivable, however, that emigration could affect other aspects of family life. There is increasing evidence, for instance, that male labor migration results in some stress on women who are left behind. Among spouses of contract laborers in the Middle East, emotional and psychosomatic problems are reported to be common (Arnold, 1984). The findings of another study show that the extended absences of migrant males may be responsible for the incidence of Oedipus complex among children and mental disorders among women (Naim, 1974: 425).

2. Brain and Skill Drain

A major concern of Filipino scholars and policy makers is that the massive movement of Filipinos to other countries has also meant the increasing departure of persons with professional and technical qualifications. The volume of the flow for this type of immigrant has been particularly large for the Philippines. As can be seen in Table 8, students (23.8 percent) and professional and technical workers (8.7 percent) constituted a very large percentage of all Filipino immigrants to various parts of the world in 1987.

Results of the IPDA survey generally confirm this phenomenon. Based on responses to questions about their work in the past 12 months, a relatively high 28.1 percent of survey respondents can be classified as professional and technical workers. The figure for the Philippine population is a lower 6.6 percent. Significantly for both the Philippine population and the survey sample, a much higher proportion of females was classified as professional and technical workers, a discrepancy that can probably be explained by the preponderance of nurses and midwives in recent immigrant flows. As discussed elsewhere (Cariño, 1987), this type of selectivity could have important implications for the social and economic growth of the sending nation. From the perspective of the immigrants, however, their experience in high status occupations could be an important resource in enhancing their social and economic advance in the host society.

The extent of the brain flow from the Philippines is vividly illustrated by data on immigrant scientists, engineers and physicians. Along with India, the Philippines has been a major supplier of these professionals to the United States. The flow of scientists, engineers and physicians peaked in the years immediately following the 1965 amendments to the immigration law. Over the five–year period from 1966–1970, more than 4,300 Filipino engineers and scientists (including social scientists) and some 3,000 physicians and surgeons emigrated to the United States. During the pre–amendment period from 1962 to 1965, only 349 immigrant

TABLE 8

Occupational Distribution of Registered Filipino Emigrants by Country of Destination 1987

Occupational	USA		Australia		Canada		Others		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Prof. Tech. & Related Workers	3,481	8.5	1,00	11.1	372	6.5	45	5.6	4,899	8.7
Mgrl. Exec. & Adm. Workers	242	0.6	90	1.0	84	1.5	4	0.5	420	0.7
Clerical Workers	2,819	6.9	1,213	13.5	502	8.7	71	8.9	4,605	8.2
Sales Workers	2,029	5.0	456	5.1	305	5.3	35	4.4	2,825	5.0
Service Workers	625	1.5	132	1.5	84	1.5	33	4.1	874	1.6
Agri/Animal Husbandry/ Forestry, worker/ Fishermen	942	2.3	36	0.4	118	2.0	9	1.1	1,105	2.0
Production Process workers	1,270	3.1	252	2.8	213	3.7	19	2.4	1,754	3.1
Transport Equipment Optrs. & laborers	73	0.2	–	–	–	–	–	–	73	0.1
Numbers of the Armed Forces										
OTHERS:										
Housewives	7,574	18.6	933	10.4	684	11.9	123	15.4	9,315	16.5
Retirees	1,253	3.1	122	1.4	313	5.4	3	0.4	1,691	3.0
Students	9,625	23.6	1,877	20.9	1,734	12.7	173	21.7	13,409	23.8
Minor	3,349	8.2	1,461	16.3	445	7.7	127	15.9	5,382	9.6
(Below 7 yrs. old) Unemployed	7,531	18.4	1,410	15.6	903	15.7	154	19.3	9,998	17.7
TOTAL	40,813		8,983	100.0	5,757		797		56,350	100.0

Source : CFO, Statistical Report, 1989.

physicians and surgeons and 180 scientists and engineers had been admitted to the United States. In a more recent three-year period from 1976–1978, some 2,600 Filipino engineers and scientists emigrated to the United States. The proportion of scientists and engineers coming from the Philippines accounts for almost 30 percent of the total number of scientists and engineers from Asia.

The flow of temporary migrant workers similarly involves the loss, even for a temporary period, of many highly skilled and experienced workers. Abella (1980) reports that many sectors in industry have complained of productivity losses due to the emigration abroad of their experienced workers. Even such government departments as the Department of Agriculture and the Department of Health have complained of the scarcity of agriculturists and irrigation technicians, and doctors and nurses respectively, for assignment to the rural areas. As noted by Abella (1980:7), the problem from the standpoint of workers "is seen as the heavy cost of training new workers and the temporary dislocations that can be caused by the departure of many experienced workers all at once."

The observations of Abella are generally substantiated by the information presented in Table 9. As the data show, a high 27.6 percent of deployed contract workers in 1987 was classified as professional, technical and related workers. Service workers (33.7 percent) and production and process laborers (33.1 percent), however, still represent the largest proportions of temporary labor migrants during the period.

There had been as much debate in the Philippines as elsewhere on the possible impacts of the emigration of professional and technical workers. Those concerned about the brain- and skill-drain point out that the departure of the economically active and productive segment of the population reduces a country's ability to produce and, hence, reduces income. The fact that most emigrants are employed prior to departure strengthens the brain- and skill-drain argument. Results of the IPDA survey show that almost all respondents of labor force age were employed prior to departure. There is sufficient evidence that the same is true among temporary migrant workers. An OEDB study in 1977 showed that all overseas applicants in the labor service exchanges had previous employment in the Philippines or overseas (Jayme, 1979). A small study of ILMS on migrant workers in Iran showed only 4.5 percent of the respondents as having no previous employment. Similarly, Gibson's survey of 1982 revealed that an overwhelming majority of migrant workers had jobs prior to departure, with over two-thirds of them having worked for 2 to 22 years in their last jobs (as cited in Arcinas, 1987).

The brain-and skill–drain argument is also bolstered by generally favorable projections of employment opportunities. Such favorable projections were, for instance, made by Aguilar (1980) by selected skills and occupations, as follows (as also cited by Arcinas, 1987):

A. Selected Profession based on 1975	Trends to 1980 (based on 1978)	Trends to 1983
1. Medical Field	favorable opportunities with few graduates	
1. dentist	compared to the increasing demand for dental services	
	job openings will rise significantly due to the expanded health program	
2. dietician	rapid employment growth to meet the need for effective management in the nutrition and food fields	
3. midwife	rapid increase in employment due to the expandsion of public health services	
4. pharmacist	moderate increase in em ployment, job openings arise mostly from the extensive use of their services in hospitals and clinics	still a moderate increase of employment
5. registered physicians	rapid increase in employment because of high turnover rate of nurses who leave the country for better paying jobs abroad	

	6. registered physicians	very good employment opportunities especially in the rural areas	
II.	Technicians		
	1. laboratory technician (B.S. Eng'g./B.S. Chem)	rapid increase in employment to industrial expansion/increasing opportunity in the fields of environmental control and urban development	moderate rise of employment due to the expansion of the chemical industry especially along the line of pharmaceutical and toilet products
	2. x-ray technician	rapid increase to keep pace with the growing acquisition of x-ray equipment and demand for medical services in general	still a rapid increase to keep up with the developments
III.	Engineers		
	1. civil engineer	opportunities to expand moderately as a result of increasing number of construction projects on housing, water supply, roads and other heavy infrastructure programs.	
	2. electrical engineer	employment growth is going to increase rapidly for the next 2-4 years, due to the growing demand for electrical equipment and the on-going rural electrification programs of the government	still an upward trend with the preference for electrical goods and appliances
IV.	Accounting Field		
	1. accountant/auditor	moderate increase in employment due to the complexity of accounting process, best opportunities for CPA	need for these professions is expected to increase due to the rise in size and number of firms

2.	Bookkeeper	slowly declining in employment growth rate due to the increasing automation of bookkeeping	for payroll clerks, demand is expected to increase, bigger volume of paperwork is expected to accrue to payroll clerks
V.	Architects	rapid increase due to the increasing demand for urban development projects and modernized architectural design	
VI.	Others		
1.	Cashier	moderate increase in employment growth due to the establishment of more small companies engaged in services	
2.	personnel	very rapid employment growth due to the expansion of businesses, very favorable prospect for those with MBA's	
B.	Selected Skilled Occupations		
1.	Electricians	employment will increase tremendously with the widespread use of electrical devices, switches, wirings; however, the job is done on contractual basis resulting in a high turnover rate; openings are seasonal	
2.	Machinist	rapid employment growth due to rising demand from machine goods such	still to grow with the demand for more machine metal parts; opening will

		as automobile, household appliances	rise with plant expansion and the replacement of those who die, are retired or migrate to other countries
3.	Plumber	moderate employment increase due to the increasing construction activity and expansion of industries using extensive pipework (refining plants)	
4.	Steel Metal Worker	moderate employment increase as a result of a growing demand for workers in the installation of airconditioners, heaters, etc.	
5.	Carpenters/Mason	rapid growth of employment due to increasing construction activity, good prospects for skilled workers needed for maintenance of large factories, stores, departments	for masons, job prospects bright as more concrete structures are built; in addition, there is a construction boom in the Middle East where these workers are in demand
6.	Painters	moderate rise in employment due to housing project goal of private firm	

Source: Virginia Sinay–Aguilar, et al., "Effects of Temporary Employment of Professionals and Skilled Manual Workers in the Middle East on the Labor Market" (submitted to the Program in Development Economics, School of Economics, University of the Philippines, in partial fulfillment of the Certificate in Development Economics), April 1980, pp. 57–58. Also reproduced in Arcinas (1987), pp. 24–29.

It may usefully be noted that the data base for Aguilar's projections are somewhat dated (1975 and 1978). The projected favorable employment for Filipinos in the 1980's must now be reassessed in the light of the country's continuing economic and political crisis, peace and order problems particularly in the countryside, as well as recent changes in the country's trade and fiscal policies. What seems certain is that it is difficult to generalize about the brain– or skill–drain problem with any degree of certainty especially in the light of evidence that there seems to be an "oversupply" of workers, at least in certain types of occupations and skills.

TABLE 9

Deployed Contract Workers
by Major Occupational Category, 1987

	Male		Female		Total	
	N	%	N	%	N	%
Professional, Technical and Related Workers	42,738	21.2	62,800	34.8	105,538	27.6
Managerial, Executive & Administrative Workers	1,372	0.7	131	0.1	1,503	0.4
Clerical Workers	9,888	4.9	3,806	2.1	13,694	3.6
Sales Workers	1,773	0.9	1,949	1.1	3,722	1.0
Service Workers	21,904	10.8	106,800	59.2	128,704	33.7
Agricultural Workers & Fishermen	2,202	1.1	13		2,215	0.6
Production, Process Workers, Transport Operators & Laborers	121,911	60.4	4,942	2.8	126,853	33.1
TOTAL	201,788	100.0	180,441	100.0	382,229	100.0

Source of Data: *POEA, Statistical Report, 1988.*
X = Less than .01

3. Repatriated Earnings

Remittances have been viewed by many as a factor that may offset the harmful effects of the brain– and skill–drain. The country of origin, it is argued, can benefit from the success of its immigrants abroad through repatriated earnings and other forms of support, especially when viewed in the context of the country's economy. A survey of Filipino immigrants in Honolulu in 1982 revealed that almost three-quarters of the households surveyed sent remittances to relatives in the Philippines, averaging $600 per sending household during a 12–month period. Over a one–year period, these remittances totaled more than $373,000 from 623 households (Caces, 1985:148).

For the Philippines, a substantial source of repatriated earnings is the social security payments to Filipino veterans and retired workers, a legacy of the country's long history of military and economic ties with the United States. In 1983, monthly U.S. social security payments to recipients in the Philippines amounted to almost $7 million, or about $84 million over a one–year period. Among all countries in the world, the Philippines ranks fourth (behind Mexico, Canada, and Italy) in total number of U.S. social security beneficiaries, including spouses and children (Social Security Administration, 1984).

In absolute terms, foreign exchange remittances from temporary migrant workers are even more substantial. Over a 10–year period from 1977 to 1987, remittances from processed overseas workers averaged $578.1 million. The amount of remittances from these workers steadily increased from $162.96 million in 1977 to $791.91 million in 1987. The highest amount of remittance at $944.45 million was reported in 1983 (Table 10).

Remittances undoubtedly have had a favorable effect on household welfare in the Philippines. Beyond household welfare, other scholars have argued that even relatively small remittances could somehow result in net gain for the Philippine economy.

Among households of permanent immigrants, housing and land are the most common purposes for which remittances are spent– often as a testimony to the immigrants' material success abroad. In particular, the purchase of land in the Philippines has been noted to be a reflection of a desire to gain security and social status: such purchases have little production effects since no additional land is necessarily going into production. In fact, the increased demand for land in the face of its scarcity may result in severe local inflation of land prices, an effect that could work against the consolidation of small landholdings predicted by Griffiths (1979).

Basically the same pattern of remittance use can be discerned among households of temporary migrant workers. Gamboa and Gayo (1983) report that 78 percent of remittances

was used for such purposes as food, education and housing and only 22 percent for investments in economic ventures. High level investments of about $4.000 or more were found among a very small proportion of the recipients.

On balance, the impact of remittances on production seems to be negligible. Some have argued, however, that the worth of remittances may lie not in their initial use but in the ultimate purpose to which they are put. Although evidence suggests that a substantial proportion of repatriated earnings is destined to serve consumption needs, Arnold (1984) notes that the seller of consumption items may put the proceeds into productive investments. This argument could very well be valid; for now, however, there is as yet no evidence to substantiate it.

TABLE 10

Exchange Remittance by Processed Overseas Workers and Yearly Growth Rates, 1977–1987

Year	Remittance US$ (in million)	% Growth
1977	162.96	–
1978	290.85	78.48
1979	364.74	25.40
1980	421.27	15.50
1981	545.87	29.58
1982	810.48	48.48
1983	944.45	16.53
1984	658.89	(–30.23)
1985	687.20	4.30
1986	680.44	(– .98)
1987	791.91	16.38
TOTAL	6,359.06	578.10

Source: Department of Economic Research, Central Bank of the Philippines.

