JDS The Project for Human Resource Development Scholarship by Japanese Grant Aid

Edited By:
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CONTEMPORARY DEVELOPMENT ISSUES IN THE PHILIPPINES

Lessons from JDS Fellows

Contemporary Development Issues in the Philippines: Lessons from JDS Fellows

Edited by
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&
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Writing Journals

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CONTENTS

About JDS ----------III

About Authors
Chief Editors ----------VII
Co-Authors ----------VIII

Introduction ----------1

Chapter 1: Review of Economic Development Mechanism and Philippine Development Plan (2016-2022) ----------21

Chapter 2: Economic Growth through Human Development in the Philippines: Issues and Recommendations ----------67

Chapter 3: Harnessing the Digital Economy for Development: Issues and Prospects ----------103

Chapter 4: Modernizing Agriculture in the Philippine: Lessons from Japan ----------135

Chapter 5: Education for Overcoming Middle-Income Trap in the Philippines: Issues ad Recommendations ----------163

Chapter 6: Redundancy of Road Network, Alternative Route under Road Reconstruction and Maintenance ----------201

Chapter 7: Resiliency to Natural Disaster: The Philippine Initiatives on Disaster Management ----------233

Chapter 8: Environmental Management for Sustainable Economic Development "Case of Central Visayas" ----------267

Chapter 9: Gender and Development: Contemporary Issues of Female OFWs During the Covid-19 Pandemic ----------301

Chapter 10: Technology Transfer and Innovation for the Philippines' Economic Growth: Challenges and Recommendations ----------335

Chapter 11: Increasing Intergovernmental Fund Transfer to Spur Local Development in the Philippines ----------369

Chapter 12: People to People Exchange in a Changing World ----------401

Conclusion ----------437

ABOUT JDS

The Project for Human Resource Development Scholarship (hereinafter referred to as "JDS") was first launched in Uzbekistan and Laos in fiscal year (FY) 1999 as part of the "100,000 International Students Plan" of the Japanese government, with the aim of developing human resources who can play core roles in the formulation and implementation of social and economic development policies in developing countries. The project has later been introduced to other countries as well, and has accepted 3,970 international students from a total of 15 countries since the first intake of international students in FY 2000 up to FY 2021.

Since FY 2009, the project was gradually switched to a new system as adopted by partner countries subsequently. In this system, an intake framework in four batches is planned, based on the aid policies of the Japanese government and the development issues and the human resources development needs of the target countries. Furthermore, the target of the project is limited to civil servants who are involved in

the formulation and implementation of policy in development issues.

The Republic of the Philippines (hereinafter referred to as "the Philippines") has been one of the target countries since 2002, the fourth year from the beginning of JDS, with 400 JDS fellows dispatched to Japan until 2021. As continued from the second phase, the Operating Committee consists of members from the Philippines (National Economic and Development Authority (NEDA); Civil Service Commission (CSC) and Department of Foreign Affairs (DFA) and Japanese members (Embassy of Japan in the Philippines and JICA Philippines Office). It was agreed upon that the committee makes discussions and decisions on policy, implementation, and operation of JDS.

The current framework for the 17th to 20th batches is characterized by Sub-Programs and Components that are established in each target country based on ODA priority areas, the target country's issues and human resource development needs, Target Organizations (national government agencies) and Accepting Japanese Universities. Participants are selected and dispatched to universities that are suitable according

to the programs and components in the framework (see table below). JDS participants are dispatched under the same schemes, with the same Sub-Programs/Components, Target Organizations and Accepting Universities for four years. This results in the improvement in the core human resources' abilities to make policies and manage projects, which leads to improvement of Target Organizations' ability in policy-making. In addition, Accepting Universities can provide education through programs suitable for target countries through the acceptance of JDS participants from the same countries and Target Organizations for four years as shown in the Table below.

The JDS returned-fellows, who were successfully obtained their Master's degrees, are back to their agencies for contributing to further development in the Philippines, and some were promoted as policy-makers. Also, some of the returned fellows work for the JDS to promote the scholarship with JICE and JICA. The co-authors of this publication are also the returned-fellows.

Sub-Program	Component	Expected Research Topic
1. Public Policy + Science and Technology for Sustainable Economic Growth	1-1. Enhancement of Public Administration and Finance	Public policy in general (other than industrial policy), law, public fiscal management
	1-2. Enhancement of Industrial Promotion	Promotion of investment and trade, automobile industry, IT industry, SME promotion
	1-3. Improvement of Transportation Infrastructure Development	Urban planning, traffic planning, traffic engineering, etc.
2. Overcoming Vulnerability and Stabilizing bases for Human Life and Production Activity	2-1. Disaster Risk Reduction and Management	Weather, marine weather, earthquake, tsunami, volcano, disaster prevention policy, coastal engineering, flood control, erosion control, etc.
	2-2. Environmental Management, Infrastructure Development in Regional Cities	Construction engineering (water and sewerage commission), environmental sanitation engineering, climate change countermeasures, etc.

Source: JICA (2018)

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JICA Philippines Office. The Japan International Cooperation Agency (JICA) is the executing agency of

Japanese Official Development Assistance (ODA), which handles technical cooperation, ODA loans and investment, and grant aid, as well as cooperation volunteers and disaster relief programs. JICA is the world's largest bilateral aid agency with its scale of operations amounting to about USD 16.37 billion for JFY 2019 and a worldwide network of almost 100 overseas offices including the Philippines.

Introduction

HARA MASATOSHI

THE WAY WE SEE…

On June 1st, 2017.

It was the date that I started to be assigned in the Philippines to promote the JDS project as a Country Officer from Japan International Cooperation Center (JICE). It was my first time staying in the Philippines, and I had no knowledge of this country. When studying Development Economics at my graduate school in Japan, I used to learn about the Philippines' Economy slightly, but have never thought that I would work in this country. Honestly, I had a negative image of the Philippines, due primarily to the media in Japan; there is higher poverty rate, illegal stay in other countries, a higher crime rate, etc. So, my family was so concerned about my stay in the Philippines. But I wanted to find something new in a new environment, and decided to work here.

On my first arrival at the NAIA Terminal 2 at around 19:00 p.m., I felt something blowing inside myself in the evening. It

was my first visit to Metro Manila, and I was surprised to see the night view along the skyway. I was so impressed to see the highway going to Makati, one of the largest business cities in the Philippines. The next day, on our way to the then JICE office, my predecessor took me to several outside places to have street food, i.e., Jolly-jeep. I saw plenty of dishes arranged on the table and some pedestrians going inside, eating and ordering the dishes. The scenery reminded me of the time of my childhood to drop by the food court outside and buy some food with my family and friends in Tokyo. Also, I was astonished at the many skyscrapers in Makati in coordination with general construction agencies from China, South Korea, Japan, and the other countries. We can see some translations of Tagalog into Chinese, Hangul, and sometimes Japanese. That would be part of what the President Duterte has advocated, "build, build, build" since his inauguration for promoting infrastructural development. Still, development policies are in question.

…I have been working to promote the JDS project with some Operating Committee members and our staff. Our project aims to promote human resource development by using the scholarships funded by the tax collected through the Japanese government, and offering the scholarship programs

to study at graduate schools in Japan. This project is targeting public servants in developing countries in order to build capacity for contributing to socio-economic development in each country. Since my appointment in the Philippines, I have sent over 100 fellows, and 60 fellows have successfully earned their Master's degree and returned to the Philippines, with the rest at various stages of earning their degrees.

Four years and six months have passed since I have remained working here in JICE Makati office. The office has since transferred to another new building this June 2021. Due to the COVID-19 pandemic, I went back to Tokyo in 2020, and worked remotely. I was so happy to be back in the Philippines in March 2021. Still, while it is lucky that our office is still available, we keenly realize that the pandemic has affected ways of life here in the Philippines. Particularly, many developing countries, including the Philippines, have found it difficult to strike a balance between protection from the pandemic and economic development. I could also see reality when coming back here. Then, I thought if there is something we can do to promote further development in the Philippines, despite having been under the pandemic. JICE has been supporting the "Follow-up Activity" for the JDS returned fellows with the use of some funds by JICE head

office in Tokyo since 2018. We had a 15th anniversary of the JDS in July 2018 at Civil Service Commission in Quezon City, and over 100 returned fellows and some JDS Operating Committee members were attending to the ceremony. Since then, however, due to the pandemic, we were not able to conduct more follow-up activities. However, a new activity was launched this May with the following backgrounds.

FOR FURTHER DEVELOPMENT IN THE PHILIPPINES

While the world economy has dramatically advanced since World War II, many economies have struggled for growth, prosperity, and development. The World Bank (2021) has paid close attention to further development, growth, and prosperity in many parts of the world. Previous studies by other researchers have signified the Sustainable Development Goals (SDGs) realization in developing countries to be one of the world's most significant social problems (UN, 2021). Since the outbreak of the COVID-19 pandemic in early 2020 (WHO, 2021), the world economic outlook has further deteriorated (IMF, 2021). Remarkably, developing countries have faced a higher poverty rate as one of the most serious social issues (World Bank, 2021). Under the situation,

balancing economic development and pandemic minimization should further be promoted. Economic development has always been the goal for most countries. Some nations have been successful in achieving economic development, while the others have been in failure.

What about the Philippines? Unfortunately, the Philippines has still been one of the developing countries in the world as of now. Interestingly, many specialists can see that no other economy has possessed favorable initial conditions for economic development than the Philippines. For instance, the earlier establishment of democracy, the arrangement of agrarian reform for the "Green Revolution," and the English-spoken environment are featured as the primary advantages of promoting economic progress (ADB, 2017). Despite these desirable initial conditions, socio-economic indexes have shown challenges for economic development in the Philippines, and its Gross National Income (GNI) per capita (US$ 3,430 in 2020) remains within the lower-middle income range (IMF, 2021). Further, it also has a lower Human Development Index (HDI) than other countries than other countries—0.699, ranked 13th (UNDP, 2021) —fares even worse in its business environment, with its Doing Business Index (DBI) ranked 95th out of 196

economies in the world (World Bank, 2021). These indexes suggest the challenges involved in escaping the MIT, thus inappropriate policies to take advantage of its good initial conditions could be a hidden factor perpetuating the Middle-Income Trap (MIT) in the Philippines. The truth is that the Philippines has remained the same as the lower-middle income level for over 30 years since 1987 (World Bank, 2021). Over thirty years have passed since this economy has been under the same income stage. The Philippines has the longest history of operating under the MIT of any of the countries surveyed. As I said earlier, the COVID-19 pandemic has influenced the lives of others. We have plenty of people suffering not only from physical conditions, but also their financial and job conditions, especially in the developing world (WHO, 2021). Such issues were also identified in the Philippines.

Based on the statistical data, how can the Philippines promote further development, from the aspects of not only economic development, but also political, social, and technological development? Such concerns were raised when discussing this with the retuned fellows, as well as the other stakeholders.

BACKGROUND OF PUBLICATION

After my Ph.D. in the United States in early 2021, I had a chance to discuss with Dr. Quimba to promote a research project by making use of the research experiences by the JDS returned fellows who have studied in Japan. Through the discussion with him, we reached a conclusion that we will make a publication by some JDS returned-fellows together with me. As a result, Dr. Quimba and I became the chief-editors to take care of the publication. We need to come up with the specific idea of the publication in a concept paper. Also, we needed to have an individual interview to find appropriate returned-fellows to work with us. Because the publication project is a voluntary activity, the returned-fellows needed to spare some more time to dedicate themselves to the assigned chapter. Of course, during the interview or even after exchanging the consent forms with some returned fellows. Therefore, it took so much time to select, sort out, and assign chapters.

This publication is for providing some policy recommendations along with the current development issues in the Philippines, especially under the outbreak of the pandemic in March 2020. We mainly focus on the contemporary development issues here in this country, paying

closer attention to some of the most significant development issues either in Metro Manila or in provinces. From this point of view, the major concept of publication is to analyze the contemporary development issues in the Philippines for policy-making relevant to the development policies and strategies suggested by the JDS returned fellows. The co-authors are all JDS returned-fellows who have studied Master's degrees in Japan. Regularly, they are public servants who work in the Philippines, so it was a good opportunity for them to share their ideas of how to approach contemporary development issues in the Philippines based on their own experiences that they learned in Japan through JDS. In this way, the JDS publication project was launched to contribute to further development in the Philippines by showing their original viewpoints that were cultivated through their studies in Japan.

WHAT WILL THIS BOOK ADDRESS?

This publication is composed of 12 chapters.

In Chapter 1, we explained an economic development mechanism in developing countries by employing existing theoretical studies and addressing it as one of the most significant contemporary development issues in the

Philippines. The mechanism will further extend to the middle-income trap (MIT) in the Philippines economy since 1987 (Gill and Kharas 2017). Based on the economic development theory, we review the PDP from 2016 to 2021 and forecast 2022, especially in consideration of the COVID-19 pandemic, pointing out some issues and challenges on the PDP.

In Chapter 2, our co-author tried to examine the relationship between the Philippines economy and human development. We will also look into our country's macroeconomic policy choices, to see whether or not these policies translate to advancing the welfare of the Filipinos. Especially since the whole world is going through the COVID-19 pandemic, there are more discussions on health and social security policy issues than before.

In Chapter 3, our chief-editor, Dr. Quimba, focuses on the growth and prospects of the digital economy in the Philippines. NEDA has also been keen on the realization of digitalization for recovering the economic damage due to the pandemic, while recognizing the need for digital infrastructure and human resource development need to be improved. Digital economy is the contemporary development issue in this nation.

In Chapter 4, our co-author showed the importance of agriculture. For further agricultural development, he discusses the role of the youth in the Philippines' agricultural modernization efforts, Japan's Modern Farming Techniques and Farm Villages located in Hokkaido, realigning Agricultural modernization with social capital and embeddedness, and reforms for generating a National System for Innovation with Agriculture as its main driver along with the collaborative efforts from Academe, Government and Industry sectors.

In Chapter 5, the two chief-editors address the importance of education for economic development, educational issues as the contemporary development issue here in the Philippines, and showing several recommendations for better policy-making for education. Education is one of the major catalysts for development in the developing world, while achievement is still far from what it needs to be. Thus, they emphasize the significance of promoting educational opportunities, especially secondary education in the Philippines.

In Chapter 6, our co-author focuses on issues that need to be addressed during road closures and recommends possible solutions to lessen or better yet eliminate traffic

congestion specially during road construction and maintenance since agriculture and education are discussed in separate chapters in this publication.

In Chapter 7, our co-author discusses what we have done to ensure resiliency of our population from the impacts of natural disasters. He pointed out that every local government unit should be able to improve the resiliency of their areas of responsibilities, while local government units have financial limitations to fund their initiatives as they are only allowed to use 5% of their annual Internal Revenue Allotment for local disaster risk reduction and management funds.

In Chapter 8, our co-author raises the topic of environmental management for sustainable economic development, particularly in the Central Visayas region of the Philippines. Environmental management means different things to different people, especially depending on the context and the purpose or objectives for which it is used, as emphasized by Louis Kotze's article on environmental management.

In Chapter 9, our co-author addresses the latest trends in challenges being faced by female OFWs coupled with the addition of the COVID-19 pandemic. She tries to address what the Gender and Development (GAD) issues female OFWs

face during the COVID-19 pandemic, especially how the cross-country mobility restrictions and measures to fight the virus aggravated their state and worsened the gender inequalities.

In Chapter 10, our co-author pays closer attention to further development in science and technology in the Philippines, determining the factors affecting the innovation and technology transfer in the Philippines by looking at the lessons learned from the design and development of the Hybrid Electric Train by observing how technological development relates to economic growth of a country.

In Chapter 11, our co-author focuses on how to improve the function of the Local Government Units (LGUs) as the principal law that laid out decentralization and devolution in the Philippines. Primarily, he focuses on two of the processes that operationalize decentralization, intergovernmental fund transfers, and Local Development Planning (LDP) by employing the framework of Polish Municipalities for motivating the LGUs to conduct the local development planning.

Finally, in Chapter 12, our organizational co-author, JICA Philippines Office summarizes the Official Development Assistance (ODA) project and its actual achievements here in the Philippines, and focuses on the role of the JDS project. They also explain why the ODA is

necessary and what makes Japan ODA different as compared to the other ODA donors based on their successful cases.

With these 12 chapters, we covered what the contemporary development issues are and where the Philippines is. Then, all authors showed their recommendations that can contribute to further development in the Philippines through the lessons from Japan, especially by raising awareness of how to sustain the economy even under the COVID-19 pandemic. Hopefully, these recommendations can be helpful after the next Philippines development plans from 2022.

WHO IS THIS PUBLICATION FOR?

This book is for Filipino government agencies (policy-makers), JDS Operating Committee members, universities, students who are interested in economic development, and the other external readers by showing the main points of research questions per topics, where we are, and how to address the suggested issues to be analyzed, which can influence them, especially in policy-change for promoting further development in the Philippines. This book is recommended for anyone who will engage in the development activities in the Philippines and expected to guide to grasp the ideas of

contemporary development issues in the current Philippines from various aspects.

Furthermore, for the readers to be able to understand the topics and what was written, we tried our best to make this publication readers-friendly. It meant that we wrote the main body more casually than academically. Because all the authors studied at their graduate schools, they practiced academic writing. But, to avoid this book becoming too technical or academic, we tried describing the main contents descriptively with easy English sentences so that it can be more understandable, despite some parts to be analytically described for finding the essence of the development issues in the Philippines. Hopefully, all the readers, including public servants, general workers, students, etc., can enjoy reading this book, and get stimulated by raising more awareness of the significance of promoting further development in the Philippines. We welcome any comments about this publication.

AIMS AND GOALS OF THIS PUBLICATION

This publication is to share a specific idea aiming at contribution to further development in the Philippines with

JDS returned fellows as one of the major follow-up activities. The purpose of publishing this book is to crystallize study outcomes gained through the study in Japan, and reflect the vision of promoting further development in the Philippines. This publication project will help us not only nurture the identity as JDS fellows' networks, but also contribute to diplomatic and academic relationship between Japan and the Philippines further and to contribute to further growth and prosperity in the Philippines, especially for suggesting the policy-makers.

This publication has a larger potential to contribute to further development in this country with the possible goals to be achieved as the following two points.

Firstly, there will be no doubt that the beneficiary of the proposed activity should not be limited to an individual, but also to organizational and national development through the outcome of the study. In this way, the publication can have an equal opportunity to benefit all others. As said earlier, the authors are working for the governments, including National Economic and Development Authority (NEDA), Department of Interior and Local Government (DILG), Department of Science and Technology (DOST), Department of Public and Highways (DPWH), Department of Finance (DOF), Bangko

Sentral ng Pilipinas (BSP). They spent much time drafting the manuscript for each chapter by selecting some of the most significant development issues. Further, thankfully, Japan International Cooperation Agency (JICA) Philippines Office also joined this publication project by being in charge of Chapter 12. They were so motivated to summarize the ODA project in the Philippines and discuss the roles of JDS in this country. In these ways, these chapters address the issues and provide some recommendations for promoting further growth and prosperity in the long-run as public servants.

Secondly, as a different way of showing the JDS outcome by the returned fellows, it would be appropriate for returned fellows, who will be involved with the project, to show the study outcome for contributing to social transformation here in the Philippines. Particularly, we raised more awareness of how to overcome the pandemic and galvanized economic activities. Under the global economy with the COVID-19 pandemic, there should be many challenges to overcome the complicated situation. From this point of view, it would be beneficial for us to share the experiences with as many readers as possible by providing some information about where we are and how we should be in consideration of the current situation.

ACKNOWLEDGEMENT

Firstly, I would deeply appreciate Dr. Quimba as the chief-editor of this publication project. He fully supported us since the launch of this activity. We, two, recruited the volunteers to be co-authors to be in charge of the assigned chapters, reviewed their proposal and manuscripts through the online meetings repeatedly. I am grateful for him to support me and this project to be complete.

Then, I appreciate nine co-authors of Ms. Joy Ya-On, Mr. Neil Halcon, Ms. Ice Rosalio, Mr. Eric Cabutaje, Ms. Maria Dabon, Ms. Jean Clarisse, Mr. Osric Primero, Mr. Arce Fajardo to contribute to the completion of the publication project. We were so impressed that they have become more active in participating the publication project, especially when they joined the periodical meetings and presented their progress of their studies. The originality of this publication is based on their experiences gained through their studies in Japan. These experiences were introduced in this book, and hopefully the readers can see their visions and passions to promoted further development by addressing some issues in the Philippines.

Also, we are so grateful for JICA Philippines Office to contribute to the publication project; they were in charge of

Chapter 12 to summarize the ODA project and their prospects of the future. Aside from the regular JDS activities, they helped a lot to promote the scholarship project as a way to human resource development in the Philippines. Hopefully, we will have more solid relationship for the better scholarship.

Finally, I need to deeply show my gratitude for my colleagues, especially Ms. Rhina Encila, at JICE JDS Project Office in the Philippines. Remarkably, I sincerely appreciate her dedication to support this project by negotiating with publishing companies, making the design of this book, editing, and proofreading the manuscript so carefully. Despite her new position as an admin assistant, she did much more than she has been in charge of. Hopefully, this publication activity gives her a lot meanings ahead of her life.

Well, it is time for the publication journey to be launched. A lot of comments or feedback are welcomed for further consideration of future edition of this book. We appreciate your kind consideration and attention to this project.

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Chapter 1

Review of Economic Development Mechanism and Philippine Development Plan (2016-2022)

HARA Masatoshi

QUIMBA, Francis Mark

01

REVIEW OF ECONOMIC DEVELOPMENT MECHANISM AND PHILIPPINE DEVELOPMENT PLAN (2016-2022)

Despite having different backgrounds, Dr. Hara and I have been exposed to the development issues in the Philippines because of our work. Working for the Philippine Institute for Development Studies as a research assistant in 2003, I was exposed to various policy research in different fields. My work included primary data collection for various projects and this would entail interviewing various stakeholders—entrepreneurs, farmers, students, teachers and government employees. I have learned that development is not really just about income. It is about the way of life. The development economics that I have learned in Japan has taught me that there are various forces at work pulling a person's resources. The lesson of the pandemic has also taught us that. There are things that are beyond our control and what we can only do is to make our economy (our people) more resilient.

Economic development has always been the goal for most countries. Some nations have been successful in achieving economic development, while others have been in failure. In this chapter, we will explain an economic development mechanism in developing countries by employing existing theoretical studies and address it as one of the most significant contemporary development issues in the Philippines. The mechanism will further extend to the middle-income trap (MIT) in the Philippines economy since 1987 (Gill and Kharas 2017). Based on the economic development theory, we will review the PDP from 2016 to 2021 and forecast of 2022, especially in consideration of the COVID-19 pandemic, pointing out some issues and challenges on the Philippine Development Plan (PDP). The aim of this chapter is to show the economic development mechanism and pinpoint where the Philippines is, address issues and challenges of the PDP 2016-2021, and forecast 2022 under the pandemic.

WORLD ECONOMIC OUTLOOK

Historically, most developing countries became independent as low-income economies after the Second World War. Upon de-colonialization, all peoples in the developing world were enthusiastic in the pursuit of further economic development. In the 21st century, some economies

have made further improvements in quality of life by increasing income levels, facilitating social welfare, stabilizing their political systems, and promoting employment, thus becoming equivalent to advanced economies including the U.S. and other Western countries.

While some economies have met with success, others have had difficulty in realizing their development goals. East and Southeast Asia, for example, have been more successful than has sub-Saharan Africa (Allen, 2012). One of the most comprehensive indicators is Gross Domestic Product (GDP) per capita. Comparative development status reports of different global regions are available from as early as the 16th century using estimates of GDP per capita as continuous. Table 1 represents the trend of GDP per capita from 1949 to 2020 in seven regions: Western Europe, Eastern Europe, Western Offshoots the former USSR, Latin America, East Asia, the Middle East, and Africa, using data obtained from Angus (2003), the Groningen Growth and Development Centre (GGDC, 2021), and the World Development Indicators from the World Bank (2021). According to Table 1, examining the 1949, the trend shows an emerging difference in GDP per capita among regions, especially between the group, including the Western European countries and the Western Offshoots, and the other group including the other regions, including Eastern Europe, Latin America, Former

United Socialist Soviet Republic (USSR), East Asia, Middle East, and Sub-Saharan Africa. Nevertheless, there was no such difference between these two groups, especially from the GDP indicators with the figures of US$ 5,000-9,000 and US$ 500-3,500. Then, economies in Western Europe and their settler colonies drastically increased their national income, reaching approximately US$ 10,000 before 1965.

On the other hand, nations in East Asia and Africa in particular had US$ 1,000 in per capita income at this time, placing them at the low-income stage. However, this tendency substantially changed for the period 1989 to 2020. In East Asia, Japan and South Korea have reached per capita GDP equivalent to those of Western countries.

Table 1

Gross Domestic Product per Capita (US$) World View: 1949 to 2020

Region & countries / Year	1949	1965	1989	2008	2020
Total average in Western European countries	5,005	9,130	16,751	22,246	34,688
France	5,186	9,165	17,300	22,223	40,560
United Kingdom	6,939	9,752	16,414	23,742	39,102
Total average in East European countries	2,111	3,664	5,905	8,569	15,860
Western offshoots	9,268	12,967	22,255	30,152	53,224
Total average in Latin America	2,510	3,447	5,131	6,973	8,928
Brazil	1,672	2,448	5,224	6,429	10,672
Chile	3,670	4,577	6,283	13,185	14,050
Mexico	2,365	3,702	5,899	7,979	9,322
Total average in former USSR	2,841	4,634	7,112	7,904	11,786
Total average in East Asia	710	945	1,346	2,296	10,646
China	448	702	1,834	6,725	8,405
Indonesia	803	983	2,351	4,428	4,312
India	619	771	1,270	2,975	1,961
Japan	1,921	5,934	17,943	22,816	49,000
Philippines	1,070	1,633	2,184	2,926	2,980
South Korea	854	1,436	8,027	19,614	28,361
Total average in Middle East	1,776	3,033	4,590	6,947	7,258
Total average in Sub-Saharan Africa	889	1,181	1,444	1,780	1,592
World	2,111	3,228	5,130	7,614	10,561

Note. Reprinted from Statistics on World Population, GDP, and Per Capita GDP, 1-2008 AD. by Groningen Growth and Development Centre, 2010 and World Development Indicators 2020 (World Bank, 2021)

Furthermore, some nations have succeeded in boosting their productivity while others have remained unsuccessful - notably within the Latin American and East Asian regions. For example, Brazil and Mexico had higher GDP than Chile in 2020, within Latin America. Also, while Japan and South Korea reached higher figures of US$49,000 and US$ 28,361, India and the Philippines have had difficulty raising their GDP per capita since 1965. Thus, overall GDP per capita in East Asia is at the second-lowest level in the world.

Furthermore, since 1965, discrepancies in GDP per capita can be identified country by country within regions, notably in East Asia and Latin America. In concrete terms, the increase in GDP per capita in Japan and South Korea has been the most spectacular trend over the last 55 years, as also stated by Perkins (2013). However, the Philippines almost remained the same until 2020 with the figure of less than US$ 3,000.

Aside from the GDP per capita from a historical perspective, we can see some socio-economic indicators to see the current world outlook sourced from World Bank (2021) by reviewing the differences in 1995 and 2019.

Table 2 is the summary of world poverty outlook representing the differences in some significant indicators, including GNI per capita, economic growth rate by two intervals (1995-2006 and 2007-2019), foreign direct investment rate vis-à-vis GDP, saving rate vis-à-vis GDP in

each region between 1995 and 2019. In this respect, this table demonstrates how much the poverty head count ratio and the other relevant indicators got improved over the forty years and helps me find which areas or regions the poverty head count ratio should further be improved. Regarding the GDP annual growth rate, in 1995-2006, overall, we could see the positive growth rates despite different figures per region, while negative growth rates were seen between 2007 and 2019, especially in. Latin America & Caribbean, Middle East & North Africa, and sub-Saharan Africa. Also, in gaining insight into the poverty headcount ratio at 1.90US$ per day, we can easily observe that East Asia and the Pacific drastically improved the poverty rate from 44.6% to 1.2% for over 25 years. We also see an improvement in the poverty rate in South Asia from 43.6% to 15.2%. On the other hand, sub-Saharan Africa still has as much as over 40% in 2019. Also, regarding the Gross Domestic Savings, it is said that nations should preserve over 25% savings rate vis-à-vis investment rate (Otsuka, 2014). Sub-Saharan Africa is the only area where the saving rate is below 25% in 2019. Finally, in gaining sight into the value added per industry (agriculture, manufacturing, and service), it is clear that East Asia and the Pacific and Europe & Central Asia have the higher ratio in manufacturing with a lower one in agriculture in 2019 vis-à-vis 1995. Meanwhile, South Asia and sub-Saharan Africa

have the opposite proportion; lower rates in manufacturing with higher rates in agriculture. There seems no significant difference in the figure of service industry. However, since service industry handles plenty of types, the productivity completely differs (Otsuka, 2014).

