

Proceedings of the Inter-Program Inception Meeting and Workshop on Public Policymaking

29-30 April 2024

Cebu Parklane International Hotel, Cebu City

Prepared by John Ryan Jacot



UNIVERSITY OF THE PHILIPPINES
CENTER FOR
INTEGRATIVE AND
DEVELOPMENT
STUDIES

An aerial photograph of Cebu City, Philippines, showing a dense urban landscape, a large bridge spanning a body of water, and industrial areas with storage tanks. The image is in grayscale and serves as the background for the document cover.

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"Cebu City, Philippines - Panoramic aerial of the Metro Cebu Skyline and Cebu - Cordova Bridge."

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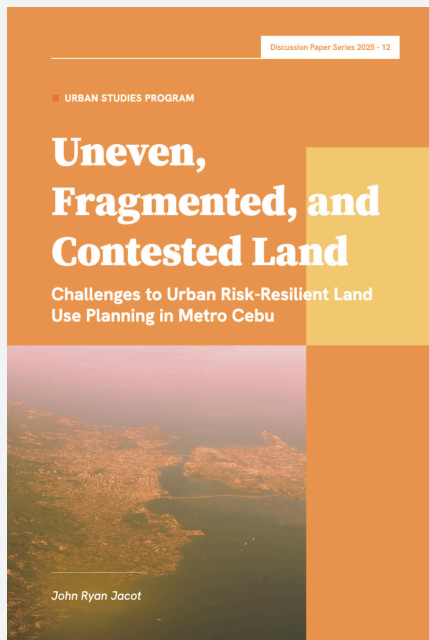
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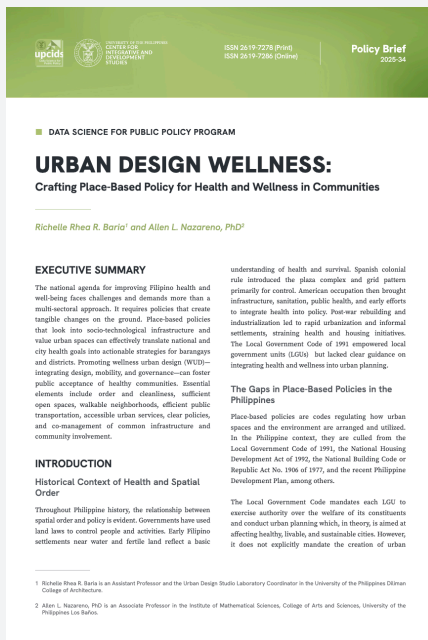
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About the Event Proceedings

The Inter-Program Inception Meeting and Workshop on Public Policymaking was held last April 29-30, 2024 at the Cebu Parklane International Hotel, Lahug, Cebu City. The workshop was jointly spearheaded by the Urban Studies Program (USP) and the Program on Data Science for Public Policy (DSPP) of the UP Center for Integrative and Development Studies (UP CIDS). The workshop was joined by the project teams of the Urban Studies Program from UP Cebu, UP Visayas, and UP Mindanao and the Local Regional Studies Network (LRSN) from the Central Visayas Studies Center (CVSC) and the Center for West Visayan Studies (CWVS).

The workshop was designed to orient UP CIDS program and project leaders, fellows, and staff on harnessing and translating research data and findings into evidence-based public policies and recommendations. It was also designed to level off, update, and map the direction of the Urban Studies Program, as a new program of UP CIDS from constituent universities in the Visayas-Mindanao region, and its activities and objectives for the year 2024.

This proceeding was prepared by John Ryan Jacot, project staff of the Urban Studies Program, from the recordings of the Inter-Program Inception Meeting and Workshop on Public Policymaking.

DAY 1

Opening Remarks

Weena Gera, PhD

Convenor, Urban Studies Program

UP Center for Integrative and Development Studies

In her opening remarks, UP CIDS Urban Studies Program Convenor Dr. Weena Gera highlighted the critical task of public policy research in addressing the persisting development issues and emerging risks that communities in the Philippines confront. She emphasized that, as the national university, UP is expected not only to lead in promoting research and development but also to provide various forms of public service including technical assistance to the government, the private sector, and civil society. She stressed that the Inter-Program Inception Meeting and Workshop on Public Policymaking is an opportunity for project leaders, fellows, and staff of UP CIDS, especially from new programs based in the Visayas-Mindanao region, to nurture partnerships, share insights and reflections on each other's projects, and develop competencies in policy research. She concluded her remarks with a reminder that academics are compelled to effectively communicate research findings and policy solutions for public access and to continually take stock of the academe's impact on society.