4. Return Migration

The transfer of technology and skills through return migration could be an important positive impact of emigration. Although some return migration to the Philippines is occurring, the evidence is very fragmentary. Jasso and Rosenzweig (1982) have estimated that for immigrants who entered the United States in 1971, some 20 to 38 percent had returned to the Philippines as of January 1979. In another study, the author reports that in 1981, 39,000 of the approximately 113,000 Filipinos who emigrated to Hawaii returned to the Philippines while 18,000 moved on to the Pacific Coast states (Kitano, 1981). Within a shorter four–year period – from July 1935 when the Philippine Repatriation Act was signed, to December 1940 when the law expired – Arnold (1984) estimates that some 2,000 Filipinos were repatriated to the Philippines.

Proportionately, the magnitude of return migration to the Philippines in recent years appears to be smaller. Based on the results of the survey of Filipino immigrants in Honolulu, Arnold (1984:9) reports that only 16 percent of the immigrant respondents expressed an intention to move again in the future. Among those who intended to move, however, the most popular choice was a return to their home region. It may usefully be noted that among the same informants, return visits to the Philippines were very common: a remarkable 61 percent has taken at least one trip home since they first came to Hawaii (Caces, 1985:147).

The evidence on the impacts of return migration is even more fragmentary. For instance, no studies have been done in the Philippines on whether returnees are productive workers, or mostly dependents such as retirees and the elderly. Nor is there information on whether or not return migrants bring back useful skills. Fragmentary evidence elsewhere shows that few additional skills are acquired and these skills are often unsuitable to conditions in the sending country. It has been noted that the immigrant returnees may, in fact, have an unfavorable influence on the sending society in that they bring back materialistic values and often demand imported consumer goods, thereby shifting attention away from productive investments.

5. Immigrant Activities Abroad

Filipinos abroad have become more visible in recent years. In the U.S., for instance, some political and lobbying activities of several professional Filipino-American groups have been reported. Although the memberships of these groups are small relative to the size of the Filipino American population, their activities intensified with the 1983 assassination of opposition leader Benigno Aquino and the subsequent revolution leading to the flight of former President Ferdinand Marcos into exile and the installation of Corazon Aquino as president.

Many of these groups disseminated information aimed at increasing the Filipino people's awareness of the "abuses" of the previous Philippine regime and apprising them of the forms of opposition that existed. Several other lobby groups have reportedly exerted efforts to influence the nature of U.S. military and economic aid to the Philippines, while others have documented the extent to which the conduct of the political and economic affairs of the country is tied to pressures from international lending institutions such as the USAID and the World Bank (Abad and Eviota, 1984). Several underground movements have urged the withdrawal of American support from the Marcos regime and called attention to human rights violations in the country.

The extent to which the governments of the Philippines and the United States react to these pressures is of great significance to the majority of Filipinos. For now, however, the impact of these political activities is difficult to measure because the 1986 revolution has led to changes in domestic policy that will have effects on the political and economic context.

V. INTERNATIONAL MIGRATION POLICIES

As noted earlier, there are no policies in the Philippines which directly curtail the people's freedom of mobility. It should be noted, however, that a number of programs and policies which may indirectly influence trends in international migration do exist. A brief chronological description of these policies follows. The possible impact of these policies is summarized in Table 14.

Date	Description of Policy
	Return Service Requirement. Scholars sponsored by the Philippine government for further studies abroad are required to serve the government upon return. The period of return government service required is dependent upon the length of the scholarship, as follows:
	Below 60 days – One (1) year service
	Two (2) mos. – Two (2) years service
	Six (6) mos. – Three (3) years service
	One (1) year – Four (4) years service
1973	*Balik–bayan Program.* This program is designed to encourage permanent emigrants to return to the Philippines with reduced fares, tax exemptions and customs privileges.
1974	*Overseas Employment Program.* Through the Philipine Labor Code, the overseas employment program was instituted. This major government policy

was formulated to ease the problems of unemployment and tight balance of payments in the country. This program provided for a remittance requirement among contract workers: 70 percent of basic salary for construction workers, and 50 percent for other land-based workers.

Balik-Bahay Programs. A program which grants emigrants similar rights as citizens to purchase home lots and to spend the remaining days of their lives in the Philippines.

Program for Overseas Filipino Professionals. A program designed to allow former Filipino professionals abroad (now nationals of other countries) to practice their respective professions in the Philippines.

Tax Holidays for Overseas Filipinos. In connection with the Balik-bayan program, overseas Filipinos with Balik-bayan status were provided with additional tax exemptions under this policy.

1975 *Balik-Scientist Program.* A program designed to encourage Filipino scientists abroad to return to the Philippines. It provides for incentives for any foreign-based scientist of Filipino origin or descent to practice his/her profession in the Philippines.

Protection Against Illegal Recruitment. A Presidential instruction was issued in 1975 to protect Filipinos desiring employment abroad against illegal labor recruiters. The instruction directs various government agencies concerned to penalize travel agencies engaged in illegal recruitment.

1976 *Use of International Flag Carrier.* A policy requiring government offices, agencies, instrumentalities and government owned or controlled corporations, persons and entities enjoying tax exemption and subsidy from the Philippine government, to utilize on international transportation the services of the Philippine flag carrier and shipping lines. The purpose of this policy is to generate revenues for the government as well as to help ease the country's balance of payments problems.

1977 *Travel Tax.* Individuals not travelling officially under government auspices are required to pay a travel tax (currently a flat rate of P/1,800). The purpose of this policy is to discourage unnecessary travel in order to help ease the balance of payments problem of the country.

1982 *Orientation Seminars.* The Commission on Filipino Overseas (CFO) conducts these seminars to prepare the emigrants for eventual resettlement in their host country, thereby helping facilitate their adjustment in their prospective

communities abroad. The sessions focus on living and social conditions in the country of destination, as well as rights of immigrants in their host countries.

Guidance and Counselling. Also an activity of the CFO, this program is designed to cater to the needs of Filipinos migrating as fiancee–visa holders or spouses of foreign nationals. Individually, fiancees/spouses are given information and counsel that would prepare them for the kind of life they will be encountering in their host country and to minimize the problems arising from inter–racial marriages.

1983 *Emigrant Children Educational Assistance Program (ECEAP).* This program was conceived by CFO in response to the clamor of Filipino immigrants to have their children study and know more about the Philippines. An annual three–week summer course on Philippine Studies is conducted for immigrant children.

1987 *Balik–Lalawigan Program.* This program is aimed at bringing together Filipino immigrants from the same regional groupings with a view to seeking their assistance in funding development projects for their region.

It may be noted at the outset that many of the policies listed have actually been designed to achieve development objectives other than to regulate international migration flows. At the same time, however, these policies do have an impact on migratory movements. As shown in Table 14, the programs and policies may be divided into five main categories:

1. Policies and programs that encourage people to leave the country;
2. Those that discourage people from leaving the country;
3. Those that encourage return migration;
4. Those that discourage return migration; and
5. Those that serve the needs of emigrants.

An analysis of the data provided in Table 14 would readily reveal the predominance of programs aimed at encouraging return migration. Foremost among these is the Balik–Scientist (Return of Scientists) program which is designed to provide incentives for any foreign–based scientist of Filipino origin or descent to practice his/her profession in the Philippines. A related policy similarly allows overseas Filipino professionals (now nationals of other countries) to practice their respective professions in the Philippines. Other programs provide return incentives in the form of reduced fares, tax exemptions and customs privileges.

TABLE 11

Philippine International Migration Policies

Policy/Program	Possible Impact				
	Encourage Departure	Discourage Departure	Encourage Return	Discourage Return	Serve Needs of Emigrants
1. Return Service Requirement				X	
2. Balik-bayan Program			X		
3. Overseas Employ-ment Program	X				
4. Balik-Bahay Program			X		
5. Program for Overseas FilipinoProfessionals			X		
6. Tax Holidays for Overseas Filipinos			X		
7. Balik Scientist Program			X		
8. Protection Against Illegal Labor Recruitment	X				
9. Travel Tax		X			
10. Orientation seminars					X
11. Guidance and Counselling					X
12. Emigrant Children Educational Assistance Program					X
13. Balik-Lalawigan Program			X		

The main rationale behind these programs is the assumption that the process would mean the repatriation of skills and earnings. As previously mentioned, information is scanty on the acquisition of new skills among migrant returnees. The little evidence that exists indicates that negligible additional skills are acquired or at least few are applied. It has been noted that immigrant returnees of the sending society bring back materialistic values and often demand imported consumer goods thereby shifting attention away from productive investments.

Repatriated earnings to the Philippines (including those from temporary migrant workers) have been known to be substantial and, undoubtedly, have had a favorable impact on household welfare. Beyond household welfare, other scholars have argued that even relatively small earnings repatriated could somehow result in net gain for the Philippine economy. Still others point out that the benefit of repatriated earnings may be negligible in that only a small proportion of the funds are invested in productive enterprises (Caces, 1985).

Among government scholars and fellows, a policy which may have the opposite effect (i.e., to discourage return) is the return service requirement which mandates government fellows to serve the government four years for every year abroad. This is often a disincentive since government pay is low and no clear reward is available to the fellow upon return. It should be noted that despite this requirement a number of fellows (about 10 percent) have reneged on their government obligations. Theoretically, these fellows have to pay back the government but no effective sanctions have as yet been found to ensure that the government gets back its investments.

Policies also exist that encourage at least the temporary migration of workers. The overseas employment program was formulated with a view towards easing the problems of unemployment and tight balance of payments of the country. To ensure the repatriation of earnings the program provides for a remittance requirement: 70 percent of basic salary among contract workers, and 50 percent of other land–based workers.

On the other hand, a policy currently exists which may discourage departures. Individuals not travelling officially under government auspices are required to pay a travel tax (currently a flat rate of P/1,680.00). Again, the main purpose of this policy is to discourage unnecessary travel in order to help ease the balance of payments problems of the country.

A final category of policies has to do with programs aimed at serving the needs of immigrant groups or helping them maintain links with their home country. Foremost among these are the orientation seminars conducted by the Commission on Filipinos Overseas (CFO) to prepare the emigrants for eventual resettlement in their host country. A related CFO activity is a Guidance and Counselling Program designed to cater to the needs of Filipinos migrating as fiancee–visa holders or spouses of foreign nationals. More recently, the CFO has launched an

annual summer course on Philippine Studies for the children of Filipino emigrants who had expressed a desire to know more about the Philippines.

On the whole, the impact of these policies has been offsetting. While some have discouraged the outflows and encouraged return, others have encouraged emigration and discouraged return. Judging from the rapid rise in the number of Filipino immigrants to other parts of the world, it is obvious that policies that do discourage departures from the country have had negligible impact. And a major reason for such negligible impact is the fact that the policies do not respond directly to the structural problems that trigger the population movements.

VI. SUMMARY AND CONCLUDING OBSERVATIONS

The Philippines has become one of the largest suppliers of immigrants and manpower to various countries in the world. Among the important factors that seemed to have influenced the movement of Filipinos across the borders of their nation are the country's tradition of democracy which has guaranteed the freedom of mobility; its serious structural and economic problems which have worsened in recent years; and its development policy which has apparently failed to cope with the country's poverty and unemployment problems.

In turn, the massive emigration of Filipinos has important socio–economic consequences for the sending country. The nature and magnitude of these consequences are, however, difficult to assess because of the dearth of information on such aspects of the problem as the brain- and skill–drain, repatriated earnings, return migration, and immigrant activities abroad. The impacts of these phenomena are still the subject of considerable debate, and additional studies are obviously needed to serve as a basis for the formulation of emigration–related policies.

Some programs do exist which, to some extent, regulate the international movement of Filipinos. The overall impact of these policies, however, seems to be offsetting and negligible, a reflection of the fact that the country does not have an overall policy in regard to the emigration of Filipinos. It is important to note, in this connection, that policy alternatives include not only direct instruments but also programs aimed at improving the structural conditions in the sending country (e.g., wages, employment, agricultural productivity, etc.).

Moreover, a major area of concern in the country is the continued lack of articulation between the educational system and the needs of its predominantly agricultural economy. Unless sufficient political will exists to bridge the gap between policy and action, and to implement a manpower policy that is responsive not to external markets, but to the internal development needs of the country, it would be difficult to expect the economy to absorb the Philippines' ongoing supply of labor.

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POPULATION, ENVIRONMENT AND DEVELOPMENT
(With Applications to Philippine Forestry)

Ma. Concepcion J. Cruz

I. INTRODUCTION

The International Conference on Population (ICP), held in Mexico in 1984, initiated the important recommendation that there must be increased global concern for the effects of population pressure on resource scarcity and the physical deterioration of many of the world's fragile ecosystems. The recommendation states:

> To be realistic, development policies, plans, and programmes must reflect the inextricable links between population, resources, environment, and development. Priority should be given to action programmes integrating all essential population and development factors, taking fully into account the need for rational utilization of natural resources and protection of the physical environment and preventing its further deterioration (IPPF, 1988:24).

Information on population growth and distribution holds significant implications for the evaluation of current and future "carrying capacity" of resources. Allan (1965) defines carrying capacity as the maximum population that the environment is able to support without damaging the environment. It implies a fixed limit to population growth, beyond which environmental degradation sets in. It is evident that population pressure on resources represents a key policy concern especially for developing countries where the poorest segments of society are completely dependent on natural resources for their livelihood.

This paper discusses the important linkages of population, resources, environment and development and looks at the specific conditions of population pressure on forest resources in the Philippines. It begins with a brief review of some theoretical perspectives followed by a discussion of population growth and distribution in Philippine forest lands. Part II describes the nature of population stress on resources in terms of its symptoms and the resulting environmental conditions. In Part III the demographic and agricultural responses to population pressure are discussed including alternative land use options adopted by certain communities. A review of some government policies and programs is provided in the last part to demonstrate how public sector planning has failed to address the impact of population pressure on resources.