On the other hand, Table 3 is also the summary of the world poverty outlook showing the differences in some significant indicators, including, industrial structure per agriculture, manufacturing, and service industry, educational opportunity, and literacy rate from 1995 to 2019. Firstly, in paying attention to the literacy rate both adult and youth, the three regions of East Asia & Pacific, Europe & Central Asia, and Latin America & Caribbean have improved the literacy rate of over 97%, compared with the ones in 1995. Meanwhile, the rest of Middle East & North Africa, South Asia, and Sub-Saharan Africa surely enhanced the literacy rate vis-à-vis 1995. Still, the figure for the literacy rate in these regions on average is 65% to 75% in 2019.

Next, in observing the school enrollment rate in primary education, sub-Saharan Africa and South Asia had the lower proportion of net enrollment rates with the figures of 87.8% and 75.3% vis-à-vis the other regions on average approximately 95%. The similar tendency can be seen both in secondary and tertiary education as well. In my previous study, secondary education was the major catalyst for

promoting economic development through industrialization in Southeast Asia (Hara, 2021). Notably, sub-Saharan Africa considerably had the lower proportion of 35.6% compared with the other regions. Indeed, it has already been evident that human capital development through literacy, numeracy, and medical health is of importance according to a previous study by Schultz (1971). In particular, literacy and numeracy are undoubtedly essential components in leading their lives for earning jobs and avoiding poverty. In this regard, it would be essential for poor economies, especially in sub-Saharan Africa and South Asia to promote human capital development, at least, through the opportunity of school education and literacy improvement.

Based on the statistical data, some of you are wondering how these results came out. Yes, it is necessary to think why such a discrepancy happened, depending on the regions. With this expectation, next we will see the mechanism of economic development in a country by reviewing several theories made by some well-known economists and summarize the simple process of how to promote economic progress.

Table 2

Socio-economic Indexes per Region between 1995 and 2019

	Poverty Headcount Ratio under $1.90 (%) *1		GDP Growth (Annual, %) *2		Gross Domestic Savings (% of GDP)		Agriculture, Forestry, and Fishing, Value Added (% of GDP)		Manufacturing, Value Added (% of GDP) *3		Service, Value Added (% of GDP) *4	
Region/Year	1995	2019	1995-2006	2007-2019	1995	2019	1995	2019	1995	2019	1995	2019
East Asia & Pacific	44.6	1.2	0.7%	-5.2%	35.2	33.5	36.3	16.9	14.3	22.7	49.4	60.4
Europe & Central Asia	6.8	1.1	5.8%	-7.3%	22.3	25.2	22.6	21.5	17.8	13.7	59.6	64.8
Latin America & Caribbean	13.6	3.7	11.9%	-14.8%	21.4	18.6	26.7	26.8	16.5	13.0	56.8	60.2
Middle East & North Africa	6.4	7.0	7.7%	-19.3%	28.1	33.8	40.0	33.8	12.1	12.3	47.9	53.9
South Asia	43.6	15.2	0.9%	-5.3%	23.0	25.6	43.5	35.8	17.3	13.5	39.2	50.7
Sub-Saharan Africa	60.5	40.4	5.5%	-9.0%	23.1	19.8	41.2	39.4	14.3	10.9	44.5	49.7
World	31.3	9.3	3.4%	-5.4%	25.1	25.3	29.7	20.5	16.1	14.5	54.2	65.0

Note. Based on World Development Indicators (World Bank, 2021), Hara made.

*1: Poverty Headcount Ratio is the population living on under $1.90 a day at 2011 international prices (WDI, 2021). Also, due to the missing data in 2019, I used the figure in 2018 in South Asia, sub-Saharan Africa, and World.

*2. GDP annual growth rate was measured by using the formula, $[(G(t+1) - G(t))/G(t)] \times 100$ (United Nations, 2021).

*3&4. Due to the missing data in 2019, I used the figure in 2018 in East Asia and Pacific.

Table 3

Socio-economic Indexes per Region between 1995 and 2019 (Human Capital Aspect)

	Literacy Rate, Adult Total (% of people ages 15 and above)		Literacy Rate, Youth Total (% of People Ages 15-24)		School Enrollment, Primary (% Net) *1		School Enrollment, Secondary (% Net)		School Enrollment, Tertiary (%, Gross)	
Region/Year	1995	2019	1995	2019	1995	2018	1995	2018	1995	2018
East Asia & Pacific	83.2	95.8	95.0	98.7	94.2	95.9	63.2	78.9	14.4	46.6
Europe & Central Asia	95.7	98.4	98.9	99.7	95.0	94.9	83.5	89.9	43.0	72.0
Latin America & Caribbean	86.8	94.3	93.4	98.6	93.6	93.7	64.8	77.5	22.7	52.7
Middle East & North Africa	62.0	79.3	80.9	90.1	83.0	93.7	60.1	72.9	20.0	40.6
South Asia	48.9	73.0	62.6	90.0	74.0	87.8	37.9	60.5	7.5	24.2
Sub-Saharan Africa	54.1	65.5	66.4	76.3	58.0	75.3	20.0	35.6	4.2	9.4
World	76.2	86.5	84.2	91.7	82.7	89.4	54.1	66.3	18.4	38.4

Note. Based on World Development Indicators (World Bank, 2021), Hara made.

*1. Due to the missing data of the figures in East Asia & Pacific and Sub-Saharan Africa in 2019, I used the figures in 2009 and 2015, respectively.

*2. The three indicators of "School Enrollment Rate" in primary, secondary, and tertiary, do have the sufficient missing data, I used the alternative data of 2018.

MECHANISM OF ECONOMIC DEVELOPMENT

In talking about the mechanism of economic development, it was beneficial for us to employ some theories by several economists since the 1950s in the early days of economic development.

Representatively, when it comes to the mechanism of economic development, Lewis (1954) suggested the concept of a "dual economy" featuring traditional (agricultural) and modernized (non-agricultural) sectors, observing the process by which the labor surplus made available in the traditional sector is transferred into the industrial sector, promoting industrialization; he identified this process as the "turning point" (p. 164) for the developing world. At the same time, Solow (1956) developed his economic growth model. The Robert Solow model, carried an idea similar to the production function described on the previous page, developing the role of capital investment and of technological advancement for economic growth (Solow, 1956). In this conception, the technological development of a country is accompanied by increasing capital investment: the more advanced the technology becomes, the more productivity is expected. One of the most significant key phrases from these two theories would be to promote industrialization through technological development. Indeed, in taking a look at development

foundations in East Asia, including Japan, South Korea, Taiwan, and China, one of the most significant catalysts for economic development was industrialization during the 1950s to 1970s (Perkins, 2013). In this way, Lewis (1954) and Solow (1956) contributed to the new findings of the relationship between economic development and industrialization via technological advancement.

Another significant model during the 1960s was the economic development stage model by William Rostow (1961). He suggested five stages of economic development in his study, leading from "traditional society," to "the preconditions of take-off," "take-off," the "drive to technological maturity," and finally "high mass consumption" in one nation (Rostow, 1961). The development stage model showed a significant implication that economic development takes time to be achieved through institutions and markets.

Based on the traditional models explained above, another trend in relation to economic development has been the concept of "human development." Human development is referred to as the process of enlarging people's freedoms and opportunities and improving their well-being (MOASSRC, 2021). It is related to the real freedom ordinary people need to decide who to be, what to do, and how to live. The human development concept was developed by an economist, Mahbub ul Haq, in the 1970s (MOASSRC, 2021). In relation to the human development concept, one more representative

economist, Theodore Schultz, launched his theory of "human capital development" in his study on how to mitigate poverty in the developing world (1971). Human capital refers to the ability or skills to work for further productivity. Schultz (1971) pointed out that due to the lack of human capital, economic development cannot be achieved. Since then, the significance of promoting human development or human capital development has been emphasized. Based on the trend of human development, in 1990s, one of the most well-known economists, Sen launched his theory of "Capability Approach," which emphasized the significance of arranging public service, especially basic education, medical health to maximize the freedom to overcome poverty and choose options for people's lives (1999).

In the 2000s, while the world economy has greatly advanced, a number of economies have struggled for growth, prosperity, and development. The World Bank (2007) has paid close attention to the strategy of how to overcome the middle-income trap (MIT) in many parts of the world. Thus, some economists have paid closer attention to formulating theories or frameworks that can address how to overcome MIT. Representatively, Tran (2016) formed his own framework, describing stages of economic development over time. Building from such key terms as Lewis's "turning point" and Rostow's "take-off," Tran formulated a transition from low-income to lower-middle income, higher-middle income,

and high-income stages. The crux point in his framework is that many economies reach a plateau in the middle-income range, falling either into the lower-middle income trap (LMIT) or the higher-middle income trap (HMIT), respectively (Tran, 2016). Also, from the aspect of the industrial development models in line with the MIT, Ohno (2010) crystalized the four stages of industrialization with a focus on Southeast Asian development, then identifying the horizontal line of the MIT visually and implying that promoting secondary education is key to developing the industrialization stage. From this point of view, how to overcome the MIT has been one of the hot topics since the 2000s.

Lastly, aside from the MIT, many development economists have been keen on how to overcome the vicious cycle of poverty in the 21st century in low and lower middle-income countries (LLMICs), especially in South Asia and Sub-Saharan Africa, several theories were developed. For instance, the concept of "poor economics" launched by Banerjee and Duflo (2012) the effectiveness of solutions to global poverty using an evidence-based Randomized Control Trial (RCT) model. One more Japanese scholar, Otsuka (2014) developed the frameworks for promoting poverty reduction through three types of industries, including agricultural, manufacturing, and service industries. With the essences of promoting poverty reduction, the author made

several significant components, including infrastructure, private sectors, education, and labor markets, etc., emphasizing the increment of capitals for promoting further productivity and conceptualizing two main frameworks of development strategies in agricultural and manufacturing industries, respectively.

Based on the economic development theories to be explained above since the 1950s until the 2010s, we can simply summarize the mechanism of economic development in an economy as follows. Firstly, promoting the industrialization, as well as agriculture, should be one of the significant catalysts for realizing economic development. Then, for industrial changed to be realized, it is necessary to promote human capital or human development through education and medical health, as well as the investment in infrastructure and private sectors. Economic development has some stages to be achieved in high-income levels, but it takes time through institutional changes and labor market (Tran, 2010). Indeed, Tran (2016) developed his idea of the LMIT and HMIT, especially in ASEAN economies, which means that some economies have been in difficulty in advancing economic development stage.

With this mechanism, we want to move on to the topic of what these theories can say about the Philippines from the economic development aspects before embarking on the discussion of the contemporary policy issues.

WHAT CAN THEORIES SAY ABOUT THE PHILIPPINES?

When processing some public policies in developing countries, some public servants may ignore or dismiss theories or frameworks relevant to their policy-making (Otsuka, 2014). Usually, it is not preferable to create new policies without examining the applicability of theories or frameworks. Notably, in the case of the contemporary development issues, touching frameworks should be essential.

What about the mechanism of economic development applicable to further development in the Philippines? At least, it would be necessary to see where the Philippines is theoretically and how it can be progressed, especially under the COVID-19 pandemic. Surely, many experts see that no other economy has possessed favorable initial conditions for economic development than the Philippines. Primarily, the earlier establishment of democracy, the arrangement of agrarian reform for the "Green Revolution," and the English-spoken environment are featured as the primary advantages of promoting economic progress (Nakanishi and Maquito, 2016). Despite these desirable initial conditions, socio-economic indexes have shown challenges for economic development in the Philippines, and its GNI per capita (US$ 3,430 in 2020) remains within the LMIE range (IMF, 2021). Meanwhile, it also has a lower HDI than other countries than

other countries—0.699, ranked 13th (UNDP, 2021) —fares even worse in its business environment, with its Doing Business Index (DBI) ranked 95th out of 196 economies in the world (World Bank, 2021). These indexes suggest the challenges involved in escaping the MIT, thus inappropriate policies to take advantage of its good initial conditions could be a hidden factor perpetuating the MIT in the Philippines. The truth is that the Philippines has remained the same as the lower-middle income level for over 30 years since 1987. Over thirty years have passed since this economy has been under the same income stage. The Philippines has the longest history of operating under the MIT of any of the countries surveyed, while it is worth analyzing how to promote economic development by overcoming the MIT theoretically and practically. In this way, the mechanism of economic development can hopefully be helpful in the case of the Philippines.

For the Philippines to be further developed, it is necessary to see the current policy-making. The best way to analyze would be to review the Philippines Development Plan (PDP) 2016-2022, and raise some policy gaps or issues.

REVIEW OF THE PHILIPPINE DEVELOPENT PLAN

Since the 1940s, every administration of the country outlines its objectives and goals through the formulation of the Philippine Development Plan (PDP). These goals and objectives are based on an assessment of the current economic and social environment. The plan also outlines the strategies that the administration would undertake in order to achieve these goals. Furthermore, the PDP presents a set of indicators that measure the Philippines' progress in the achievement of these goals. The PDP also identifies policy interventions (i.e., new laws that need to be passed) that would support the strategies outlined in the plan.

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Table 7

Description of Previous Philippine Development Plans

Period	Administration	Description
Pre-Marcos (1947-1964)	Roxas (1947-1952)	The development plans during this period were initially plans focusing on post-war rehabilitation and economic development. Issues such as the withdrawal of trade preferences of the United States, expansion of employment in all sectors, increasing production in productive elements and achieve self-sufficiency in staples were common themes during this period. Towards the end of this period, the development plans have evolved to become more deliberate, systematic, moderate and progressive in terms of its approach to the solutions of the country's economic problems.
	Quirino (1949-1953)	
	Magsaysay (1955-1959)	
	Garcia (1957-1961)	
	Macapagal (1961-1964)	
Marcos (1965-1987)	Marcos (1965-1987)	The initial plans of the Marcos administration present the blueprint for the development of the Philippine economy, set targets for the national economy and identify a collection of projects which the government considers of the highest priority to achieve basic macroeconomic targets: increase in GNP and an increase in real per capita income. Updates to previous plans were released annually. When the country was put under martial law, the plan restated the objectives and

		priorities of the administration. The plan incorporated social development and regional development targets. This is guided by the "New Society" philosophy of the administration. It was in this period that the development plan has also incorporated a long-term plan up to the year 2000 and a ten-year plan for the medium run.
Aquino (2011-2016)		Articulates the national goals (e.g., alleviation of poverty, generation of more productive employment and promotion of equity and social justice) and the strategy to attain these goals are economic recovery and sustainable growth.
Ramos (1993-1998)		Zeroes in on the key development areas and concerns: human development, agri-industrial development, infrastructure development, macroeconomy and financing and development administration.
Estrada (1999-2004)		PDP not available
Arroyo (2001-2010)		The plan aims to expand and equalize access to economic and social opportunities, inculcate receptivity to change and promote personal responsibility.
		Identifies the 10-point legacy to win the war against poverty. The strategies include, among others: promotion of livelihood, strengthening of education, attainment of

	fiscal stability, decentralized development, and arriving at sustained national harmony.
Aquino, B. (2011-2016)	With an overall goal of reducing poverty and promote inclusive development, the plan identifies strategies such as investing in health, education and employment

Source: NEDA

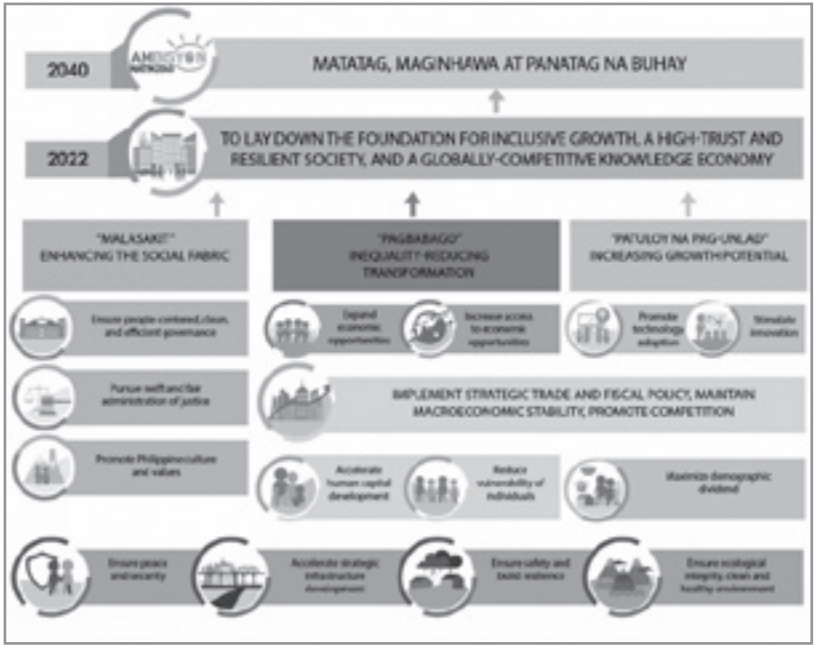
The Philippine Development Plan under the Duterte administration (2017-2022) is similar to the Five-year development plan 1978 to 1982 of the Marcos Administration (See Table 7) as it is geared towards the achievement of the Philippines' long-term vision. For the Duterte administration, the long-term vision is a *matatag*, *maginhawa at panatag na buhay para sa lahat* () by 2040. It is the first of the set of PDPs that would dovetail with each other in achieving the Philippines' long-term vision by laying the foundation for more inclusive growth, a high-trust and resilient society and a globally competitive knowledge economy. The PDP 2017-2022 also considers the Philippines' international commitments such as the 2030 Sustainable Development Goals and the achievement of the ASEAN Economic Community by 2040.

The overall strategic framework of the PDP 2017-2022 is composed of three (3) pillars supported by an enabling economic environment. This framework intersects with some

of the Asian Economic Community (AEC) characteristics. NEDA (2017) described each pillar as:

Figure 1

PDP 2017-2022 Overall Strategic Framework



Source: Figure 4.2, Chapter 4 of PDP 2017-2022

Pillar 1: Enhancing the social fabric (Malasakit): There will be greater trust in public institutions and across all of society. Government will be people-centered, clean, and efficient. Administration of justice will be swift and fair. There will be greater awareness about and respect for the diversity of our cultures.

Pillar 2: Inequality-reducing transformation (Pagbabago): There will be greater economic opportunities, coming from the domestic market and the rest of the world. Access to these opportunities will be made easier. Special attention will be given to disadvantaged subsectors and people groups.
Pillar 3: Increasing growth potential (Patuloy na Pag-unlad): Many more will adopt modern technology, especially for production. Innovation will be further encouraged, especially in keeping with the harmonized research and development agenda. And in order to accelerate economic growth even more in the succeeding Plan periods, interventions to manage population growth will be implemented and investments for human capital development will be increased.
Enabling and supportive economic environment: There will be macroeconomic stability, supported by strategic trade and fiscal policies. A strong and credible competition policy will level the playing field and encourage more investments.

Policy-making in macro- and micro-economic scope ways

How has the Philippines performed in terms of development as reflected by the targets in the Philippine Development Plans?

The Philippine Statistics Authority has come up with economic progress and social change that can be monitored and measured more effectively. It aims to serve as an early warning measure by showing the likelihood of achieving the

economic and social development goals set forth in the Philippine Development Plan (PDP), including the midterm updates. Thus, the StatDev framework is necessarily congruent with the current PDP and is revised each time a new plan is formulated.

In general, the Philippines has only 42 percent of the indicators having a very high probability of achieving the targets. In addition, the percentage of indicators with low likelihood of meeting targets is at 47 percent which implies that the likelihood of this administration achieving its targets is quite low. However, there are bright spots at specific sectors. The list of indicators compiled by the PSA show that the Philippines is doing very well in Competitiveness (77) and Macroeconomy (61) with more than 60 percent indicators likely achieving their targets. Competitiveness aims to improve consumer welfare and improve market efficiency (through reduction of anti-competitive practices and elimination of barriers to market entry by firms). The Philippines aims to achieve a stable, sound, and supportive macroeconomic environment achieved by the end of this administration. Despite the COVID-19 pandemic, a number of indicators related to the fiscal sector are on track to be achieved. These would include improvements to government revenue-to-GDP and tax revenue to GDP ratios.

Table 8

Likelihood of achieving PDP2017-2022 targets

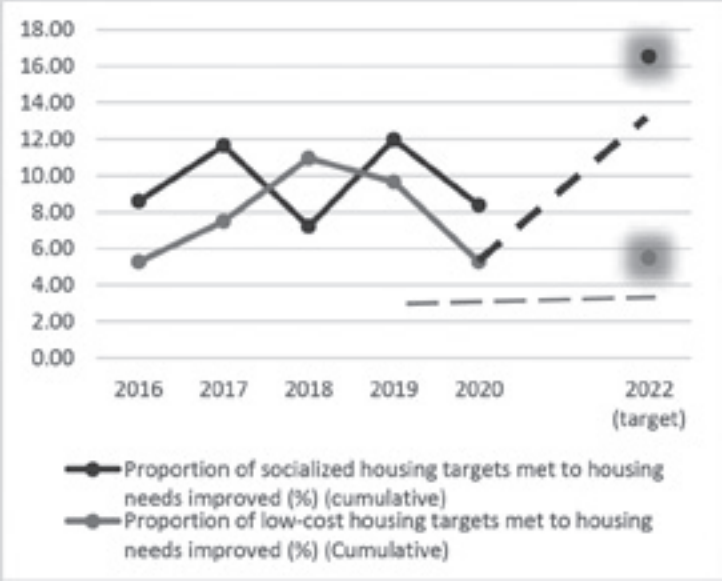
Sector	Percent of Indicators by Likelihood of Achieving the Target (%)			TOTAL (number of indicators
	High	Medium	Low	
Governance	45	5	50	20
Justice	45	18	36	11
Culture and Values	50	-	50	4
Agriculture, Forestry, and Fisheries	23	9	68	65
Industry and Services	50	25	25	20
Human Capital Development	48	10	43	40
Social Protection	25	13	63	8
Shelter and Housing	-	-	100	4
Demographic Dividend	45	9	45	11
Science and Technology	45	-	55	11
Macroeconomy	61	-	39	23
Competitiveness	77	-	23	13
Infrastructure	38	13	49	45
Environment	52	28	20	25
TOTAL	42	11	47	300

Source: PSA

In contrast, the country is not doing very well in Shelter and housing (100), Agriculture, Forestry and Fisheries (68), and Social protection (63) as these have the highest proportion of indicators with the lowest likelihood of achieving their targets. The goal of the Shelter and Housing sector is to expand access to affordable, adequate, safe and secure shelter in well-planned communities. This goal may not be achieved as indicators like trends in socialized housing targets met to housing needs and low-cost housing targets met to housing needs show that the 2022 target is too far off from the 2022 target (Fig. 2).

Figure 2

Selected indicators of shelter and housing



Source: PSA

Increasing access to economic opportunities by small farmers and fisherfolk and expanding economic opportunities in agriculture, forestry, and fisheries are the sector outcomes of the Agriculture, Fisheries and Forestry sector but this may be derailed as the pandemic has adversely affected the sector. The sector related to social protection aims to reduce the vulnerability of individuals and families. This can be done through the achievement of a universal and transformative social protection, but the indicators show poor performance in this sector as well.

Table 9

Indicators and targets in the social protection sector

	2016	*2018*	*2020*	*2022*
Zero deaths due to natural and human-induced disasters achieved	431	555	257	0
Zero missing persons due to natural and human-induced disasters achieved	47	37	56	0
Percentage of population covered by social health insurance [1/]	91	98	87	100
Number of Conditional Cash Transfer (CCT) beneficiaries covered (cumulative, in thousands) [e/]	4,388	4,179	4,325	4,400
Percentage of economically active population contributing to SSS	34.1	39.7	38.96	44
Percentage of employed in the government covered by GSIS [f/]	100	100	100	100
Number of OFW membership to OWWA increased (cumulative, in thousands)	1,835	1,313	711	1,912
All emergency loan applications by calamity-affected GSIS members and pensioners granted (%) [g/]	100	100	100	100

Source: PSA (2021)

WHAT CAN WE SAY FROM OUR STUDY HERE?

From significance to theoretical aspect, "theory to practice," especially economic development model, should hopefully be applicable to the Philippines economy under the pandemic. At least, continuous effort in arranging public services, especially arranging education, medical health (including the vaccine for the COVID-19 pandemic), infrastructure, business environment through industrial policies, needs to be made. In this way, the mechanism of economic development model can be considered for reflecting the Philippine development plan after 2022.

Assessment of key Philippine policies and policy gaps as presented in the PDPs

What has the country achieved in terms of policy? It has passed Republic Act (RA) 10881 Foreign Investment Liberalization Act in 2016 and RA 11203 Rice Tarrification Law in 2018. These laws facilitate the movement of investment and rice to the country. The country was also able to pass RA 10963 Tax Reform for Acceleration and Inclusion or TRAIN Law (TRAIN) which aims to lessen the overall tax burden on the poor and the middle class. Given the tax rate adjustments, TRAIN is expected to have a slightly inflationary effect on the economy, thus, the government allocated 30

percent of the additional revenues from TRAIN to mitigate its adverse effects. In particular, the government initiated a three-year unconditional cash transfer (UCT) program beginning 2018, where 10 million poorest families are granted PHP 200 monthly or a total of PHP 2,400 for 2018 to help them cope with the effects of TRAIN. This amount of grant will be increased to PHP 300 per month in 2019 and 2020.

A number of laws and policies have been passed related to Science and Technology and industrial development. Policies related to improving the investment environment and the ease of doing business in the country were also passed (Table 10).

Table 10

Recent policies supporting the Philippine Development Plan

Policy	Area	Description
Inclusive Innovation-Led Industrial Strategy (i3 S)	Science and Technology, Industries, Exports, and GVC (overlaps with characteristics 1 and 3)	Strives to make Philippine industries globally competitive as well as prepare them for the drastic changes brought by new technologies such as automation, advanced robotics, and artificial intelligence.

Policy	Area	Description
RA 11035 Balik Scientist Act	Labor, Research and Development, and Science and Technology (overlaps with characteristic 3)	The law also aims to accelerate the flow of new technologies into the country by providing incentives to scientists to entice them to return to the country.
Investment Priority Plan (IPP) of the Board of Investments	Investment, Commercialization of Technologies, MSMEs (overlaps with characteristic 4)	Focuses on the development of micro, small, and medium enterprises and of innovation-driven service activities such as creative industry, knowledge-based services, inclusive business models, and commercialization of new and emerging technologies, among others
RA 10844 The Department of Information and Communications Technology (DICT) Act of 2015	ICT, Governance and Innovation, Consumer Protection (overlaps with characteristic 3)	The DICT is mandated to be the primary policy, planning, coordinating, implementing, and administrative entity of the government to plan, develop, and promote the national ICT development agenda.

Policy	Area	Description
RA 11032 Ease of Doing Business and Efficient Government Service Delivery Act of 2018	Ease of Doing Business, Governance, MSMEs (overlaps with characteristic 4)	Aims to further simplify requirements and streamlining procedures related to starting and operating a business.
Revised Corporation Code of the Philippines	Ease of Doing Business, Governance, MSMEs (overlaps with characteristic 4)	Simplifies the requirements to set up and register a corporation with the Securities and Exchange Commission (SEC).
RA 11057 Personal Property Security Act	Governance, MSMEs (overlaps with characteristic 4)	Aims to promote economic activity by increasing access to least cost credit, particularly for micro, small, and medium enterprises (MSMEs), by establishing a unified and modern legal framework for securing obligations with personal property.
RA 11127 The National	Governance, E-commerce, Taxation, ICT (overlaps with	Empowers the BSP to ensure a safe, secure, and reliable operation of the Philippine payment systems. It is expected

Policy	Area	Description
Payment Systems Act	characteristic 3)	to foster the adoption of electronic receipts, invoices, and tax-related documentation, allow the adoption of digital signatures to establish identity of people entering into transactions, and promote the adoption of e-notary to authenticate and further formalize agreements between parties
RA 11232 Revised Corporation Code of the Philippines	Ease of Doing Business, Governance and Industries	Introduces many provisions drastically changing the process of organizing corporations, day to day activities, and compliance with regulatory requirements.
RA 11293 Philippine Innovation Act	Governance, Science and Technology, ICT, and Innovation (overlaps with characteristic 3)	Mandates the creation of the National Innovation Council (NIC) that will steer the whole-of-government coordination and collaboration and to remove the fragmentation in the country's innovation governance.
Local Government	Governance	The Supreme Court issued what is known as the Mandanas ruling that expands the tax base for computing the IRA, effectively

Policy	Area	Description
Code (LGC) Amendments		increasing intergovernmental transfers once implemented. Aside from amending several LGC provisions, the Supreme Court case is also expected to make a dent in the overall fiscal balance by expanding the revenue base by which to compute the intergovernmental fiscal transfers for LGUs.
RA 11315 Community-Based Monitoring System Act (CBMSA)	Governance, and Social Protection (overlaps with characteristic 4)	Aims to adopt the CBMS for coming up with updated and disaggregated data for deeper poverty analysis and more effective policymaking and impact evaluation.
RA 10870 Philippine Credit Card Industry Regulation Law	Consumer protection	Fosters the development of the credit card industry by protecting consumers against abusive and unfair practices of credit card issuers and collection agencies and by encouraging competition and transparency to improve the quality and efficiency of credit card services.