Rationale

Rosalie B. Arcala Hall, PhD

Executive Director, UP Center for Integrative and Development Studies

In her rationale, UP CIDS Executive Director Dr. Rosalie Arcala Hall stressed UP CIDS as the university's policy research unit and its mandate to develop impactful policy outputs and recommendations across development issues in the Philippines. The programs of UP CIDS should be guided along the standards of public policy research, sustained stakeholder engagement, and concrete measures of policy impact. She also encouraged the project leaders and fellows to structure their projects as multi-year endeavors with progressing research objectives and corresponding policy impact targets per year. She challenged the new programs to "go the extra mile" by actively presenting policy outputs to stakeholders and expanding collaboration with local government units, civil society, and other state universities and colleges (SUCs).

KEYNOTE PRESENTATION

Training on Public Policy Making

Ebinezer Florano, PhD

*Convenor, Program on Data Science for Public Policy
UP Center for Integrative and Development Studies*



■ **Figure 1.** Dr. Ebinezer Florano led and facilitated the workshop on public policymaking with the project leaders, fellows, and staff of the Urban Studies Program and the Local Regional Studies Network projects of UP Cebu and UP Visayas. Photo by John Ryan Jacot

UP CIDS Program on Data Science for Public Policy (DSPP) Convenor Dr. Ebinezer Florano began with an overview of the DSPP. He shared that the DSPP was created in 2018 with the aim of building the capacity of UP faculty in data science to apply research for public policy and governance. The program aims to convene multidisciplinary teams of social scientists, humanists, and scientists in pursuing interdisciplinary problem-oriented research with high-level quantitative analyses to aid the public sector.

The training on public policymaking consisted of two lectures, which tackled the basics of public policy and problem structuring, and three workshops. The theoretical inputs of the training are informed by William Dunn's *Public Policy Analysis: An Introduction* (2004). At the end of the lecture, the participants are expected to have:

- a. appreciated the nature and origin of public policy;
- b. traced the processes involved in public policy making and steps in policy analysis;
- c. learned the nature and basic elements of a policy issue paper; and
- d. generate the policy problem and policy issue statement through the identification of the gaps and deficiencies in existing laws and policies.

PUBLIC POLICY

In the first lecture entitled "Public Policy," Dr. Florano gave an overview of the history and foundational concepts of public policy. "Policy" is rooted in various terminologies that are associated with the affairs of the state and the conduct of public affairs (Dunn 1994). "*Polis*," for instance, is a Greek word for a city-state. "*Pur*" is a Sanskrit word for city (Dunn 1994). "*Politia*" is a Latin word for state, and "*Policie*" is a Middle English word that refers to the conduct of public affairs or the administration of government (Dunn 1994). These etymologies reflect the public character and effect of policy. Dr. Florano highlighted two major proponents of public policy, namely, Charles Merriam and Harold Lasswell. Merriam defined planning as an "interdisciplinary policy science," while Lasswell referred to the policy sciences as a "theoretically-oriented multi-discipline" concerned with societal problems and with the improvement of democracy and the realization of human dignity in theory and fact as public policy's ultimate goal.



■ **Figure 2.** Urban Studies Program, UP Visayas Project Fellow Asst. Prof. Brian Ventura gave a brief overview of their project on “Revitalizing an Urban River” and outlined the key policymakers and stakeholders in the management and rehabilitation of the Iloilo-Batiano river. Photo by John Ryan Jacot

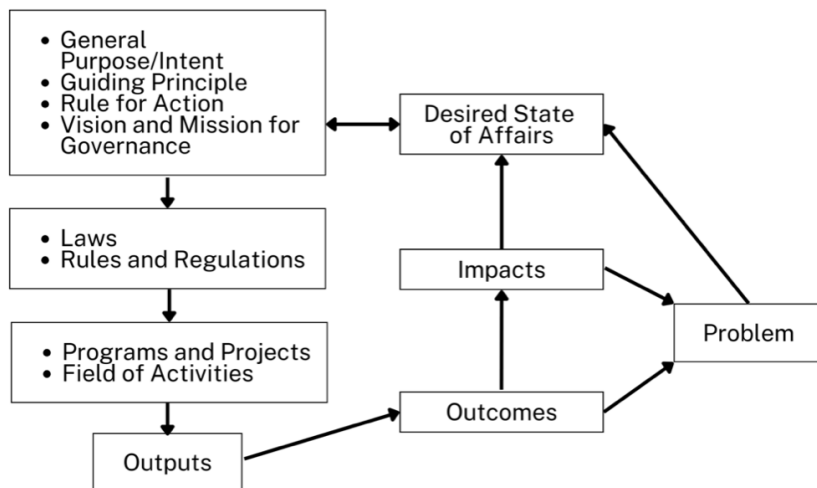
Dr. Florano expounded that there are various definitions of public policy. The definitions emphasize that public policy encompasses what governments choose to do and not to do. Table 1 shows these definitions.