1. Theoretical Background

At least two major theoretical perspectives may be applied in analyzing the relationship of population, resources, environment and development. The first perspective is the economic-demographic notion of "optimum population." This is defined as that population at which with given resources and given technology output per capita is maximized (Sauvy, 1968). When the optimum population is reached, a community begins to feel the pressure of overpopulation and the community is forced to change either their technology or their resources until the equilibrium, optimum population is established (Easterlin, 1969). Changes in the social organization of production, or direct attempts to restrict further demographic growth (e.g., through delayed marriages), have also been found as natural responses towards achieving the optimum population. Smith's study (1981) of responses to population pressure by communities in the Ilocos region, Philippines, represents a case study using this perspective.

In *The Conditions of Agricultural Growth,* Boserup (1965) provides an important theoretical argument for viewing population growth as the "major force in determining agricultural change." A series of progressively more intensive land use systems will evolve as communities exceed levels of optimum population. Indeed population pressure is a constant condition that compels communities, even in their pre-industrial state, to adopt fundamental changes in livelihood and technology.

The second perspective views population pressure as a social and economic problem which has the potential of leading to environmental degradation (Carner, 1981). The degradation of resources then results in further misery for the agrarian sector. Geertz (1963) uses the Javanese economy in Indonesia to illustrate how the process ends up in a stagnant economy. Instead of introducing new techniques for farming, the Javanese adopted only known methods by endlessly elaborating and intensifying the usefulness of traditional techniques, a process which Geertz calls "agricultural involution."

It is difficult to compare these two perspectives as they generate essentially similar empirical propositions. The concept of optimum population emphasizes a maximum population limit that is consistent with "carrying capacity" but also sees the possibility of increasing degradation of resources over time. However, optimum population does not include a discussion of effects of overpopulation on the economy because it assumes communities will always try to achieve equilibrium, optimum levels. But this only serves to support the argument that indeed solutions towards resolving the "population crisis" and the "environmental crisis" lie within the scope of both perspectives.

2. Philippine Population and the Resource Base

Short- and long-term extrapolations of population growth in the Philippines, in spite of declining growth rates, indicate rapidly expanding numbers especially in the rural areas. The

Philippine population increased from 19 million in 1948 to over 48 million in 1980, or a growth of 1.5 times in 30 years. The highest growth rates occurred in the 1950s at 3% per year, declining to about 2.7% per year in the 1970s. The present population is about 59 to 61.5 million but this is projected to grow to 71 million by year 2000 and 97 million by year 2030. The country is projected to reach 125 million by the time zero population growth is attained in year 2075 (Vu and Elwan, 1982).

The rapid growth rate of the country's population is due to a long history of high birth rates coupled with declining mortality levels. The young age structure, and the increasing and anticipated larger numbers and proportions of women in the childbearing years, will contribute to a much expanded population in the future (Concepcion and Herrin, 1986). However, as the total population continues to grow, various areas in the country, including its cities and the over one-half land area classified as forest or mountainous, will be progressively subjected to migration.

2.1 Estimating Forest Land Population

The development of upland areas, broadly defined in the Philippines as lands with 18 percent slope or higher, has been a major concern of public policy. Recently an increasing number of new programs in the forest sector has focused on "social forestry," as many of the problems addressed by government forestry officials now concern having more people and less trees. However, until the last two years, very little information was available regarding the actual number and distribution of persons in the so-called uplands, their migration patterns, and the socio-economic determinants of movement.

Previous information on upland communities gives the impression that the majority of public forest lands support only a limited and marginal population (Llapitan, 1977; Spencer, 1966; Rebugio, 1976). The official figures of the government's Bureau of Forest Development (now reorganized as the Forest Management Bureau or FMB), indicate detected cases of squatting in forest lands of about 1.2 million persons (BFD, 1982).

There are at least three reasons for undertaking a systematic analysis of upland population. The first reason has to do with the significance (in both actual number and proportion) of the growing population of upland dwellers in the country. The total upland population is estimated to be around 14.4 million people as of 1980 (about 17.8 million today) or 30% of the total Philippine population. If only forest lands under the public domain are considered, excluding the upland urban areas and forest lands classified as alienable and disposable (A&D), the population figure is about 5.8 million. The annual population growth rate for the period 1948 to 1980 in these forest lands is 2.5%, which means that if such a rate were to continue, forest land population would double in 27 years.

The second reason is the urgency of resolving the critical problems associated with population stress on forest resources. A greater demand for enforcing effective conservation and forest protection policies is needed, especially if movement into easily erodable and critical watershed sites is left uncontrolled. Often migrant settlers have farming experiences different from those suited for cultivation of steep slopes, leading to such destructive effects as increased soil erosion, silting, and clogging of waterways downstream.

The third reason for arriving at a good population estimate for forest lands is the need to address present problems of low income and poverty. The upland residents have been found to be among the "poorest of the poor" with annual per capita incomes of P2,168 ($108), which is below the average poverty cut-off for families belonging to the bottom 30% income bracket. As of the third quarter of 1983 the poverty incidence rate in forestry and forest-based occupations was 46.8%, which is significantly higher than the 43.3% poverty incidence rate for lowland rice and corn farmers (Quisumbing and Cruz, 1986; Cruz, et al., 1987).

In general, it is difficult to break down the total Philippine population into resource area since the census is taken on the basis of administrative boundaries. An indirect estimate is used through employment figures but this procedure usually grossly underestimates the total population since a majority of employment in the rural sector is unrecorded (due to high underemployment and unemployment rates).

To estimate population in the uplands, aerial photographs were used to delineate a settlement density factor (SDF), which is the ratio of the number of residents within an upland boundary (defined by elevation and slope) relative to the total number of residents in the municipality. Areas lying entirely within a mountain zone receive an SDF value of 1.0 while municipalities with one-third of houses located in the uplands receive an SDF value of 0.33. This SDF value is then applied to the census figure to adjust for the actual population residing in the upland portion of the municipality (refer to Cruz, Zosa-Feranil, and Goce, 1986).

Based on this procedure, there are 709 municipalities in 67 provinces which can then be classified as upland, representing 48% of the entire listing of municipalities in the country (see Table 1). Of this number, 490 municipalities (or 69%) are classified as forest lands and over three-fourths of the land area in these municipalities is considered to be part of the public domain (non-A&D). As of 1980, the estimated number of occupants of the public forest lands was 11.0 million, but if the 20% urban population is deducted, the more realistic forest-based population would be around 8.8 million (see Table 2). A more interesting figure is the 4.3 million persons residing in municipalities with timber concessions, which account for 43% of the total public forest land area and over 74% of the total forest-based population within the public domain. A majority of families in timber concession areas are believed to be lowland migrants (see Table 3).

TABLE 1

Number of Provinces and Municipalities with Upland Areas and Total Population of Areas Classified as Upland (1980)

Region	Upland Classified:[a] Provinces	Municipalities	Total Population as of 1980[b]
I. Ilocos	7	115	1,445,522
II. Cagayan	7	67	1,129,268
III. Central Luzon	6	34	843,611
IV. Southern Tagalog	10	72	1,299,226
V. Bicol	5	50	1,059,419
VI. Western Visayas	5	61	1,477,525
VII. Central Visayas	3	72	1,839,817
VIII. Eastern Visayas	5	53	944,817
IX. Western Mindanao	3	28	569,605
X. Northern Mindanao	6	55	1,254,448
XI. Southern Mindanao	5	68	1,833,747
XII. Central Mindanao	5	3	743,083
Total Upland	67	709	14,440,088
Total Philippines	73	1,505	48,098,460
Percent of Total Population	92	48	30

[a]Based on the official definition of "upland": as lands 18% slope and above.
[b]Derived from municipal population data.

Source: Cruz, Zosa-Feranil and Goce 1986). Values derived from National Census and Statistics Office published Census for 1980.

TABLE 2
Total Population in Lands Classified as Public Forests as of 1980 Census
(in thousand persons)

	Total Number of Municipalities Classified as Upland[1]	Number of Municipalities in the Forest Zone[2]	Total Population in the Forest Zone	Total Urban Population in the Forest Zone	"Net" Population Occupying Public Forestlands[3]
PHILIPPINES	709	490	11075	2258	8817
I. Ilocos	115	86	1246	189	1057
II. Cagayan	67	54	1017	136	881
III. Central Luzon	34	17	606	221	385
IV. Southern Tagalog	72	49	985	62	923
V. Bicol	50	36	907	13	894
VI. Western Visayas	61	39	1146	171	975
VII. Central Visayas	72	53	1252	519	733
VIII. Eastern Visayas	53	43	754	51	703
IX. Western Mindanao	28	14	306[4]	231	75
X. Northern Mindanao	55	38	1033	406	627
XI. Southern Mindanao	68	40	1235	1006	
XII. Eastern Mindanao	34	21	588	167	421

[1]Based on the official definition of "upland" as lands 18% slope and above.

[2]Includes only non A & D or public forestlands.

[3]Estimated population occupying forestlands engaging in some form of agriculture (mostly shifting cultivation).

[4]Incomplete population; aerial photographs not available for some areas.

Source: Cruz, Zosa-Feranil and Goce (1986) from figures derived from the 1980 Census of Population.

TABLE 3

Total Population in Municipalities with Major Timber Concessions as of 1980 Census (in thousand persons)

	Number of Municipalities with Major Timber Concessions	Total Population in Municipalities with Major Timber Concessions[1]	Percent of Population in Forest Zone[2]
PHILIPPINES	114	4258	38.4
I. Ilocos	6	88	7.1
II. Cagayan	19	44	4.3
III. Central Luzon	–	–	–
IV. Southern Tagalog	9	190	19.3
V. Bicol	1	33	3.6
VI. Western Visayas	–	–	–
VII. Central Visayas	–	–	–
VIII. Eastern Visayas	5	724	96.0
IX. Western Mindanao	10	631	[3]
X. Northern Mindanao	16	397	38.4
XI. Southern Mindanao	36	189	15.3
XII. Eastern Mindanao	12	523	88.9

Notes: 1. As of December 1985 only. Umali (1987) cites the figure of 134 timber licencees covering 4.79 million hectares as of December 1986.
2. Based on forest zone population presented in Table 2.
3. Information on population in this region incomplete.

Sources: Basic source from Cruz, Zosa-Feranil and Goce (1986) as derived from 1980 Census of Population; BFD Annual Report for 1985.

2.2 Environment Under Stress

Of the estimated 17.8 million upland population, about 8 to 9 million are small-scale cultivators who have opened up interior forest lands, their numbers increasing at rates of 2.5% to 4% per year. The recent SPOT satellite land use estimates of total farm population in forest lands is 8.4 million. This is based on the estimated upland agricultural land area of 3.9 million hectares, 2.6 hectares per farm, and 5.6 persons per family (see Table 4). This figure is close to the 1980 estimate of 8.8 million persons residing within public forest lands (or about 10.8 million today).

If the current population growth rates continue, two major consequences are evident. First, to meet food requirements, more forest lands will be converted for agricultural uses. From 1970 to 1980 about 300,000 hectares of forests are believed to have been converted into other uses (agriculture) each year (Revilla, 1985).

In municipalities with major timber concessions, where population growth rate is rapid at 3% per year, the rate of conversion of forest lands for agriculture is about 100,000 hectares per year (Umali, 1987). With the projected increase in upland population of 24 to 26 million by year 2000, an additional 5 to 6 million people will be opening up new lands for cultivation. Assuming that about 2 hectares per family of 6 are used for upland cultivation, then another 8 million hectares of forest lands will be converted, or about four-fifths of the present forest land area under tree cover.

Secondly, as upland agriculture is accelerated, many environmental effects in the form of soil erosion, flooding, sedimentation and siltation will emerge affecting the lower floodplains. The average annual erosion rate in Philippine uplands ranges from 20 to 40 tons per hectare but as much as 200 tons per hectare are eroded in the degraded grasslands (Revilla, 1985).

A similar trend can be observed in the coastal zone where over one-half (55%) of the country's population reside in some 10,000 coastal municipalities. Of the 25 large urban centers in the country, 17 have populations in excess of 100,000 people living near the coast. The coastal municipalities which are dependent on fishing for livelihood have remained poor especially as population growth has absorbed catch increases, plus an absolute reduction in fish catch in the last decade due to overfishing and extensive deterioration of marine and terrestrial resources. The more significant environmental problems associated with population pressure (which lead to overexploitation of the fishery) are the physical and chemical damage to coral reefs, conversion of mangroves, pollution of freshwater lakes, swamps and rivers, and the deterioration in the quality of marine, brackish and fresh water through increased sedimentation and industrial pollution.

It is important to emphasize, however, that population pressure is *not the only cause of environmental degradation.* In fact the widespread deterioration of many of the country's

TABLE 4

Estimated Farm Population in Classified Forestlands Based on Recent SPOT Figures of Cultivated Area

Region	Total Cultivated Area Area (in thousand) Hectares[1]	Estimated Farm Population (in thousand persons[2]	Total Farm Population in Forest Zone Based on 1980 Census
PHILIPPINES	3927	8459	8817
I. Ilocos	407	877	1057
II. Cagayan	436	940	881
III. Central Luzon	202	435	385
IV. Southern Tagalog	544	1172	923
V. Bicol	173	372	894
VI. Western Visayas	333	717	975
VII. Central Visayas	308	664	733
VIII. Eastern Visayas	339	731	703
IX. Western Mindanao	177	382	75
X. Northern Mindanao	345	742	627
XI. Southern Mindanao	419	902	1006
XII. Eastern Mindanao	244	525	421

Notes: 1. Includes cultivated areas in forestlands and grasslands and areas with mixed cultivation/brushland/grassland.

2. Assumes 2.6 hectares per farm and 5.6 persons per household.

Sources: Swedish Space Corporation 1988. Mapping of the Natural Conditions of the Philippines, Solna, Sweden: SSC.

forests and coastal resources is merely aggravated by demographic stress, the underlying causes being the undervaluation of natural resources and ineffective enforcement of government controls. These problems have brought about the rapid overexploitation of natural resources, specifically through logging and large-scale, commercial fishing.