Source: Quimba et al. (2021)

But we have to recognize that the momentum of the Philippines has been slowed by the pandemic and the various mobility restrictions imposed as part of the pandemic response. In addition, the Philippines had to revise its PDP goal from aiming to be an upper middle-income country to a healthy and more resilient Philippines by 2022 due to the current pandemic. Having seen a shift of focus in PDP, some of its goals remained aligned to the original plan. Chua (2020) discussed that the banner programs under the updated PDP will be mainly focused on the improvement in the health system, food security, and digital government. The updated PDP goals will be focused on: Expanding economic opportunities across regions because there is a need to reduce congestion and spread opportunities; Ensuring people centered, clean technology-enabled, and responsive governance; and scaling up technology and stimulating innovation as key strategy to rise above the economic slowdown and to find new areas of productivity and efficiency.

Chua (2020), during his presentation in the virtual meeting for the House Committee on Economic Affairs, discussed that under the updated PDP, the following shall be prioritized:

1) Improving the health system- so that people will be able to know that they are being taken care of and that their

chances of getting sick are less. He added that this would improve basic confidence and stimulate domestic demand;

2) Proposing a transformation of the way people do business with government to as much as possible online transactions;

3) Protecting not just jobs in the short-term, but in the medium to long term, employability, making skills training important;

4) Processing of more balanced regional development. This requires two major underpinnings. The first one is the provision of all the basic services in the provinces so that people will have a reason to stay and businesses will have a reason to invest there. The second is to improve connectivity so that the provinces and secondary or tertiary cities or towns will be connected to high growth drivers or markets in Manila or the rest of the world;

5) Creating series of "structural reform options" which have been taken out of the revised PDP and can be institutionalized through a legislation to further strengthen the government's response against the coronavirus disease pandemic;

6) Strengthening of research and development; establishment of a Virology Center and Pharma Development Center; production of pharma-grade medical supplies; and strategic inventory of medicine and equipment;

7) Proposing a discussion on how each of these could be legislated with the intention of strengthening the foundations of the Philippines to deal with the new normal characteristics and still attain our potential GDP growth; and

8) Passing economic liberalization bills, including the Corporate Recovery and Tax Incentives for Enterprises (CREATE) to attract foreign direct investments.

CONCLUDING REMARKS

Here are the concluding remarks before leaving this chapter.

From the theoretical aspect, in analyzing the policies, introducing frameworks on economic development in the Philippines should further be considered. Making frameworks or theories enables public servants to analyze where they are and where they should be more specifically, reflecting on improvements in policy-making. In this way, we should not easily say theories are not helpful. On the other hand, from the practical approach, we analyzed the development policies since the 1940s, finding the policy-gaps. Also, in observing the current Philippines development plan, we paid attention to the discussion raised by NEDA secretary that the banner programs under the updated PDP will be mainly focused on the improvement in the health system, food security, and digital government as prioritized areas for further

development, notably from the aspect of how to go up to the upper-middle income stage as early as possible.

Finally, as a study scope, we need to admit that the impact of the COVID-19 pandemic on economic progress in the Philippines needs to be further studied. Then, making a new framework relevant to pandemic and economic development also needs to be further considered. Because of the pandemic, the Philippines economy, especially in comparison between 2019 and 2020, has deteriorated. Specifically, unemployment rate and GNI per capita showed the negative results with the figure of 9.4% in 2020, vis-à-vis 5.2% in 2019, and US$ 3,430 in 2020 vis-à-vis US$ 3,980 in 2019 (PSA, 2021). It would be necessary to see the relationship between the pandemic and economic development theoretically, which needs to be transferable to the Philippines economy in the long-run.

As an introduction part, we showed the theoretical and practical approaches relevant to Philippines' development plans in this chapter. We will, then, move on to the next chapters which deal with contemporary development issues in this economy. Hope for further discussion can be welcomed.

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Chapter 2

Economic Growth Through Human Development in The Philippines: Issues and Recommendations

Sheena Joy N. Ya-on

02

ECONOMIC GROWTH THROUGH HUMAN DEVELOPMENT IN THE PHILIPPINES: ISSUES AND RECOMMENDATIONS

During the summer vacation of 2019, I volunteered for five days in hoikuen (daycare) at Yokohama city, where my Japanese friend works. Since I love children, I wanted to have memorable interactions with Japanese kids while learning about daycare centers in Japan. I volunteered at "Ninka hoikusho", this type of child facility is government-funded and follows the Ministry of Health, Labor, and Welfare. Parents pay only about a fifth of the system's total cost. The government sees the funding as an investment in their future.[1] *The kids are served food in the facility (lunch and snacks), take naps, and sometimes take a bath there. I was amazed at how the nutritionist carefully planned the meals and calculated the calories, preparing the menu monthly. They ensure that the children get the proper nutrition that they need for their age. Meals were healthy with portions of vegetables,*

meat (fish or chicken), noodles or bread, miso soup, and milk. The facilities were excellent and well-maintained, with beds, storage, tables, chairs, and toilets explicitly designed for infants and toddlers. Aside from the primary care, there were fun activities such as story-telling, dancing, music, free play, and arts & crafts. With the quality of care given at the daycare center, parents need not worry about their children and focus on their jobs. I remembered telling myself, "I hope that the Filipino children could experience the same."

In the summer of the same year, I went to a hospital in Japan for the first time. I had surgery for the extraction of my two impacted wisdom teeth. Although it was not a severe illness, my hospital experience at Uonuma Kikan Hospital was astounding. Located at Minami Uonuma City, Niigata Prefecture, the hospital was about ten minutes away from the International University of Japan where I studied. It looked like one of the malls in the Philippines - spacious with elevators and state-of-the-art facilities. Considering that Minami Uonuma City is a rural area with an estimated population of only 0.4% of Tokyo's people, I was surprised that the town has this kind of hospital. Japan has a Universal Healthcare System, which means it is available to all citizens and non-Japanese citizens staying for more than a year, such as international students like me. Aside from free screening for certain diseases, the health insurance also provides free

annual check-ups to everyone enrolled in the system, which I availed of during my two years of studying in Japan. From what I have experienced in hoikuen and at the hospital, I was amazed at the quality of health and social services that the Japanese enjoy. Not only are daycare centers and hospitals excellent in Japan, but they also provide outstanding services in nursing homes for the aged population. Since access to health and social services are basic needs, Japanese citizens, from infants to the elderly, are fortunate to receive such privileges provided by their government. Again, I told myself, "I wish that my countrymen could experience the same."

You may say that Japan can afford such services because it belongs to advanced or developed countries. Whereas, the Philippines is considered among the emerging and developing economies. But how about countries such as Cuba or Sri Lanka, which succeeded in raising their citizens' quality of life and healthcare system with their limited resources or low economic growth? In this chapter, we will try to examine the relationship between the Philippine economy and human development. We will also look into our country's macroeconomic policy choices whether or not these policies translate to advancing the welfare of the Filipinos. Especially since the whole world is going through the COVID19 pandemic, there are more discussions on health and social security policy issues than before.

ECONOMIC GROWTH AND HUMAN DEVELOPMENT

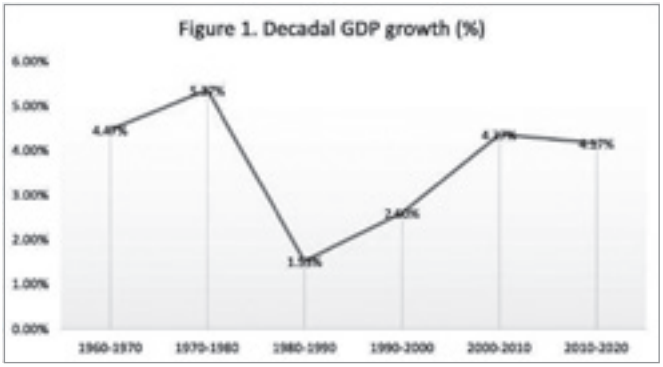
Macroeconomic indicators such as GDP growth rates are the starting point in assessing the country's economic health. They serve as the basis in identifying the current and future trends to identify the right policies or interventions for the country's economic development. However, economic growth alone is not the ultimate criterion in assessing the development of the country. Nobel Laureate Amartya Sen is known for his framework "capabilities approach" in 1985, which inspired the creation of the Human Development Index (HDI) in the 1990s. Sen's framework has three key elements: 1.) *Functioning* are what a particular individual chooses to do with his life; 2.) *Capabilities* are everything that an individual could decide to do with his life; and 3.) *Agency* is his freedom to choose as an individual according to his values. To illustrate the capabilities approach, Sen used the example of voluntary and involuntary fasting. The circumstance of a person who skips a meal (involuntarily) because he has no food is different from someone who fasts because of personal convictions. These convictions may be driven by religion or a hunger strike to advance a political or social objective. In essence, Sen argues that "freedom" is central to the process of development. When an individual has options and is empowered to choose based on his values, life becomes more

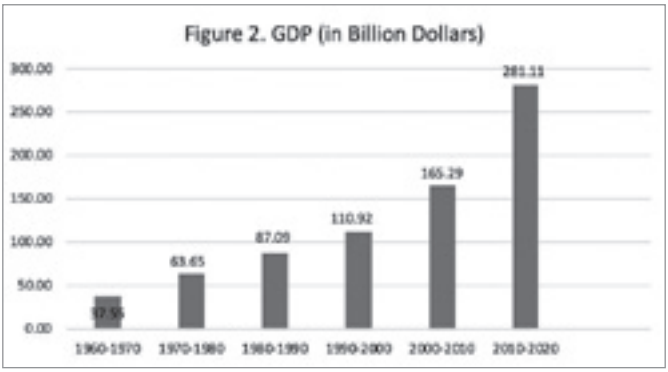
meaningful. [2] Development, therefore, is not just measured in terms of GDP per capita or income levels but in terms of the absolute freedom that citizens enjoy. In Sen's book entitled Development as Freedom, he mentioned that economic growth depends on using its fruits.[3] Economic development is, therefore, all about people. If economic growth does not translate to better human welfare and quality of life, they are mere numbers. As I've mentioned, Sen's work gave birth to HDI, a measure of human development launched by the United Nations Development Programme (UNDP). The index summarizes the average achievement in key dimensions in human development mainly: long and healthy life measured by life expectancy index, knowledge measured by education index, and decent standard of living measured by the Gross National Income (GNI) index.[4]

Although HDI does not capture all the dimensions of human development, its simplicity and usefulness make it easy to communicate to policymakers and researchers. It shifted attention from economics to human well-being. This chapter will focus on health and standard of living dimensions since there is a separate chapter in this book about education.

OUR COUNTRY'S ECONOMIC HEALTH

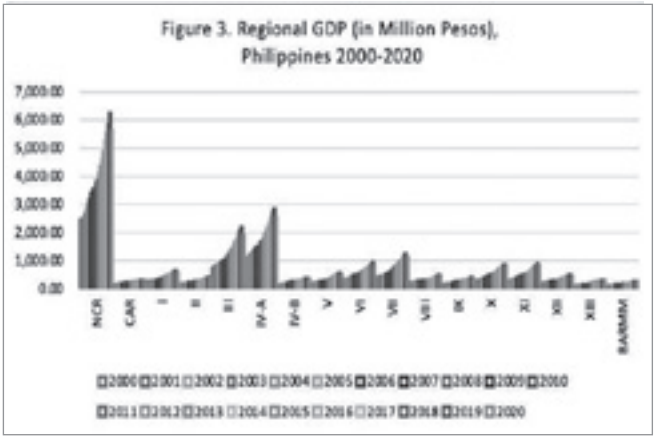
First, let's take a closer look at the overall health of the country using macroeconomic indicators. From 1960 to 2020, the Philippine GDP has consistently increased for the past six decades (Figure 2). However, we have also experienced periods of growth and contraction (Figure 1). For instance, we had the fastest gains in 1970-1980, slowed down within two decades 1980-2000, recovered in 2000-2010, and again contracted in 2010-2020. We can recall that the country was placed under Martial Law in 1972-1986, while in 2020 the COVID19 pandemic shrank the Philippine economy by -9.6%. Among the ASEAN countries, the Philippines performed second to the lowest during the first year of the worldwide health crisis. Myanmar was at the bottom with a -10% GDP growth rate amidst the political turmoil and widespread civil wars during the pandemic.[5] Other external economic shocks between 2000-2020 were the 2008 global financial crisis, the 2011 oil price hikes due to the 9/11 US bombing, and the political unrest in the Middle East. However, observing from the graph, amidst the external economic shocks, the country still had the slowest growth during and post-Martial Law era (1980-2000).



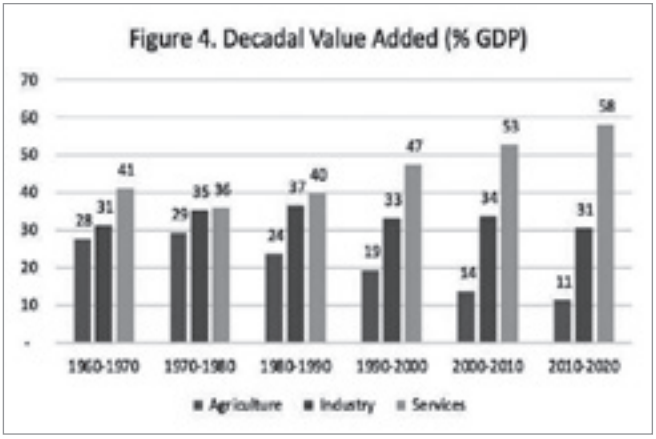


Source: World Bank (2021)

Furthermore, based on regional GDP data for 2000-2020 (Figure 3), growth has been concentrated only in three regions: National Capital Region (NCR), Region III Central Luzon, and Region IV-A Calabarzon. In contrast, the remaining 14 areas have experienced significantly lower growth compared to these three regions.



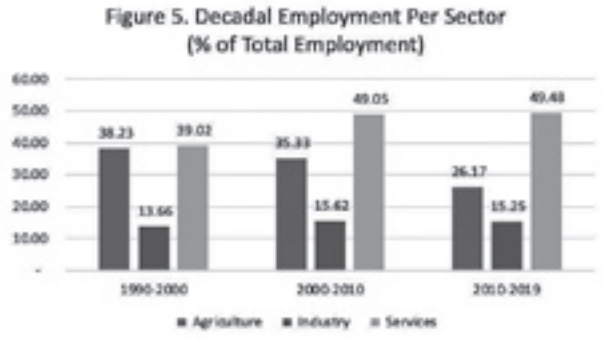
Source: PSA (2021)



Source: World Bank (2021)

Regarding industries contribution to GDP (Figure 4), the services sector has been the major contributor with an increasing share of 40-58% for the past six decades. The industry sector followed with levels of share between 31-37%. Meanwhile, the agriculture sector's contribution has been the

least among the three major industries. Over the past decades, it had been declining from 19-29% in 1960-2000 to 11-14% in 2000-2020.



Source: World Bank (2021)

In contrast, we can observe (Figure 5) that while the industry sector contributes more to GDP than agriculture, it employs significantly less. The highest employer among the three major sectors is the services sector since the Philippines exports services rather than manufactured goods through IT-business process outsourcing and tourism. However, advancements in industry and agriculture sectors have been minimal.

According to PSA classification, the sub sectors included in the services sector are transport, storage & communications, trade & repair of motor vehicles, motorcycles, personal & household goods, financial

intermediation, real estate, renting and business activity, public administration and defense, compulsory social security, and other services. The industry sub sectors, on the other hand, are mining & quarrying, manufacturing, construction, and electricity, gas & water supply. Agricultural industry sub sectors are agriculture, hunting, forestry and fishing.

We can also note that in 2020, on the expenditure side, household, trade, and investments significantly declined. These were due to loss of jobs, disruptions in the supply chain due to lockdowns, and closures of small and medium-scale enterprises, respectively. Only government expenditures grew by 10.4%, while household consumption declined by -7.2%, private investments by -29.0%, imports by -18.8%, and exports by -16.7%. [6]

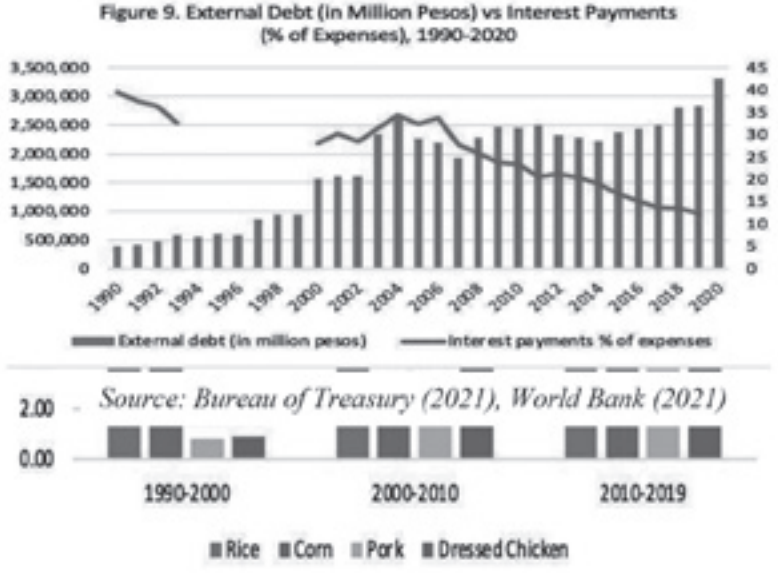
Source: World Bank (2021)

Inflation rates (Figure 6) averaged 8.48% from 1960-2020. The highest average recorded was 15.32% in 1980-1990, and the lowest average was 2.98% in 2010-2020. The main driver is food inflation. Over the years, there have been threats of natural calamities such as typhoons, floods, and animal viruses such as swine flu, significantly affecting agricultural production. Moreover, the COVID19 pandemic disrupted the supply chain due to lockdowns resulting in increased prices of food products.

Source: World Bank (2021)

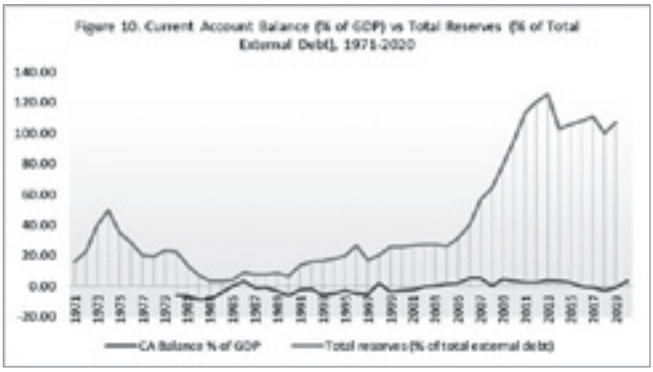
In general, trade as % of GDP (Figure 7) increased from 1960-2000 and declined in 2000-2020. Imports have always been greater than exports, making us an import-dependent economy. By commodity group, exports of electronic products continued to be the country's top export (86.8%), followed by mineral products (4.4%) 2020.[7]

During the same year, by commodity group electronic products also accounted for the highest import value (28.9%), followed by transport equipment (8.6%), and mineral fuels, lubricants & related materials (8.1%).[8] Our import dependency ratio on major food products, which measures the extent to which the country's supply of commodities comes from imports, (Figure 8) has significantly increased over three decades (1990-2019). A higher ratio implies a greater dependency on imports. This includes importation of those considered staple foods in the country such as rice, corn, pork, and dressed chicken, which implies that our country is a net-food importer.



Source: PSA (2021)

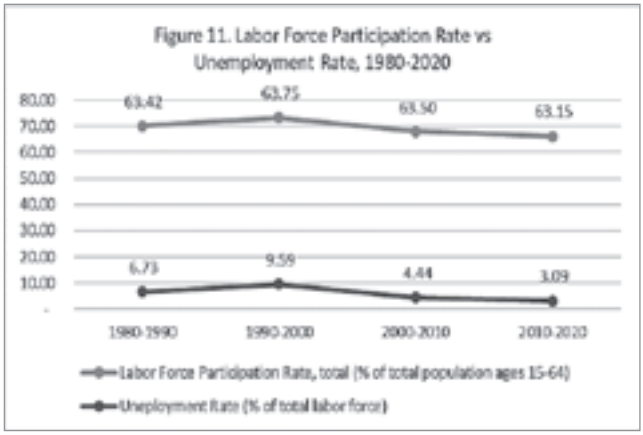
The country's external debt ballooned to P3.3 trillion pesos in 2020 (Figure 9), the highest amount recorded, to support the COVID19 pandemic responses under the Bayanihan Laws. Meanwhile, interest payments (% of expenses) have been decreasing from 2007 to 2019. During the same period, the debt to GDP ratio ranged from 31%-72%, which the credit raters still consider as manageable compared to Japan's debt to GDP ratio of 237% and Greece 177%. [9]



Source: World Bank (2021)

Furthermore, although we are a net borrower as shown by negative current account balances (% of GDP), our total reserves as % of total external debt increased from the 1990s (Figure 10). The high OFW remittances allow us to have enough dollar reserves to pay our external obligations. The inflow of remittances worldwide is at ~8% of GDP. Moreover, in 2020, despite worldwide mass layoffs, repatriations, and lockdowns, OFW remittances fell only by 0.8%.[10]

Meanwhile, the percentage of the population aged 15-64 working or actively looking for work averaged around 64% since 1980-2020. The unemployment rate averaged the highest (9.59%) in 1990-2000 and declined in 2010-2020 (3.9%). (Figure 11)



Source: World Bank (2021)

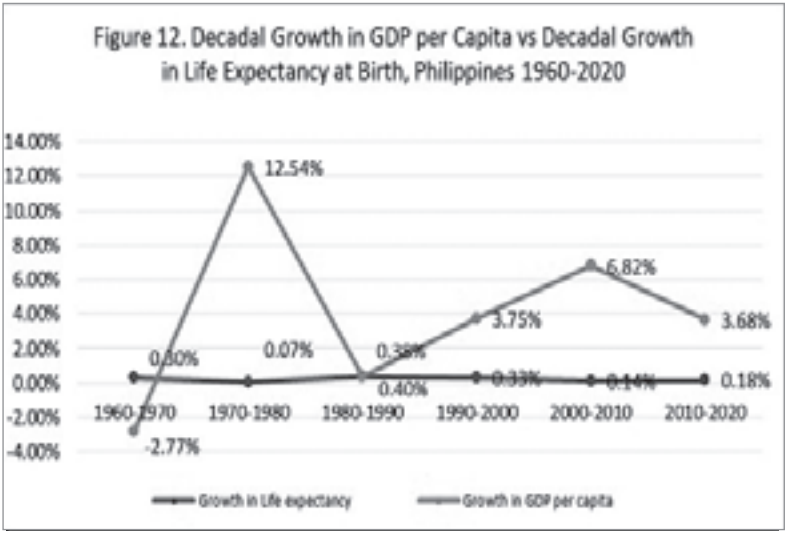
Amidst the pandemic, according to the PSA report, as of July 2021, the unemployment rate was at 6.9%, equivalent to 3.1 million unemployed persons compared to 10% or 4.6 million reported in July 2020. Meanwhile, the labor force participation rate declined by 2.1% in July 2021 (59.8%) compared to July 2020 (61.9%).[11] The decrease in the labor force participation rate is the effect of lockdowns that limited movement and working capacity.

Some were hesitant to participate in the labor force due to the high risk of getting sick, while deaths caused by COVID19 which reached 39,624 total deaths as of September 29, 2021[12] resulted in a permanent loss in our human capital resources. Moreover, MSMEs, which comprise 99.5% of business establishments and employ about 63% of the country's workforce[13] have also been significantly affected by the pandemic. According to a World Bank survey of 13,878 firms conducted in November 2020, 7% (972 firms) reported having closed permanently. 67% (9,298 firms) reported a reduction in sales due to limited operation and limited movement of the customers, and 66% reported net income losses.[14]

FILIPINOS' HEALTH AND INCOME

After looking at the overall health of our country's economy, we now zoom in on improvements in Filipinos' capabilities focusing on health and income. Chapter 5 of this book will discuss development issues in education in detail. To observe the relationship between economic growth and health dimensions, I compared the decadal increase in life expectancy at birth with the decadal increase in GDP per capita. I computed decadal growth rates for both variables using the compounded annual growth rates (CAGR). CAGR smooths out the extreme values (too high or too low) within

one decade. The formula for CAGR is $(V_{final}/V_{begin})^{1/t}$ -1, where V_{begin} is the beginning value, V_{final} is the final value, and t is the time in years. The decadal increase in life expectancy at birth has remained almost stagnant, while GDP per capita has experienced periods of fast and slow growth for the past six decades. (Figure 12) Moreover, even during periods of fast economic growth (1970-1980, 2000-2010), change in life expectancy remained slow. Although life expectancy slightly grew in 1980-2000, it again slowed down in 2000-2020 at 0.18%, significantly slower than 0.30% life expectancy growth in 1960-1970.



Source: World Bank (2021)

Source: World Bank (2021)

Among ASEAN countries (Figure 13), the Philippines' decadal growth in life expectancy has been the slowest in 1960-2020. In 1960, Singapore, Philippines, and Malaysia had the highest life expectancy at birth, 65.66 years, 61.1, and 60, respectively. In terms of life expectancy at birth by the number of years from 1960-2020, Cambodia increased by 28.81, Indonesia 25.25, Laos 25.02, Myanmar 24.62, Thailand 22.64, Brunei 21.19, Singapore 18.24, Vietnam 16.43, Malaysia 16.32, and Philippines 10.13. Life expectancy refers to the number of years a newborn infant could expect to live. The possible factors to life expectancy include access to healthcare, maternal care, child malnutrition, lack of immunization in infants, malaria incidence, and non-

communicable diseases. Access to healthcare in the Philippines has become expensive and difficult, especially for the poor over the years. The private sector is mainly active in-hospital care and maternity clinics, comprising 67% and 54% of health facilities. Meanwhile, the government caters to primary care and first-line facilities through barangay health stations, rural health units, and infirmaries. The public and private health care infrastructure are largest in NCR and Luzon, having 65% of the total hospital beds while only 20% and 15% of the hospital beds are in Mindanao and Visayas, respectively.[15] The average healthcare expenditure as % of GDP is 3-4% from 2000-2018.[16] Many people are pushed to poverty in case of catastrophic health expenditures as out-of-pocket household payments remain high at 47.9, severely limiting Filipinos' access to health care.[17] Our nurse-to-patient ratio is 1:50 to 1:80 far from ideal UN ratio of 1:12[18] while our doctor-to-patient ratio is 1:33,000 compared to the ideal UN ratio of 1:6,000. Meanwhile, Cuba, also among the developing countries, has a doctor-to-patient ratio of 1:1,075.[19] As a result of the shortage of competent doctors and nurses, 7 out of 10 Filipinos die without seeing a health professional. According to the World Health Organization (WHO), 17,000 to 22,000 health professionals leave the Philippines each year for overseas work mainly because of lack of fulfillment, low salaries, frustration with corruption, equipment, and services. Moreover, the majority of these

health professionals are in NCR compared to Visayas and Mindanao Region. At the beginning of this chapter, I shared my superb dental experience in Japan; meanwhile, dental care in the Philippines has also been neglected. Oral diseases are serious public health problems too, creating an epidemic and a burden on school children. According to Department of Health, due to a lack of public dentists, an estimated 87.4% of children suffer from tooth decay. Aside from children, the National Monitoring and Evaluation Dental Survey (NMEDS) also estimated that close to half of the adults have periodontal disease.