Table 1. Definitions of public policy

Anderson (1990)	“A purposive or goal-oriented than random or chance behavior; consists of course of action than separate, discrete decisions; what governments actually do, not what they intend to do or say they are going to do; based on law and is authoritative; broken down into categories of: (1) policy demands; (2) policy decisions; (3) policy statements; (4) policy outputs; and (5) policy outcomes”
Anderson (2015, 7)	“A purposive course of action or inaction followed by an actor or set of actors in dealing with a problem or matter of concern”
Dye (2017, 1)	“Whatever governments choose to do or not to do.”

Source: Florano 2024

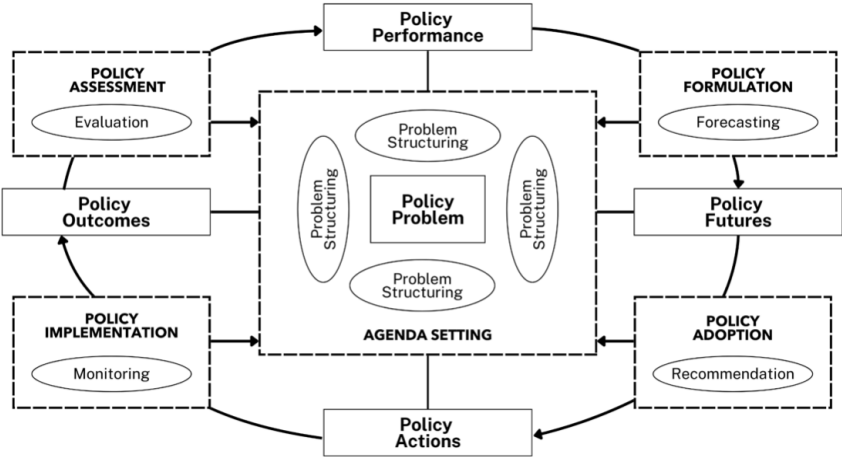
Dr. Florano then explained the anatomy of public policy, as presented in Figure 1. Public policy starts with the problem of the stakeholders. By sharing the problem, the stakeholders also point out their desired state of affairs and communicate them with policy makers who are expected to come up with laws, rules, and regulations. Dr. Florano emphasized that public policy does not end with the legal instruments and interventions to policy problems, but also encompasses how policy is implemented (outcomes), which responds to the problem and the desired state of affairs that is communicated by the public.



■ **Figure 3.** The anatomy of public policy. Source: Florano 2024

The manifestations of public policies include policy statements (speeches, vision-mission statements, slogans, congressional resolutions, etc.), laws (Constitution, Republic Act, Executive Orders, Ordinance, etc.), and plans, programs, and projects (Administrative Order, Memorandum Circular, Memorandum Order, etc.). In response to a question asked by Dr. Florano, Atty. Cyril Bryan Cuizon, a project fellow from the Urban Studies Program, stated that the Supreme Court of the Philippines is also a policymaker, albeit a passive one. In doing policy research, it is important to specify the type of policy the researchers want to refine and modify. As Dr. Florano emphasized: “It is not enough to say ‘a policy on.’ What are the strengths and weaknesses if we are going to adopt any of these [manifestations of public policies]?” He distinguished the three manifestations of public policies based on their strengths and weaknesses: (1) policy statements are soft because they do not necessarily have the power of implementation; (2) laws are hard, but they are difficult to make because they encompass the whole legislative process; and (3) plans, programs, and projects are government department-level changes but successfully pushing for them depends on department leadership. There is a need to assess which level and manifestation of public policy is best to create a sustainable policy change.

To further map out how to analyze public policy comprehensively, Dr. Florano introduced the participants to the framework for problem-centered policy analysis (Dunn 1994), as presented in Figure 4. The framework integrates the five phases in public policymaking (agenda setting, policy formulation, policy adoption, monitoring, and evaluation) with policy-relevant knowledge (policy problem, policy futures, policy action, policy outcome, and policy performance) and the methods of policy analysis (problem structuring, forecasting, providing recommendations, monitoring, and evaluation).



■ **Figure 4.** Problem-centered Policy Analysis Framework. (Dunn 1994 as presented in Florano 2024).

Dr. Florano explained the five phases in public policymaking. In agenda setting, policy researchers and policymakers decide what issues and problems will be addressed by the government. The agenda-setting phase should involve the stakeholders and consider the multiple courses of actions that may be taken to resolve an issue/problem. In policy formulation, policy proposals are developed to resolve issues and ameliorate problems. In policy adoption, a policy proposal is selected. It is important to develop political support for the proposal in this stage for it to be enacted into law. Policymaking does not end after adoption. The policy will be implemented, and its progress will be monitored and evaluated. Policy implementation encompasses the planning, organizing, staffing, directing, coordinating, reporting, and budgeting the implementation of the adopted policy proposal. Policy assessment includes reporting outputs, evaluating impacts, and proposing changes or reforms to the adopted policy.