II. THE NATURE OF POPULATION STRESS

1. Environmental Indicators of Overpopulation

When do we classify a community as overpopulated? Due to the seriousness of the resource scarcity and population growth problems, it is difficult to arrive at a single, nationally acceptable standard for defining overpopulation. Nevertheless, it is possible to address the important considerations for identifying the "critical" versus "non-critical" overpopulated areas by looking at indicators of the carrying capacity of the natural resource base. This will be important in establishing *sensible* and *realistic* targets for resource development programs.

1.1 Measurements of Overpopulation

Grigg (1976) proposes two ways of measuring overpopulation. One is by defining it in terms of delivery of services. When a community contains more people than can be maintained at a given standard of living, it is said to be overpopulated. A second measurement uses available labor force in agriculture. Overpopulation occurs when there is surplus agricultural labor relative to available cultivable lands.

Alternative measures of overpopulation have been used; the most notable are those associated with demographic indicators such as infant mortality rates, sex ratio, and total dependency ratio (Hunter, 1966). Of course there is also the carrying capacity measurement but its quantification, beyond Allan's (1965) application to African conditions, is problematic, as different environments respond in many ways to pressure.

Some measures of carrying capacity have been estimated for shifting cultivation systems. Using case studies of tropical forest communities, Gourou (1966) shows that a decrease in the fallow period from 24 to 9 years increased the potential population that could be supported from 12 to 30 persons per square kilometer. However, Conklin (1961) proposes that in the Mindoro upland environment in the Philippines as much as 200 persons/sq. km can be supported using an extensive 8-year rotation system.

1.2 Indicators of Environmental Stress on Resources

More than one-half of the world's potential gross arable land lie in the humid tropics zone covering almost 1.5 billion hectares. Using the Food and Agriculture Organization (FAO) definition for cultivated area as: "lands under permanent crops, including land under crops, temporary fallow, temporary meadows for mowing and pastures, market and kitchen gardens, fruit trees, vines, shrubs, and rubber plantations," nearly all lands in the humid tropics can be

considered cultivated. However, due to intensification, the area harvested during any particular year is about one-half to two-thirds of the cultivated land area.

Population pressure on natural resources accelerates as available cultivated land for food production begins to decline. In intensive agriculture, one hectare produces roughly 30,000 kilocalories per day, which is enough energy to sustain 5 persons. Thus, at a population growth rate of 2% per year, 50 years from now an additional 10.7 billion hectares of cultivated lands worldwide must be placed under intensive food production. To be able to meet this requirement, massive investments in irrigation (including desalinization) and further improvements in technology will be needed.

However, in the developing countries, where 75% of the world's population live, there is very little scope for further expansion of croplands. Over 100% of potentially arable lands have already been cultivated in Asia while the ratio of cultivated land to population has been declining in the period 1965 to 1985, as shown in Table 5. The presently uncultivated lands in Asia are mostly in the upper forest zones, which require from 6 to 8 years of fallow per year of cropping to enable the soil to regenerate until it reaches original fertility levels. Due to population pressure, even these marginal lands are already opened up for some form of permanent cultivation.

TABLE 5
Cultivated Land Compared with Potentially Arable Land and Population, 1965-1985

Continent	Estimated Population		Arable Land (million hectares)		Percent of Potential Land Already Cultivated	Cultivated Area Per Person (hectares)	
	1965	1985	Potential	Cultivated		1965	1985
Africa	310	515	500	160	32	0.5	1.0
Asia	1985	2700	465	470*	101	0.3	0.2
Australia and New Zealand	14	25	120	20	16	1.4	4.8
Europe	445	490	170	150	88	0.4	0.3
North America	225	330	450	240	53	0.9	1.4
South America	197	390	370	80	21	0.9	1.4
USSR	243	295	350	230	66	1.0	1.2
TOTAL	3320	4745	2425	1350	56	0.4	0.5

*Assumes all potentially arable land is cultivated: in Asia there is considerable double cropping and extensive cultivation.

Source: Food and Agriculture Organization. 1985. The World Food Problem and Report of a Panel on the World Food Supply. Rome FAO.

1.2a Cultivation of Marginal Lands

Table 6 gives the most recent classification of land cover for the Philippines. Of the 30.2 million hectares total land area, 32% is under intensive cultivation, 45% of which is devoted to rice and corn. Large plantations account for the rest of the 55% cultivated land area which are mostly covered with coconut. Another 40% of land area is under extensive cultivation but 30,000 hectares are found within forest lands. A significant 1.8 million hectares are cultivated from grasslands which require good conservation farming to reduce soil erosion.

TABLE 6
Classification of Land Cover in the Philippines
Based on the 1988 SPOT Survey
(in thousand hectares)

Land Cover	Area	Percent
1. *Forest*	7226	23.9
Pine	81	
Mossy/Unproductive	246	
Dipterocarp	6629	
Closed	2435	
Open	4194	
Mangrove	149	
2. *Extensive Cultivation*	11958	39.6
Open in Forest	30	
Grassland	1813	
Mixed (grass, brush, plantation and other crops)	10114	
3. *Intensive Cultivation*	9729	32.2
Plantation	5337	
Coconut	1133	
Other	91	
Coconut and Cropland	3748	
Other and Cropland	365	
Cropland 4392		
4. *Fishponds*	205	0.7
Fishponds from Mangrove	195	
Other Fishponds	10	
5. *Other Land/Lakes*	542	1.8
6. *Unclassified Area*	546	1.8
TOTAL	30205	100.0

Source: Swedish Space Corporation, 1988.Mapping of the Natural Conditions of the Philippines.Solna, Sweden:SSC.

It is difficult to establish long-term trends in land use as land statistics in the Philippines tend to vary from year to year. For example, in 1981 government estimates placed total classified forest lands at 10.8 million hectares, while LANDSAT (remote sensing) estimates of ground cover identified only 8.1 million hectares as forest, 2.9 million hectares as "reproduction brush" and some 6 million hectares as grasslands and croplands. As of 1987, the National Mapping and Resource Information Authority (NAMRIA) of the Department of Environment and Natural Resources (DENR) increased the official classified forest land area to about 15 million hectares. Classified A&D lands covered some 14.1 million hectares while forest area was about 15.8 million hectares (see Table 7). The recent (1988) SPOT satellite survey confirms only 7.2 million hectares or 24% of total land area under some form of forest cover and close to 12 million hectares under extensive cultivation.

Whichever statistics are used, it is still possible to delineate some indicative trends in the pattern of forest land use in the Philippines. The opening up of forest lands for permanent cultivation has increased based on the two satellite photographs (1980 and 1988). This trend is supported by deforestation rate statistics for the same period as shown in Table 8. About 2% per year of the forest area is subjected to deforestation either through cutting of trees for logging purposes or through clearing to make way for cultivation. In 1983 the FMB estimated that some 23% of forest land was under permanent cultivation and another 3% under pasture. However, by 1988, the proportion of cultivated lands in the forest zone increased to almost 40%. About 15% of the extensively cultivated lands are located in the critical forest and grasslands which are susceptible to erosion (refer to Table 6).

1.2b Depletion of Resources

The population growth rate in the rural areas continues to be high at an average of 2.5% to 2.7% in the 1970s. For the period 1970 to 1975 nearly 3.8 million people were added to the rural population. Such sustained pressure from a rapidly expanding resource-based population, coupled with uneven resource distribution and unequal access, have contributed to declining availability of land relative to population.

The ratio of net cultivated land to the rural population decreased from 0.37 hectares in 1960 to 0.32 hectares in 1970 and fell further to 0.30 hectares in 1974 (World Bank, 1980). At present the ratio is about 0.15 hectares, indicating that the percentage of the population dependent on small-sized farms probably increased further.

The steadily declining average farm sizes in lowland agriculture has also resulted in increased settlement of new areas specially in relatively accessible hilly lands. While a majority of farms are now down to the minimum size for cultivated croplands, a substantial proportion of resources is still concentrated in large ownerships. For example, farmlands 5 hectares or more account for only 8% of the total number of farms in 1972 but over 50% of the land area.

TABLE 7
Official Land Classification Status of the Philippines by Region, 1987
(in thousand hectares)

Region	Total Area	Alienable & Disposable	Total Forest	Unclassified Public Forest	Total Classified Public Forest
PHILIPPINES	30,000	14,103	15,892	881	15,001
I. Ilocos	2,157	1,045	1,112	54	1,058
II. Cagayan	3,640	1,066	2,574	146	2,428
III. Central Luzon,	1,823	1,052	771	27	774
IV. Southern Tagalog	4,756	2,209	2,546	175	2,371
V. Bicol	1,763	1,222	541	30	511
VI. Western Visayas	2,022	1,409	613	2	612
VII. Central Visayas	1,495	959	536	70	466
VIII. Eastern Visayas	2,143	1,024	1,119	39	1,080
IX. Western Mindanao	1,868	856	1,013	118	895
X. Northern Mindanao	2,833	1,067	1,765	51	1,715
XI. Southern Mindanao	3,169	1,212	1,957	117	1,840
XII. Eastern Mindanao	2,329	987	1,343	53	1,289

Source: Remote Sensing and Resource Data Analysis Department, National Mapping and Resource Information Authority, Department of Environment and Natural Resources. 1988.

In forest lands, 134 timber licensees have control over three-fourths of total declared forest land area, while some 8 million upland residents cultivated about a third of the forest land area in 1980 (World Bank, 1980; Umali, 1987).

The figures on deforestation in Table 8 indicate a pattern of dwindling forest reserves. Even in the interior forest zone few unsettled frontier areas remain, as the pressure to convert forest lands for agricultural uses increases. Table 9 shows the area of remaining forest lands after distribution at the low rate of one hectare per household (the current landsize in the Integrated Social Forestry Program is 2.5 hectares per family). By the year 2000 the remaining forest area is estimated to be 3.08 million hectares, which is about a third lower than the present 4.49 million hectares. In 25 years, only about 1.7 million hectares of forest cover will remain.

The estimates of forest lands also show that certain regions will have negative forest cover by year 2025. Central Visayas (VII), Western Mindanao (IX), and Northern Mindanao (X) will have no available forest land by year 2025, but will have around 200,000 to 500,000 hectares of forest area left at the turn of the century. In Central Luzon (III), where 3 of the largest watershed areas in the country are found, there will be 334,000 hectares of forest cover left by year 2025. This will have serious implications for available water supply for food production and domestic uses.

2. Indicators of Population Stress on Resources

The next sections discuss indicators of population stress. These are the following: (1) total population and population growth rate, (2) population density, and (3) migration patterns. The application to forest resources emphasizes the important interactions of population growth and resource use.

2.1 Total Population and Population Growth Rate

As of 1980 over 14.4 million people resided in communities classified as upland, representing 30% of the total Philippine population of 48 million. The upland population is estimated to be around 17.8 million today, at an annual growth rate of 2.6% for the period 1975 to 1980. During the same period the national population grew at a slightly higher rate of 2.8% per year, a rate which is decidedly rapid by international standards.

A summary of indicators of upland demographic characteristics for the period 1948 to 1980 is presented in Table 10. As the figures in the table indicate, the most rapid growth of the upland population occurred between 1948 to 1970. Even if population growth rates in the succeeding years declined gradually, population size has steadily grown. Since the upland population is large, even a small rate of increase can produce considerable yearly increments to the total number already occupying the uplands. Thus, even a small reduction in the rate of growth of the upland population would be significant.

TABLE 8

Estimated Rate of Deforestation by Region for the Period 1980–1987

Region	Total Forest Cover (hectares)		Total Area Deforested Per Year (hectares)	Annual Rate of Deforestation (Percent)
	1980	1987		
PHILIPPINES	8,106,955	7,104,600	143,194	1.87
I. Ilocos	605,322	2898,200	45,160	10.01
II. Cagayan Valley	1,737,844	1,470,200	38,235	2.36
III. Central Luzon	321,387	293,600	3,969	1.28
IV. Southern Tagalog	1,325,940	1,333,900	(1,137)	(0.08)
V. Bicol	91,193	118,000	(3,829)	(3.75)
VI. Western Visayas	135,752	140,100	(621)	(0.45)
VII. Central Visayas	147,350	44,800	14,650	15.64
VIII. Eastern Visayas	619,861	559,200	8,666	1.46
IX. Western Mindanao	435,040	317,900	16,734	4.38
X. Northern Mindanao	1,096,856	1,039,700	8,165	0.76
XI. Southern Mindanao	1,005,722	975,400	4,332	0.44
XII. Eastern Mindanao	584,688	522,600	8,870	1.60

Note: Figures in parentheses represent afforestation rates but it is possible that these may be due to inconsistencies in data reporting for these regions.

Source: Forest Management Bureau, Department of Environment and Natural Resources. 1988.

TABLE 9
Projected Area of Forestland Remaining After Land Distribution to Upland Residents, 1988-2025

Region	Forest Land Area Remaining After Land Distribution[1] (in million hectares) 1988	2000	2025
PHILIPPINES	4.496	3.080	1.704
I.Ilocos	1.199	1.095	0.808
II.Cagayan	2.076	1.939	1.474
III.Central Luzon	0.419	0.334	0.069
IV.Southern Tagalog	1.996	1.837	1.287
V.Bicol	0.561	0.439	0.289
VI.Western Visayas	0.694	0.601	0.357
VII.Central Visayas	0.376	0.213	(0.276)[2]
VIII.Eastern Visayas	0.650	0.584	0.404
IX.Western Mindanao	0.403	0.295	(0.164)[2]
X.Northern Mindanao	0.864	0.673	(0.050)[2]
XI.Southern Mindanao	1.644	1.342	0.060
XII.Eastern Mindanao	0.810	0.752	0.613

[1]Based on one hectare per household; 5.6 persons per household.
[2]Indicate decline in forest area.

Source: Adapted from preliminary estimates as cited in Cruz and ZosaFeranil (1988).