The on-going COVID-19 pandemic tested the resilience of our healthcare system. In 2019, the Philippines was one of the poorest performing countries next to Lao PDR and Cambodia in terms of International Health Regulations (IHR) of WHO. IHR monitors the capabilities of the health system to detect, assess, and notify public health risks and emergencies including pandemics.[20] Furthermore, aside from COVID19, there was increasing death in non-COVID cases. From January to June 2021, the top three causes of death were ischemic heart diseases/cardiac arrests (56,760 cases), cerebrovascular diseases/stroke (30,800 cases); and neoplasms/cancer (27,340 cases). Diabetes (19,800 cases) ranked fourth, while COVID19 (17, 160 cases) ranked fifth cause of death during the said period.[21] In terms of child

malnutrition, one of the glaring issues among Filipino children is stunting. Stunting or "low height-for-age" results from chronic or recurrent undernutrition, usually associated with poverty, poor maternal health and nutrition, frequent illness, and inappropriate feeding and care in early life.[22] 30.3% of Filipino children under five years old are affected by stunting, higher than 21.8% for the Asia region.[23] If not addressed, this will lead to low productivity, and significantly affect the analytical/cognitive ability of the Filipinos in the long run. As I have mentioned, HDI summarizes the critical dimensions of human development. According to UNDP Human Development Report 2020, the Philippines ranked 107th with an HDI score of 0.718 (high category), higher than the 2019 HDI score of 0.711 or ranked 111th. The Southeast Asian leader was Singapore, ranked 11th (0.938), Brunei was 47th (0.838), followed by Malaysia, ranked 62nd (0.810), Thailand, 79th (0.777), and Vietnam, ranked 117th (0.704). The estimates for the Philippines for the three key dimensions were: 71.2 years' life expectancy, 13.1 years of regular schooling, 9.4 mean years of education, and per capita GNI of $9,778. UNDP classifies countries scores of 0.800 as "very high" in terms of human development, those within the 0.700-0.799 range as "high" and those within the 0.550-0.699 range as "medium." Countries scoring less than 0.550 have a low level of human development.[24] Regarding poverty and income, the Philippines' GNI per capita increased by 135.2%

from 1990-2019; however, there is a wide disparity between the richest and poorest citizens.[25] Our poverty incidence in 2018 (pre-pandemic) was 16.76%, equivalent to ~18 million poor Filipinos. With the pandemic, ADB estimated 2020 poverty incidence to be 20% or ~22 million poor Filipinos. Moreover, issues on underemployment, youth unemployment, low labor market participation of women, and inadequate jobs leading to migration still need to be addressed. According to SWS Survey June 23-26, 2021, 13.6% or 3.4 million families experienced involuntary hunger due to lack of food to eat at least once in the past three months, while 49% of adult Filipinos got worse off in the past 12 months.[26] On the other hand, based on the 2020 ASEAN report, the share of the productive working-age population increased in the Philippines. The increase brings about potential demographic dividends, contributing to economic growth and poverty reduction. Demographic dividend refers to economic growth resulting from a change in the age structure of a country's population typically due to a decline in fertility and mortality rates. With the demographic dividend, however, challenges may also arise in allocating resources to provide education and health services, and create sufficient employment opportunities. [27]

OUR POLICY CHOICES

COVID19 Response: The most pressing issue affecting our human capital and economy is the COVID19 pandemic. Regarding containing the spread of the virus, we need to significantly improve testing, contact tracing, and vaccination. Our positivity rate is 13% vs WHO ideal rate ≤5%. Our contact tracing is 1:3 which means that for every confirmed case, the number of close contacts found is only 3 persons while the ideal ratio is 1:30 to 1:37. Compared to our ASEAN neighbors, we ranked 3rd in terms of active cases, 3rd in deaths per population, and 6th in terms of vaccine roll out. Furthermore, although our government provided cash assistance through Social Amelioration Program, COVID-19 Adjustment Measures Program, Tulong Panghanapbuhay sa Ating Disadvantaged/Displace workers, and Small Business Wage Subsidy Program, the amounts were obviously insufficient. Still, they forced people to leave their homes despite the lockdowns. Giving out one-time financial aid of P5,000 for every family (in cash or kind) was barely sustainable, especially to those living in Metro Manila with high monthly cost of living. In 2020, before I left Japan, I received the P50,000 blanket cash handout program for 126 million residents. The government gave cash aid to all citizens regardless of income, but they had the option to avail of the cash aid. The blanket cash aid was the Japanese government's

response to ease the initial economic impact of the declaration of the state of emergency from April to May 2020. They also provided monetary relief funds & loans to businesses affected aside from payment deferrals and tax rate reductions. The Bayanihan Heal as One Act in 2020 (Bayanihan 1) allowed President Duterte to reallocate ~P275 billion from the national budget in response to the pandemic. Out of the P77.98 billion budget released by the Department of Budget and Management (DBM), the budget allotted only P6 billion (1.28%) to DSWD to implement COVID19 interventions. Meanwhile, in 2021, under Bayanihan to Recover as One Act (Bayanihan 2), P166.4 billion (25%) was allocated to DSWD to cover funding requirements for SAP out of the P646.7 billion budget released.[28] There were also various issues on SAP distribution during the pandemic, such as reports of anomalies where the Ombudsman suspended at least 89 barangay chiefs. The lists were reportedly inconsistent with the number of families in need due to the lack of a consolidated database. As the LGUs were given control over the cash disbursement, there were politicking or "palakasan" reports. The recipients lined up, making the venues crowded. These issues also highlighted the immediate need to improve our database systems and shift to digitalizing government transactions and services to provide faster and better services to citizens. Meanwhile, Bangko Sental ng Pilipinas (BSP) reduced policy rates and reserved requirements to make

borrowing cheaper, encourage spending, and allow banks to make more loans. There were also tax payment extensions, tax discounts, exemptions from custom duties, and monetary and fiscal incentives to reboot and boost demands as part of the macro-policy responses to pandemic.

Macro-economic Policies in the Duterte Administration: I would like to highlight three main points from the 2018 NEDA Socio-Economic Report (SER). (1) The role of taxes and revenues – tax revenues improved with the implementation of the TRAIN Law but remained below target. In 2020, the Bureau of Internal Revenue (BIR) contributed most significant share, 77.9% of national government revenues, followed by the Bureau of Customs (21.47%) and other agencies (0.63%).[29] Moreover, the digital economy is growing along with the issues and challenges in taxation for the complex and multifaceted nature of the digital trade. We need to implement reforms and strategies to address policy gaps including regulatory and legal frameworks. There was also no significant improvement in the revenue self-reliance of Local Government Units. (2) Our debt-to-GDP has significantly increased although the ratio is still manageable. But we need to allocate the proceeds of our loans appropriately to address immediate and basic needs such as health and social protection. (3) The role of trade – our current account deficit increased to 2.4% of GDP for 2018 which

means that our imports have always been greater than exports, making us an import-dependent economy. We need to address food-import dependency and implement measures to avoid food supply shortages, especially during disasters. Included in the macro-policies of the current administration are plans for exports to achieve a trade surplus, such as expanding market access, diversifying export products, and increasing the competitiveness of the Philippine exports.

Health & Income Policies: The current administration has enacted various laws and implemented policies in terms of health and income, however there are still major issues in need of greater attention. Among the major issues are prevalence of malnutrition, slow decline of infant mortality rate, fragmented information systems, increasing incidences of non-communicable disease, and large health disparity among the Philippine regions. We have good plans and laws but poor implementation. One of the hindrances to proper implementation of laws is the lack of funds. The spending priorities of the government should ensure consistency with its policy pronouncements. Given the current situation, our budget should focus on containing the spread of the virus, vaccination funding, and restarting the economy to create more jobs and attract investments, and transition to the post-crisis recovery environment. But based on detailed analysis done by PIDS, the 2021 proposed budget gives higher

spending priority on physical infrastructure spending, maintenance of peace and order, and national defense more than health and social services. The 2021 budget allotted the largest portion to education (16.7%). DPWH (15.4%), DILG (5.5%), and DND (4.6%) are in higher spots compared to DOH (4.37%) and DSWD (3.8%) in the top 10 departments/recipients for FY 2021. Furthermore, a close examination of various government documents indicated that the proposed budget for National Task Force to End Local Communist Armed Conflict (NTF-ELCAC) is part of the government's recovery program to adapt to the post-pandemic life.[30] In Japan, for fiscal year 2021, the Ministry of Health, Labor, and Welfare budget is 33.6% of the total budget, while 4.7% for pandemic response alone.[31]Aside from spending on healthcare and social services, I would also like to highlight three policies based on our observations of the country's overall economic health. First, develop our regional and provincial centers. We have seen that our growth was concentrated only in three regions, which means there is room for improvement in the other 14 areas. At the onset of the COVID19 pandemic in 2020, lockdowns resulted in limited movement and limited working capacity leading to unemployment. Many, including repatriated OFWs, resorted to going back to their provinces due to the inability to meet the high cost of living and greater risk of acquiring the COVID19 virus in NCR. Through our visits to the different

prefectures in Japan, I have observed that the regional and local governments developed the prefectures based on their competitive advantages. They also created provincial centers to promote domestic and international tourism. Chapter 11 of this book will discuss regionalization. Second, develop the agriculture sector to address food inflation and ensure food security. We have seen the share of the agriculture sector in GDP significantly declining over the past decades, we should implement measures to address food supply as prolonged lockdowns will affect global supply chains and in preparation for future disasters. Chapter 4 & 7 of this book will discuss agriculture development & disaster risk management, respectively. Lastly, we need to heavily invest not just in physical infrastructures but also in digital infrastructures to adapt to the new normal. Our internet connection is expensive and ranked second slowest among the ASEAN countries. As mentioned, government transactions and services need to be digitalized, especially the distribution of financial aids.

MOVING FORWARD

Our country's development should not be based on economic growth alone but also on improvements in human capabilities. The strength of the effects of economic growth on human development depends entirely on the effectiveness of expenditure targeting and delivery.[32] Economic growth (in

money terms) should lead to improvements in the population's living standards, reduction in poverty, and increased access to goods and public services that satisfy basic needs. And the government plays a critical role in these policy choices. We, therefore, should prioritize expenditures on sectors that will highly contribute to human development, such as health, education, and social services predominantly distributed to the poor or low-income groups. As we invest in human development, it will in turn lead to economic growth in the long run. Just like what I have shared at the introduction of this chapter, when it comes to the quality of privileges that the Japanese citizens enjoy, *"I hope that one day my countrymen could experience the same"*.

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Chapter 3

Harnessing the Digital Economy for Development: Issues and Prospects

QUIMBA Francis Mark

03

HARNESSING THE DIGITAL ECONOMY FOR ECONOMIC DEVELOPMENT: ISSUES AND PROSPECTS

I have had the privilege of living in two very different areas of Japan: Minami Uonuma in Niigata Prefecture in 2006, a very rural area known for its rice fields and ski resorts, and Tokyo, known for its busy streets and fast-paced life in 2011. As early as 2006, rural areas of Japan already had the foundation for a digital economy. As a student living in the dormitories, I had access to the internet which allowed me to meet all my academic and non-academic needs—books, journal articles, music, movies and even shopping. Payments for online purchases are still in cash (ginko furikomi) but can be done in any convenience store, just print out a barcode that the convenience store can scan, and you can pay. There is also the payment via credit card which is more convenient. I have never once really worried about failed transactions because

there were updates coming in by mail (albeit in Japanese) and in some cases, tracking numbers and details. In a day or so, the products are already by my door or mailbox. For digital products like music or articles, it is there instantly.

The digital world has continued to grow since 2006 with the advent of smartphones, faster internet access and digital platforms. In Tokyo, the goods and services available at the touch of one's finger are close to unlimited. Listening to music or watching a movie on the train is commonplace. I have bookmarked digital platforms like Amazon.jp in my browser because of the number of transactions I have made with it. Aside from that, food delivery platforms like dominos.jp make it easy to order pizza. Platforms like Airbnb have also allowed students to bring in their family and friends for a visit.

As reflected by my experience in Japan, information and communications technology through the use of mobile phones, internet and other digital applications to much of our daily lives has permeated in our daily lives so much so that much of our activities would revolve in the digital economy. But what is the digital economy? The Digital Economy "encompasses the economic and social activities being undertaken using the ICT infrastructure" (Quimba et al, 2018).

ICT enriches economic and social activities by opening access to information and opportunities and

improving the efficiency of business and daily life, which in turn increases productivity and value-added, and enables growth. Studies have already quantified the relationship between ICT and economic growth [see Qiang et al. (2009) and Spiezia (2013)].

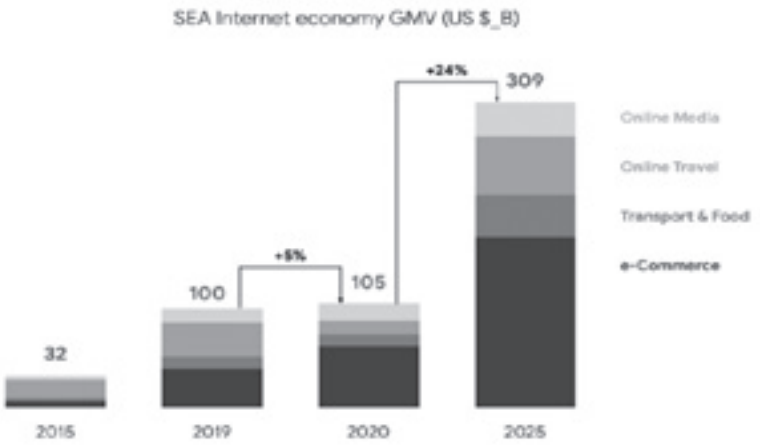
Because of the permeation of digital technology and ICT innovations into almost every aspect of our lives, the digital economy has seen unprecedented growth globally. Huawei & Oxford Economics (2017) has estimated that the global digital economy has grown more than two times faster than the global economy. As of 2017, the global digital economy was estimated to be worth US $12.9 trillion and it is projected to grow to US $23 trillion by 2025 (Sharma 2019).

At a regional level, Google, Temasek and Bain (2020) report that the internet[1] (digital) economy in Southeast Asia in 2020 is at $105 Billion (Gross Merchandise Value) which has grown 26.8 percent times annually from 2005. They project that the internet economy in the region will continue to grow at roughly 24 percent annually (despite the pandemic). to reach $309 Billion by 2025.

Because of its robust and rapid growth, the digital economy has implications for achieving the development goals of any

[1] For this Chapter, I use internet economy and digital economy interchangeably.

country. The next section presents the role of the digital economy to development.



DIGITAL ECONOMY AS A CATALYST OF SUSTAINABLE DEVELOPMENT

ICT development can be a driver of the country's economic activities and sustainable development. This is enshrined in the Agenda for Sustainable development (Paragraph 5) which says: "The spread of information and communication technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy". ICT development is now seen as

catalysts to the achievement of all SDGs (Sharma 2019) with particular attention given to SDG4 Quality Education (4b), SDG5 Gender Equality (5b), SDG9 Industry, innovation and Infrastructure (9c), and SDG 17 Partnerships for the Goals (17.8, as a means of implementation). During this time of COVID-19, we have seen how the digital economy through e-commerce can be an important tool for consumers.

Meanwhile the private sector, specifically the ICT sector and ICT-enabled firms, contributes to economic growth and the labor market efficiency through ICT and other emerging technologies of Fourth Industrial Revolution such as automation and robotics, the Internet of things, 3D-printing and big data (Dadios et al. 2018). These technologies are also affecting the nature of work (ADB 2018; WB 2019), and even the data ecosystem (UN 2019; Albert and Martinez 2018). Private companies have launched digital platforms that are connecting people to interact either socially or financially.

We now use many of these platforms to access huge amounts of available information and services for our use in our day-to-day activities. For example, to participate in online learning activities, we may have used Coursera or Udemy. To buy or sell products and/or services, there is Shopee, Facebook Marketplace and Metromart.ph. With the pandemic, we are now able to obtain healthcare through telemedicine, which has become extremely important, especially amid the

restrictions imposed to control the spread of COVID. With ICT, MSMEs can link with potential buyers in another location (within the country or abroad) through the Internet, social media and digital platforms. Real-time communication brought about by ICT allows MSMEs to gain knowledge and skills from other businesses and to build trust with prospective business partners.

Traditional banks and fintech startups are also able to expand financial services through mobile money. Mobile money is giving an easy and secure alternative to the traditional banking system, thus boosting financial inclusion especially in many developing countries. In the time of the pandemic, mobile money has allowed people to adapt to the mobility restrictions in the pandemic as it allowed them to send money without having physical contact with actual bills or coins.

For the public sector, ICTs are enabling governments to work differently, to transform public services and governance with a transparency and accountability framework, and ultimately to make service delivery more efficient and effective (DICT 2019). Digital identification is now allowing people, including those marginalized, to prove who they are, exercise their rights, and avail of essential social services like education, health and social protection. The benefits of ICT products, services and tools are reaching far

and wide and potentially unlocking innovative solutions to complex challenges in attaining the SDGs, including goals on food security, to quality healthcare and education for all, to disaster risk management.

CHARACTERISTICS OF THE PHILIPPINE DIGITAL ECONOMY

The backbone of the digital economy is the physical digital infrastructure such as international links, cell site towers, communication lines, broadband, fiber optic technology, and others[2]. The ITU asserts the link between digital infrastructure and development, emphasizing that "the quality, quantity and extent of digital infrastructure plays a decisive role in a nation's capacity to realize the benefits of the digital economy and society" (ITU 2019, p. 18). The Philippines' international access and connectivity is through 7 undersea cable systems. Primarily, these are connected to terrestrial landing points on the main island of Luzon. According to the National Broadband Plan, the majority of these cable systems are hosted by only two major providers: Philippine Long-Distance Telephone (PLDT) and Globe, indicating very high market power in the international access and connectivity services. Internet access services in the

[2] See Albert et al. (2021) for a more detailed discussion of digital infrastructure of the Philippines.

Philippines are also supported by 17 satellite internet service providers (DICT 2017a).

One of the strengths of the Philippines in terms of connectivity is the domestic connectivity infrastructure (Ruddy 2013). This is attributable to the high investment in terrestrial and submarine fiber optics by the country's service providers and operators. Another strength is the competing national fiber-backbone infrastructure, which comprises PLDT's domestic Fiber-optic Network (DFON), Globe Telecom's Fiber optic backbone network (FBON) and the National Grid corporation's Private telecommunication network (NGCP). Albert et al. (2021) notes, however, that with a projected service life for fiber optic cables of 20-25 years, some segments of the three nationwide backbone networks are nearing the end of service.

There are current plans for improving our country's digital infrastructure. The NGCP's FON is envisioned to provide the backbone network to be connected to its government-funded Luzon Bypass Infrastructure (LBI), which will receive the cable capacity from the international submarine cable system called Pacific Light Cable Network (PLCN), partly owned by Facebook and Google, which was originally expected to connect Los Angeles, USA to Hong Kong, People's Republic of China. Under the DICT's plan, the PLCN submarine cable system will provide the

international link, through a 2 Terabit-per-second (Tbps) cable capacity, between the Philippines and the global Internet. Once completed, the DICT expects the NGCP fiber optic backbone and the LBI to "save up time, manpower, and resources for the government," which will amount to "approximately 2.6 billion US dollars" (DICT 2018).

According to the ITU (2018b), "Mobile penetration passed the 100 percent mark in 2012 but there is room for growth with 84 percent of homes having a mobile phone (91% in urban areas, 78% in rural areas)." For the Philippines, Internet affordability is a bottleneck to access. The Economist Intelligence Unit (EIU) Affordability Score ranks the Philippines lowest among its ASEAN peers – Thailand, Singapore, Malaysia, Viet Nam, Indonesia [ranked by affordability] (WB 2020). Moreover, the number of cell sites is among the lowest in ASEAN (WB 2020). As of September 2020, the Philippines has around 20,00 cell towers, far lower than Viet Nam's 50,000. This gives a ratio of one tower to 4,000 households, when the ideal ratio is one to 100-200 households (Galvez 2020).

The lack of basic infrastructure, particularly for fixed wired broadband networks, is highlighted in various reports. In the 2020 Digital Evolution Scorecard, 17 of the Philippines were categorized under "Watch Out" countries, which are characterized by shortcomings in both existing digital

capabilities and momentum for future development." According to the scorecard, those in the Watch Out category should prioritize, first and foremost, "making long-term investments to address basic infrastructure gaps" (Chakravorti et al. 2020).

The Measuring the Information Society (MIS) 2018 report noted that the Philippines has a high level of mobile coverage (with 93% of the population covered by 3G, and 80% by LTE/WiMAX), but wired services are relatively underdeveloped, particularly fiber to the premises (FTTP). The MIS 2018 describes the Philippines as "well endowed with international Internet bandwidth," backed by PLDT and Globe's "extensive national fiber optic backbone employing a mix of underground, overhead and submarine cable." This is consistent with UNESCAP's earlier assessment prepared by Ruddy (2013) that the Philippines has excellent international connectivity and relatively strong domestic connectivity.

Similarly, WB (2020a, p.34) reports that the "Philippines is much further behind fiber deployment than similar countries with a comparable GDP per capita." Vietnam, for example, which has a lower GDP per capita than the Philippines—has 170 percent more fiber connections than what the two dominant Philippine telcos have of all types of fixed broadband subscribers combined (Mirandilla-Santos et al. 2018, p.15). In the 2020 edition of the Networked

Readiness Index (Dutta and Lanvin 2020), the Philippines ranked 74th out of 130 countries, a drop of three places from its ranking in the previous year. While the Philippines posted improved scores in the three pillars of Impact, People, and Governance, it performed notably worse in the Technology pillar, which corresponds to the level of the country's development in terms of Access, Content, and Future Technologies. Among these sub-pillars, Access covers issues of "communications infrastructure and affordability." The Philippines' low ranking was affected by comparatively low levels of household Internet access, low levels of 4G mobile network coverage, and the high cost of mobile services (mobile tariffs) especially when compared with neighboring countries.

Data from the International Telecommunications Union shows that the Philippines, as of 2017, has 99 percent of the population covered by a mobile-cellular network, with 93 percent of the population covered by at least a 3G mobile network and 80 percent covered by at least a 46 network. The dismal performance in ICT access at home (18 percent of households with access to internet at home and 24 percent of households with a computer at home) is made up by mobile phone ownership (79 percent of individuals owning a phone) and the increasing mobile-cellular subscription per 100 inhabitants (155).

Use of computers is as low as ownership of computers. Only about a third (34%) of individuals used a computer during the three-month reference period of the survey (Figure 3.1). In terms of magnitude of users, there are more women than men (56% versus 44%), but usage relative to population is higher among men than women, though only at a small margin (35% of males, 33% of females). High usage was observed among individuals aged 10-17 years old (49%), and lowest among the older population, 55 and above (13%).

Interestingly, and perhaps surprisingly, at first glance, three-fifths of the unemployed (61%) used a computer, while among their employed28 counterparts, only three tenths (30%) used a computer. This may be on account of the higher educational attainment of the unemployed that has been observed in various examinations of the labor force (Albert et al. 2015), as unemployment in the Philippines is not a concern of the middle class and not the poor since the poor cannot afford to stay unemployed. Computer usage was observed in half (52%) of individuals who studied beyond high school; about a quarter (27%) for those that reached at most high school, and less than a twentieth (3%) for those with no or little schooling.

Ownership and use of cellphone are much higher: 75 percent of individuals own at least one cellphone, and 79 percent used one in the last three months (Table 3.2); this is

partly on account of household ownership of cellphones referring to joint use. The proportions of ownership are slightly higher among women than among men: around 8 in 10 women (77%), and 7 in 10 men (72%). A similar pattern is seen in use of cellphone: 81 percent among women, and 77 percent among men. Across age groups, highest grade completed, and labor force status, the proportions owning cellphones are over 60 percent, except for individuals with no or little schooling (46%) and with age 55 years old and above (59%). Generally, the same pattern is observed in the use of cellphone.

Table 1.

Proportion of individuals by use of computer, ownership of cellphone and use of cellphone

	Used a computer in the last 3 months	Own at least one cellphone	Used a cellphone in the last 3 months
Total	33.9	75.3	79.0
Sex			
Male	35.2	72.5	76.6
Female	33.0	77.4	80.8
Age group			
10-17	49.3	61.9	73.2
18-34	44.4	87.6	88.9
35-54	23.5	79.6	81.6
55 and above	12.8	58.9	61.0
Highest Grade Completed			
No or little schooling	2.9	45.7	43.9
At most highschool	26.8	68.5	73.4
Beyond highschool	52.0	92.8	93.7
Labor force status			
Employed	30.5	79.5	81.1
Unemployed	60.7	82.0	86.1
Not in labor force	19.0	74.3	76.5

Notes: No or little schooling: No schooling, Pre-school; At most high school: Elementary, High School, K-12 program, ALS; Beyond high school: Post-secondary, College, Post-Baccalaureate. Employed: Employer, Employee, Own-account worker/Self-employed, Member of Producers' Cooperatives, Contributing Family Worker, Worker not classified by status; Not in the labor force: Student, Retired, Homemaker/Housewife, Person with Disability (PWD).

Source: 2019 NICTHS, DICT and PSRTI

BENEFITING FROM THE DIGITAL ECONOMY

Despite the positive role of the digital economy in driving sustainable development, it is clear that not all would have benefited equally from the digital economy. Many in the Philippines are complaining about the slow speed and huge costs of Wi-Fi access, for a substantial portion of the population, there is even no access. There are prevailing disparities within the country when it comes to the penetration, affordability, and performance of digital products and services.

At the individual level, the top Internet activity is social activities and communication, which are performed by 94 percent of Internet users (Figure 3.3). This is consistent with findings that the Philippines is the social media capital of the world, with nearly 4 hours spent on social media platforms (We Are Social and Hootsuite 2020). Coming in at far second rank in Internet activity to social activities and communication is access to information, which involves use of online search engines, reading general information, and downloading of files/software (44%). Third highest activity is online gaming, downloading music and streaming, which fall under the leisure and lifestyle category (37%). Overall, the results indicate that Filipinos are knowledgeable about using ICT in communications, accessing information, creating content,

learning (academic research, online course, etc.), and e-commerce/financial transactions.

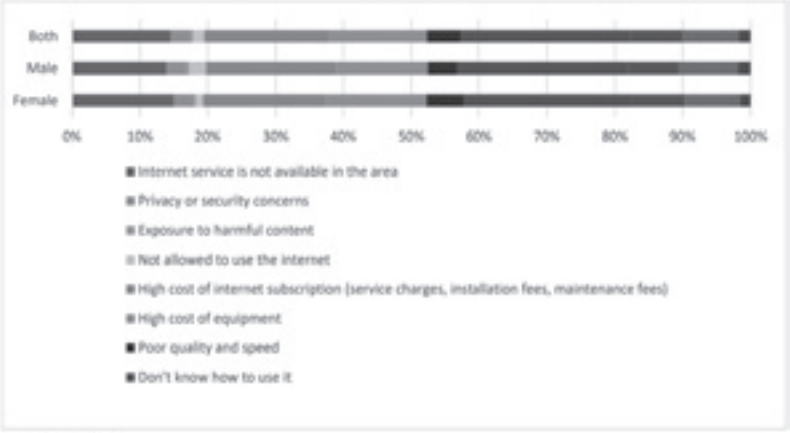
Purpose	Percent to total		
	Women	Men	All
Communication	71.6	65.7	69.0
Entertainment and Gaming	56.2	72.8	63.4
Distance/Online/Computer-aided Learning	23.2	20.7	22.1
Using copy and paste tools to duplicate/move information (files/folder)	23.8	21.7	22.9
Transferring files between a computer and other devices	20.1	19.8	20.0
Sending emails (plain text)	23.5	22.5	23.1
Sending emails with attached files (document, picture, video)	23.0	22.7	22.8
Data encoding	23.0	19.7	21.5
Finding, downloading, installing and/or configuring, running software	10.4	8.8	9.7
Running software program	4.6	4.4	4.5
Using basic arithmetic formula in a spreadsheet	5.8	7.1	6.4
Creating documents using a word processing software	18.7	16.7	17.8
Creating electronic presentations with software	8.0	8.2	8.1
Data management and analysis	4.0	4.8	4.3
Using modelling, simulation and rendering software	1.6	3.3	2.3

Looking closely at specific digital skills, Communication and Entertainment/Gaming are what most individuals have capabilities in (Table 3.5). Furthermore, the older adult males and females are into communications, and the working age females and young males are into entertainment/gaming. As for other skills, the working-age population possess skills in Data management and analysis, and use of modelling, simulation and rendering software, more than the youth. Between the sexes, females dominate males in skills related to communication, sending emails,

creating documents, encoding, and file management. On the other hand, males dominate females in skills that are rather intermediate, such as data management and analysis, the use of modeling and simulation software, and basic arithmetic formulas in spreadsheets.

When Internet non-users were asked about their reasons for not using the Internet, one of the most common reasons was lack of knowledge on how to use the Internet and what Internet is (51%). Other important reasons are the high cost of Internet subscriptions (29%) and the high cost of equipment (22%) (see Figure 2). A non-negligible proportion (23%) also reported that Internet service is not available in their area. A few reported that they do not need the Internet (nearly 13%), or are concerned with privacy and security (4%)

Figure 2 Reasons for not using the internet, by sex (%)



Source: NICTHS

With respect to the usage of online platforms, the activity that is most commonly done by Internet users is the purchase of goods/services (26% of Internet users). This percentage is higher among women (29%) who are Internet users than among men (22%) (see Figure 5). Very small proportions use online platforms for paying bills (6%), online banking activities (6%), online delivery of services (6%), and online selling of goods/services (6%). The prevalence of online investing such as stock trading and other online investments does not even reach 1 percent of Internet users (only 0.4%).