Policy problem refers to what is wrong in the existing policy. Given that “public policy is what the government does or does not do” (Dye 2017, 1), the policy problem could be the absence of a policy. As Dr. Florano further explained, when coming up with a policy problem, there is a need to forecast policy solutions and alternatives, which will be assessed depending on whether they are effective, efficient, and acceptable to the stakeholders.

Policy analysis is designed to provide policy-relevant knowledge about the policy problem, policy futures or the expected policy outcome, policy action or the preferred policy, policy outcome, and policy performance (Dunn 1994). The policy problem is an unrealized need, value, or opportunity which, however identified, may be attained through public action. Policy futures refer to the forecasted consequences of a policy action and its alternatives. A policy action refers to the complex series of moves guided by a policy alternative that is designed to achieve certain values. A policy outcome is an observed consequence of a policy action. Policy performance refers to the degree to which a given policy outcome contributes to the attainment of values.

The five policy-relevant knowledge are developed using policy-analytic methods such as problem structuring, forecasting, recommendation, monitoring, and evaluation. Problem structuring is for producing information about the nature of the problem and its potential solution. Forecasting is for producing information about the probability of occurrence of policy futures. Providing a recommendation is for producing information about the probable consequences of future courses of action and their value or worth. Monitoring is for producing information about the past causes and consequences of policies. Evaluation is for producing information about the value or worth of past and/or future courses of action.

Policy papers are informed by policy analysis. There are four types of policy papers: a white paper, policy research, policy issue paper, and a policy memorandum. A white paper is a position paper identifying the grievances and providing a solution to the problem. This paper is not usually rigorous and is often self-serving. Policy research is academic and aims to broaden knowledge on policy making by describing the causes, contents, context, and consequences of a public policy. A policy issue paper is a practical, problem-solving, descriptive, and analytical policy paper that identifies a policy problem, a policy issue, alternatives, and recommends the best

alternative course of action. A policy memorandum, on the other hand, is a letter addressed to policymakers explaining the policy problem, issue, alternatives, and the best alternative to them. Dr. Florano pointed out that there are important distinctions between academic papers such as theses and dissertations and applied policy analysis papers. These differences are outlined in Table 2.

Table 2. Differences between academic and applied policy analysis papers

CHARACTERISTIC	ACADEMIC PAPERS (THESES AND DISSERTATIONS)	APPLIED POLICY ANALYSIS
Origin of Problems	University colleagues	Government clients and citizens
Type of Research	Original data collection	Synthesis and evaluation of existing data
Primary Aim	Generate or improve theories	Improve practice
Communications Media	Article or book	Policy memorandum or issue paper

Source: Florano 2024

Table 3 further illustrates and explains how the policy-analytic method informs the policy-informational component of policy analysis in a policy issue paper.

Table 3. The elements of a policy issue paper

ELEMENTS OF POLICY ISSUE PAPER	POLICY- INFORMATIONAL COMPONENT	POLICY-ANALYTIC METHOD
Letter of transmittal Executive summary		
I. Background of the problem a. Description of the problem b. Outcomes of prior efforts to solve problem	Policy Outcomes	Monitoring
II. Scope and severity of problem a. Assessment of past policy performance b. Significance of problem situation c. Need for analysis	Policy Performance	Evaluation
III. Problem statement a. Definition of the problem b. Major stakeholders c. Goals and objectives d. Measures of effectiveness e. Potential solutions	Policy Problems	Problem Structuring
IV. Policy alternatives a. Description of alternatives b. Comparison of future consequences c. Spillovers and externalities d. Constraints and political feasibility	Policy Futures	Forecasting
IV. Policy recommendations a. Criteria for recommending alternatives b. Description of preferred alternative(s) c. Outline of implementation strategy d. Provisions of monitoring and evaluation e. Limitations and unanticipated consequences	Policy Actions	Recommendation
References Appendices		