TABLE 10
Indicators of Demographic Change in the Upland, 1948-1988

Indicators	1948	1960	1970	1975	1980	1988
Population Size (thousand)	5,868	8,190	11,1091	2,703	14,440	17,835
Population Growth Rate per Year (%)		2.98	3.03	2.73	2.59	2.67
Population Density (persons/sq.km.)	39	55	74	85	96	119

Sources: Cruz, Zosa-Feranil and Goce (1988); Cruz and Zosa- Feranil (1988).

The regional upland population estimates show that Central and Western Visayas had the largest upland populations before 1970. Southern Mindanao's upland population increased substantially over time, doubling from its postwar population by 1960 and doubling again in 1970. By 1980 Southern Mindanao accounted for the largest upland population for the whole country (see Table 11). Central and Western Visayas continued to register very large numbers residing in the uplands.

The growth rates of upland population declined from the very high levels of about 3% per year during the 1950s and 1960s to less than 2.7% and 2.6% per year during the first and second half of the 1970s, respectively (see Table 12). Trends in the various regions are not uniform although the Cagayan Valley, Southern Tagalog, Bicol, Southern and Central Mindanao follow the Philippine pattern of decline in population growth rates.

Assuming that the growth rate in upland population continues to decline from the 1975 to 1980 levels by 5% every 10 years, the following population projections are possible. The figures for every five-year projection up to year 2025 are found in Table 13. Total upland population is expected to reach 18.6 million by 1990, will nearly double the 1980 population of 14.4 million by 2005 (27 million), and by the year 2025 will approach 43.5 million.

2.2 Population Density

The upland population is unevenly distributed throughout the country, with density levels in 1980 ranging from 48 persons/sq km in the Cagayan Valley to 223 persons/sq km in Central

TABLE 11
Upland Population by Region, 19481988

Region	1948	1960	1970	1975	1980	1988*
PHILIPPINES	5867586	8190012	11108731	12703070	14440088	17835118
I. Ilocos	755878	973245	1205127	1317257	1445522	1677784
II. Cagayan	402065	591987	832473	971231	1129268	1437203
III. Central Luzon	284968	408994	633034	742182	843611	1035907
IV. Southern Tagalog	422012	665626	957965	1129221	1299226	1659935
V. Bicol	496408	740710	916094	987626	1059419	1184988
VI. Western Visayas	860566	1068708	1178576	1362450	1477525	1681552
VII. Central Visayas	1035154	1216953	1462250	1639949	1839817	2212068
VIII. Eastern Visayas	566555	659191	794222	863411	944817	1091472
IX. Western Mindanao	198936	274666	422081	460556	569605	800166
X. Northern Mindanao	384123	553919	875480	1047295	1254448	1674991
XI. Southern Mindanao	308713	488510	1224869	1503734	1833747	259278
XII. Central Mindanao	152208	347503	606560	678158	743083	859774

*Estimated population for 1988 based on population projections from the 1975-80 levels. The estimates assume that population in various regions will decline from the 197580 level by 5% every 10 years.

Source: Cruz Zosa-Feranil, and Goce (1986) as derived from the 1980 Census of Population.

TABLE 12

Annual Growth Rate of the Upland Population, 1948–1980

Region	1948–1960	1970–1975	1960–1970	1975–1980
PHILIPPINES	2.98	3.03	2.73	2.59
I. Ilocos	2.24	2.11	1.80	1.88
II. Cagayan	3.46	3.39	3.14	3.06
III. Central Luzon	3.23	4.37	3.24	2.60
IV. Southern Tagalog	4.09	3.63	3.36	3.11
V. Bicol	3.58	2.10	1.52	1.41
VI. Western Visayas	1.92	0.96	2.95	1.63
VII. Central Visayas	1.43	1.81	2.33	2.33
VIII. Eastern Visayas	1.34	1.84	1.69	1.82
IX. Western Mindanao	2.88	4.29	1.77	4.34
X. Northern Mindanao	3.27	4.58	3.66	3.68
XI. Southern Mindanao	7.31	5.80	4.20	4.05
XII. Eastern Mindanao	7.53	5.60	2.26	1.84

Source: Cruz, Zosa-Feranil and Goce (1986) as derived from the 1980 Census of Population.

TABLE 13
Projected Upland Population, 1980-2025*

Region	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025
PHILIPPINES	1444033	16412145	18630519	21120427	23912362	27036702	30524237	34409006	38732483	43531906
I. Ilocos	1445522	1582118	1729534	1885332	2051127	2227117	2413454	2610238	2817513	3035262
II. Cagayan	1129268	1307861	1509557	1736440	1990635	2274280	2589498	2938364	3324489	3750358
III. Central Luzon	843611	955866	1079893	1216445	1366255	1530022	1708400	1901983	2112325	2340191
IV. Southern Tagalog	1299226	1508354	1744356	2010434	2309227	2643409	3015659	3428617	3886746	4393201
V. Bicol	1059419	1134005	1212047	1293543	1378476	1466812	1558498	1653462	1751614	1852842
VI. Western Visayas	1477525	1598783	1726590	1860944	2001804	2149085	2302657	2463555	2631798	2807371
VII. Central Visayas	1839817	2058334	2296058	2553728	2833370	3135944	3462336	3813339	4189636	4591784
VIII. Eastern Visayas	944817	1031446	1123807	1222033	1326233	1436488	1552849	1675333	1803921	1938553
IX. Western Mindanao	569605	700709	857449	1044221	1265576	1526488	1832339	2189946	2605999	3087640
X. Northern Mindanao	1254448	1496380	1777230	2101630	2474448	2902140	3390588	3945909	4574390	5282410
XI. Southern Mindanao	1833747	2225676	2688403	3231729	3868040	4609574	5469440	6461533	7604092	8914090
XII. Central Mindanao	743083	812013	885595	963948	1047171	1135343	1228519	1326727	1429966	1538204

*These projections assume progressively declining population growth rates from the 1975 up to 1980 levels by 5 percent every 10 years.

Source: Cruz, Zosa-Feranil, and Goce (1986) as derived from the 1980 Census of Population.

Visayas. The highlands of Cagayan Valley, Southern Tagalog, and Southern Mindanao comprise 45% of the total land area classified as upland. However, their combined population accounts for only 20% of the entire upland population in the period 1948 to 1980. Meanwhile, the regions of Central and Western Visayas, which represent 10% of the total upland population, occupy only 5% of the land area (see Table 14).

Density levels as of 1980 were lowest in the vast but mountainous Kalinga Apayao in the Ilocos region (with only 21 persons/sq km) but exceeding 400 persons/sq km in the uplands of Pampanga in Central Luzon (402), Laguna in Southern Tagalog (513) and Cebu in Central Visayas (424). The province of Laguna, for example, due to its proximity to Metro Manila, experienced a doubling of its upland population size and density in the years 1960 to 1975 as a result of government-sponsored resettlement from crowded urban centers.

A majority of the provinces classified as upland have density levels of about 100 to 200 persons/sq km. Given the country's history of postwar rapid population growth, which in turn can also be noted of many provinces, it is not surprising that only 10 provinces have upland density levels less than 50 persons/sq km, while 12 provinces have density levels exceeding 200 persons/sq km.

The distribution of the upland population among the constituent provinces within an administrative region varies widely, with density levels ranging from a low 70 persons/sq km to the maximum 200 persons/sq km (see Table 14). This is true especially for about one-half of the regions in the country. Cagayan Valley, having the largest land area of the entire country's mountain zone, registered provincial population density levels between 21 to 80 persons/sq km. In contrast, provinces in the highlands of Central Visayas, which rank among the most highly populated regions in the country, had density levels that ranged from 150 to 424 persons/sq km. Thus, while variations in density levels exist across provinces, the uplands in the Central Visayas region are already well inhabited.

The steeper upland sites, with slopes of 30% or higher, have varying density levels (from 50 to 250 persons/sq km), although 43 of the 709 upland municipalities in these steep sites already had population densities of over 200 persons/sq km in 1980. Ten municipalities can be considered critical, with population densities exceeding 500 persons/sq km and located in areas with average slopes higher than 30%.

The population projections for the uplands also indicate rapidly increasing density levels. Overall density levels of the country will rise from 96 persons/sq km in 1980 to 126 persons/sq km in 1990, 165 persons/sq km in year 2000, and 339 persons/sq km by year 2025. Only Central Visayas (291 persons/sq km) will have a density ratio of over 200 persons/sq km in 1990. Region III (Central Luzon) will reach the density level of over 200 persons/sq km by 1995. Western and Northern Mindanao, experiencing rapid growth in the uplands owing to

TABLE 14
Upland Land Area and Population Density by Region, 19481988*

Region	Land Area (sq.km.)	1948	1960	1970	1975	1980	1988
PHILIPPINES	149698.7	39	55	74	85	96	119
I. Ilocos	15121.5	50	64	80	87	96	111
II. Cagayan	23437.3	17	25	36	41	48	61
III. Central Luzon	6118.9	47	67	103	121	138	169
IV. Southern Tagalog	23062.4	18	29	42	49	56	72
V. Bicol	7187.6	69	103	127	137	147	165
VI. Western Visayas	10079.5	85	106	117	135	147	167
VII. Central Visayas	7891.6	131	154	185	208	233	280
VIII. Eastern Visayas	8537.6	66	77	93	101	111	128
IX. Western Mindanao	5520.3	36	50	76	83	103	145
X. Northern Mindanao	11761.9	33	47	74	89	107	142
XI. Southern Mindanao	21281.7	15	32	58	70	86	118
XII. Central Mindanao	9699.2	16	36	63	70	77	79

*Density measured as number of persons per square kilometer.

Source: Cruz, Zosa-Feranil, and Goce (1986) as derived from the 1980 Census of Population. The 1988 are based on the population assuming progressively declining population growth rates of 5% every 10 years.

migration, will join Central Luzon and Western Visayas as among the regions with upland density levels exceeding 200 persons/sq km in the year 2000. While Central Visayas will already have over 397 persons/sq km of upland area, Bicol and Southern Mindanao will join the regions with upland density levels over 200 persons/sq km only in the year 2005, while Eastern Visayas will be having critical density levels by 2015. By year 2025, only the vast uplands of the Cagayan Valley will have density levels less than the critical limit of 200 persons/sq km.

2.3 A Closing Upland Frontier

The present upland population of 17.8 million persons can conceivably occupy all of public domain lands that are alienable and disposable (3.34 million hectares). Assuming a standard household size of 5.6 persons, each household would be presently occupying a little over a hectare (1.02 hectares). This means that at the current level of population, if the government were to declare all disposable lands subject to land reform (e.g., under Program D of the Comprehensive Agrarian Reform Program), each family now residing in the uplands would receive an average of 1.02 hectares.

Table 15 contains the number of households occupying the uplands for the period 1980 to 2025. As the figures in the table indicate, by year 2000, assuming that each household in the uplands occupies one hectare, an additional 1.52 million hectares of forest lands would have to be cleared for agriculture, leaving less than 5.8 million hectares forest cover. By year 2025, using the same allocation of one hectare per household, another 5.24 million hectares would have to be converted. The remaining forest cover would then be less than one million hectares — a dramatic decline in forest cover from the current 51% of total land area in the country to less than 28%, or a rate of conversion of about 1.6% per year. This rate of conversion due to upland agriculture is significantly higher than the 1.2% per year conversion rate of forest lands due to logging (Umali, 1987).

However, when only lands with less than 30% slope are included as "potentially cultivable" only Southern Tagalog (Region IV) has over one million hectares of forest land left, net of the allocation of one hectare per family. By year 2000, Ilocos and Southern Mindanao would not have significant "cultivable" land, and by year 2025, there will be 6 regions with less than one hectare per family. Thus the largest number of out-migrants from the uplands are expected to originate from Southern Mindanao, Ilocos, Central Visayas, Western Mindanao, and Central Luzon.

2.4 Migration

Population distribution in the entire Philippines can be characterized by two dominant but evolving patterns. Philippine migration prior to 1960 was predominantly frontierward and male-dominated (Pascual, 1966; Smith, 1977). Migration into the southern frontier of

TABLE 15
Estimated Number of Households Occupying the Uplands By Region, 19802025

Year	Number of Households (000)*				
	1980	**1988**	**2000**	**2020**	**2025**
Average Household Size	5.59	5.36	4.92	4.41	4.31
PHILIPPINES	2,583	3,327	4,860	8,783	10,100
I. Ilocos	263	313	417	639	704
II. Cagayan	202	268	405	754	870
III. Central Luzon	151	193	278	479	543
IV. Southern Tagalog	232	310	469	881	1,019
V. Bicol	189	221	280	397	430
VI. Western Visayas	264	314	407	597	651
VII. Central Visayas	329	413	576	950	1,065
VIII. Eastern Visayas	169	204	270	409	450
IX. Western Mindanao	102	149	257	592	716
X. Northern Mindanao	224	312	503	1,037	1,226
XI. Southern Mindanao	328	484	786	1,724	2,068
XII. Central Mindanao	133	160	213	324	357

*Excluding urban population; population projections assuming declining growth rates of 5% every 10 years.
Sources: Cruz, Zosa-Feranil, and Goce (1986); Cruz and Zosa-Feranil (1988).

Mindanao was particularly significant during the 1950s. The most significant stream was the heavy outflow of population from the regions of the Visayas which headed towards Northern and Southern Mindanao.

The information on the annual growth rates of the estimated upland population by region from 1948 to 1980 can be analyzed to provide indicative patterns of population movements involving upland areas. Using the national growth rate as reference point, regional differentials from the national level indicate net in- or out-migration status.

It is evident that the highest growth rates throughout the period 1948 to 1980 occurred in the Mindanao regions. The most rapid growth of the uplands in regions like Southern and Central Mindanao occurred between 1948 to 1960 with growth rates more than doubling, indicating positive net in-migration into the highlands in the region. Moreover, even if the in-migration rates declined slightly during the 1970s, probably due to the growing attraction of urban areas, the flow of people to the Mindanao uplands remains significant.

Upland areas in Luzon experienced the fastest growth of their respective populations during the 1950s. This is true especially for Southern Tagalog, Bicol and Cagayan Valley which also registered growth rates higher than the national level. Although population growth rates across the regions tended to decline after 1960, the data indicate that the growth of the upland population, particularly in the regions of Cagayan Valley and Southern Tagalog, continued to be high even up to 1980, suggesting continued attraction of the frontier sites in these regions.