The most common reasons behind internet users, non-sellers' decision not to engage in online work is lack of interest (82%) and lack of knowledge or skills (31%), respectively (see Figure 8). The survey showed no disparity between men and women in this regard. In terms of age, individuals from 18 to 34 years old comprise the majority (46%) of those who choose not to sell for lack of interest. This is followed by individuals aged 35 to 54 years old (25%). Individuals aged 10 to 18 years old lead the majority of those who choose not to sell due to lack of knowledge (38%), this time trailed by the individuals from 18 to 34 years old (32%).

PHILIPPINE DIGITAL ECONOMY: STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS

Strengths of the Philippine Digital Economy

Arguably the greatest strength of the Philippine Digital economy is the strong and developed mobile market with 50.0 percent of the population subscribed to mobile services. Moreover, 87.0 percent of the population owns a mobile phone while 55.0 percent owns a smartphone. While statistics on computer ownership are low, the majority of Filipinos (70.0%) are actually 'proxy users' and could therefore be unaccounted in surveys. Households with OFWs are more likely to access the internet as well considering that long distance relationships with families can be bridged by digital means. It is favorable as well that Filipinos rank 4th among 60 countries in terms of willingness to participate in the sharing economy (Valencia 2017).

The Philippine digital economy, then, finds a strong foundation on the capacity and optimism of people and businesses to actually participate in digitalization. Filipinos could be described to be more welcoming than resisting changes in the status quo brought forth by the digital economy. The experience of COVID-19 has also shown this adaptability and openness to explore the use of mobile technology. The prevalent use of social media through

Facebook, Twitter, and Instagram is another strength. For instance, the delivery of information during calamities is quickened by tweets and Facebook posts that are able to reach people in real time.

Apart from this, there are existing efforts from all stakeholders to improve digital literacy, increase financial inclusion, utilize remote learning, and foster digital delivery of services. This can be found both from private sector initiatives such as with CARD Bank's "konek2CARD" and MyPocketDoctor's remote healthcare consultation, and from government programs such as the TOP and the NTHC's initiatives in healthcare.

In terms of the regulatory environment, the needed plans and legislations such as for the protection of data privacy, enablement of electronic modes and means, and the acknowledgement of cybersecurity issues and Digital economy potential are in place. The efficient implementation of these plans would serve as fertile ground for the digital economy to grow.

Weaknesses of the Philippine Digital Economy

Weaknesses, meanwhile, are primarily associated with having insufficient IT infrastructure. For instance, only 10.0 percent of the needed towers in the ICT backbone of the country are in place. Average internet speeds stand at the lowest in Asia-Pacific with just 5.5 Mbps. With the internet

being the primary connection allowing the interlinked effects of the DE to manifest, having weak internet capacity in the Philippines will weaken its potential.

Moreover, computer ownership is characterized as low in rural areas and with the poor and very poor sectors of society. This may translate to having localized access divides. Concentrations of computer usage are found in Metro Manila and in urban areas with the middle-to-upper classes mostly having it; thus, rural areas tend to face both a weak IT infrastructure and slow unstable internet connection and the lack of device ownership to access the internet. Nonetheless, mobile connections could be alternatives to personal computers, albeit weaker and less efficient.

Cybersecurity issues are also a major risk with the Filipino population characterized by having a low degree of awareness. This leads then to potential cases of online scams, data phishing, hacking, or theft. With the prevalent use of the internet by Filipinos primarily through social media, this lack of awareness places individuals in vulnerable positions that they may not fully comprehend what the repercussions are.

While advances in ICT and other frontier technologies of the FIRe have generated unparalleled, enormous wealth in record time, but that wealth has also been largely concentrated around a small number of individuals, companies, and countries. As regards digital or Internet platforms alone, the

total market size of platform companies across the world is estimated at $7.2 trillion, as of 2018 (Dutch Transformation Forum 2018), an increase of 67 percent from an estimated $ 4.3 trillion in 2016 (Evans and Gawer 2016). Nearly half (46%) of platform companies with a value of +$1 billion are based in the US, while slightly more than a third (35%) are based in Asia, most of which are in China. These platform companies are dominant in four sectors, namely, Internet Software & Services, Ecommerce & Retail, Social and Search, although in recent years, these platform companies have shifted focus to variegated sectors as well. Platform companies are extremely concentrated around seven 'Super platforms': US-based Apple, Amazon, Microsoft, Google, Facebook and the PRC based Alibaba and Tencent, which have an aggregate market value of USD 4.9 trillion or 69 percent of the total market value of the 242 platform companies (Dutch Transformation Forum 2018).

Opportunities to the Philippine Digital Economy

Nonetheless, opportunities abound with improving conditions in the Philippine DE. For instance, both the IDI and the NRI are improving gradually in the Philippines; thus, signifying those efforts both in government and in businesses are manifesting favorably. Smartphone ownership is growing fast with a growth rate of 75.0 percent in just a four-year period. The Philippines is likewise considered to be a

pioneer in the mobile market of the Asia-Pacific. Local mobile brands are also providing cheaper alternatives. Again, this addresses the access divide of Filipinos in the ownership of mobile devices. Internet penetration, despite being slow and unstable, has been growing with it now having 55.5 percent coverage in the country.

With opportunities for a growing digital market, the Philippines holds potential for accommodating digital technologies and innovative start-ups to grow. Particularly, with a large population characterized by a large youth base, the Philippines has a demographic advantage for fostering digitalization. Moreover, the Philippines has been experiencing high GDP growth rates in recent years prior to the pandemic.

Optimism in the Duterte administration's plans to deploy a national broadband network and with the flagship project of the Build, Build, Build is also present. The large budget allocated for strengthening the infrastructure of the country does not only prove promising for the DE, but also extends to the general landscape and business environment of the country. The political will is strong as well to push for strengthening the ICT infrastructure and to create opportunities locally for Filipinos.

Threats to the Philippine digital economy

Finally, threats to the Philippine DE are found in prices of ICT services being among the highest in ASEAN. This being the case despite having a slow and unstable connection as compared to other countries in ASEAN. In hindsight, the cost of an internet connection is inefficient and discourages or threatens growth in the DE.

Moreover, 74.1 percent of provinces are characterized with having low access to landline connection which suggests that line-based internet connection is inaccessible to a large portion of the country. This is particularly felt in rural areas that rely heavily on mobile connections which are less stable than with line access. Again, this threatens the delivery of the benefits of the DE primarily by creating localized access divides. Moreover, with the cost of ICT services being high, last mile consumers that are financially handicapped face less chances to access the DE on their own.

The labor market of the Philippines is also characterized with a job mismatch and jobless growth despite rising GDP growth rates. This translates to affecting local market supply that could pose negative externalities to the development of the DE. Moreover, there is a lack of studies in the Philippines that explore the sector-level or firm-level effects of digitalization.

The lack of understanding could threaten or impede growth and may cause confusion or damage to the DE.

One of the things missed the most by the JDS Fellows upon returning to the Philippines is the impressive internet speed they once enjoyed in Japan. Such speed in connection and ease of connectivity has allowed the JDS Fellows to explore the country despite limited language capabilities. I think the Philippines can look at Japan as a goal which they can hopefully emulate. The discussions here in this chapter show that the foundations are already in the country and once the weaknesses have been addressed then we are sure to see a rapid rise in the country's digital economy.

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Chapter 4

Modernizing Agriculture in the Philippines: Lessons from Japan

Neil Angelo C. Halcon

04

MODERNIZING AGRICULTURE IN THE PHILIPPINES: LESSONS FROM JAPAN

I very much appreciate my journey as a JDS scholar from 2006-2008 as part of Batch 4. What is impressive about the learning and training programs in Japan is the combination of theory with practical applications in the field. In the middle of my journey of taking the Master of Arts in International Business and Development Studies at Sophia University in Tokyo, Japan – I was fortunate to join fellow scholars and attend a short course on the city planning and tourism development at Otaru City Hokkaido Japan. I was very excited, since this shall be the first time that I shall be going to a place that has the longest winter period. I was also intrigued by the fact that despite the harsh cold and winter climate – Hokkaido was able to rank number 1 in Agriculture production. How were they able to do these? They used modern agricultural techniques and equipment that defied temperature ranges and they were not afraid to embrace change in their farming techniques. At the JICA Office in

Sapporo Japan – aside from drinking their famous Sapporo Beer and able to visit their beer museum, I was able to read their pamphlets and programs (although most of them were in Japanese I was quite good in somehow understanding a bit) – they value and respect the human person – so much so that they treat each other as co-equals whether the person comes from the Industry, the Academe or the National Government. I was amazed by how they conducted themselves in a meeting – as well as how they valued each other's opinions and arguments. Their collaboration helped Otaru City in Sapporo become a historical and cultural tourism site. A vision that was realized by the number of local tourism arrivals in the city to appreciate their history and culture.

The Duterte Administration is quite "silent" on Agricultural Modernization – but one of his major infrastructure components are irrigation systems and farm-to-market roads. But there may still be more urgency to key reforms that seek to address the root cause of the problem of addressing the country's food security and food resiliency amidst climate change. Through this book chapter, which contains important insights from Japan, it is hoped that the next administration can consider reforms and recommendations to uplift the agriculture sector of the economy. The sector that covers Agriculture, Fisheries and Livestock highlights the utmost importance of giving

credence and integrity back to these noble men and women that bring food to our table. But this shall require a complete and granular change in mindset, embeddedness, and a collaborative approach to bring about a National System of Innovation with Agriculture as its main driver for development.

The book chapter is organized as follows: (1) Stylized facts and figures on the importance of agriculture; (2) the role of the youth in the Philippines' agricultural modernization efforts; (3) Japan's Modern Farming Techniques and Farm Villages located in Hokkaido (4) realigning Agricultural modernization with social capital and embeddedness; and (5) reforms for generating about a National System for Innovation with Agriculture as its main driver along with the collaborative efforts from Academe, Government and Industry sectors.

STYLIZED FACTS AND FIGURES RELATING TO AGRICULTURE, FISHERIES AND LIVESTOCK

1. **Contribution of Agriculture to the Philippine Economy** – not so much in terms of Gross Value Added (GVA) averaging 1.7 trillion out of the Philippines' GDP 5-year average of 17 trillion pesos. It may be small with respect to value-added contributions – but still we need to understand that the

items produced in Agriculture and Fisheries sectors are considered as "backward" linkages to our manufacturing sector – in particular the food processing sector. It is important to note that the food processing industries (sardine can production, meat processing plants, dairy production and rice milling activities) are all in need of a sound and stable agricultural base. The fisheries and the Philippines' "blue economy" still remain untapped until now, thus we also need to focus on developing our seas and its natural endowments.

Table 1.1 Macroeconomic Growth Indicators, Philippines, 2015-2019
(Value at constant 2018 prices)

Item	2015	2016	2017	2018	2019
GNI (million pesos)	16,722,293	17,862,678	19,084,224	20,212,349	21,272,666
Growth Rate (%)	6.1	6.8	6.8	5.9	5.2
GDP (million pesos)	14,990,907	16,062,676	17,175,978	18,265,190	19,368,513
Growth Rate (%)	6.3	7.1	6.9	6.3	6.0
GVA in Agriculture, Forestry and Fishing (million pesos)	1,688,344	1,672,085	1,743,134	1,762,616	1,783,855
Growth Rate (%)					
Agriculture, Forestry and Fishing	0.7	-1.0	4.2	1.1	1.2
Crops	-2.0	-3.2	4.7	-0.7	-2.0
Livestock	3.6	3.0	3.4	3.7	-0.8
Poultry and egg production	8.7	1.8	5.0	5.3	5.8
Other animal production	3.6	5.3	6.4	9.3	31.8
Forestry and logging	-24.4	-4.3	-1.4	22.9	5.0
Fishing and aquaculture	1.4	-1.0	2.1	-0.6	2.5
Support activities to agriculture, forestry and fishing	5.4	2.9	4.7	3.4	5.8

Source: PSA

2. **Significant Contribution of Human Labor to Agriculture Sector** – data from the PSA shows that this is a clear indication that despite the minimal contribution of agriculture to the Philippine economy,

its contribution to total employment is quite robust – since nearly 25 percent of the labor force (averaged over the last five years) are in the Agriculture and Fisheries sectors. But it is very interesting to note that in 2019 employment in agriculture sector falls below the 10 million barrier – indicating a possible departure of the youth from agriculture-based work to industry-based and services-based employment.

Table 1.2 Population, Labor Force and Employment, and Wage Rate, Philippines, 2015-2019

Item	2015	2016	2017	2018	2019
Population (million persons) 1/	100.98	102.53	104.17	105.76	107.29
Labor Force (million persons) 2/	41.34	43.36	42.78	43.46	44.69
Employment	38.74	41.00	40.33	41.16	42.43
Agriculture	11.29	11.06	10.26	10.00	9.72
Unemployment	2.60	2.36	2.44	2.30	2.26
Wage Rate in Agriculture (pesos per day)					
Nominal	267.88	276.03	280.37	306.28	331.10
Real	189.32	191.69	251.45	261.55	275.46

1/ 2015 Census of Population result; 2016 to 2019 are updated projected mid-year population based on 2015 POPCEN

2/ Starting April 2016, the Labor Force Survey adopted the 2013 Master Sample Design as well as the population projections based on the 2010 CPH while previous survey rounds used the 2000 CPH population projections.

Source: PSA

3. **Resiliency of Agricultural Labor during times of Pandemic** – interestingly, the earnings per week in Agriculture in 2020 have only dropped by 5 percent from last year. While workers from industry and services suffered substantial drops in earnings per

week at almost 20 percent decline from the industry sector, and 11 percent drop in the services sector as well. Notwithstanding that food is considered as an essential good during the times of the pandemic, we can see that in times of crisis and uncertainty. Agriculture can still be a reliable income source from the first four years of data 2015-2019. It also helped that during and after the 2-month lockdown from 16 March until 15 May 2020, one of the first movers from the logistical perspective was food and agricultural services.

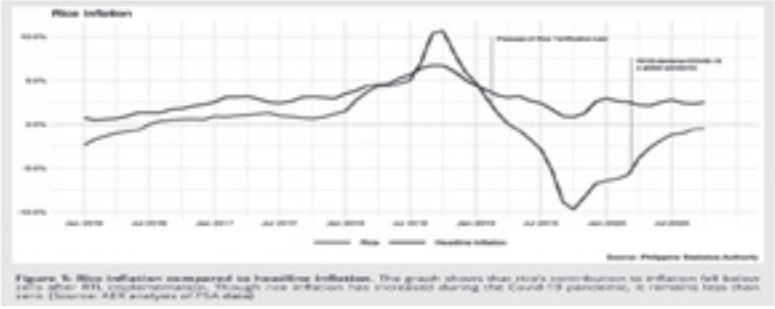
Table 1. Earnings in a week from 2015 to 2020

Average earnings in a week

Average of table1	Column Labels					
Row Labels	2015	2016	2017	2018	2019	2020
Agri	909	1,008	1,043	1,150	1,253	1,179
Industry	1,951	2,125	2,128	2,307	2,461	1,977
Services	2,277	2,453	2,453	2,664	2,887	2,561
Grand Total	**1,712**	**1,862**	**1,875**	**2,040**	**2,200**	**1,906**
Growth rates						
Agri		10.9	3.4	10.3	9.0	-5.9
Industry		8.9	0.1	8.4	6.7	-19.7
Services		7.7	0.0	8.6	8.4	-11.3

Source: Labor Force Survey

4. **Implications of Rice Tariffication Law (RTL) on rice production** – According to the Asia Foundation (2021), despite the pandemic and lockdowns, the agriculture sector grew in 2020, and rice production reached 19.44 million metric tons, breaking the country's previous record. Projections put this year's yield even higher, at 20.4 million metric tons. The most tangible benefit is that Filipino consumers are now enjoying lower rice prices. The average price of regular-milled rice is now PHP 34.00–36.00 per kilogram (70–74¢), compared to PHP 40 per kilogram (82¢) before the RTL. The poor benefit disproportionately from the lower and more stable prices. Philippine agriculture can now shift its attention to the challenge of becoming globally competitive. Having emerged from decades of protectionist policy, the rice industry can now focus on raising productivity, improving farm yields, and lowering costs. (Ocampo and Pobre, Asia Foundation 2021)



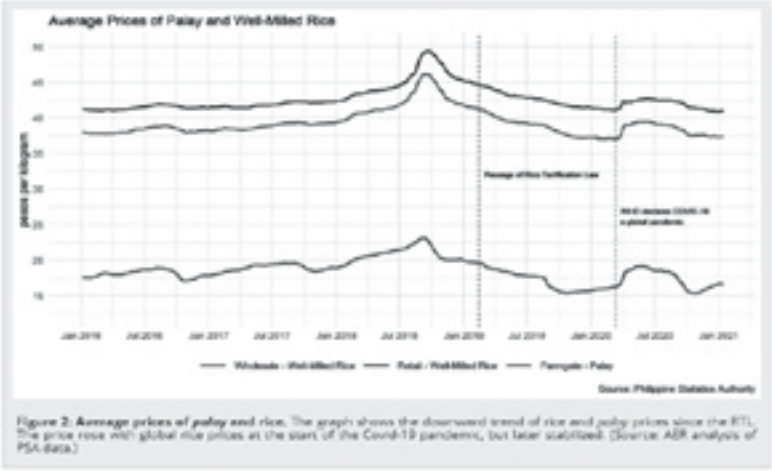


Figure 2: **Average prices of palay and rice.** The graph shows the downward trend of rice and palay prices since the RTL. The price rose with global rice prices at the start of the Covid-19 pandemic, but later stabilized. (Source: ABR analysis of PSA data.)

5. **Impact of the African Swine Fever on Hog Industry** – the disease of the African Swine Fever (ASF) had direct implications on industrial and backyard hog raisers alike - Based on reported population stamped out, direct animal value loss approximates Php1.0 billion and a potential income loss of Php10 billion. For its associated businesses - Around 56 of the total 81 provinces have imposed restrictions on the movement of Luzon-based pork-processed meats. Since the Department of Agriculture (DA) confirmed the first outbreak started in July 2019, ASF has spread to 579 cities/municipalities, and 2 981 villages, mostly in Luzon Island; as of August 2021, ASF incidence is down to only 16 cities/municipalities. In Luzon Island, ASF was confirmed in Bawanta, Palintucang, Pottot

and Cabisilan villages of La Union Province on 17 September. In Eastern Visayas Region, ASF spread to 49 towns and cities in Leyte, Southern Leyte, Samar, Northern Samar and Eastern Samar Provinces; as of mid-September, ASF affected 14,924 pigs in 230 villages (almost 7 percent of the total pig population in the region). According to officials, the recent spread may be due to unregulated trading of processed meat. In Mindanao Island, ASF was reported at a backyard farm in Sarangani, Davao Occidental Province on 21 September (Sources: Philippine News Agency, September 2021 and FAO monitor).

ROLE OF YOUTH IN AGRICULTURAL MODERNIZATION AND DEVELOPMENT

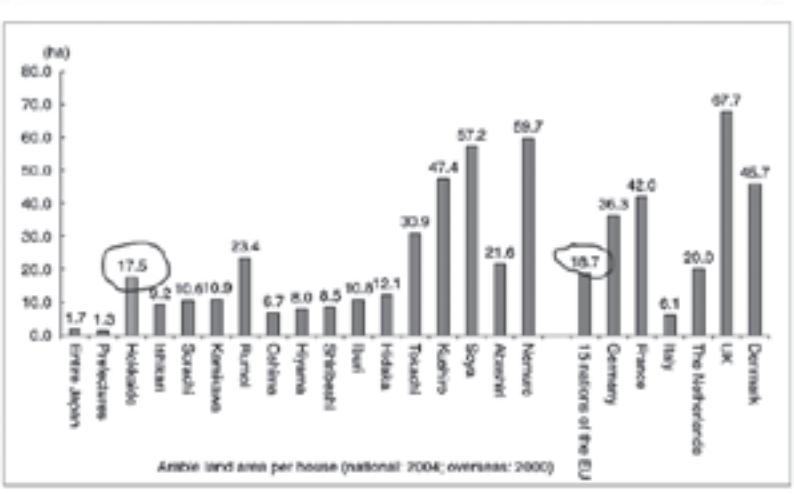
From the study made by Quimba and Estudillo (2021), the that the interaction between the four modernizing forces: (1) population pressure on closed land frontier; (2) implementation of land reform; (3) expansion of public infrastructures such as irrigation systems, roads, and schools; and (4) growing urban influences accelerated by improvements in transportation and telecommunication systems and the diffusion of modern rice technology resulted in major economic and social changes that led to a rise in household income and prevented poverty from increasing. Their research provides concrete evidence contrary to the popular belief that the spread of modern agricultural technology and the encroachment of market activities into rural villages are harmful to the economic welfare of the rural Filipino people.

According to Agrarian Reform Secretary John Castriciones, the farmer's average age is 57 years old. And for a normal father farmer, he would rather see his children become engineers, accountants or lawyers – rather than be encroached in farming activities. In order to address the situation, the Department of Agrarian Reform issued Administrative Order No. 3 Series of 2020, granting those

graduates of agricultural courses with arable land with not more than 3 hectares, so long as they meet the qualifications and secure the requirements.

JAPAN'S MODERN FARMING TECNHIQUES AND FARM VILLAGES LOCATED IN HOKKAIDO

Hokkaido, Japan remained as the top agriculture and food base – due to its large-scale and abundant land resources. This second largest island in Japan has already reached a management scale at par with the level of European countries. Centering on rice, field crops and dairy farming, full-time resident farmers employ high land-use productivity methods. The banner for the 6th term Hokkaido comprehensive development plan is "Realizing a Global Scale Food Base."



In addition to this land resource – modern farming methods, the use of high-yielding crop varieties and smart technology methods – the farming village also became a "tourist attraction" to many local and foreign visitors wanting to see the old culture of farming and the new techniques to cultivate higher yields of crops. Hokkaido strives to be one of the best rice-producers in Japan.

RE-ALIGNING AGRICULTURAL MODERNIZATION WITH COLLABORATION AND EMBEDDEDNESS

In a Philippine Institute and Development Studies Policy Note made by Dr. Rhoelano Briones and Ivory Myka Galang (2013) – they have already identified policy recommendations to urgently have a clear roadmap for agriculture modernization in the Philippines. These are the following: (1) create a coordination mechanism among stakeholders (short term); (2) adopt vertical measures (medium term); and (3) adopt horizontal measures (long term).

Short-term measures. For any system to function properly, it is essential to have constant communication and collaboration among its players. This can be done by developing a participatory competitiveness working group for

the agri-industry. At the national and regional levels, this can build on existing initiatives, notably the agriculture and fishery councils (AFCs) organized by the Department of Agriculture, and the cluster strategy pursued by the Department of Trade and Industry (DTI). Learning from Japan's academe-industry-government collaboration approach, this recommendation can be raised to another level. For the academe participation – State Universities and Colleges (SUCs) that produce graduates in the agriculture-related courses should raise the bar in methods and techniques in farming, as well as the adaptation of modern farming technology in their arable lands. For industry participation – the food processing manufacturers or the ones that need an agricultural backward link – should likewise take the lead in its coordination efforts. For government participation – the way to make these work is via effective policy-making and enforcement, as well as providing incentives to these agricultural clustering initiatives from both the academe and industry.

Medium-Term Measures. There is obviously a need to dramatically raise investments in Research and Development (R&D), extension systems, irrigation facilities, regulatory systems, and transport infrastructure. However, such increases must be informed by performance indicators; for instance, the increased outlays for irrigation in support of

the country's Food Self Sufficiency Program (FSSP) may have been, to some extent, wasted due to technical lapses and even corruption. Other measures may take the form of ecozones and industrial centers, the strategic application of tax incentives, duty-free importation of equipment, direct credit and price stabilization. For these to be realized - there should be a great transition to embed agriculture as part of the Philippines's strategy for economic development. According to Mark Granovetter (1985) - embeddedness theory acknowledges that "the on-going networks of social relations between people discourage malfeasance." People guide their choices based on past actions with people and continue to deal with those they trust. However, embeddedness theory makes no assumptions of an orderly self-regulating system and acknowledges that social networks alone will not deter malfeasance. We should begin with the farmer – uplift their stature and give them the proper dignity, respect and initiative. It should start with educating our young generations by properly acknowledging and thanking them for the hard work and labor they have done to bring food to our table --- similar to the treatment and acknowledgement that our frontliners (health workers) and teachers are getting. Next step is to empower the farmers with guided and proper training on the new methods – and at the same time – train them as well on the marketing and pricing side of their produce. In this way – the middlemen – are eliminated since these empowered farmers can never be

fooled as to the pricing mechanisms involved in their products.

Long-Term Measures. These involve institutional change across stakeholders in agriculture. A critical reform is in the area of property rights, which can only be resolved by setting up an efficient land administration system, based on a comprehensive legal and regulatory framework. This should settle, once and for all, the perennial problem of property boundaries, effect orderly transfer of title and enforcement of contracts of land sale address property encumbrances, and so on. Agro-enterprises would also benefit greatly from a regulatory system (not specific to agriculture) that facilitates business registration and licensing, zoning, contract enforcement, monitoring, and so on. There is furthermore a need to enact a comprehensive competition policy framework that prohibits anti-competitive practices such as price fixing. The ease of doing business, as well as the rule of law should be properly enforced and monitored in order to generate the vision of a modern farming village – filled with innovations, ideas and with the hope of raising future agriculture employees proud of their work and achievement. It is with great honor and privilege that the researcher/author has personally visited the Enchanted Farm Village located in Angat Bulacan, owned and facilitated by Tony Meloto – the prime-mover of the Gawad Kalinga Foundation. It is hoped

that this model can be replicated in several provinces across the Philippines.

NATIONAL SYSTEM OF INNOVATION FOR AGRICULTURE

A national system of innovation (NSI) is the flow of technology and information among people, enterprises and institutions which is key to the innovative process on the national level. According to innovation system theory, innovation and technology development are results of a complex set of relationships among actors in the system, which includes enterprises, universities and government research institutes. For this to be implemented at the agriculture level – various stakeholders should pitch in their share of resources. For the academe – their knowledge and expertise in modernizing the agriculture process is key. According to CHED, some state colleges and universities have started their efforts to have their graduates of agriculture courses really be "engaged" in a career in modern farming. Tarlac Agricultural University (TAU) has recently been ranked as one of the top universities in the Times Higher Education impact rankings for 2021. With its pursuit of internationalization by partnering with seven Canadian Universities – it is viewed that TAU along with the UPLB

(University of the Philippines Los Baños) would become the innovation focal point.

The next level is agriculture-related industries that should possess both knowledge and information technology to tap the agro-enterprise. This comes from agri-technology, agri-tourism, and agri-ventures. The agri-technologies shall enhance the capability of farmers and agriculture workers with the latest farming and harvesting equipment. Kubota is a leading Japanese company that prides itself on producing machines that can really help ease the burden of our farmers here in the Philippines.

Agri-tourism has become popular since the 1990s as retired individuals – whose on their desks and tables for so many years before retiring from work – seek a hands-on application by paying a visit to a farm village. According to the Southeast Asian Regional Center for Graduate Study & Research in Agriculture (SEARCA) said that the country is now at par with other agro-tourism sites all over the world including Taiwan, Hawaii, Tuscany, Mallorca, California and Brazil. The Philippines is highly sustainable as an agri-tourism destination due to its natural resources and biodiversity, rich farming heritage and the Filipinos' innate hospitality and openness towards foreign tourists. Organic

farms, nature-friendly farms and health and wellness farms are among the top tourism farm destinations in the country. With this in mind – the effort shall generate more opportunities for the farmers to raise their income further as well as their living standards.

CONCLUDING REMARKS

Agricultural modernization in the Philippines can really happen if we begin with the farmers and fishermen – provide them with the complete package of capacity-building – not by just giving them land which is a band-aid solution. We need to acknowledge them first and foremost – thank them for their hard work – the same as we treat, recognize and thank our frontliners and teachers.

Thank a Farmer Day is an initiative by Boer Bewust and is celebrated during the Dutch Food Week. Cosun is a partner of the Dutch Food Week, which takes place from 9 to 16 October 2021. In this edition, the positive power of food is shown during all kinds of events throughout the country. Thank A Farmer Day is a promotion celebrating our nation's farmers. Programs designed around the day educate consumers and children about farmers and the importance of farming. The goal of Thank A Farmer Day is not for farmers and farm groups to thank themselves, but for consumers to become aware of the importance farmers play in their daily

lives. In the future we will have a Thank A Farmer Day recognized nationally in our nation's schools so children will grow up learning to respect and admire farmers.

This effort should be "embedded" in our social fabric and networks – and we can realize this if we put all our efforts into making the Philippines a food secure nation – and not relying on imported food – from rice, to pork to even fish.

Moving forward, since there is already solid evidence that lauric acid (found in coconut oil) can prevent individuals from contracting COVID-19 symptoms – there is a big opportunity for the Philippines and the coconut farmers and its stakeholders to "possibly manufacture" a medication that can be exported to other countries. We need to export higher value products – and not only export raw materials that are of course, low in value.