Source: Florano 2024

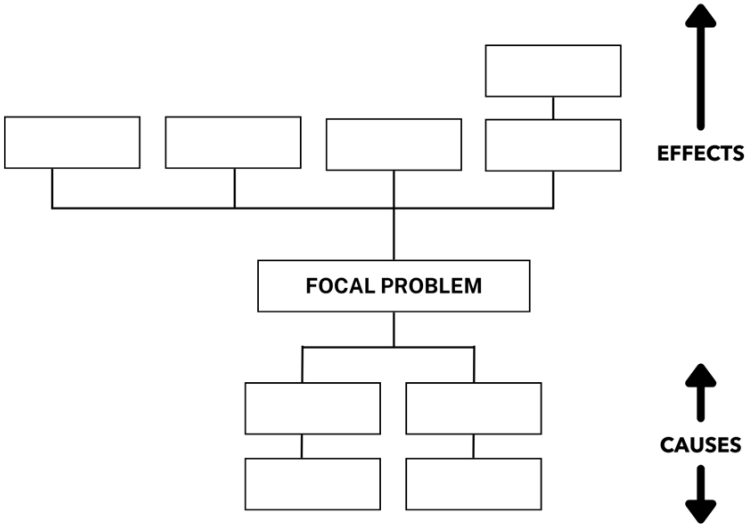
PROBLEM STRUCTURING

After explaining how to do public policy analysis, Dr. Florano proceeded with discussing the first method in public policy analysis, which is problem structuring. Dr. Florano began the lecture on problem structuring with a quote from Russel Ackoff in *Redesigning the Future* (1974): “Successful problem solving requires finding the right solution to the right problem. We fail more often because we solve the wrong problem than because we get the wrong solution to the right problem.” Pointing to the significance of coming up with a well-structured and right policy problem, Dr. Florano explained that there are four characteristics of policy problems, namely, interdependence, subjectivity, artificiality, and dynamic. Firstly, policy problems are interdependent as they are “messes,” whole systems of problems - a policy problem in one area affects policy problems in other areas (Dunn 2004). Second, policy problems are subjective since the same data about a problem can be interpreted in different ways. They are also artificial since they are socially constructed and arise from human judgments about altering a problem situation. Lastly, policy problems are dynamic and relatively unstable since there may be “as many different solutions for a problem as there are definitions of the problem” (Dunn 2017, 72). In other words, problems do not stay “solved.”

There are various sources of information for problem structuring. These include the most recent literature in the concerned policy area that shows an undisputable cause-effect relationship between the problem and its causes. Quantitative methods to detect causality include regression analysis, correlation, and factor analysis. Qualitative methods, on the other hand, include Delphi technique, problem tree analysis, narrative techniques, and case studies. Other information sources include interviews with experts, surveys, and the policy researcher’s own modeling of the cause-effect relationship of the problem.

Dr. Florano further elaborated how to do problem structuring through a problem tree analysis. A problem tree is an analysis tool that shows a hierarchical relationship between cause and effect. It identifies a core problem and its effects/ends and root causes/means. It is used to link the various issues or factors which may contribute to a problem and helps to identify the underlying root causes of a problem. The root cause of a problem is usually the one which occurs most often, is related to all other causes, and the cause

pointed to by experts and studies. Ideally, a root cause can be solved by the government through a policy. If tackled and addressed with a responsive policy action, solving the root cause will likely solve the other causes observed in a problem tree. Figure 5 illustrates how a problem tree is developed in terms of the focal problem and its causes and effects.



■ **Figure 5.** A problem tree (Source: Florano 2024)

With various perspectives in seeing and approaching a problem, it is best to draw and develop problem trees in a multi-stakeholder consultation with the participation of stakeholders/beneficiaries, experts, policy implementers, and decision-makers/policymakers.

The policy problems developed through the problem tree analysis are “representations of problem situations, which are diffuse sets of worries, inchoate signs of stress, or surprises for which there is no apparent solution” (Dunn 2018, 5). Policy problems could be conflicting policies, the lack or absence of a public policy, unresponsive or mismatched policies, and inefficient policies. It is important for a policy problem to be specific to arrive at effective, efficient, and acceptable policy actions. As much as possible, policy researchers should cite specific provisions or sections of the public policy and its effects. Table 4 lists down some sample policy problems from Dr. Florano.

Table 4. Examples of policy problems

TYPE OF POLICY PROBLEM	EXAMPLE
The government is not doing anything to solve the problematic situation or root cause of the problem.	The lack of policy on inactive members
The government is doing something but there are shortcomings: ineffective, inefficient, inadequate, unequal, inequitable, etc.	The ineffectiveness of the X policy because it does not uplift the plight of the beneficiaries
It might be the wrong public policy.	The Y policy does not address the need for a cleaner Manila Bay.
Conflicting policies	The personnel promotion policy of government agency X encourages the <i>padrino</i> system which contradicts the merit and fitness of Civil Service Commission (CSC) Resolution XXX.