The low growth rates of the uplands in the Visayas suggest that these areas were likely to have been out-migration areas for most of the period shown. It should be noted, however, that the regions in the Visayas, particularly Central and Western Visayas, registered very large numbers of people residing in the uplands. Actually the mountain areas in the Visayas regions were already well populated even before 1960 as indicated by their population density levels. The high man-to-land ratios in these areas may have accounted for some of the out-migration to Mindanao.

The 1980 Census has information on residence in 1975 and this was used as a baseline for estimating migration patterns. The upland settlement density factor (or SDF) derived by Cruz, Zosa-Feranil and Goce (1986) was correspondingly applied to available migration information at the municipality level to approximate inter-regional transfers to upland sites. This procedure is likely to underestimate migration to the uplands, since the SDFs are based solely on settlement configurations which are more likely to follow household settlement preferences rather than individual movements. While adjustments need to be made, the conservative estimate provides the minimum number.

2.4a Inter-regional Migration

Compared to intra-regional migrants, which totaled 114,000 in 1975 to 1980, inter-regional migrants reached almost 275,000 for the same period. Readjusting migration figures from the 1980 census, Nguingain (1986) estimated that inter-regional migrants exceeded 1.2 million persons. These two figures when placed together indicate that nearly one out of every four migrants that crossed regional boundaries during the period 1975 to 1980 proceeded to upland destinations. Over one-third of inter- regional migration went to Northern and Southern Mindanao, these two regions having the most attractive frontier sites.

Around 15% of inter-regional migrants also ended up in Southern Tagalog. The uplands of four regions – Northern and Southern Mindanao, Southern Tagalog, and Ilocos – actually attracted substantial numbers from within and outside their boundaries. If the 3 largest numbers of inter-regional upland migrants in Luzon were added together, an aggregate reaching 28% headed for the regions of Southern Tagalog, Cagayan Valley and Central Luzon (see Table 16).

Central Visayas is a significant out-migration area. Migration history since 1948 points out that the region is attractive to intra-regional migrants. However, in general, in- migration to frontier sites from within the region was less than in-migration from outside the region. This tendency for frontierward migrants to engage in long-distance movements suggests the propensity of migrants to try different environments. For example, a significant 47,000 migrants from Metro Manila moved into nearby upland sites in Central Luzon and Southern Tagalog.

Table 16 gives the estimates of: (1) inter-regional inflows headed toward upland sites and (2) out-migrants lost to upland areas in another region. The largest inflows included the stream of nearly 15,000 migrants coming from the national capital region and headed towards the uplands of Southern Tagalog. This stream almost equals the number of migrants from Central Visayas that moved into the Mindanao frontier lands.

2.4b Indicative Migration Trends

In general, the population movements show that the largest net positive migration to the uplands during 1975 to 1980 occurred in regions where upland density levels in 1975 emerged as among the lowest in the country. The low density levels, plus the availability of lands for occupancy, have attracted many migrants, a majority of migrants traveling long distances. Southern Mindanao and Southern Tagalog stand out as having the largest net gain of upland migrants, but these regions ranked highest also among the least populated upland areas.

Central Mindanao and Cagayan Valley belonged to the category of the least densely populated upland areas. Despite the vast land area of forest lands in these regions, net in-migration streams to the uplands in these regions were less than half of the numbers

TABLE 16
Migration to Upland Areas 1975-1980

Region	Intra-Regional	Inter-Regional		
	Migrants to Upland Areas from other Provinces of the same region	In-Migrants to Upland Areas from other regions	Total Outmigrants Lost to Upland Areas in other regions	Regional Upland Net Migration
I. Ilocos	14657	17279	18017	-738
II. Cagayan	8680	17670	8912	8758
III. Central Luzon	5855	17792	15775	2017
IV. Southern Tagalog	11361	40216	12101	28115
V. Bicol	5684	11094	13487	-2393
VI. Western Visayas	6644	9951	23934	13983
VII. Central Visayas	4959	20332	39950	19618
VIII. Eastern Visayas	2860	10056	18985	-8929
IX. Western Mindanao	2881	8354	14668	6314
X. Northern Mindanao	21781	48228	23088	25140
XI. Southern Mindanao	23653	47120	21863	25257
XII. Central Mindanao	5247	26195	16147	10048

Source: Cruz, Zosa-Feranil, and Goce (1986) as derived from the 1980 Census of Population.

registered for Southern Tagalog and Southern Mindanao. The uplands of Cagayan Valley actually rank as one of the least densely settled areas but its population size is moderately large (7th in rank).

Central Luzon falls under the positive net migration regions but the presence of a large outflow resulted in a small net gain. Such redistribution patterns may be due to already high population density levels even in 1975. The small land area of its uplands and forests indicates limited attractiveness to in- migrants.

All three Visayas regions sent more people to the uplands of the other regions than the numbers that their own highlands gained. Central and Western Visayas were the two largest sources of inter-regional upland migrants. With the exception of the Ilocos region which has relatively large upland areas and forest cover, all regions experiencing net out-migration in their uplands can actually be characterized as having small upland areas and forest lands. One should note, however, that a number of provinces in these regions has density levels that far exceeded 200 persons/sq km in 1975 and 1980.

Central Visayas' predominant out-migration status may be partly traced to population pressure already prevailing in a large number of areas in the region, notably Cebu province. Despite the presence of demographic pressure, the number of in- migrants that the uplands of this region attracted still exceeded the number going to a very low density region like Cagayan Valley. Accessibility, given Central Visayas' geographic location and better roads and transportation, may be a reason for its higher attractiveness than Cagayan Valley, which is more remote and less developed.

2.4c Demographic Characteristics of Migrants

Age and Sex. For the period 1948 to 1980 two significant migration streams to the uplands operated, suggesting a process that could very well have resulted in chain migration. Population growth rates for 1948 to 1980 show that the upland areas that grew fastest right after the war were frontier regions of Mindanao. No direct data on directions and selectivity of migrants to the uplands are available, but Pascual's (1966) work on population redistribution in the Philippines supports the presence of a significant Visayas-to-Mindanao upland migration stream. This is also verified in the study of Simkins and Wernstedt (1971) on migration in Mindanao. Migrants during the period after the war up to 1960 tended to be young, with average ages of 15 to 34 years, and consisting largely of males.

In other upland sites there appears to be a clear pattern among migrants. One could say that the first wave of migrants was young (15 to 24 years) males settling in the Northern and Southern Mindanao regions. This first wave of young males comprises almost 65% of total migration to the uplands in the years 1960 to 1975. The other destination areas are in the provinces of Misamis Oriental, Lanao del Norte and Benguet, which received primarily male

migrants. Another significant migration stream can be found in the still male-dominated but older (45 to 54 years) movements into Southern Tagalog, Cagayan Valley and Central Visayas.

However, one should note that female migrants dominated in the 1970s. The 1973 National Demographic Survey showed that females accounted for 20% of total lifetime migrants. One female-dominated stream occurred in the highlands of Cagayan Valley. It should be emphasized that female migrants were becoming prominent in urbanward migration, but there had been increasing evidence also of female movements towards the uplands. It was also possible that females constituted a second wave of migrants once more established routes were set.

Literacy. Literacy rate is slightly higher for males in the uplands but overall the literacy level is lower than the national average. Some upland sites in Western and Central Mindanao have very low literacy levels of less than 50%. The role of migration in shaping a destination area's population composition is one topic that needs further investigation.

III. RESPONSES TO ENVIRONMENTAL STRESS

In this section alternative ways of responding to population and environmental stress are discussed. Two general categories of responses describe the range of possible reactions to sustained demographic stress on resources. First are the demographic responses which tend to reduce absolute numbers dependent on resources. The second category is technical change, which allows the community to attain a balance between population and food supply. If none of these responses work and the community remains overpopulated relative to available resources, then a gradual deterioration of the economy and social structure occurs, along with radical changes in land use.

1. Demographic Responses

A community that is overpopulated will want to reduce its numbers as competition for scarce resources increases with population size. Three ways of achieving such a reduction in population size are through: (1) increased mortality, (2) lower birth rates, and (3) increased migration. The following sections discuss indicative trends related to these demographic responses.

1.1 Mortality

Indicative trends in mortality by region relative to the estimated forest land area and population are presented in Table 17. In general, the Mindanao regions, which have large proportions of upland areas and population, tend to have significantly higher mortality rates. The high density Northern Mindanao region has a large 12.3 death rate per thousand population and a low life expectancy value of 55 years. Meanwhile, Central Visayas, which has more than one-half of its land area in the uplands, has a comparatively lower mortality rate

TABLE 17
Comparison of Indicators of Mortality By Region for the Upland Population, 1980

Region	Percent of Upland Population to Total Population	Percent Upland Land Area	Upland Population Density (persons/ sq.km.)	Mortality Indicators		
				Crude Death Rate (per 1,000)	Life Expectancy at Birth (years)	Infant Mortality Rate (per 1,000)
PHILIPPINES	30.0	55.3	96	8.7	61.6	63.2
I. Ilocos	40.8	70.1	96	9.9	63.0	57.0
II. Cagayan	51.0	64.4	48	10.6	58.3	78.3
III. Central Luzon	17.6	33.6	138	7.1	65.1	48.2
IV. Southern Tagalog	21.2	49.1	56	7.6	64.3	51.6
V. Bicol	30.5	40.8	147	9.2	61.2	64.8
VI. Western Visayas	32.6	50.0	147	9.0	62.2	60.5
VII. Central Visayas	48.6	52.8	233	8.7	63.9	53.3
VIII. Eastern Visayas	33.8	40.0	111	10.9	58.3	78.3
IX. Western Mindanao	22.5	29.5	103	14.3	51.3	112.8
X. Northern Mindanao	45.5	41.5	107	12.3	55.0	94.5
XI. Southern Mindanao	54.8	67.1	86	12.6	54.5	97.6
XII. Central Mindanao	32.7	41.6	77	14.3	51.5	112.8

Sources: Upland Population and Land Area data from Cruz, Zosa-Feranil and Goce (1986); Mortality data from NCSONEDA, Compendium of Philippine Social Statistics (1986).

than its less dense neighboring provinces in Western and Eastern Visayas. However, this may be due to the high urban population in Central Visayas, notably Cebu City, where improvements in medical and health services have significantly lowered mortality rates.

This pattern of high mortality and high density is also true for its converse. In Region IV (Southern Tagalog), the low density of its provinces (56 persons/sq km) corresponds closely with low mortality – a crude mortality rate of 7.6 per thousand population and a small 51.6 per thousand population infant mortality rate. On the other hand, both Western and Northern Mindanao, which are densely populated with a third to almost one- half of its area in the uplands, have higher mortality rates of 14.3 and 12.3 per thousand population, respectively. Of particular importance is the high 112.8 per thousand population infant mortality rate.

Several reasons account for the incidence of high mortality rates in densely populated regions. First, since about one-third of forest land population belong to ethnic, tribal groupings, it has been found that socially acceptable mortality is allowed once overpopulation has been established. This is certainly true among the Mandaya of Eastern Mindanao where infanticide rates are high (Yengoyan, 1964). A similar observation is provided by Warner (1981) for the Tagbanwas of Palawan.

The second reason has to do with resource competition — when resources become scarce the pressure from overpopulation is sometimes translated into higher mortality rates. Missen's (1972) study in Central Java, Indonesia, for example, shows the interaction of large increases in infant and child mortality among densely populated regions.

A third reason associates the type of environment with population size where the higher incidence of environmental hazards, such as drought, famine and blight is more likely to occur. Of course, under these circumstances the environmental hazards were not caused by overpopulation. The increased mortality, as a result of the hazard, serves as one of the few instances of a Malthusian reaction to overpopulation (Grigg, 1976).

1.2 Fertility

Several writers suggest that fertility is likely to decline when the general level of economic development results in improving rural incomes. The correlates of fertility decline are viewed as intricately connected with income (Cassen, 1976).

The Philippines, like most developing countries in the world, experienced historical reductions in fertility. The crude birth rate declined from 48 per thousand population in 1948 to 46 in 1960 and 39 in 1970. The lower fertility rates in 1960 and 1970 are due to increasing female age at marriage and not due to lower marital fertility. In the period 1970 to 1975, fertility rates dropped rapidly due to the nationwide family planning program, from 39.2 per

thousand population in 1970 to 34.8 in 1975. This was attributed to the decline in marital fertility rather than changes in the female age at marriage or age structure (Herrin, 1988).

Table 18 contains the regional distribution of total fertility rate and number of females in childbearing age (15-49 years). As shown in the table, Bicol and Eastern Visayas have the largest fertility rates and high proportions of women in childbearing age. There is also significant male selectivity in these regions. The Mindanao provinces have relatively higher fertility rates, ranging from 4.7 to 5.7 births per woman. This is followed closely by Ilocos, Cagayan, and Western Visayas regions. In contrast, the lower density provinces in Southern Tagalog have smaller fertility rates (4.58 births/woman).

Trends in upland population and total fertility are provided in Table 19 for the years 1970 to 1980. Western Mindanao and Northern Mindanao both experienced high growth rates in upland population but also exhibited corresponding declines in number of births per woman. On the other hand, Eastern Visayas had a modest increase in population with total fertility rate increasing from 5.81 to 6.23 births per woman in 1975 to 1980, respectively.

It is difficult to attribute the reductions in birth rate to levels of overpopulation in the uplands. Case studies of upland tribal communities show that with the combined hazards of famine and disease in the highlands, a self-regulating mechanism works to limit the number of births. Yengoyan (1964) observed the rise in the practice of delayed marriages among the Mandaya in Eastern Mindanao which follows a similar trend observed by Smith (1981) for Ilocos. The maximum possible births is not attained due to adoption of birth control methods. Warner (1981) concludes that even though the Tagbanwas of Palawan lacked the efficient methods of birth control that are accessible to lowland families, traditional sources of fertility reduction are nevertheless developed and used and these tended to be effective in spacing births.