Digital Farming is also a wave of innovation that the Philippines must capture. By utilizing the IoT (Internet of Things) and AI (Artificial Intelligence) to collect and analyze data from their farming practices and the surrounding environment, this technology enables even inexperienced growers to implement such intangible techniques. It can improve agricultural productivity even in areas with limited access to water. This technology is expected to bring a huge change to the future of sustainable agriculture.

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APPENDIX

MASBATE, PHILIPPINES – Most sectors of the Philippine economy recorded a deep decline in 2020 due to months of lockdown arising from the COVID-19 pandemic.

However, agriculture posted good growth, raising optimism among policymakers that this sector would remain one of the key drivers in stimulating the economy this year.

The government believes it will stay on track, as it can withstand the pandemic's ill effects.

Agriculture has been the backbone of the country's economy, with more than 30 percent of the population directly or indirectly involved in this sector. Although it is a neglected sector, farmers remain committed to providing food for the growing number of Filipinos.

One of them is 30-year-old farmer Neil Anthony Aban from Mobo, Masbate — a province in the eastern Philippines, about 200 nautical miles from the capital Manila.

Farming was not Aban's original career choice rather, he was expecting to land a white-collar job in Manila.

"I thought before that farming was really a very tiring job," he says, adding that in Masbate, "most people into farming are poor."

Having decided against taking up agriculture in college, he opted for a nursing degree. However, due to financial constraints, Aban failed to finish the course and ended up working on his family's small farm to help bring in money.

He trained under the local government's 4-H (Hands, Head, Heart, Health) Club training program that encourages out-of-school-youth into farming to learn advanced techniques and strategies in agriculture.

"I was the only one who attended from my village. It was only a random decision I made as I was not busy at that time," he says.

Lessons from Japan

Inspired by the other farms they visited during the training sessions, he says, “In time, I would manage a farm like those.”

In May 2014, Aban joined 19 other Filipino participants selected for the Young Filipino Farm Leaders Training Program in Japan, where they trained at various regional host farms.

The Japanese government, through the Japan Agricultural Exchange Council and the Ministry of Agriculture, Forestry and Fisheries, supports the program, which officially started in 1986 for the benefit of Association of Southeast Asian Nations member states.

“I was so excited that time because that would be my first time going to Japan and to go outside the country,” Aban says.

The 11-month training program in Japan included studying the Japanese language, on-site farm training with Japanese host farmers, institutional development training on Japanese etiquette, farm machinery operation and farm research fundamentals.

“I stayed with a host family who handled organic farming. Their main product is oranges, but there are other varieties of fruits and vegetables there,” he says, recalling with fascination his experience in witnessing Japan’s advances in the agriculture sector.

“After some time, I realized the struggles of old Japanese farmers because they were the only ones taking care of their farms,” he says.

Aban managed 10 hectares of farmland in Kanagawa Prefecture from 7 a.m. to 5 p.m. He loved Japanese work ethics, time discipline, and hospitality. Aside from farm work, his host family also taught him marketing management, which is essential in production.

“There were many moments I wanted to surrender because it’s really hard,” he says. “But I always looked at the impact of this one-of-a-kind experience on my country.”

After 11 months, Aban completed his hands-on practical training from Japanese farmers and left the country. Although he was sad to leave, he

was motivated to apply everything he learned from his experience in Japan back home in the Philippines.

"When they returned to the Philippines, they became champions in agricultural development by influencing members of the community, especially the youth, to go into agriculture," says Rosana P. Mula, assistant director of the Agricultural Training Institute in the Philippines.

"They need to incorporate Japanese strategies and mechanisms to not only improve their respective farms but to share their learning with the young farmers in their communities," Mula says.

She also notes that "young Filipino farmers harness their leadership potential to lead their communities in sustainable development."

Upon returning to the Philippines in April 2015, Aban transformed his land, "literally" a backyard garden, into a larger production farm. He calls it "Denny's integrated farm," and it offers short courses on farming.

"I never thought that I could transform my farm into a learning site," he says, explaining the process of accreditation as a learning hub by the Agricultural Training Institute.

In December 2018, his farm become an official farm school, certified by the Technical Education and Skills Development Authority.

Through the establishment of training facilities such as Learning Sites for Agriculture and Schools for Practical Agriculture, in-school and out-of-school youths can freely immerse themselves in hands-on farming activities.

"The training abroad inspired me to become a better person, to do work ethics effectively, to know the best technology and farm practices, and to become a role model in the Philippine society," he says. "I hope I can add more classrooms in five years' time, develop more farming procedures and transform it into an ecotourism site where visitors can do kayaking in the nearby river."

Aban feels inspired and motivated to share with others what he has learned and teaches the potential of agriculture, especially in times of crisis.

“It’s really challenging. Before no one believed in me, no one wanted to attend my training. From zero enrollees, now I have more than 200 participants,” he says.

“Food is fundamental for the survival of humanity,” Mula explains, as she discusses the importance of Japanese training to encourage more people to go into agriculture.

Since 1986, a total of 592 participants have completed the training. A new batch of 21 Filipino trainees awaits their departure for Japan, which was postponed last April 2020 due to the pandemic.

“The global COVID-19 pandemic may have decimated a lot of businesses worldwide, but it did not hamper food production. This program is important to educate people on the importance of agriculture and the ways and practices to make growing food sustainably for generations to come,” Mula says.
Although many farmers lack access to information technology, Aban is making tremendous social change in Philippine agriculture.

“I always tell them not to rely on harvesting and production alone. There are many ways to improve it. We need to see the value-adding components of each product as part of our strategies,” he says.

For him, passion and patience are key ingredients for success, values that he picked up from his experiences here and abroad.

“It is really my advocacy to help the youth and to help them appreciate agriculture in today’s time. They really should be into farming because it’s the Philippines’ paramount potential,” he says.

As Aban has proven, agriculture does not doom one to poverty but can lead to success in life.

“Remember,” he says, “I really did not like farming before, until I was inspired by its greatness

Chapter 5

Education for Overcoming Middle-Income Trap in the Philippines: Issues and Recommendations

HARA Masatoshi

QUIMBA, Francis Mark

05

EDUCATION FOR OVERCOMING MIDDLE-INCOME TRAP IN THE PHILIPPINES: ISSUES AND RECOMMENDATIONS

Last September 2019, I volunteered to help out families, especially the kids in the rural area of Porac, Pampanga in the Philippines.

The area was very far from the city and what the city has. They do not consistently have electricity and use water only from nature. From what I saw during my stay there, the area was also lacking in education facilities. The kids are just learning basic education from a volunteer teacher who visits the area. They do not have enough good facilities, and school materials (like educational books, art materials, tables & chairs, and etc.) It was hard for us to see Filipino kids in that kind of situation.

So, my team and I decided to go to the local government of the area to coordinate and to hold an event for the community, especially for the kids. But before that, we communicated and sought for help. We decided to hold a fundraiser and gather donations (school supplies, educational toys, food & basic essentials for hygiene and monetary donations). After gathering all the donations, we set a day to come back to the area. We held a memorable experience for the local community of Porac, Pampanga.

We all gathered in an area where we played some educational movies & games. We handed them basic school supplies which they could use to practice writing, reading books and coloring & crafting. The kids were very happy that you could see in their eyes and smiles that they wanted to learn something new, outside the basic life in their area. They enjoyed receiving the gifts from the donors. We also invited the parents in the area, we gave them food packs, basic hygiene essentials, and we also informed the parents to continue to support and guide their kids, especially on the first lesson they can learn inside the house. Even though they are not familiar with the technology, I can witness that the local community of Porac, Pampanga was very creative and innovative. They can build their houses using mud/clay, woods from forest, and grass

leaves. They can make their life easier even without using technology. The basic knowledge they had was a big achievement for them and a big wake-up call for our government to help this kind of community to deliver enough education, materials, donations, and guidance for them to use their knowledge and add up for a better life. To enhance each and everyone's knowledge in the community. From what I have experienced in Porac, Pampanga, I was really amazed by the people there. Even if they are far from the city, they manage well to live a life in the forest. They are also one of the reasons why we still have such beautiful forests, because they are the one to take good care of our mother nature. The knowledge they had kept them going. But how I wished "That someday our local governments, communities and countrymen would be well-educated and the skills of everyone are well-enhanced so that everyone can handle any kind of situation, so that the next generation will not experience the unfortunate side of life"

…This is a school-day episode shared by one of our colleagues in our project office. We can see that education is one of the major catalysts for development in the developing world, while the achievement is still far from what it needs to be. Nevertheless, educational opportunities should further be

enhanced in the Philippines, especially secondary education and higher education.

Particularly, due to the pandemic, educational opportunities might potentially be further lost. In this way, we will address the importance of education for economic development, educational issues as the contemporary development issue here in the Philippines, and showing several recommendations for better policy-making for education.

MIDDLE-INCOME TRAP IN THE PHILIPPINES

Have you ever heard of the "Middle-income Trap" before (MIT)? Maybe, most of you say, "No," unless you have studied Applied Economics, notably Development Economics. So, we will firstly explain the MIT. Many of the readers may have already known that certain East Asian economies, including Japan, South Korea, and China, have achieved a new level of development since the Second World War (Perkins, 2013). Nevertheless, further development, growth, and improvements in standard of living need to be further promoted in the other regions, especially several economies in Southeast Asia, South Asia, Central Asia, Middle East, Sub-Sahara Africa, and South America.

International organizations have been discussing the MIT for a considerable period (Gill & Kharas, 2007), including the Asian Development Bank (ADB) and the World Bank. These two authors have classified all the world's economies into high-, middle-, and low-income groups and proposed the concept of the MIT in 2006 (Gill & Kharas, 2007). Following the definition of a "trap" as "a dangerous or unpleasant situation which you have got into and from which it is difficult or impossible to escape" (Cambridge Dictionary, 2019), they applied this definition to the situation of middle- and low-income economies. A longer-term difficulty in escaping the low- and middle-income stages and reaching enhanced levels of prosperity is considered the definition of the MIT. In focusing on the ASEAN economies, Southeast Asian economies, including Vietnam, Indonesia, and the Philippines, have remained among the lower-middle income economies for over twenty years. The World Bank (2019) uses US$ 1,045 per capita as the upper cut-off for the low-income group, with US$ 1,046 to 4,095 identified as lower-middle income, US$ 4,096 to 12,695 as higher-middle income, and countries with per capita income over US$ 12,696 in the high-income group, based on the World Bank methodology (WDI, 2021). Still, a majority of these countries have found it difficult to increase per capita income, remaining within the MIT over the past 40 years (Tran, 2016).

Also, given the wide range of economies identified as middle income, the World Bank (2007) also categorized them into two groups: Higher-Middle Income economies (HMIEs) and Lower-Middle Income economies (LMIEs). Indeed, the number of LMIEs and HMIEs, as well as the number of high-income economies, increased, while the number of low-income economies decreased over this period. From this discussion, ways to overcome the MIT in Southeast Asia need to be explored further. You can see Table 1 presenting the economic indexes, including the average growth rate in Asia from 1995 to 2019, annual growth rate in 2020, and Gross National Income (GNI) per capita in 2020.

Table 1

Economic Growth Rate and Income Level

Countries in Asia	Average growth rate (%) *1 (1995-2007)	Average growth rate (%) (2008-2019)	Annual Growth rate (%) (2020)	GNI per capita (2020, Atlas, US$)
Cambodia (LM)	2.7	2.8	2.38	1,490
Bangladesh (LM)	0.3	0.5	-3.14	2,010
Pakistan (LM)	-0.2	-4.8	0.53	1,280
India (LM)	0.1	2.5	-7.96	1,900
Lao P.D.R. (LM)	0.6	-3.2	0.44	2,480
Myanmar (LM)	4.7	-15.1	-9.99	1,260
Vietnam (LM)	-2.4	2.0	2.91	2,660
Sri Lanka (LM)	1.8	-8.4	-3.57	3,720
Philippines (LM)	2.8	3.2	-9.57	3,430
Indonesia (LM)	-2.1	-1.6	-2.07	3,870
Thailand (HM)	-3.3	2.5	-6.09	7,050
China (HM)	2.2	-4.3	2.30	10,610
Malaysia (HM)	-3.6	-1.0	-5.59	10,580

Source: WDI (2021)

Note. L = Low income, LM = Lower-middle income, HM = Higher-middle income.

**1: Calculated by Compound Annual Growth Rate (CAGR) method as the percentage change in the real GDP per capita between two consecutive years (UNECE, 2021).*

Based on the income criteria specified by the World Bank, many LMIEs are represented in East Asia, while only three economies fall under the HMIE category. Overall, some of the East Asian economies have achieved economic growth rates from 2.0% to 5.0% between 1995 and 2007, while we can see the negative growth in most of the economies from 2008-2019. Then, taking a look at the annual growth rate in 2020, only a few economies have achieved the positive growth, including Cambodia, Pakistan, Lao PDR, Vietnam, and China ranging from 0.5% to 2.5%, primarily due to the minimum economies activities due primarily to the COVID-19 pandemic.

Finally, there have been stark differences in the value of per capita GNI between LMIEs (under US$ 4,095) and HMIEs economies (under US$12,695): Most of the economies, including Cambodia, Bangladesh, Pakistan, India, Lao P.D.R., Myanmar, Vietnam, Sri Lanka, Philippines, Indonesia, have the ranges from US$ 1,200 to US$ 3,900. Then, only three economies of Thailand, Malaysia, and China have achieved high-income status with the figures of US$7,000 to US$11,000, accordingly.

Despite these desirable initial conditions, socio-economic indexes have shown challenges for economic

development in the Philippines, and its GNI per capita (US$ 3,430) remains within the LMIE range (IMF, 2021). Meanwhile, it also has a lower Human Development Index (HDI) than other -- countries—0.718, ranked 107th (WB, 2021) —fares even worse in its business environment, with its Doing Business Index ranked 95th out of 190 economies in the world (World Bank, 2021). These indexes suggest the challenges involved in escaping the MIT; thus, inappropriate policies to take advantage of its good initial conditions could be a hidden factor perpetuating the MIT in the Philippines.

Table 2 presents the trend in income levels since 1987 in Southeast Asia. First, the four economies at the low-income stage in 1987 (Indonesia, Vietnam, India, and China), have upgraded to at least the LMIE threshold. Notably, China has reached HMIE status since 2010, with the annual economic growth rate exceeding 10% over the past 15 years. Secondly, some LMIEs in 1987 (Malaysia and Thailand) have reached HMIE status (in 1992 and 2010, respectively).

In observing the table, I found that the Philippines has remained the same as the lower-middle income level since 1987 (World Bank, 2021). Over thirty years have passed since this economy has been under the same income stage. The Philippines has the longest history of operating under the MIT

of any of the countries surveyed. Indeed, many experts see that no other economies have possessed favorable initial conditions for economic development than the Philippines. Primarily, the earlier establishment of democracy, the arrangement of agrarian reform for the "Green Revolution," and the English-spoken environment are featured as the primary advantages of promoting economic progress (Tran, 2016).

Based on the statistical data presented above, further improvement in the income level in the Philippines from the lower-middle-income is required from LMIE to HMIE, respectively. Therefore, escaping the MIT is one of the most critical social problems identified in previous studies, to permit further development in the economy. The ADB (2017) identified the factors of "unfavorable demographics," the "low level of economic diversification," an "inefficient financial market," "insufficient infrastructure," a "low level of innovation," "weak institutions," and an "insufficient labor market" as contributing to the MIT (ADB, 2017, pp. 16–17). Meanwhile, substantial conditions to promote economic development were identified as infrastructure, industrialization, an efficient financial market, a sufficient labor market, governance, social welfare, political

institutions, etc. (ADB, 2017; Robert, 2013; Otsuka, 2014). So, these factors can contribute to economic development in the lower-middle income classes.

Table 2

The Trend of Income Level Transition in East Asia

Countries in East Asia	Income stage in 1987	Years to be lower-middle Income	Years to be higher-middle Income	Income stage in 2016	Years to stay under middle-income level
Malaysia	LM	1987	1992	HM	15
Thailand	LM	1987	2010	HM	7
Indonesia	L	2003	-	LM	14
Philippines	LM	1987	-	LM	30
Vietnam	L	2009	-	LM	8
China	L	1997	2010	HM	7
India	L	2007	-	LM	10

Note. L = Low income, LM = Lower-middle income, HM = Higher-middle income.
Source: Tran (2016).

But how can the contribution of education in overcoming the MIT be workable? So, next, let us see how education can contribute to economic development with the use of several theories relevant to education for development,

while we show you some statistical data that represent the educational situation in the Philippines visually.

WHAT CAN EDUCATION DO FOR ECONOMIC DEVELOPMENT?

As we explained earlier, for the lower-middle income economies to promote further development, industrialization is one of the key factors. Indeed, Hara (2021) studied the impact of the secondary education enrollment rate on the MIT in ASEAN economies quantitatively, finding the result to be significant in secondary education and higher education. Then, he formulated his theoretical framework that represents the income stage and educational development in the developing world (Hara, 2021). In a word, education, notably secondary and higher-education, can be major catalysts for overcoming the MIT in Southeast Asia, including the Philippines.

But, how does education work for economic development through industrialization? Some economists can help answer the question. In earlier days, Schultz (1971) analyzed the impact of education on economic development. In relation to agricultural and manufacturing development, he observed that the enhancement of human capital through

education and training enables workers to improve the numeracy and literacy required for their job opportunities, improving their income levels, and reducing poverty (Schultz, 1971). For economists, human capital consists of knowledge, training, and skills to be used for productivity in the workplace defined by Becker (1964) and Schultz (1971). Still, in the developing world, the children in rural areas often forego opportunities for education due to their parents' lack of financial resources and a necessity for help with housework (UNESCO, 2012). The authors emphasized that the significance of education as the only way to connect economic development with individual welfare; education and training can help laborers enhance their abilities and increase their productivity (JETRO, 2010). Based on this theoretical framework, investment in education can invisibly boost individual incomes and also facilitate economic development.

Further, some scholars have also gained insight into the impact of education on national and individual incomes through empirical research and have reached some robust conclusions. Representatively, regarding the return to investment in education, historically the Mincer wage equation (1974) has been employed to observe the benefits of education quantitatively within labor markets. The authors

stated that when education is considered as a potential investment, the problem is whether the internal return rate is higher than the market interest rate (Mincer, 1974). Therefore, the equation model became a representative model used to calculate the benefits of education, employing regression equations that included such independent variables as years of education, characteristics of workers, features of the labor market, etc. (Mincer, 1974).

Based on this equation, it is possible for researchers to observe the impact of education on the individual wages empirically. Using this equation, Psacharopoulos and Patrinos (2004) estimated the social and individual return to investment in education by classifying income into four income groups of lower, lower-middle, higher-middle, and high income. Psacharopoulos (1985) presented the return to education according to the four income levels and described both social and private rates of return. When this calculation was made in 1993, LMIEs and HMIEs had the highest proportion for primary education, with figures ranging from 14% to 35%, while the rate of return to secondary education was estimated to be approximately 10% to 20% at all the income levels (Psacharopoulos, 1985). Apparently, in middle-income groups, financial investment in primary education

seemed to be the key to further development. However, these authors reached the speculative conclusion that middle-income economies also need to create opportunities for secondary education to develop skilled laborers in more advanced studies (Psacharopoulos & Patrinos, 2004). Indeed, East Asian development through education in the 1950s to 1970s, especially in Japan, South Korea, China, and Taiwan, was realized (Lewin and Caillods, 2001). Notably, promoting secondary education, as well as higher education, is one of the biggest economic drivers in these economies. In these ways, we can give you a quick review of the mechanism of how education can work for economic development; education can help upgrade their knowledge and skills for their increasing income level and expanding the job opportunities, as well as upgrading their productivity in their worksites, leading to economic development.

EDUCATIONAL ISSUES IN THE PHILIPPINES

We can see several educational issues in the Philippines from several perspectives. Firstly, taking a look at Table 3, we can see the trends in enrollment as well as completion rates for primary, secondary, and higher education

in six Asian economies in 2019. The six economies presented, including both LMIEs and HMIEs, have achieved at least 90% net enrollment in primary education, but improvement is needed in the proportion in secondary education as the figure averages approximately 60% to 77% with the exception of China. Notably, the Philippines had the lowest percentage among the middle-income economies in 2016, at 65.9%. In this regard, the case of the Philippines is striking for its higher enrollment rate of primary education and the lower rate of secondary education (NEDA, 2021; PSA, 2021). Finally, as for enrollment in higher education, these economies have a percentage with a range of 15% to 45%. Eventually, due to an insufficient allocation of financial and human resources (UNESCO, 2017), these opportunities need to be cultivated in both HMIEs and LMIEs (Kuroda & Yokozeki, 2005). Notably, the Philippines needs to improve the quantity of education, especially from the aspect of the secondary educational opportunity.

In gaining insight into secondary education, it is defined as education for young students with ages between 11–12 and 18–19, between primary education and higher education (UNESCO, 2017). Secondary education aims to expand the knowledge and academic background of

individuals with a view to enrollment in higher education and preparation for working within organizations. The length of secondary education varies by country with a typical period of six years in almost all countries (three years for junior secondary school and three more years for senior secondary school) but ranges between 2 and 8 years in some nations (Kuroda & Yokozeki, 2005).

Lower and upper secondary education call for different skills and attitudes in relation to the labor force. Junior high school students need only basic numeracy or the other fundamental skills including communication skills, while high school students need the ability for analysis, problem-solving, and planning to achieve goals. Regarding the required skills and attitudes in lower secondary education, discipline and positive attitudes are generally required, while others desirable in high school include accuracy and entrepreneurship. Indeed, Otsuka and Kurosaki (2003) showed accuracy and entrepreneurship to be important for work as factory managers in China (Otsuka & Kurosaki, 2003).

Also, interestingly, there seem to be educational discrepancies between urban and suburban areas in the Philippines from some aspects of education (UNESCO,

2021). Remarkably, we can see the discrepancy in completion rates in secondary and tertiary education. For example, as for the completion rate in lower secondary education, urban areas, including Metro Manila, have 75%, while rural areas do 63% (UNESCO, 2021). Also, we can see the difference in the completion rate in upper secondary education, we see that 78% in urban areas vis-à-vis 62% in rural areas (UNESCO, 2021). Finally, as for the completion rate in tertiary education at the age of 25-29, there is 42% in urban areas vis-à-vis 26% in rural areas (UNESCO, 2021).

We also see the discrepancy between urban and rural areas in quality of education statistically, from the aspect of learning achievement (grade), especially reading, mathematics, and science exam scores of the Programme for International Student Assessment (PISA) in the Philippines. The OECD (2021) measures 15-year-olds' ability of reading, mathematics and science knowledge and skills to meet real-life challenges through the PISA. In taking a look at the learning achievement in reading for upper secondary education, urban areas have 47%, while rural areas do 29% (UNESCO, 2021).

Table 3

Educational Indicators

Countries in East Asia	Literacy Rate in 2019 (%)	Enrollment rate in primary education in 2019 (Net, %)	Enrollment rate in secondary education in 2019 (Net, %)	Enrollment rate in tertiary education in 2019 (Gross, %)
Indonesia (LM)	95.6	94.3	83.6	36.3
Philippines (LM)	98.0	96.9	65.6	35.5
Vietnam (LM)	95.0	98.6	98.9	28.6
Cambodia (LM)	80.5	89.1	85.3	14.7
Malaysia (HM)	94.8	98.5	87.9	43.1
Thailand (HM)	93.8	98.0	82.6	49.3
Lao P.D.R (LM)	84.6	91.7	72.4	14.4

Note. "LM" means "Lower-middle Income," and "HM" for "Higher-middle Income."
Source: World Bank (2021)

Likewise, there was a stark difference in the learning achievement in mathematics for upper secondary education with the figure of 47% in urban areas vis-à-vis 26% in rural

areas (UNESCO, 2021). Finally, we can see the discrepancy in the learning achievement in science for upper secondary education with the figure of 58% in urban areas vis-à-vis 45% in rural areas (UNESCO, 2021). The three essences of subjects are helpful for increasing productivity and expanding job-opportunity. Nevertheless, we can see the stark differences in the test results as quality of education, as well as the educational access and completion in the Philippines. Then, we want to provide several recommendations relevant to education for development.

WHAT CAN WE RECOMMEND ABOUT EDUCATION FOR DEVELOPMENT IN THE PHILIPPINES?

We showed several issues in education here in the Philippines, especially from the aspects of quantitative and qualitative approaches. The thing is that education needs money because it is considered as a human capital investment, while the problem is that education is an intangible investment for a better future. Still, we do not see if the future is blooming or not, despite the higher education to be achieved. Still, we showed that education can give the significant impact on the individual income based on the previous studies by Schultz

(1971), Psacharopoulos (1985), Otsuka (2014), and Hara (2021), especially for further industrial development here in the Philippines to overcome the MIT. Thus, despite invisible investment, we believe that the Philippine government should further continue educational investment, especially secondary education in the provinces.

Then, how should the educational issues be improved, especially for expanding the more opportunities for secondary education? We can provide several recommendations for further appropriate investment.

Firstly, as for the educational access and completion, budget allocation for secondary education in provinces for the realization of compulsory education should be considered for mitigating the discrepancies between the National Capital Region (NCR) and other provinces. As UNESCO (2017) emphasized, poverty could be cut in half if all adults completed secondary education in the world. We observed that at least there is a discrepancy in secondary education completion rate between the urban and rural areas with the figure of 12% (UNESCO, 2021). We see the differences, especially due to low-income family status. Unfortunately, discrepancies between richest and poorest in the completion rate in primary, secondary, and tertiary, as well as in the

learning achievement in the Philippines were also observed (UNESCO, 2021). The Department of Education (DepEd) has provided the policy of "No collection policy" so that children from low-income families are freely allowed to go to school. However, the problem is "hidden" costs of education, including travel expenses, food, books and even time (The Guardian, 2014). In this way, for avoiding the costs, the agency should pay closer attention to the invisible costs and provide more subsidies or scholarship programs for children in low-income families so that the educational equity can further be bottomed up. Also, the transition rate to secondary and tertiary education needs to be further improved. At least, in most advanced economies, the enrollment rate of secondary education records 100% due to compulsory education in East Asia, including Japan, Korea, and China (Otsuka, 2014). Thus, all children should be given the chance to go to school at least by secondary education by drafting guidelines for realizing the compulsory education.

Secondly, as part of the learning achievement, the Information and Communications Technology (ICT) education should further be used. Under the pandemic since early 2020, children have not yet been allowed to go to school (UNICEF, 2021). Meanwhile, online education is not always

workable due to the insufficient mobile infrastructure, despite the drastic increase in mobile demand (Business Wire, 2021). The Philippines had the slowest Internet speed in the world (4.5 Mbps) in the fourth quarter of 2016 vis-à-vis the average global connection speed of 7.2 Mbps (Rex Book Store, 2017). Materializing the ICT-delivered education enables teachers to monitor the children's learning development and to teach some children in hard-to-reach areas online. Using technological advantage enables children to have more opportunities for education. Of course, it is understandable that going to school is the best way for children. While it is the current situation that some other children are in the status of out-of-school regardless of the pandemic. Technology can make what we find challenging possible, and provide children with a better educational environment. DepEd and Department of Information and Communication Technology (DICT) can work together with private sectors to provide better ICT education for improving both access and completion and learning achievement at least until secondary education.

Thirdly, we would further recommend the improvement in math and science education via K-12. DepEd (2021) has promoted the K-12 to expand two more years of

education for children. As shown in the analysis, the learning achievement between the urban and rural areas in the Philippines was different, especially in mathematics and science. Also, in relation to upgrading the achievement levels of these two subjects, we assume that teaching training and development should also be improved. In relation to the K-12 and enforcement of math and science, it would be necessary to increase the number of school teachers and improve their teaching ability for upgrading children's learning achievement as much as possible. DepEd (2021) has recently set up the online teaching training systems. We are not sure if the online teaching method is helpful for teachers to improve their teaching abilities for further productivity in teaching sites. More importantly, assessment of the effect to mathematics and science test scores via K-12 and online teaching systems should be conducted and reported periodically so that we can monitor the progress of educational achievement as well as the identification of the problems in teaching and learning. DepEd seems to have the monitoring assessment system, while there needs to be further clarification of how the assessment system can be useful in improving the learning achievement level. In this way, it would be necessary to investigate the assessment procedure.