Source: Florano 2024

To evaluate existing policies, Dr. Florano emphasized that there is a need to identify all presumably relevant policies from laws, ordinances, executive orders, programs, and projects related to the root cause of the problem. The next step is reviewing if the policies are indeed relevant and that they can potentially solve the root cause of the problem. If there is no identifiable relevant public policy, then, the policy problem is the lack of a public policy that addresses the problem. If there is an identifiable policy, policy researchers should gather data on the performance of the implementation of the existing policy. Using the data, evaluate the performance of the implementation of the policies based on given evaluation criteria, which may include effectiveness, efficiency, adequacy, equity, and responsiveness. If the policy outcomes or performance do not satisfy the evaluation criteria, then, there is a policy problem.

Dr. Florano clarified that the following are not policy problems: administrative matters (lack of budget, lack of personnel, delays in implementation, incompetent personnel), political climate (whether a policy is conducive or not conducive for implementation due to political partisanship), management style (approaches to implementation by government officials), and the attitude and behavior of the people (culture and traditions).

After the lectures on public policy analysis and problem structuring, Dr. Florano gave instructions for the workshop on public policy making, which was done by project teams in their respective breakout sessions. Project teams included project leaders, fellows, and staff from the Urban Studies Program (UP Cebu, UP Visayas, and UP Mindanao project teams), the Local Regional Studies Network of UP Cebu (Central Visayas Studies Center), and the Local Regional Studies Network of UP Visayas (Center for West Visayan Studies). The workshop aimed to generate policy problems and corresponding policy issue statements through the identification of the gaps and deficiencies in existing laws and policies. This was done by identifying the situational problem, developing a problem tree, listing down the causes and effects of the situational problem and identifying the root cause of the situational problem, and finally, writing the policy problem and policy issue statement.



■ **Figure 6.** Participants of the Inter-Program Inception Meeting and Workshop on Public Policymaking pose for a post-workshop photo with UP CIDS Executive Director Dr. Rosalie Arcala Hall, DSPP Program Convenor and workshop resource person Dr. Ebinezer Florano, and Urban Studies Program Convenor Dr. Weena Gera.

WORKSHOP 1

Problem Structuring: The Situational Problem

Instructions:

1. Go to your breakout room.
2. Elect a leader.
3. Identify one common topic/problem of interest.
4. Identify the situational problem by the target stakeholder
5. Assess the current efforts/measures of the government to solve that situational problem.

WORKSHOP 2

Problem Structuring: Problem Tree and Root Cause of the Situational Problem

Instructions:

1. Go back to your group.
2. Draw a problem tree diagram. Start by placing your situational problem as the focal problem.
3. Above the situational problem/focal problem, identify the effects or consequences. Use the cause-effect relationship.
4. Below it, enumerate the causes. Use the cause-effect relationship.
5. Identify the root cause of the situational problem/focal problem.

WORKSHOP 3

Problem Structuring: Policy Problem

Instructions:

1. After having identified the root cause, enumerate the existing relevant policies and their relevant provisions.
2. Assess the performance of these relevant policies vis-à-vis the root cause.
3. Write the policy problem.

DAY 2

Conversations on Urban Resilience Governance

Engr. Nigel Paul Villarete

Former City Planning and Development Coordinator
Cebu City Government



- **Figure 7.** Engr. Nigel Paul Villarete shared insights on urban resilience governance in Cebu City to the participants of the inter-program inception meeting and workshop on public policymaking. Photo by John Ryan Jacot.

Former Cebu City Planning and Development Coordinator (2003 – 2010) Engr. Nigel Paul Villarete started his presentation with an overview of local governance regimes and politics in Cebu City. Since 2001, except for the short time when Edgardo Labella was the mayor of Cebu City (2019 - 2021), Tomas Osmeña and Michael Rama were the mayors of Cebu City and had different

approaches in local governance.¹ Engr. Villarete highlighted that for most of the last three decades, Cebu City was governed by a single political party, the “Bando Osmeña Pundok Kauswagan” (BOPK), formed by Osmeña in 1988 (Bongcac and Delos Angeles 2013). Michael Rama also won as Cebu City Mayor under BOPK during his first term in 2010. The main opposition party to the BOPK has been the “Kugi Uswag Sugbo” (KUSUG) of former Mayor Alvin Garcia.² Rama later formed his own political party, the “Barug Team Rama,” which led to subsequent rivalry against Osmeña and the BOPK subsequent elections later (Pareja 2011).

Engr. Villarete stressed that the mayoralty of Tomas Osmeña was marked by a “long-term planning horizon,” which resulted in several infrastructure and transportation developments in Cebu City such as the South Road Properties (SRP), the Cebu South Coastal Road (CSCR), and the Cebu Bus Rapid Transit (CBRT), which was also planned and conceptualized during Osmeña’s term.

After sharing the political context of Cebu City, Engr. Villarete turned to different areas of urban governance, namely, participation in city governance, challenges to revenue generation and expenditure, transportation and roads, sanitation, and healthcare.