The lower fertility rates in upland sites can be seen to follow from high sex ratios and relatively higher female literacy rates as can be gleaned from Table 20. It can be noted from the table that the highly male-dominated regions are in the uplands of Southern Tagalog, Bicol, Western Visayas, Southern Mindanao and Central Mindanao. This is expected as life in a mountain environment is more difficult thereby attracting more males. In addition the females who choose to live in forest lands tend to be better educated, with a high literacy rate of 79% of the total population 10 years old and over.

1.3 Migration

Migration is a common response to population pressure in rural areas. Population pressure can act to "push" migration movements toward less dense areas. The more populated areas, because of increased competition resulting in limited income opportunities and dwindling resources, tend to receive less in- migration than areas with lower density.

TABLE 18
Comparative Fertility Rates By Region for Forest Land Communities, 1980

Region	Percent of Females in Child-bearing Age in Forest Lands[1]	Sex Ratio in Forest Lands (all ages)	Total Fertility Rate Per Woman[2] (no. of births/ 1,000 pop.)	Upland Population Density (persons/ sq. km.)
PHILIPPINES		103	4.96	96
I. Ilocos	49.3	100	5.50	96
II. Cagayan	48.4	104	5.27	48
III. Central Luzon	39.3	100	4.23	138
IV. Southern Tagalog	42.0	105	4.58	56
V. Bicol	51.8	105	6.32	147
VI. Western Visayas	32.7	102	5.49	147
VII. Central Visayas	38.1	99	4.72	233
VIII. Eastern Visayas	69.0	104	6.23	111
IX. Western Mindanao	45.3	103	4.76	103
X. Northern Mindanao	49.4	103	5.45	107
XI. Southern Mindanao	51.8	106	5.34	86
XII. Central Mindanao	54.3	104	5.78[3]	77

[1]Refers to women 15-49 years.
[2]Data available at national and regional lands only.
[3]Represents total fertility rate for 1975-1980.

Source: J.V. Cabigon, 1985 Fertility and Contraception in the Region. In *Philippine Population Journal*. 1(4) 3066: for upland data, Cruz, Zosa-Feranil and Goce (1986).

TABLE 19
Trends in Upland Population Density and Fertility By Region, 1970-1980.

Region	Upland Population Density (persons/sq. km.)			Total Fertility Rate (no. of births/women)		
	1970	1975	1980	1970	1975	1980
PHILIPPINES	74	85	96	5.92	5.20	4.96
I. Ilocos	80	87	96	5.48	4.90	5.50
II. Cagayan	36	41	48	6.56	5.41	5.27
III. Central Luzon	103	121	138	5.76	4.63	4.23
IV. Southern Tagalog	41	49	56	5.74	5.13	4.58
V. Bicol	127	137	147	6.22	6.03	6.32
VI. Western Visayas	117	135	147	5.79	5.60	5.49
VII. Central Visayas	185	208	233	5.63	4.70	4.72
VIII. Eastern Visayas	93	101	111	7.68	5.81	6.23
IX. Western Mindanao	76	83	103	6.67	4.99	4.76
X. Northern Mindanao	74	89	107	7.40	6.09	5.45
XI. Southern Mindanao	58	70	86	6.93	5.66	5.34
XII. Central Mindanao	62	70	77	5.44	5.78	

Sources: Cruz, Zosa-Feranil, and Goce (1986) and Cabigon (1985)

TABLE 20
Upland Population By Region Classified By Sex and Percentage Distribution of Literacy Levels, 1980

Region	Male (in thousand)	Female	Sex Ratio	Literacy Rate (10 yrs. old and over) Male	Female	Total
PHILIPPINES	7,318	7,121	103	79	79	79
I. Ilocos	724	722	101	84	80	82
II. Cagayan	575	554	104	77	76	77
III. Central Luzon	421	422	99	90	89	89
IV. Southern Tagalog	665	634	105	85	82	83
V. Bicol	534	516	105	80	81	81
VI. Western Visayas	746	732	102	74	77	75
VII. Central Visayas	915	924	99	76	76	76
VIII. Eastern Visayas	481	463	104	76	79	77
IX. Western Visayas	289	280	103	69	68	69
X. Northern Mindanao	637	617	103	84	85	84
XI. Southern Mindanao	941	892	106	76	77	77
XII. Central Mindanao	379	364	104	74	72	73

Source: Cruz, Zosa-Feranil, and Goce (1986) as derived from the 1980 Census of Population.

In general, there are two stages affecting migration to the uplands. The early stage migration is characterized by low density settlements and personal rather than group migration. For frontierward destinations there is a dominant young male selectivity. Wernstedt and Simkins (1965) have shown that in the early pioneer stages of migration in Mindanao the initial moves were made by sets of brothers.

The later stages of upland migration are generally group movements. A series of chain migration follows as movements expand to include clan and community affiliates from the area of origin.

It is expected that the major destination areas in the uplands are the remote frontiers or newly-opened lands. However, the census figures indicate that this is true mostly for Luzon island (such as Cagayan, Mindoro, Southern Tagalog, and Central Luzon). For Mindanao, available evidence suggests that in the period 1948 to 1975 lower density sites tended to be the most attractive places of destination.

The high density of some upland regions such as the Visayas and Ilocos serve as "push" factors for migration. Petersen's (1971) typology of migration considers ecological stress as a primary migratory force. People are forced to move out due to environmental hazards. Furthermore, Petersen distinguishes innovative versus conservative migrants, the latter group moving to other places but still retaining the same lifestyle and livelihood practices.

However, as the competition for agricultural lands heightens, the lack of available cultivable lands serves as a strong disincentive for migration into once attractive sites. This density disincentive limit, or that level of population where the rate of in-migration begins to decline, ranges from 150 to 250 persons/sq km. By 1975 municipalities with 250 persons/sq km and above experienced a substantial drop in population growth, resulting in a relatively low average of 1.8% per year.

The movements into frontier lands from 1975 to 1980 indicate that the largest positive net migration occurred in regions where upland density levels in 1975 were among the lowest in the country. The low density status of these upland communities provided increased availability of forest lands. Southern Mindanao and Southern Tagalog stand out as having the largest net gain of upland migrants but these regions ranked among the least sparsely populated upland areas for the entire country. Central Mindanao and Cagayan belonged to the category of the highly settled upland areas but the in-migration streams to these regions were less than one-half the numbers registered for Southern Tagalog and Southern Mindanao (refer to Table 16). The migration figures also indicate that the out-migration regions such as Central and Western Visayas and Ilocos have density levels that far exceeded 200 persons/sq km in 1975 and 1980.

1.3a Determinants and Motives for Migration

The factors that influence migration decision-making have to do with the following: (1) geographic and distance characteristics, (2) ethnic similarity, (3) age-sex selectivity, and (4) economic "push" and "pull" conditions. A discussion of these factors and trends in upland migration follows in the next sections.

Geographic and Distance Characteristics. Migration in the postwar up to 1960 period appeared to have been largely determined by geographic and distance related factors. Zosa (1973) found the large segment of migrants during this period to be constrained by distance. Geographic contiguity emerged as a major factor in migration streams. For example, the period registered substantial exchanges between provinces close to each other. However, distance did not deter movement into Mindanao frontier sites, with migrants crossing major island boundaries and originating from the Visayas and Ilocos.

Zachariah and Pernia (1975) studied inter-regional migration during the 1960 to 1970 period and regrouped the Philippines into different levels of urbanization. Their findings show that a majority of migrants traveled long distances and moved from one socio-economic environment to another. Such movements included the migration of urban residents into the more remote frontier areas.

Ethnic Similarity. A number of studies on migration point out the significant effect of ethnic similarity as an incentive for migration. This view is supported by trend studies conducted by Zosa (1973) for the period 1960 to 1970, and Gonzales and Pernia (1983) for the 1970s.

Overall, migrants tended to settle in areas where ethnic composition is similar to their origin areas. The presence of a large segment of the population who speak the same language or dialect gives a potential destination area an additional "plus" factor, as this gives easier adjustment after movement. Similar observations of ethnic similarity raise the possibility of reinforcing kin and lineage ties and expansion of a network of relatives and friends. This was true especially of migration from the Visayas to the hinterlands of Mindanao, where settlement areas in Mindanao were named after communities of origin in the Visayas.

Age-Sex Selectivity. Incomes at origin and destination significantly and sizeably affected the migration of the younger (10-34 years) population. The presence of past migrants in the destination areas was also a major inducement for the young to migrate, who were not at all deterred by distance. Small effects of incomes at origin and destination emerged among middle-aged and older migrants where distance also served as a disincentive for movement.

The study of Wernstedt and Simkins (1965) indicates that a marked increase in the male population within the 20-35 year range occurred after 1960, the period of rapid in-migration into frontier lands of Northern and Southern Mindanao. Two dominant sets of male migration

streams were observed – the first group of young (21-40 years) single males and the second wave of older males (50 years and above). A larger proportion of single females in the 11-25 year range was also noted, suggesting the family orientation of second-wave migrants.

The study of Madigan and associates (1982) showed a similar trend of age-sex selectivity in Northern Mindanao. Migrants were found to be middle-aged males. Duldulao and others (1981) report a familiar male-dominant pattern with over 60% of migrants in the Diadi, Nueva Vizcaya upland area being young males (16 to 49 years).

Economic "Push" and "Pull" Conditions. The economic conditions at the place of origin have greatly influenced upland migration in three ways. These are: (1) in terms of the income distribution effect, (2) the wage differential effect, and (3) the consequences of increasing landlessness. As a general observation, Zachariah and Pernia (1975) note that high income and employment opportunities at the place of origin reduced the likelihood of out-migration among 1960 to 1970 inter-regional migrants. Gonzales and Pernia (1983) added that the extent of migration at origin served as a proxy for agricultural productivity which turned out to be a significant factor in inter-regional, long-distance moves.

The remarkable growth in productivity of irrigated rice farms – from 1% per year to 2.5% per year after 1965 and accounting for over 75% of the growth in rice output compared to the low 40% before 1965 – provided a positive response to population pressure on limited land (Herdt and Capule, 1983). However, Hayami (1979) argues that such gains in productivity were not without social costs. In particular, modernization of rice production led to greater inequitable income distribution as average farm sizes increased along with the introduction of labor replacing mechanical technology (Otsuka, 1987).

The shift in the character of rural migration is indicative of growing population pressure where earlier period migration found farmers acquiring land through marriage, fragmentation of holdings and other means. Later period migration, on the other hand, occurred largely as employment-seeking moves by landless workers reflected the continuing pressure of land scarcity relative to labor (Hayami, 1979).

The concentration of landholdings to a small group of large landowners has served to induce out-migration as land operations became increasingly fragmented, with farms below one hectare increasing but the number of farms between one to three hectares declining in the period after adoption of modern varieties (1965- 1975). For example, Hayami (1979) observes, using a case study in Laguna province, that the average landsize of small farm operations declined from 1.9 hectares in 1967 to 1.4 hectares in 1977 while the average size of large farms increased from 28.8 hectares to 45 hectares in the same period.

The general decline in labor wage rates shows that even with modest increases in labor demand from intensified cropping, these have not been sufficient to overcome population

pressure on limited land. Coupled with the rise in land rents the trend has been towards greater concentration of income and assets among large farms. In addition, the reduction in the user cost of agricultural machinery, due to special credit programs and an overvalued exchange rate, found landless workers having difficulty seeking employment in an increasingly crowded rural labor market (David, 1983; Bautista, 1987).

Table 21 contains information for three villages having different production environments. Villages with higher adoption rates (of modern varieties) experienced population growth at a relatively high rate of 2.4% per year for the period 1970 to 1986, compared to 1.9% and 1.4%, respectively, in the favorable and unfavorable rainfed sites. Man-to-land ratios have increased drastically for irrigated areas (6.29 persons/hectare) compared to the 4.7 ratio for the unfavorable rainfed sites. Correspondingly, the proportion of landless agricultural households is significantly larger in irrigated villages (31%) compared to the favorable (18%) and unfavorable (15%) rainfed sites.

TABLE 21
Population Growth Rate, Man/Land Ratio, Farm Size, and Ratio of Landless Households by Rice Production Environments

	Irrigated	Favorable rainfed	Unfavorable rainfed
Average annual population growth rate (%)			
1970-80	2.89	2.03	1.07
1980-86a	1.67	1.63	2.14
1970-86a	2.45	1.90	1.46
Man/land ratio (persons/ha)			
1970	4.26	4.01	3.66
1980	5.59	4.93	4.08
1986a	6.29	5.13	4.70
Average farm size (ha)			
1986	1.69	1.67	1.70
Ratio of agricultural landless households (%)b			
1986	30.6	18.1	15.1

[a]Recent population statistics are unavailable in two irrigatedvillages and one favorable rainfedvillage.
[b]Ratio of number of agricultural landless households to the total number of farming house holds.

Source:Otsuka, Keijiro (1987), Table 4.

The economic "pull" factors that are closely associated with migration to frontier lands fall into two types – those associated with agricultural opportunities or potentials and those associated with industrial employment. The importance of employment opportunities and farm density at the place of destination are the two most important factors working towards increased in-migration to upland sites. However, with growing industry, an additional outlet can be found in the cities which have been attracting many of the newer streams of migrants.

2. Agricultural Responses

Communities that are resource-dependent when faced with population pressure can attempt to return to original optimum density levels by either reducing fertility and controlling mortality or migrating elsewhere. If population growth continues, then new techniques are developed, and resources are exploited to increase output and productivity. However, the opportunities available to traditional agricultural societies are limited.

The more important options available to agricultural, resource-using communities when confronted with demographic stress on resources are: (1) cultivation of unused, marginal lands, (2) adoption of changes in cropping pattern, and (3) utilization of more labor inputs.

2.1 Expansion of Cultivated Area

Increasing evidence of expansion of area under cultivation has been shown to occur after long periods of sustained population growth. Two trends can be recognized from migration patterns to the Philippine uplands. First, there was a clear movement from densely populated areas towards unoccupied or sparsely populated and uncolonized upland sites.