Lastly, choosing the most prioritized education policies should be preferable. The educational development strategy needs to be established and shared with the stakeholders in the Philippines. We believe that DepEd has made efforts to provide a higher quality of education for all, while we surely identified several serious educational issues, including the lack of achievement in education for all the children, the insufficient mobile educational environment due to the insufficient Internet providers speed, teaching development programs, etc. What the Philippines needs to do is to update the framework to address the educational issues and achieve the educational goals for further development here in the Philippines. The strategic framework helps the government agency to visually identify the problems and implement some educational policies in their taskforce (Bryson, 2011). In forming a strategy, it would be indispensable for the public servants to identify and analyze the problems. In conducting the analysis, using a framework and developing a strategy are helpful to frame their problems and find several solutions strategically to share with the concerned parties. For making the framework and the strategy, however, it would be more significant to sort out which issues need to be addressed first and prioritized from the perspectives

of emergency and importance. In this regard, it would be vital for them to prioritize the educational problems and sort out which to be addressed for making their framework for educational development and its strategy to settle down the issues.

STUDY SCOPE

We have addressed the MIT in the Philippines to be overcome for upgrading the income level through human development, especially from the aspect of education. Through the analysis of educational issues in the Philippines, we pointed out the significance of promoting secondary education quantitatively and qualitatively; the importance of secondary education for all the children with higher quality of education through technological advancement.

Still, limitations to this study are present. We would raise two scopes; firstly, area studies in the Philippines need to be further focused, because they have different educational teaching and curriculum, depending on the areas. Namely, we need to see further differences in educational access, completion, and learning achievement between provinces in another opportunity. Secondly, we should analyze the impact of the COVID-19 on educational access, completion, and

learning achievement in comparison with the ones prior to the pandemic.

These limitations, however, can positively be interpreted as the research protocol on education and economic development in developing countries in further expanding the potential of the relevant research through this study. Education can multi-dimensionally influence individuals' choices of their lives and societies' transformation in the more extended period, and thus directly affect their values and income, and social status. Despite the difficulty, it is still worth researching the impact of education quality, including teaching styles, family environments, classroom environments, testing types, subjects, and student academic performance in the future.

IMPLICATION FOR DEVELOPMENT IN THE PHILIPPINES

We can provide at least two implications for further development in the Philippines. One is that despite technological advances, education should be one of the significant catalysts for overcoming the middle-income trap in the Philippines. Human capital development should always be prioritized in realizing economic development. For

employees' income to be raised, industrial development through human capital development needs to be addressed as the first implication.

The other is that making a comprehensive framework and the development strategy relevant to educational achievement needs to be addressed for the stakeholders to implement the plans and monitor the effects on the educational outputs, results, and progress frequently and periodically. The government agencies should be more aware of the positive cycle of feedback, review, and improvement by using the framework and its strategy, overcoming the MIT in the long run.

LESSON FROM THE JDS

JDS can provide not only the educational opportunity for fellows as public servants, but also help them broaden new perspectives and see things from various aspects via study in Japan. JDS is one strategy for providing educational opportunities through the Japanese government scholarship. The aim of the JDS is to promote socio-economic development in some developing countries, including the Philippines. The educational opportunity through JDS can

give the fellows confidence, while the benefits should be used in an altruistic way. More importantly, for the fellows to become promising policy-makers, they should have a specific vision for development and passion for taking actions. Earning their higher degrees is merely starting. Life goes on after the JDS.

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Chapter 6

Redundancy of Road Network, Alternative Route Under Road Reconstruction and Maintenance

Janice C. del Rosario

06

REDUNDANCY OF ROAD NETWORK, ALTERNATIVE ROAD UNDER ROAD RECONSTRUCTION AND MAINTENANCE

"Arigato gozaimasu!", which means thank you, is the most powerful and most often used word I have uttered in Japan. First of all, I want to thank the government of Japan for accepting Filipino scholars like me to learn about their culture and expertise in nation building. When I arrived in Japan in October, 2017, I said to myself, "It is the same as Manila, Philippines". I was referring to the roads, buildings and sceneries, but I had to admit that it is much cleaner and more planned. As an employee of the Department of Public Works and Highways (DPWH), referred to as the engineering and construction arm of the Philippine Government, I keenly observed and compared the facilities such as roads, bridges, airports, buildings, flood defenses, forms of transportations and others that involve planning and construction in Japan.

After some time, I greatly appreciated the facilities like sidewalks, pedestrians, and traffic lights in Japan. Why those facilities? I used these facilities on my day to day living in

Japan, walking or riding my bike to buy necessities outside or going to school which is very common practice in Japan. Sidewalks serve as bicycle lanes and as channels for pedestrian movements. There was a time I was going to the supermarket and witnessed an on-going rehabilitation of drainage and sidewalks. I noticed traffic aids, sufficient traffic warning signs, especially their provision of temporary walkways and/or bicycle lanes. Taken for example the photo above. During road construction, I seriously idolized them in terms of the safety and the traffic management which our country is way beyond expectation. Before leaving Japan after finishing my studies, I've witnessed how Japan implements their projects with their utmost effort in providing safety to the traveling public by providing public information and sufficient warning signs and efficient traffic management not to cause traffic accidents or traffic congestion on said construction site. Thermoplastic traffic paint was provided/revised showing that the original road line is close to traffic and guided the motorists to use the other lane to divert the traffic. It's evident that proper planning and implementation was made which is incomparable to the project implementation in the Philippines in considering the safety of traveling public and pedestrians.

TRANSPORTATION NETWORK DEVELOPMENT

Infrastructure networks such as transportation systems, electrical facilities, water supply systems, digital infrastructure systems and so forth are considered the backbone of cities. These systems are essential in providing quality of life improvement and stimulating economic growth. Transportation system is the most essential lifeline system (Hopkins, et. al, 1991), because it creates an extra burden on other lifelines. Transportation systems play a vital role in offering accessibility of resources and mobility of individuals, providing links between production and consumption.

Roads are a basic system of transportation, used every day all around the globe. Road transportation is considered as an integral part of a nation's infrastructure and is often termed as its 'socio-economic life line' since it is used to promote social and economic activities more than any other form of transportation (Solway, 1999 & Bruton, 1995). Construction of new roads typically results in social and economic benefits as it provides access to areas thereby facilitating connectivity and trade. In upgrading economic status, most of the developing countries involve industries to rise, together with infrastructures, factories, especially the intensification of construction development and the increasing of the quantity of roads for the purpose of transporting goods. Planning and

increasing road network development imposes potential growth on sectors such as manufacturing, agriculture and tourism.

The Philippines government's "Build Build Build" program comprises large projects that address major bottlenecks, focusing on transportation, water resources and energy which according to International Monetary Funds (IMF), these investments in infrastructure rose from an average of 3 percent of GDP during 2011-2016 to over 5 percent in 2018. One of the major outcomes identified in DPWH Strategy Map 2022 is the reduction of travel time by increasing the road network capacities and construction of new roads and bridges for a seamless transport system. The new roads to construct are diversion roads, bypass roads, missing links and new access roads.

Extensive and high-quality road infrastructure is important for trouble-free road transport, helps in decreasing transport costs, travel time and attaining better market access. In agriculture, we consider it as a crucial factor in enhancing productivity, improving the quality of life of the society and building a market for agrarian produce, serving as a link between environmental and economic regions, then forming new areas of commercial motivation. Moreover, road transportation is an asset to industries by supporting them in improving their supply chains. For the education sectors,

teachers and particularly students are benefited by enabling them to reach their school to become well educated. Furthermore, roads provide links to inter-regional and city-to-city travel, links to tourism destinations for cultural gain and for leisure. Roads ensure freedom of movement and eliminate individuals from being isolated. In this chapter, we will focus on issues that need to be address during of road closures and recommend possible solutions to lessen or better yet eliminate traffic congestion, especially during road construction and maintenance, since agriculture and education are discussed on separate chapters on this book.

BREAKTHROUGHS IN ROAD TRANSPORTATION

Roads in the Philippines have four classifications namely national roads, local roads, private roads, and expressways. National roads are administered and under the jurisdiction of the Department of Public Works and Highways (DPWH). Based on the latest Road and Bridge Information Application (RBIA) of DPWH, the total length of national road is 33,119.569 km as of October 15, 2020, having 98.21% is paved either asphalt or concrete and 1.79% is unpaved either gravel or earth as shown in Table 1. In their recent report, 43.79% is in good condition, 34.12% in fair condition,

11.25% in poor condition and 4.55% in bad condition while 6.29% of the total road network are yet to be assessed.

Region	Paved			Total Length	Unpaved			Total Length	Grand Total
	Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		
CAR	90.76	998.65	1,078.98	2,168.39	-	13.63	87.48	101.10	2,269.49
NCR	169.68	395.67	600.88	1,166.24	-	-	-	-	1,166.24
Region I	591.37	495.81	611.75	1,698.92	-	-	0.34	0.34	1,699.27
Region II	629.03	326.75	1,023.01	1,927.78	-	3.54	42.19	45.73	2,018.51
Region III	531.47	746.03	1,066.43	2,343.95	-	0.47	0.06	0.53	2,344.48
Region IV-A	454.76	1,279.93	807.76	2,542.45	-	-	-	-	2,542.45
Region IV-B	-	1,703.08	485.09	2,268.17	-	21.48	8.33	29.81	2,297.98
Region V	468.74	1,159.20	770.76	2,390.71	-	7.33	19.68	27.01	2,417.71
Region VI	489.74	1,454.40	1,116.67	3,060.81	-	-	0.76	0.76	3,061.57
Region VII	531.17	1,093.71	698.30	2,323.25	-	-	7.65	7.65	2,330.91
Region VIII	562.04	1,344.07	694.56	2,550.68	-	-	9.69	9.69	2,560.37
Region IX	657.51	369.47	483.33	1,510.31	-	57.42	83.93	141.35	1,651.66
Region X	734.88	461.96	714.24	1,911.50	-	1.39	64.64	66.04	1,977.53
Region XI	469.75	818.37	391.37	1,629.49	-	50.66	24.12	74.78	1,704.27
Region XII	368.41	763.52	365.87	1,497.80	0.35	24.70	33.17	58.22	1,556.02
Region XIII	358.73	715.67	417.40	1,491.60	-	7.79	21.72	29.51	1,521.11
Grand Total	7,093.45	14,206.30	11,227.29	32,527.04	0.35	188.40	403.77	592.53	33,119.57

Table 1. National Road Length by Surface Type and Functional Classification per Region in Kilometers. Source: DPWH (2020, October)

The Philippines is experiencing rapid urbanization, and by 2030, about 77% of the population will live in urban areas (ADB, 2012). Transport systems of all 120 cities in the country are almost entirely road based except for cities in Metro Manila. Although principal road corridors in Metro Manila are wide and have high capacities, traffic volumes are also extremely high due to the increasing number of vehicles especially during rush hour, resulting in an increasingly difficult movement of people, goods and services. According to the study of Japan International Cooperation Agency (JICA), Metro Manila is suffering losses in a single day of Php

3.5 billion due to traffic congestion and projected to get worse to Php 5.4 billion a day by 2035.

In spite of having a Metro Rail Transit System that carries around 600,000 passengers which is designed to have a capacity of just 350,000. Thus, the majority of commuters choose to travel via bus or jeepney and some prefer to take their own cars that result in exhausting the capacity of the road network. Putting it in a simple way, vehicles are a lot more for the road can handle to meet its demand. Furthermore, half of the 6.6 million vehicles in 2010 were motorcycles which are vulnerable to road crashes and greatly contribute to traffic congestion (ADB, 2012). In addition, mega-cities or so-called the Metropolitan Centers such as the City of Cebu and Davao experience the same fate in terms due to the overflowing numbers of private vehicles; too many Public Utility Jeepneys (PUJs) and motorcycles that occupy the existing road network that we already resorted of adopting the multi-layered superways such as fly-overs and construction of new expressways such as to address these issues. Recently, one issue to be addressed is the increasing number of private vehicles as a result of having a poor public transportation system and worsened by the current pandemic.

These same issues are already experienced by growing cities or the so-called Regional Centers. Let me differentiate first on what Metropolitan Centers (MC) are versus Regional

Centers (RC). MC provides higher forms of economic services and facilities, including innovation and advanced services, culture and tourism, education and research, transportation and trade, manufacturing, and technology development while RC serves as regional markets and service centers to several provinces wherein markets can support a range of services and investments and have direct linkages to MCs. Furthermore, they host government administrative centers, industrial and commercial areas, and transportation and tourism hubs. In the Philippine Development Plan (PDP) 2017-2022, the National Spatial Strategy (NSS) proposed the improvement of physical connectivity and provision of equal access to quality of services across the regions which pursues decongestion of the National Capital Region. To improve the connection of MC and RC to boost the economic activities of RCs and to attract investors on these locations, additional infrastructure such as roads should be constructed or rehabilitation of poor conditioned roads is advised. There are 3 out of 38 RCs in Region I namely Laoag City in Ilocos Norte, San Fernando City in La Union and Dagupan City in Pangasinan. According to the Department of Trade in Industries, Region I's economy is anchored on both on agriculture and agro-industrial sectors but recently it was hit by a devastating Typhoon "Maring" that destroyed both of these sectors, alongside the damages to infrastructures such as

roads and bridges that creates road closure on vulnerable areas in the region.

Road networks are becoming more vulnerable due to catastrophic and unforeseen events such as natural disasters, accidents, and other emergency circumstances, which cause extreme damage that may result to death, economic losses, traffic disruption, costly repairs, difficulty in the giving of relief assistance and response on affected areas and interruption of passengers and delivery of good and services. These catastrophic events impose damages, closures and degradation of the quality of roads which directly affects traffic flow and network connectivity (Chan, et.al, 2016). We can see in Fig. 1 images of damaged roads and bridges that need reconstruction and maintenance. Furthermore, road deterioration and damages can also be seen as the structure starts aging.

Road reconstruction and maintenance are implemented to enhance the quality and performance of road networks.

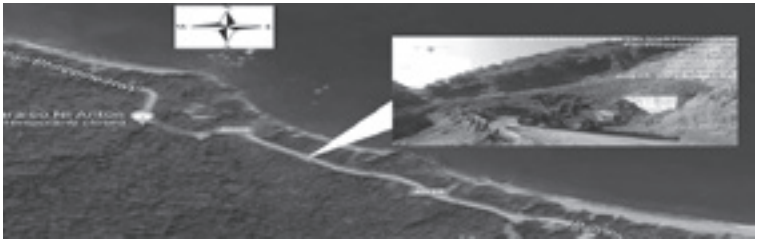

Fig. 2. Map showing road closure due to landslide in Pagudpud, Ilocos Norte, Source: DPWH (2021, July)

Reconstruction is performed on roads having poor to bad condition ratings and maintenance is performed on roads having fair to poor condition ratings. Emergency reconstruction and maintenance also occurs when the road network was damaged by natural disasters as seen in Fig. 1. During reconstruction and maintenance of road networks, full or partial closures on construction sites are inevitable to expedite the completion which causes traffic build-up, especially when no other routes are available to divert the motorist or traveling public. Take, for example, what happened in Pagudpud, Ilocos Norte (Fig. 2) where there was a full closure of the road network, with no alternate route available to divert the traffic. Motorists are advised to wait till the emergency maintenance or removal of the landslide is completed.

ROAD INFRASTRUCTURE INVESTMENT IN THE PHILIPPINES

Gross Domestic Product (GDP) from Transport in the Philippines averaged 55,812.86 Php Million from 2008 until 2020 (Fig. 3.). We could perceive that the monetary or the market value of all finished forms of transport in our country is constantly low from 2008 and gradually increasing bit by bit until the year 2019. The GDP reached its highest record in the first quarter of 2020 of 168,086 Php Million and a record

low of 34,827.71 Php Million in the third quarter of 2009. As we can see from the trends of every year, the second quarter of the year has the highest and gradually lessens its value of spending on the two last quarters of the year.

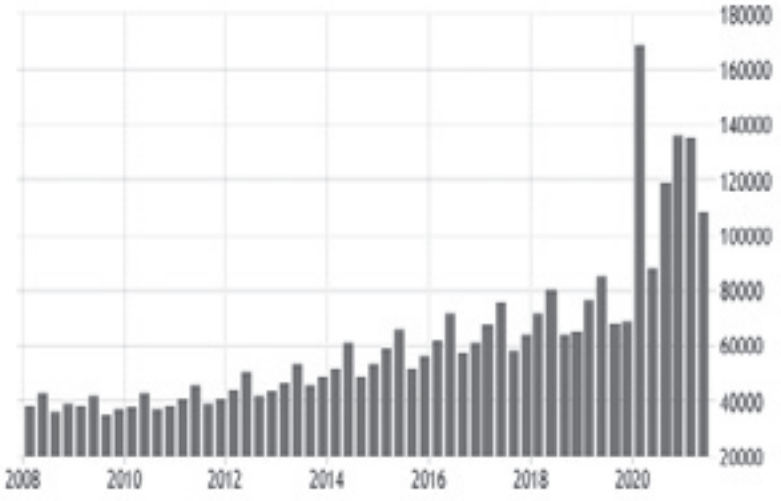

Fig. 3. Philippine GDP form Transport in Php Million. Source: Trading Economics (2021).

This is because budget allocations in our country are approved for implementation in the middle of the first quarter. Spending less in the last two quarters of the year is due to disruptions of construction activities due to rainy seasons which occur from the months May to October every year.

In the overall infrastructure of Asia, the country has seen improvement (with 7 as the best performance), in rank from 2018 (Table 1). There is still a huge gap in terms of index and rank, especially among countries in Southeast Asia. The World Economic Forum's global competitiveness report surveys business leaders' impressions on a wide range of topics in the business environment on a scale of 1–7. The report places the Philippines among the lowest in ASEAN in key infrastructure services and substantially lower than the ASEAN average in overall infrastructure and all of its subcomponents. The road connectivity index shows that these countries belong to lowest performing countries except for People's Republic of China and Thailand. In the quality of infrastructure index reported by the Global Competitiveness Index for 2018, Hong Kong, China and Singapore were among the best-performing economies in the world. The Republic of Korea was also in the top 20 due to its quality of roads, rail, and other transport infrastructure. In the quality of roads index, we rank 88 out of 140 countries in the whole world. However, the quality gap in the region is large when viewing the ranks of Indonesia, the Philippines, and Vietnam.

	Infrastructure Performance Rank	Road Connectivity Index		Quality of Roads	
		Value	Rank	Value	Rank
People's Republic of China	29	88.4	17	4.6	42
Hong Kong, China	2			6.1	4
India	63	62	76	4.4	51
Indonesia	71	34.6	120	3.9	75
Republic of Korea	6			5.7	12
Malaysia	32	26.8	128	5.5	20
Philippines	92	22.5	129	3.5	88
Singapore	1			6.4	1
Thailand	60	70.2	55	4.4	55
Viet Nam	75	44.3	107	3.2	109

Table 1. Infrastructure Performance-Selected Economies in Asia, 2018. Source: World Economic Forum. Global Competitiveness Index. Source: http://www.weforum.org/reports (Accessed date: October, 4, 2021)

In terms of status of public infrastructure and infrastructure investment needs, ADB (2017) did provide the latest estimates of countries in Asia. They carefully looked at the measurement of infrastructure investment in developing Asia collecting information from multiple data sources. They concluded that our country had been constantly low in infrastructure investment in the past and the quality and quantity of current infrastructure is low compared to other ASEAN countries. The Philippines' infrastructure investment is 5th to lowest of the eighteen ASEAN countries for a little over 2% of GDP, 1.5 percentage points lower than the sample average (Fig. 4). The extent of our road network when measured in terms of road km per square km, road km per capita, and road km per dollar GDP per capita, is comparable

or better than many neighboring developing countries (ADB, 2012).

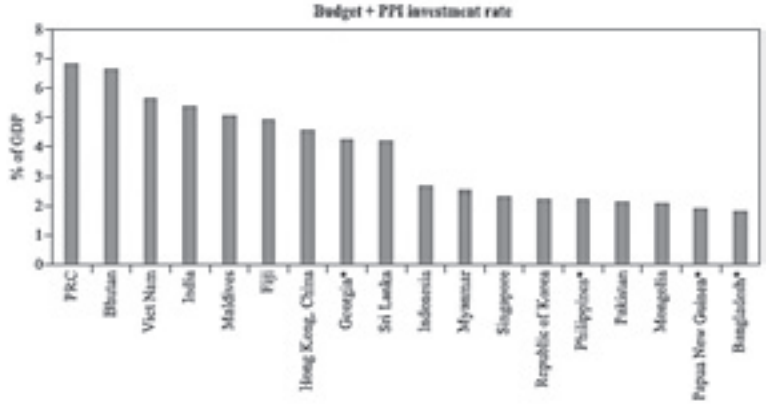

Fig. 4. Public Investment and Public Capital Stock, Association of Southeast Asian Nations. Source: Komatsuzaki (2019)

The major cause of the overall low quality of the road network is poor and inadequate maintenance due to insufficient financial resources and inadequate institutional capacities of agencies responsible for maintenance. Road damages add up in the low quality of our roads and the factors influencing these damages (Saharuddin & Ing, 2019), wherein they stated that there are two causes of road failures specifically internal and external failure. Internal failure of roads is because of poor construction and methodologies while the external factors are the results of unforeseen events such as natural disasters and overloading. The high prevalence of overloading trucks, lax enforcement of axle-load regulations and inadequate enforcement of traffic regulations

have also contributed to the unsatisfactory rating of roads in our country. Based on DPWH data, shows almost half of our national roads need upgrading/reconstruction/rehabilitation and maintenance data having ratings from fair to bad condition.

To pave the way to this reconstruction and maintenance, construction of road links such as diversion road and bypass road are to be foreseen not to hamper the traveling public and delays of delivery of goods and services to any point of the country. These road links are considered redundant road networks that will be discussed in the succeeding subchapter.

ASSESSMENT OF REDUNDANCY IN ROAD NETWORKS

Many have studied redundancy by considering transportation system performance in terms of density. The higher capacity of the road to some degree guarantees higher availability of alternative routes (Jenelius, 2009). Chen, et al. (2017) stated that redundancy is vital for the transportation network to provide utility to users during disastrous events. Their work proposed a new method for identifying critical links based on route diversity. While Xu, et.al. (2015) developed a network-based measure of alternative travel diversity between origin to destination pairs. Travel

alternative diversity was used to evaluate the existence of multiple nodes and efficient paths for travelers. However, transportation system performance in terms of density, route diversity, and alternative travel diversity only considers a network that is fully operational. The failure of one link or multiple links may cause the degradation of network connectivity.

Jenelius (2010) proposed the concept of redundancy importance to consider the importance of links as backup alternatives when other links in the network are disrupted. He characterized the importance of redundancy in two ways. First, flow-based redundancy importance is considered when the net amount of flow that is rerouted to the link of interest is closed. Second, impact-based redundancy importance, which captures how many users take advantage of a link as a rerouting alternative for other closed links.

ROAD REDUNDANCY IMPORTANCE

The transportation network is critical to a nation's way of life and its economic vitality (Freckleton, et.al., 2012). One of the important factors in supporting economic growth is accessibility. Accessibility is defined as the ease of movement with which people and goods can reach from one point to another. Accessibility was evaluated in many studies during natural disasters. In the works of Coles, et. al (2017), they've

modelled emergency service accessibility during flooding. They had identified areas that are susceptible to flooding in the City of York, U.K. and generated a map showing alternative routes and a traffic guide for attending emergencies to pass safely through deeper waters. Abad & Fillone (2017) also performed in identifying flood prone areas in Manila and give the importance of Mabuhay Lanes in providing alternative routes to reroute vehicles away from roads with heavy vehicular traffic and the vulnerability of road networks in Metro Manila to natural disaster. Meanwhile, Atmojo & Sachro (2017) have similar work identifying alternate routes for evacuation purposes during flooding events in West Semarang District, Central Java, Indonesia.

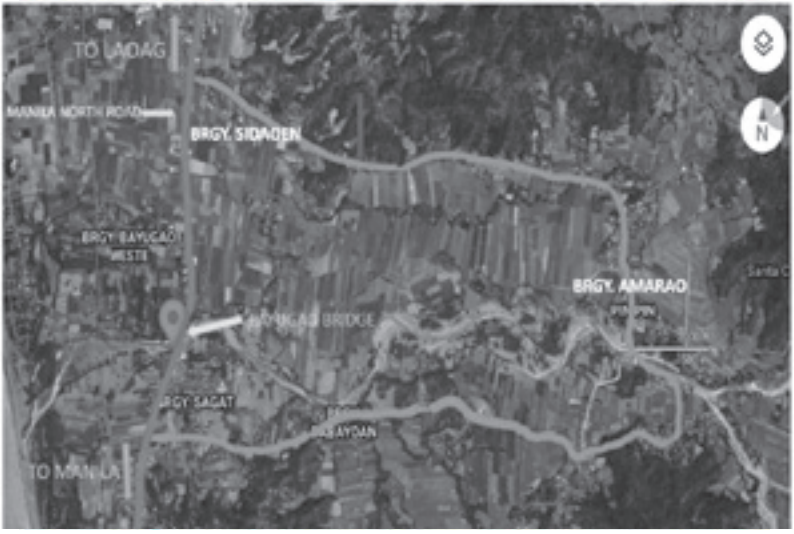

Fig. 5. Detour road to the closure of Bayugao Bridge, Sta. Cruz, Ilocos Sur. Source: DPWH (October, 2021)

Studying road networks before, during, and after disaster situations is very important to understand the reliability and robustness of the network (Chan, et.al., 2016). Resilience can be characterized by the four "R's" concept: redundancy, robustness, resourcefulness, and rapidity (Bruneau et al., 2003). Godschalk (2003) and Murray-Tuite (2006) defined redundancy as the number of functionally similar components which can serve the same purpose, and hence the system does not fail when one component fails. Damaged roadways and bridges not only disrupt traffic and lifeline supply systems but also obstruct the operation of rescue machinery, rescue vehicles, ambulances and relief workers. Therefore, how to repair the damaged roads in the least amount of time, so that subsequent relief distribution can be performed is a very important issue after a natural disaster (Yan& Shih, 2009).

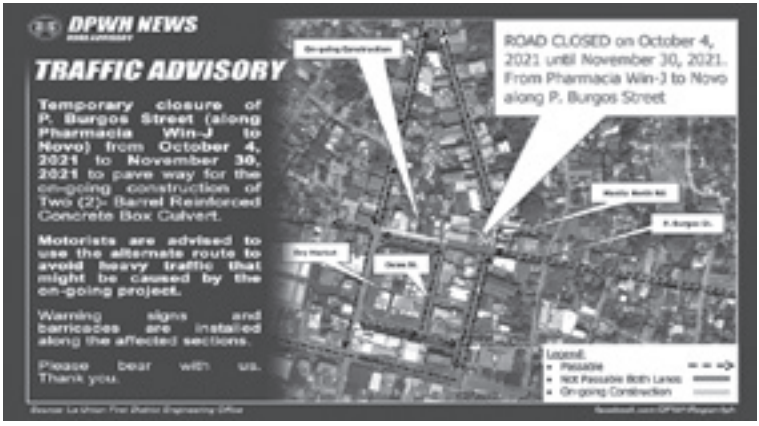

Fig. 6. Road closure due to reconstruction of box culvert and road network. Source: DPWH (October, 2021)

For example, what happened recently, one bridge in Sta Cruz, Ilocos Sur incurred damages where two spans of the bridge collapsed (Fig 1.b) due to Typhoon "Maring". There was a road closure for five (5) days, DPWH had to outsource bailey panels to nearby regions to provide emergency repair of the said collapsed bridge. They work every day and night to fast track its completion. Imagine how is delivery of emergency services and reliefs to the affected areas wherein the whole region was affected by this event. Coincidentally, an alternate route is available. However, its condition is not suitable for highly loaded trucks, as it is a barangay road. The original destination traversing Bayugao Bridge is 2 km long with 2-3 mins travel and the said alternate route is 8.4 km long and 16 mins drive (Fig. 5). This alternate route serves as a gateway for rescuers of the people trapped in their roofs during the typhoon and relief assistance coming from other parts of Luzon. As of now the bridge has one (1) lane passable with a ten (10) tons load limit. Though the widening of the bridge is in the early stages of construction, it will still take months or another year for the full operation of a two-lane traffic.

Several researches have been conducted using different methods for identifying road closure during natural disasters and proposed the use of alternative routes for vehicles and determines the vulnerability, resilience, critical

links and network connectivity for transportation system (Dey, et.al., 2015; Nakanishi, et.al., 2014; Gude, et.al. 2020; Yan& Shih, 2009). Nevertheless, only a few studies have been conducted in determining connectivity of the entire network during road reconstruction and maintenance. (Chan & Teknomo, 2016; Jenelius, 2010; Shrestha). To expedite the completion of projects to get back to normal traffic situation, road closure within the construction site is made. Fig. 6 shows a road closure during road reconstruction in P. Burgos St. in San Fernando, La union to give way for the construction of box culvert and rehabilitation of road from October 4, 2021 to November 30, 2021, suggested rerouting of motoring public is shown in the figure as well. This route that diverts traffic is called road redundancy.