Firstly, Engr. Villarete highlighted the City Development Council (CDC) of Cebu City as the most participative in the Philippines. He added that during the mayoralty of Tomas Osmeña, the city government advocated and pushed for expansive private sector participation in the CDC, even exceeding the 25 percent requirement in the Local Government Code of 1991. In terms of the local budget, Engr. Villarete explained that, with an exception for a small account identified as the “Mayor’s Discretionary Funds,” nothing in the city budget is discretionary since everything is prepared by the city budget officer, in coordination with the city’s department heads, before being approved by the

1 At the time of the Inter-Program Inception Meeting and Workshop on Public Policymaking, the mayor of Cebu City was Raymond Alvin Garcia, who served the unexpired term of suspended and disqualified Mayor Michael Rama. As of August 2025, the present mayor of Cebu is Nestor Archival of the BOPK. Tomas Osmeña is the vice mayor.

2 Former Mayor Alvin Garcia of KUSUG is the father of the present Cebu City Mayor Raymond Alvin Garcia.

city council. Specific items in the city budget are prepared by the local finance committee, approved by the mayor and the CDC, and subsequently, the city council. He also explained that there is no limit to how many subsequent budgetary appropriations can be passed in a year as it is only controlled by the availability of funds.

Engr. Villarete proceeded with discussing the patterns of revenue generation and expenditure in Cebu City. He first explained that local government revenues are sources from the national tax allotment (NTA), local revenue collection taxes (real property taxes, business, franchise, etc.), and non-tax revenue (fees, charges, etc.). According to Engr. Villarete, the major challenges in revenue generation in Cebu City rest on the attitude of taxpayers to pay on time and correctly.

Proceeding with the discussion on the focus areas of urban governance, Engr. Villarete explained that highly urbanized cities (HUCs) such as Cebu deal with engaging issues and concerns focusing on the urban poor, transportation and traffic management, and water supply and sanitation. Most of these areas are done and managed by the city government. Engr. Villarete stressed that the city government only seeks help from the national government in matters which require national assistance. He further added that the advantage of being a HUC is the availability of robust locally generated revenues to fund the needs of the city. Smaller local government units (LGUs), he pointed out, require more assistance from the national government.

Engr. Villarete explained that HUCs have a higher participation rate from higher income groups and the private sector in the management of city services and areas of concern. For example, private subdivisions provide for their own roads, security services, and in some cases, water. He also added that the private sector often provides their own development when it would seem better for them. This frees up revenue which would have otherwise been covered by the government. Engr. Villarete further stressed that there is a significant participation of the private sector in government affairs through the Local Development Council (LDC) and other collaborative government bodies.

However, Engr. Villarete pointed out that although bigger and highly urbanized LGUs have a more programmatic approach to the delivery of public services,

there are still various forms of particularistic and clientelistic delivery. He stressed that the government, especially elected officials, are political, and the delivery of public services are influenced by politics rather than by need. The best avenue for ordinary citizens to lobby, get access, and shape policy is through the local development council. In HUCs such as Cebu, Engr. Villarete added that there is more desire for participation in sectoral committees of the city government and local development council, which could open more opportunities for a more participatory urban governance and direction of development.



■ **Figure 8.** From Left to Right (L-R): Urban Studies Program Convenor Dr. Weena Gera, UP CIDS Executive Director Dr. Rosalie Arcala Hall, Former Cebu City Planning and Development Coordinator Engr. Nigel Paul Villarete, and Program on Data Science for Public Policy Convenor Dr. Ebinezer Florano. Photo by John Ryan Jacot.

Data Analysis for Social, Economic, and Environmental Research

Vladimer B. Kobayashi, PhD

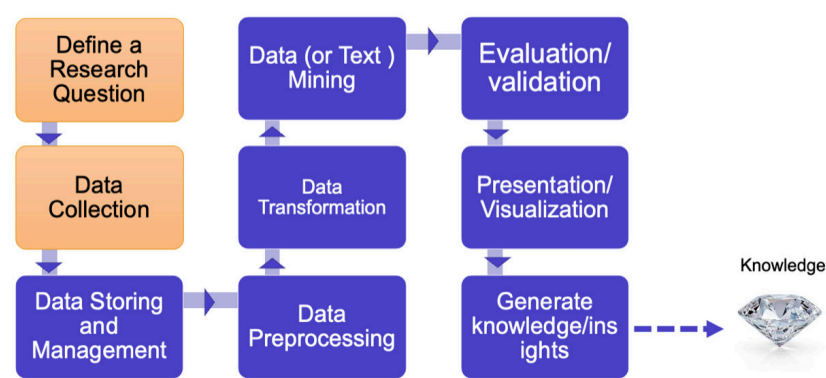
*Research Fellow, Program on Data Science for Public Policy
UP Center for Integrative and Development Studies*

UP CIDS Program on Data Science for Public Policy (DSPP) research fellow Dr. Vladimer Kobayashi started his presentation by introducing the data science approach of “Knowledge Discovery from Databases” (KDD), marked by data input (data gathering, selection, pre-processing, and transformation), data analysis (finding hidden patterns or rules or information from the data using statistics, mathematics, or machine learning), and evaluation and interpretation.