A significant migration stream to the highlands of Northern Mindanao originated from the densely populated regions of Western and Central Visayas. Another large group of migrants came from the populated centers of Ilocos region and settled in the remote areas of Central and Southern Mindanao. The rapid growth of upland population in the 1970s led to the remarkable expansion of cultivated areas, particularly in the frontier lands of Mindanao.

The second trend is the increase in cultivated area and yields. For migrant families, opening lands for cultivation represents the easiest way of increasing output or yield. During the period 1971 to 1978, about 2.2 million hectares of frontier lands in Mindanao were voluntarily settled through government- sponsored programs. Most of the newly settled areas were in slopes as steep as 25% to 30% because lower hilly lands, which were more suitable for permanent cultivation, had already been cultivated by the 1960s. About 75% of these newly settled lands had farm sizes ranging from 3 to 5 hectares. The average potential area per family in government resettlement sites was 5.85 hectares per family in the 1950s, but with population growth, the average size was reduced to 3.18 hectares per family in the 1960s and further declined to 2.38 hectares per family in the 1970s.

The net effect of migration movements is that the heavily populated out-migration areas like Central and Eastern Visayas experienced some relief from population pressure. However, most of the newly settled migrant populations may not have achieved significantly higher improvements in income due to the generally low quality of land and smaller farm sizes.

2.2 Changes in Cropping Pattern

Land use changes in the uplands are natural responses to resource competition between upland resident groups, government agencies, and private companies. Upland communities respond to population pressure and resource competition by changing basic production patterns such as shortening of fallow periods and adoption of more intensive farming.

As population density increases, the cropping period is extended and the years the land is allowed to remain fallow (or uncultivated) gradually decline until the transformation from shifting cultivation to sedentary, intensive cultivation is completed. In this sequence, the shift to intensive cropping occurs as demographic stress on resources demands greater output per unit of land area. The transition to permanent cultivation is prompted by greater demands for food availability and by the pressures of falling crop yields. When the alternative of moving is impossible the population may turn to more intensive cropping systems or engage in seasonal off-farm wage labor.

When population growth depresses average output sufficiently to lower current living standards, a community switches to a new technique that improves average output despite a reduction in the fallow period. In most cases this would mean introducing higher yielding varieties and fertilizers or using new and shorter crop rotation schemes. For example, among the Ikalahans in the mountains of Nueva Vizcaya, the mean fallow period is only 5.8 years in a swidden cycle of 10 years. In the Lake Buhi watershed in Camarines Sur, which is less remote and accessible, the fallow period is 4.4 years (Aguilar, 1982). The trend is generally towards a cultivation cycle based on an annual crop.

Population pressure, especially through encroachment by lowland migrants, coupled with the presence of incentive structures for promoting cash cropping and wage labor, has tended to accelerate the shift to more commercialized farming systems. Among the commercialized farms, rice is the preferred crop except for Central Visayas where the dominant crop is corn. In highland Luzon, for example, wet-rice fields follow a two cropping season, except for the areas in the upper elevation paddies. Scott (1969) shows that the laborious work in terraced rice cultivation easily conforms to the ritual significance of farming, so few adjustments in labor use are necessary when shifting to more commercialized production.

The incorporation of ritual into wet-rice agriculture strengthens the commitment of traditional village members to fulfill labor obligations. The many feasts, taboos, and cultural ties provide incentives for compliance, resulting in lower enforcement costs in the maintenance

of important soil-conserving structures such as terrace embankments. Such cultural mechanisms have contributed to the preservation of the community as well as the environment even when population growth rates increase.

It is also true, however, that commercialized production in the uplands leads to greater demands on labor. Since terrace embankments require extensive maintenance about 200 to 1,000 man days per hectare per year are needed for proper water control. Thus larger population densities are found among wet-rice cultivators compared to their rice swidden counterparts. Among the Ifugao, for example, the population density is 126 persons/sq km of total area and 230 persons/sq km of cultivated land (Prill-Brett, 1983).

The current pattern of upland cultivation is mixed subsistence and cash cropping combined with seasonal out- migration for wage labor. A diverse combination of income-earning activities and subsistence-oriented strategies is employed especially in the transition stage to commercialized farming.

Lopez-Gonzaga (1983) documents the use of tree crops to increase returns to land and labor as the land becomes intensively utilized among the Buhid in Mindoro. Such crops as cacao, coffee, coconut and various types of fruits are used. The favorable returns to cash cropping and the presence of markets for these crops stimulate commercialization.

2.3 Labor Inputs

The adoption of labor-intensive techniques in upland production occurs during periods of high population growth. Swiddening and wet-rice cultivation support different population densities. Swiddens, for example, can support a maximum of 50 persons/sq km (Frake, 1955). However, as much as 200 persons/sq km have subsisted on shifting cultivation (Conklin, 1980).

The returns to labor from wet-rice farming are larger. Takaki (1977) reports that among the Kalinga in Northern Luzon as much as 4.5 kg of unhusked rice per hectare were harvested. In San Jose, Palawan, Eder (1981) estimates returns to be in the range of P3.18 per man day. A higher return is achieved from tree crops at P15 per man day. Schlegel (1979) points out that it is also possible for swidden-based fields to be productive. Citing production data from the Tiruray in Cotabato, he estimates that the seed-to-population ratio is more efficient in swiddens relative to the plowed fields.

3. Effects of Government Policies on Upland Population

There are four policy areas which tended to induce population pressure in the uplands. These are: (1) the set of policies which encouraged the opening up of forest lands to lowland migrants; (2) the planned resettlement schemes of government to decongest urban centers; (3) the economic policies affecting lowland agriculture, specifically policies which resulted in

increased landlessness in the rural sector; and (4) the ineffective population control program, resulting in the current high national population growth rates.

The years of rapid population growth in the country, from 1948 to 1975, were marked by a radical shift in the character of the public forest. Most of the lands declared as alienable and disposable (A&D) reached critical population densities of over 200 persons/sq km by 1970. There was an expansion of logging concession areas and with increased access to tree cutting greater in-migration occurred after a concession area had been logged-over. While the cultivated land-to-population ratio declined from 0.18 in 1960 to 0.11 in 1975 there was a corresponding increase in upland in-migration where population growth was highest at 3% per year during this 15-year period.

3.1 Opening Forest Lands

Forest lands are opened up following logging operations. As of 1986, about 4.8 million hectares of timber concessions were awarded to 134 timber licensees (Umali, 1987). From 1960 to 1980 the rate of conversion of forest lands for logging purposes was 1.2% per year and population growth in timber concession municipalities increased by 4.7% per year in 1960 to 1970 and declined to 3.7% per year in 1970 to 1980.

The other government program which opened up the forests to migrants is the Integrated Social Forestry program or ISF. Since it was introduced in 1982, areas affected by the ISF have experienced rapid increases in the population of migrants, from 28% of total ISF population in 1983 to almost 47% by 1987.

The inability of government to enforce policies against squatting in forest lands exacerbates the upland migration problem. The total "illegal" occupants, based on unofficial census, is about 8.2 million persons in 1980 (BFD, 1985). The areas with the highest concentrations of illegal occupants are Central Visayas, Bicol, Central Luzon, and Northern Mindanao.

The high estimate of illegal forest dwellers is due to ineffective protection of these areas from spontaneous migration from the lowlands (and other overpopulated upland sites). Unclear property rights have also contributed to indiscriminate occupation of tribal lands. Unfortunately laws protecting traditional rights over ancestral territory have not been effectively implemented as the government has continuously failed to legitimize the claims of tribal communities and to support efforts to keep migrants outside of communal boundaries (Lynch, 1987).

3.2 Planned Resettlement

Government-sponsored resettlement schemes were originally efforts to recruit contract labor – such as the Ilocos tobacco monopoly in 1781 and the Mindoro sugar plantations in 1880. They were also directed towards colonization of hinterlands, especially in Mindanao

during the early 1900s. By 1937, the National Land Settlement Administration (NLSA) sponsored 35,000 families in Mindanao and in 1948 the number of settled families reached about one-fifth of total families in Mindanao (Wernstedt and Simkins, 1965).

Government resettlement efforts continued after 1965, primarily to alleviate congestion in Metropolitan Manila. Some relocation of squatter families took place in forest lands in nearby Laguna, Batangas and Tarlac. In 1975 the total resettled families in the San Pedro, Laguna site reached 20,000. The Bureau of Forest Development (now FMB) reported in 1972 that about 300,000 to 600,000 families have been resettled to upland sites all over the country, 40% of which originated from the Metropolitan Manila area.

3.3 Lowland Agricultural Policies

In general, the highest out-migration rates can be found in municipalities with relatively lower rice production levels. These areas are predominantly rainfed, with smaller average landsizes. David and Otsuka (1987) argue that without the substantial productivity gains of 3.6% from 1965 to 1985, population pressure on limited land will tend to increase the cost of rice production, thereby contributing to higher rice prices.

Distortions in the factor and product markets have created wider income disparities between rainfed and irrigated farming communities. Otsuka (1987) observes that in some rainfed areas absolute poverty has worsened and the proportion of landless households has increased. Such inequality is worsened by land reform policy impacts, which varied markedly among rainfed and irrigated areas where land distribution was effective only in the relatively better off irrigated lands (Mangahas, 1985). It is not unusual, therefore, that migration rates have been higher among lowland rainfed sites.

There is also a strong bias for development to be concentrated in urban centers. The attractiveness of the cities contributed to the large migration streams in the 1975 to 1980 period. This urbanward migration consisted largely of singular movements of young females towards the national capital region (Engracia and Herrin, 1984; Zosa-Feranil, 1987).

Within upland municipalities about 20% of the total population or 2.3 million persons reside in census-classified urban areas as of 1980 (refer to Table 22). The upland urban population is expected to increase at a much faster rate than the rest of the upland rural population.

Policies which encouraged mechanization have their impact through the labor market. The more significant labor-displacing technologies are tractors, threshers and direct seeding. Adoption of tractors was highest in the irrigated areas where labor demand also declined. The labor-displacing effects of threshers are more widespread so that there is less locational bias regarding population movements. Direct seeding, because it saves time and labor for transplanting and seedbed preparation reduced the demand for hired labor. The overall effect

TABLE 22
Urban Population in the Uplands

Region	Total Population	Urban Population	Percent Urban
PHILIPPINES	11075736	2258455	20.4
I.Ilocos	1246010	188657	15.1
II.Cagayan	1017045	135731	13.3
III.Central Luzon	605566	220684	36.4
IV.Southern Tagalog	984980	61598	6.3
V.Bicol	907267	13223	1.5
VI.Western Visayas	1145538	171263	15.0
VII.Central Visayas	1252435	518607	41.4
VIII.Eastern Visayas	754742	51262	7.0
IX.Western Visayas	305680	230908	75.5
X.Northern Mindanao	1033005	406324	39.3
XI.Southern Mindanao	1235242	228571	18.5
XII.Eastern Mindanao	588226	167358	28.4

Basic Source of Data: Cruz, Zosa-Feranil, and Goce (1986).

has been a reduction in the proportion of landless workers with access to land, thereby leading to greater unemployment. In many instances the seasonal out-migration of agricultural labor has progressed into permanent movement into frontier forest lands.

3.4 Population Programs

Accommodating a rapidly expanding population in a fragile environment such as the uplands demands sound resource management policies that would ensure that basic needs and services are provided at the same time that forest resources are preserved for future use. The need to address population directly can never be made more explicit than by considering the following trends in population growth and distribution.

First, the national population is expected to reach about 64 million people by 1992 and 98 million by year 2020. Since the natural rate of increase in population since 1980 has been at a rate of 2.5% per year, a net addition of about 1.2 million persons each year can be expected. Since there is hardly any space for expanding cultivated area in the lowlands this new population will be going to the uplands in search of unoccupied lands.

The upland population growth rate is 2.59% per year for the period 1975 to 1980. If regional growth trends in population continue there will be a net addition of about 800,000

families per year who will be occupying remaining upland areas. In addition, if we assume the same age distribution at present, the estimated working-age population will be about 13.3 million. Finding jobs for these people will be difficult unless the forest zone is opened up further for agriculture.

IV. SUMMARY

Around 30% of the total population of the Philippines now reside in the so-called uplands. A significant 8.8 million persons occupy interior forest lands which belong to the public domain. The growth rate of the upland population in the period 1975 to 1980 is 2.6% per year, which means that the upland population is expected to double in 27 years.

The population dependent on some form of upland cultivation is expected to reach 18.6 million by 1990 and 43.5 million by year 2025. The overall upland density level will rise from the 96 persons/sq km level in 1980 to over 126 persons/sq km in 1990 and almost 339 persons/sq km in year 2025. Central Luzon and Western Visayas will have critical density figures of over 200 persons/sq km by 1995, followed by Bicol and Southern Mindanao which will reach the critical density limit by year 2005. A closing upland frontier results from such high density figures. By year 2025, if each upland household were to be given a minimum of one hectare, the remaining forest cover would then be less than one million hectares. This indicates a dramatic decline in forest cover from 51% of total land area in 1980 to less than 28% in year 2025, or a rate of conversion of 1.6% per year.

The environmental indicators of overpopulation are: (1) the expansion into marginal lands, and (2) depletion of resources. Population pressure is measured in terms of: (1) total population and population growth rate, (2) population density, and (3) migration.

The responses to population pressure are categorized in two ways – demographic and agricultural. The demographic responses refer to: (1) increased mortality, (2) lower birth rates, and (3) increased migration. Indicative patterns corresponding to these responses are established and broken down by region.

The agricultural responses are: (1) expansion of cultivated area, (2) changes in the cropping pattern, and (3) use of more labor inputs. While other factors influence the adoption of these alternatives, it is population pressure which initiates the change or transformation into a more commercialized production system.

Four government policies have tended to induce population pressure on forest resources. These are: (1) promotion of programs which opened up forest lands to migrants, (2) institution of planned resettlement schemes, (3) effects of lowland agricultural policies, and (4) ineffective population control programs.

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