In introducing the potential use and benefits of data science to the participants, Dr. Kobayashi emphasized the use and richness of text data. As of August 27, 2023, there are 2.2. million new book titles and editions per year, 50 million published scientific journal articles, 500 million tweets per day, 8 trillion text messages sent per year, 55 million status updates per day in Facebook, and 108.7 billion emails sent and received per day. Dr. Kobayashi asked the participants to consider and reflect on how much text or pages of text are generated each day and each year in the Philippines.

Text mining is used to automatically extract or discover meaningful patterns in text. It is also used to associate textual elements to constructs. Text analytics

(or text mining) is part of the Knowledge Discovery from Databases (KDD) process when data is text. Figure 9 presents the process of text mining.



■ **Figure 9.** Steps in doing Text Analytics. Source: Kobayashi 2024.

Some text mining applications, as presented by Dr. Kobayashi, include assessing urban legislation, social media reaction analytics, mining social media text for environmental management, and doing text mining for policy recommendations. Text data is collected from various databases from online news sites, written records, text messages, books and periodicals, and social media sites such as Facebook, X (formerly known as Twitter), and online blogs. Text mining can then be done through dimensionality reduction, clustering, classification, topic modeling, and representations. Dr. Kobayashi stressed that there is a wealth of data available in social media which can be treated and analyzed to discover and interpret emerging patterns and trends online. Using data from photos, videos, status, comments, and connections in social media sites, data scientists can extract relationships among individuals, different organizations, and communities and identify patterns of social behavior from users’ media platform accounts.

To demonstrate the use of data science for social research, Dr. Kobayashi briefly shared an overview of a study conducted with Dr. Maria Margarita Lavidés, Cristabel Tiangco, Dr. Purisima Panlilio, Remi de Leon, and Angela Carreon that analyzed the concept of “*Pakikipagkapwa*” using web-based data from social media (see Kobayashi et al. 2024). Through the extraction of social media data and analyzing them using the topic modeling technique, the study identified distinct themes of manifestations, mediums, enablers,

and moderators connected to the concept of pakikipagkapwa. Dr. Kobayashi stressed that social media and text mining are viable approaches to replace traditional survey-based methods which can be time consuming and costly.

Dr. Kobayashi presented another example of a study that used text mining. In this example, the study developed a topic model for publicly available ordinances from Highly Urbanized Cities (HUCs) in the Philippines and provided insights about the topics expressed in the ordinances. Publicly available ordinances from HUCs were collected using a web scraper and a topic model was built using linear discriminant analysis (LDA). It then evaluated, interpreted, and constructed topic models and identified the gaps between current issues and ordinances. The last example on the use of data science shared by Dr. Kobayashi was a study on environmental research. In his example, a model was developed for the automatic detection of Anthropogenic Marine debris (AMD) in benthic areas and the development of a prototype device that embeds the model. Using the prototype, various AMD ranging from plastic bags and wrappers, metal cans, and rubber footwear were identified.

Dr. Kobayashi concluded his presentation by stressing the various data science tools and techniques that can address social and environmental problems and support policymaking.

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CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

Established in 1985 by University of the Philippines (UP) President Edgardo J. Angara, the UP Center for Integrative and Development Studies (UP CIDS) is the policy research unit of the University that connects disciplines and scholars across the several units of the UP System. It is mandated to encourage collaborative and rigorous research addressing issues of national significance by supporting scholars and securing funding, enabling them to produce outputs and recommendations for public policy.

The UP CIDS currently has twelve research programs that are clustered under the areas of education and capacity building, development, and social, political, and cultural studies. It publishes policy briefs, monographs, webinar/conference/forum proceedings, and the Philippine Journal for Public Policy, all of which can be downloaded free from the UP CIDS website.

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The **Program on Data Science for Public Policy (DSPPP)** aims to build the capacity of UP faculty in data science and apply this learned skill to public policy and governance. It seeks to engage a community of researchers within the university and encourage the pursuit of interdisciplinary problem-oriented research using high-level quantitative analyses.

The thrust of the **Urban Studies Program** is to bring to the fore the critical issues around urbanization and urban humanity in the policy discourses for the country. It brings together studies on cities especially with acute vulnerabilities such as coastal cities across the Philippines that directly respond to emerging concerns on urbanism with a specific lens on inclusive and just resilience framework.

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