The extent of the economic and social impact related with recent disastrous event experienced worldwide has emphasized the importance of transportation networks and explicitly there is a need for proper planning for a more resilient transportation network to undone disruptions by the government agencies by considering and funding route redundancy on critical areas where no available alternative routes for the diversion of traffic during catastrophic events and disruption of traffic due to full to partial closure of roads due to reconstruction and maintenance activities.

CLOSING ARGUMENTS AND IMPLICATIONS

Road transportation is considered as an integral part of a nation's infrastructure which is essential in providing quality of life improvement and stimulating economic growth. This paper focused on the problem of possible road closures due to natural disasters and reconstruction and maintenance of the road.

Road redundancy is vital during events when closure of roads is inevitable; it is used to divert traffic flow to avoid traffic build-up. Absence of road redundancy or alternative routes during road closures brought by disasters such as slides causes total prevention of vehicle movement until opening of the road is accomplished. Construction of road redundancy is recommended for road networks that are vulnerable to natural disasters, especially those that have already history of road closures due to rock falls, slides, and extreme flooding.

It was noted that 592.53 km or 1.79% is still unpaved to our national roads. The regions NCR and Region IV-A have completely paved their road networks where Metro Manila is located. In spite of having many forms of transportation, a voluminous road network, and the whole network is being paved, traffic congestion is still experienced in Metro Manila due to the number of vehicles exceeding the capacity of the

road network. Thus, National Spatial Strategy (NSS) suggested for improvement of physical connectivity and provision of equal access to quality of services across the regions which pursues decongestion of the National Capital Region to boost the economic activities of RCs and to attract investors on these locations, additional infrastructure such as roads should be constructed or rehabilitation of poor conditioned roads are advised to improve the connection of MC and RC. A brief discussion of the status of the roads in the country for the purpose of building new road links for the resiliency of the road network.

It was also noted that our country is the lowest among the lowest in ASEAN in key infrastructure services and in terms of the quality of roads index. This is the result of having low investment in infrastructure compared to other countries.

We've conveyed the importance of network redundancy during calamities, post-disaster phase and during road reconstruction maintenance. We have gathered studies focused on selection of alternative routes in giving assistance and medical services during natural disasters and showed real events of road closures experienced in Region I in two situations having or not having alternative routes for the diversion of traffic.

A possible future work would be the adoption of ontology in a real-life scenario of road closure with the aid of

Geographic Information System (GIS). The ontology's structure provides semantic support to express the rich semantic knowledge of traffic data in formalization (Malgundkar & Mantha, 2012). In this system, a practical solution is used for detecting traffic condition. If every mobile device has a GPS, then, reports could be sent to the data centre where such processing can take place and the results can be sent to the user for traffic condition information. Examples of available information sent through SMS in the Philippines are typhoon and earthquake alerts. This can be adopted in forwarding information regarding traffic conditions or road closures. The benefit of using an ontology is that it adds semantics to every definition. It also results in quick retrieval of data.

PERSPECTIVE LEARNED THOUGH MY STUDY IN JAPAN THROUGH JDS

One of my topics I remember that were discussed by our professor in Japan was regarding numerical simulation of geotechnical problems on soft clay ground and countermeasures against the latest soil-water coupled analysis which discusses damages of bridges and road shoulders due to geotechnical problems such as settlement, landslides and road slips. Settlement was caused by vibration and load applied by vehicles resulting in damage to roads and bridges, especially

cracking and depression. Landslides and road slips usually occur in mountainous areas wherein when widening of road, the soil on both ends gets disturbed. This topic has reminded me why our province frequently experiences such a phenomenon.

Another lesson was about fatigue and fracture in steel bridges, which discusses how Japan studies the history of failure accidents of bridges around the world and derived a better design for bridges as a result of the lessons learned in the past events. Bridge fails due to various reasons such as the structure itself is unstable, cannot withstand vibration, cannot support its self-weight, design errors, corrosion and fatigue problems. It also discusses the defects in steel bridges namely fatigue and corrosion which usually progress through time. Bridge maintenance or reconstruction is recommended to address these defects. Natural disasters are one of the causes why these damages occur on roads and bridges resulting in roadway closures. This topic has inspired me in completing my master's thesis for as well in Japan, Philippines experiences multiple hazardous natural disasters, for it is located in the Pacific Ring of Fire which is rank third riskiest country in the year 2017 from the report of United Nation University's Institute for Environmental and Humanities Security (UNU-EHS) when it comes to natural disaster with the risk index of 27.69%.

These topics have pushed me to think about how to act in this situation of terror that results in disruption of the traveling public especially during and after a disaster occurrence.

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Chapter 7

Resiliency to Natural Disaster: The Philippine Initiatives on Disaster Management

Eric Millan Cabutaje

07

RESILIENCY TO NATURAL DISASTER: THE PHILIPPINE INITIATIVES ON DISASTER MANAGEMENT

Typhoons and floods have been a normal event in my country and have been a part of life in many places. Ever since I was a child, my community has suffered from the destructive effects of these natural disasters. My hometown is located on the lower Cagayan River and has been one of the lowest elevation municipalities in the river basin. I could remember the stilt houses of my relatives living in flood-prone areas. These houses are designed as elevated dwellings, leaving the ground floor as vacant and the second floor as the living space. They also have their own paddle boats which serve as their mode of transportation during flood events. One fond memory as a child, at the end of the typhoon or flood is that we used to enjoy the extended vacation from school since repairs would be undertaken from damages inflicted. This was the perception of a vulnerable soul who wanted to stay happy

despite the effects of disaster on our future. It was a great escape from the burden old people had to carry to ensure our survival. Growing up in a flood-prone area groomed me to become adaptive in some ways to this perennial event. Learning how to swim is a basic skill we learned as kids as it may come in handy during a flood event. Strong typhoons and floods have showed me the harsh reality of the lack of effective disaster management at the local level. Back in the day, there were no early warning systems installed and the local government was not that equipped and knowledgeable about disaster management. No disaster protection infrastructures can be observed along the river banks. This may perhaps be because of the poor agricultural economy of the country. The people at that time relied on transistor radios that broadcast news for news of an incoming typhoon or weather disturbance. It is being augmented by years of experience and familiarity with the nearby river's attitude during the rainy season. The people's main economic activity, including my family, was agriculture, so such disasters would easily cripple their livelihood and bury them deeper into poverty. Seeing defeated face is a common view from people and yet they keep on standing up to recover. Reminiscing of my experiences as a child, I felt a chill about how vulnerable we were to

disasters, not only because we are young but because we lack the necessary system to ensure our safety against it. These experiences made me realize the need to strengthen disaster management and improve the economic condition of the grassroots level which is the most vulnerable sector in society.

HOW ARE WE DOING?

As a person who's been exposed to natural disaster events since childhood, I would often ask myself these questions: how far have we achieved in disaster management and if the programs and projects are really effective in increasing our resilience to natural disasters? Getting affected regularly by natural disasters such as typhoons and floods, which always come in package makes you question if we are doing it right to reduce or at best avert this generational burden. This was further exacerbated by the COVID-19 pandemic. While we can't deny the fact that the geographical location of the country along the typhoon belt of the Pacific makes it the expressway of an average twenty typhoons annually, five of which are destructive, this could have been our cornerstone to equip the country with an effective disaster management system in the fastest possible time. As a matter of fact, our country has been a mainstay in the top 10 category

of the World Risk Index (WRI) for 2020, this time, we ranked as ninth in the world as affected by extreme weather events. As ninth placer, we were rated with very high exposure, high vulnerability and highly susceptible to natural hazards. We have a medium level of coping capacity and a high in lack of adaptive capacities ratings (Hilft, 2020).

The Asian Development Bank in 2012, mentioned that 85.2% of our country's production sources are susceptible to disaster and half of the country's total land area is considered economically at risk (UNDRR, 2019). This means that a single major disaster can undermine the developmental growth the country has accumulated over the years. And these disasters keep getting stronger as they are related to climate change. Among the remarkable hydrometeorological disasters that devastated the country are Typhoon Bopha (Pablo) in 2012, Haiyan (Yolanda) in 2013, Mangkhut (Ompong) in 2018 and Vamco (Ulysses)in 2020. These typhoons left a dent in the economic and social sector of our country, some of which (Yolanda) even garnered the attention of the world and some put-up record setting floods (Ulysses). As a matter of fact, we were ranked 2nd in 2018 as the most affected country by extreme weather events. This is the lowest index score our country achieved from 2015 to 2019 (Eckstein, 2021). During

this year, the most powerful typhoon recorded worldwide attacked the country particularly my region leaving significant damages in the productive, social and infrastructure sector amounting to a combined value of Php15.72 billion in damages and losses and a rehabilitation and reconstruction needs amounting to Php 7.85 billion (OCD, 2018).

In the disaster management field, I often encounter the paradigm shift from reactive to proactive in disaster management to increase the resiliency of the country from the pressure of natural disasters. The enactment of the Philippine Disaster Risk Reduction and Management Act in 2010 or RA 10121 clearly stated the promotion of proactive management of natural disasters by increasing the resilience of the people. The same law provides for the National Disaster Risk Reduction and Management (NDRRM) Fund for disaster risk reduction, mitigation, prevention and preparedness activities. This is being managed by the Office of Civil Defense (OCD) through the NDDRM Council. There is an observed continuous increase in allocation for the NDRRM Fund which could indicate the government's increasing stance for disaster resiliency programs and projects (House of Representatives, 2021).

The RA 10121 allowed us to create four thematic pillars for the national and regional DRRM Councils. These are the Disaster Prevention and Mitigation, Disaster Preparedness, Disaster Response and Early Recovery and Disaster Rehabilitation and Recovery respectively. Now, to effectively implement DRRM, we have also created the provincial, municipal, city and barangay councils. These local councils were created to directly implement DRRM related programs, projects and activities at the local level. Ideally, every local government unit should be able to improve the resiliency of their areas of responsibilities, however, our local government units have financial limitations to fund their initiatives as they are only allowed to use 5% of their annual Internal Revenue Allotment for local disaster risk reduction and management funds. This dilemma is expected to loosen-up with the implementation of the Mandanas ruling in 2022 where local government units IRA will increase significantly. Nonetheless, I will discuss in this chapter what we have done to ensure the resiliency of our population from the impacts of natural disasters.

THOUGHTS OF DRRM SCHOLARS

While scavenging for related works, I came to encounter the definition of resilience from the Hyogo Framework of Action which is the capacity of the system,

community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. Another scholar, Siambabala (2006) said that disaster resilience has become a new paradigm that compliments other terms like vulnerability or risk. This new paradigm led the Philippines to create strong policies, frameworks and plans for disaster risk through the Republic Act 10121 of 2010. Through this law, we were able to establish local, municipal, provincial, regional and national DRRM Councils (Alcayna 2016). These councils served as front liners before, during and after the disaster. They are guided by the NDRRM Framework by providing a comprehensive, all hazards, multi-sectoral, interagency, and community-based approach. Under the NDRRMF, the country envisions a "Safer, adaptive and disaster-resilient Filipino communities towards sustainable development". In achieving this, our local government units play an integral part before, during and after the disaster as they are directly in contact with the affected population and have knowledge and information of their vulnerabilities and needs (PIDS 2018). They were mandated by the Local Government Code to become at the forefront of disaster risk reduction and management. They are expected to act autonomously and decisively in issuing proactive decisions suited to their constituents. Naturally, Local Government Units must be able to assess the vulnerabilities of their area of responsibility and

their constituents, instill basic knowledge of natural disasters and possible impacts, conduct information and education campaigns, coordination with other officials in-charge of planning, construction, health and welfare, conduct rescue trainings, establish partnership with other institutions and building of safe evacuation facilities.

WHAT DO WE HAVE NOW?

We already integrated DRRM in many of our developments plans from national to local levels starting from our Philippine Development Plan (PDP), the Regional Development Plans (RDP), Provincial Development and Physical Framework Plans (PDPFP), Comprehensive Land-use Plan, Local Climate Change Action Plans and other local plans. In addition, we have inked our support to different international agreements that promote disaster resilience such as the Sustainable Development Plan, Hyogo Framework of Action, COP 21 and many other development, climate and disaster related plans and agreements. To show our commitment, we have adopted these international guidelines and agreements into our national and local plans and policies that trickle down at the barangay level. Our barangay level, however, still has so much to do in order to institutionalize

and become a DRRM champion given their administrative and financial limitations.

Our deficiencies do not mean that we are not doing anything to improve the disaster management system at the local level. Several initiatives have been undertaken to stimulate the participation and adoption of the DRRM system by the local government units. One good example is the annual conduct of Gawad Kalasag of the Office of Civil Defense to the local government units, public and private institutions, communities and individuals who are actively advocating and implementing DRRM and climate change programs and practices in a proactive, gender-responsive, inclusive, rights-based and sustainable manner thereby increasing the resilience to disasters and enhance the recovery from the effects of natural disasters. As an incentive, winning LGUs and other participating institutions, accolades and cash prizes are given which will be used to further improve their DRRM system.

In addition to the Gawad Kalasag, the Department of Interior and Local Government has been conducting the Seal of Good Local Governance (SGLG) as promulgated in the Republic Act 11292 of 2019. For them, the Seal has been instrumental in increasing transparency and accountability

and promoting proactive actions to address the challenges posed by disasters. Interestingly, one of the ten criteria of SGLG is Disaster preparedness which looks into how prepared the LGUs are to disaster, natural or man-made, by adopting relevant plans, taking proactive actions and building its capacity to respond effectively. I also noticed that one of the four indicators under this criterion is for the LGUs to win an award as Best Local Disaster Risk Reduction and Management Council in the National Gawad Kalasag.

The Office of Civil defense through the National Disaster Risk Reduction and Management Education and training program are continuously conducting various disaster related trainings to the LGUs and the basic sectors such as Incident Management System, LDRRM Planning, Contingency planning, post disaster needs assessment and other related trainings. They operate with the idea that DRRM efforts can be categorized into three: "self-help efforts", "mutual-help efforts" and "public-help efforts". Self-help means the efforts made by an individual to reduce damage from disaster such as conforming evacuation routes and strengthening of houses. On the other hand, we can say that mutual-help efforts are initiatives undertaken by community-based organizations such as preparing a risk map of the

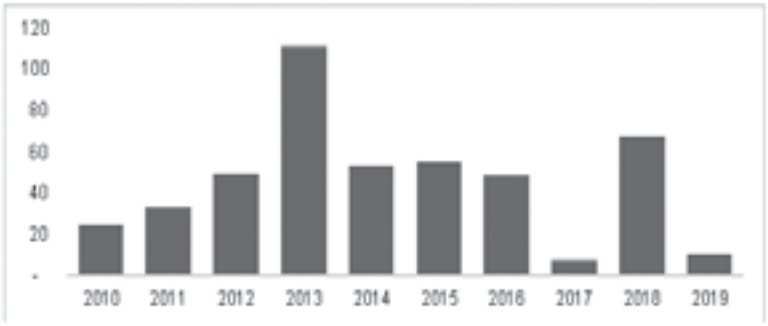
community, conducting evacuation drills, and helping each other in evacuation camps. Lastly, public-help efforts are done by the government for risk reduction and management such as improvement of public infrastructures for mitigating risk, raising public awareness, conduct of rescue operations and implementing recovery measures (NDRRMC, 2021).

This figure was a compiled report of the OCD by the Philippine Statistics Office indicating the damages inflicted by disasters in the country from 2010 to 2019. PSA said a total damage cost of Php463 billion was incurred for this 10-year period. Agriculture had the biggest chunk of damage with 62.7 percent of the total damage cost, followed by infrastructure and private/communication with 23 percent and 14.3 percent respectively (PSA, 2021).

Figure 2. Number of Incidents and Deaths Due to Natural Extreme Events and Disasters from 2010 to 2019

Source: Office of Civil Defense, 2019

Figure 1. Damages Due to Extreme Events and Disasters
(in Billion PhP)



Source: Office of Civil Defense. 2019

The next figure shows the number of disaster events and the death tolls in every event. We can observe that 2013 was erratically high compared to other years. This can be connected to the occurrence of Typhoon Yolanda in the country that left unexpected deaths from a surprised population. This event garnered the attention of the world as one of the worst disaster events of that year and led to pouring of humanitarian assistance as the local government unit was shocked by the event. The Yolanda events stirred the national necessity for a proactive DRRM at the national down to the local level. However, as we saw from the earlier figures, the damages inflicted remained significant although we were able to reduce unnecessary fatalities as shown in this downward

trend. In late 2020, a record-breaking flood dubbed as a 100-year flood event happened in Cagayan province caused by Typhoon Ulysses with reported 1.26 million affected families or 5.18 million persons with 101 casualties. This event inflicted an estimated Php7.3 billion on agriculture and Php12.9 billion on infrastructure (Office of Civil Defense, 2021). As a response, President Rodrigo Duterte issued Executive Order No. 120 entitled "Strengthening Rehabilitation and Recovery Efforts in Typhoon-hit areas through the Creation of the Build Back Better (BBB) Task Force. The Task Force is Chaired by the Department of Environment and Natural Resources with the Department of Public Works and Highways as the Vice Chair and other government agencies as members. The main function of the task force is to focus on the post-disaster rehabilitation and recovery phase of areas affected by typhoons using a whole-of-society approach wherein consultations with the multi-stakeholders will be undertaken. The BBB Task Force identified six key result areas (KRAs) namely, Better and Resilient Infrastructures, Stronger shelter and resilient settlement, Improved systems and essential services, restored sustainable livelihood, Strengthened governance through Broad-based citizen input and Intensified watershed

management. The BBB Task Force has implemented structural and non-structural interventions in Cagayan Valley, which are intended to mitigate flooding in the valley. Among the projects undertaken is watershed rehabilitation by planting bamboo seedlings along the river banks, reforestation of watershed areas, river easement recovery and dredging of the Cagayan River.

When we consider all these interventions, we expect that all local government units and the community are well equipped with the necessary knowledge on disaster management. However, we can still observe an increasing trend of damages and losses from natural disasters. While we cannot exclusively blame it to lackluster disaster administration of the local government unit due to other factors like the country's geographical location, population, poverty levels, political leadership capability, intensity of disasters and among others, it will still point to the direction of level of preparedness and resiliency to absorb the impact of disaster.

THE RESILIENCE CONCEPT

We can say that disasters only happen when there are exposed variables in an affected area. Some factors like urbanization, poverty and increasing population play an

important role in a disaster. It can be observed that areas with good economic development, such as cities like Metro Manila and Cebu attract in-migration. This movement of people and robust economic conditions increase vulnerability and exposure to disasters as more people and assets are located in high-risk areas. There are also observed land-use changes among growing regional areas located along the river and coastlines as more agricultural lands are transformed into residential and commercial establishments. In my observation, poor people tend to be more vulnerable to disaster as they lack the financial capability to cope up with the impacts of disaster either directly or indirectly. They will be dependent on the assistance of the government which could or could be provided sufficiently. Meanwhile, developed countries like Japan have higher coping capacity and are expected to be more resilient. During my stay in the country, I have noticed the presence of protective structures along the river and well forested mountains. This is in addition to the well-established warning and evacuation systems in place and operational even before the onset of a disaster. My country is still developing and is more focused on economic programs and projects and the necessary infrastructure to support it.

Despite this fact, we cannot undermine the ongoing initiatives for DRRM and climate change adaptation in the country.

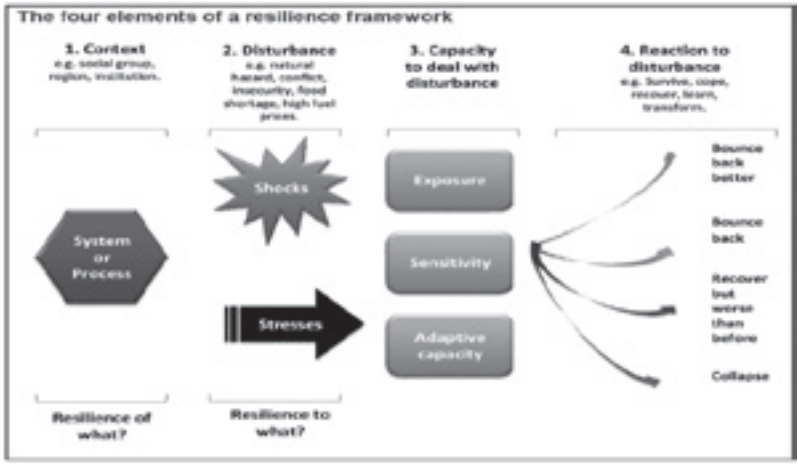
Our country has not been slacking off as it's been actively affirming its commitments in international agreements for DRRM and Climate Change Adaptation such as the COP 21, Hyogo Framework of Action, Sendai Framework for Disaster Risk Reduction, Paris Agreement and the Sustainable Development Goals, to name a few. We crafted policies and laws such as the Climate Change Act of 2009 and the Philippine Disaster and Management Act of 2010 with these international agreements. We've integrated and mainstreamed DRRM and CCA in our national and local plans. Existing plans were updated to cope-up with the changing situations. The NDRRM Plan was updated with the aim of achieving the shared goals of Ambisyon Natin 2040, National Climate Change Action Plan (NCCAP) and National Security Strategy in risk reduction, resilience building, human security and sustainable development and adhering to the principles of whole-of-society and whole-of-government approach. This approach can be observed from the DRRM Council structure of our country. In effect, our country has 1 National DRRM Council, 17 Regional DRRMCs, 81 Provincial DRRMC, 122 City RDDMC, 1,512 Municipal DRRMC and 42,026

barangay DRRMC (Domingo, 2017). This whole network is expected to implement the National and local DRRM plans, programs, projects and activities that will increase resilience against disasters.

Given these facts, how resilient is our country, our communities and households? Most of the definitions of resilience that we encounter share four common elements: context, disturbance, capacity and reaction. I was able to come into contact with a resilience framework where these four elements are integral. This framework was developed by the Department of International Development (DFID) where we can examine the various kinds of resilience and could help determine the levels of resilience that exist in our country, communities and households (DFID, 2011).

This framework was simplified by DFID but it can be more complex in real life situations as many variables will come into play. For example, the response curve can be slow or uneven, due to say, inaccessibility of affected areas or political context This, I think, is a major consideration in our archipelagic country. Other factors could be the occurrence of secondary shocks or the lack of information about the disaster. Stresses, on the other hand, can be cumulative which will eventually build into a shock in a matter of time. Now, the

affected population can have a different reaction to both shocks and stresses according to their coping and adaptive capacity.



Source: Department of International Development, 2011

"RESISTANCE TO WHAT"

In order for us to enhance resilience, it should be clearly contextualized allowing it a coherent answer to the question "resilience of what?". In our case, we've been constantly talking about natural disasters particularly typhoons and floods, which are the most common and widely occurring disasters in the country, and how the local government and the community handles these. These two disasters always come together as the latter is triggered by the first. The local

government units and the community have been on the frontline in disaster risk reduction and management and the effectiveness of their systems is one important aspect in ensuring resilience to disasters (DFID, 2011). As the main actors, local government units have acknowledged the importance of keeping the integrity of the environment, strengthening of people-centered politics, strong local economy, climate-proof infrastructure, accessible technology and good social support systems.

SHOCKS AND STRESSES

After determining the system or process of interest, we will move to the next stage which is to understand the disturbances faced thus addressing the question "resistance to what?". Here, we have two forms of disturbances, shocks and stresses. According to DFID, we define shocks as sudden events that impact on the vulnerability of the system and its components. Now shocks can strike at different levels or intensity and duration (DFID, 2011). In the Philippines, almost all kinds of shocks have occurred such as typhoons, floods, droughts, earthquakes, volcanic eruptions, COVID 19, Marawi siege and terrorist attacks. On the other hand, stresses are long-term trends that undermine the potential of a given

system or process and increase the vulnerability of actors within it. Our country is also suffering from various kinds of stresses that include natural resource degradation, loss of agricultural production, urbanization, climate change and land conversion to name a few. Sometimes shocks and stresses are interconnected which further intensifies the impacts of the shocks. A good example for this is the occurrence of shocks in the form of typhoons and floods in a denuded or degraded watershed area with uncontrolled urbanization. This scenario has been the reality in many severely damaged areas that have resulted in high fatality, like the case of Super Typhoon Yolanda.

CAPACITY TO DEAL WITH DISTURBANCE

For the system or process to be able to deal with shock and stress, they should consider the levels of exposure, levels of sensitivity and adaptive capacities. When we talk about levels of exposure, we have to assess the magnitude and frequency of shocks or the degree of stress (DFID,2011). For example, people whose residences are located in low-lying areas are more likely to have higher levels of exposure than others situated in hilly areas. On the other hand, sensitivity is the degree to which a system will be affected by, or respond

to, a given shock or stress. This can vary considerably for different actors within a system. During flood events, older people have higher sensitivity to disasters as their mobility is affected by their age. The third is the adaptive capacities of actors- individuals, communities, government, private institutions- are determined by their ability to adjust to disturbance, moderate potential damage, take advantage of opportunities and cope with consequences of a transformation or changes. Adaptive capacities allow actors to anticipate, plan, react to, and learn from disasters. In a way, sensitivity and adaptive capacity are determined by the availability of assets and resources ready for mobilization even before the occurrence of disasters. Assets and resources vary from social, human, technological, physical, economic, financial, environmental, natural and political. The resiliency of the DRRM system is a function of sensitivity and adaptive capacity. Failure on any of the assets and resources increases the vulnerability and susceptibility to cope up with the adverse effects of disasters.

REACTION TO DISTURBANCE

The best way to deal with disturbance or in our Philippine context, disaster, is to bounce back better. In this

case, the capacities are enhanced or sensitivities and exposures are reduced, leaving a system that is more able to deal with future disasters. Another alternative reaction is to bounce back to the normal pre-existing conditions before the disaster occurred or to recover but worse than before which will result in reduced capacities. The worst- case scenario that could happen is the collapse of the system from the disaster which could lead to catastrophic reduction in capacity to cope in the future (DFID, 2011). In our experience, the Yolanda event revealed the lack of coping capacity of the affected area that national and international interventions and actors took over to be able to bring back the system in the fastest possible time. This was also true in the Marawi siege where significant destruction was recorded. The government usually creates a special body to take over the rehabilitation and recovery of these areas and with special fund allocations.

CREATIVE-DESTRUCTION EFFECT

The figure below shows the theory of disasters and growth where it comes to agree that in the short run, disasters cause significant macroeconomic damage. But in theory, a disaster could send an economy along three divergent long-term growth paths. The compounding of direct and indirect losses in physical and human capital could place an economy on a permanently slower growth track. It will eventually return

to its average long-run growth trajectory; growth will long remain below its counterfactual scenario where disaster never occurred.

On the other hand, rebuilding in the wake of disaster could result in old, worn-out capital being replaced with newer and more productive technologies, machinery, factories and equipment. This "creative-destruction" process could place the economy on a permanently higher growth path. There is however, a significant financial and opportunity cost for this process (Insurance Bureau of Canada, 2014). And the third possibility is that the two effects cancel each other out, with no significant impact on long-term growth trends.

Source: Insurance Bureau of Canada, 2014

ARE OUR ACTIONS SUFFICIENT?

As discussed in the earlier part of this paper, there are various programs and activities including a bunch of policies and laws on DRRM that are being implemented in the country. In addition to this, we are signatories and pledged support to different international agreements and plans. We even formulated our development plans parallel with international action plans for DRRM and the Sustainable Development Plan. Our development plans have integrated DRRM and climate change to make it more resilient from disaster. Furthermore, we initiated an assessment system through Gawad Kalasag and the SGLG to rate the effectiveness of local government units in implementing the DRRM program, projects and activities and institutionalizing it into the governance system. And of course, the Office of Civil Defense has been very active in their capability building activities to local government units, schools, communities, and other sectors. Training such as the Incident Management System, a ladderized training, which by the end of it will enable the trainees the necessary skills and concepts on how to manage disaster and other related events that require the creation of an Incident Management Team. Basically, the training that's been implemented covers all the phases of disaster from prevention and mitigation, response,

preparedness and rehabilitation and recovery. This encompasses the DRRM cycle of management.

One major issue from the local government units is the lack of sufficient resources and assets to exercise their promulgated duty for DRRM. The burden on the LGUs has further intensified with the occurrence of the COVID 19 pandemic. In our country, local government unit's ability to implement DRRM programs and projects will depend on their income classifications. We have five levels of income classification where the 5th class is considered the poorest. The income classification determines the financial capability of local government units to undertake developmental programs and projects which include DRRM. This means that poorer LGUs are more vulnerable and lack the necessary coping capacity against the impacts of disaster. The implementation of the Mandanas ruling in 2022 is expected to ease this issue among the LGUs as additional funds of up to 30% is expected to be downloaded for them to fully implement all their devolve functions stated in the Local Government Code.

Despite all these initiatives, the data showed significant damages and losses from disasters which indicate that we still have a big room for improvements. We should assess not only the physical damages but try to look deeper

into other aspects that may have contributed to the continuing trend of high economic and social damages and losses to disasters.

A good example of disaster risk management is Japan which experienced a mega disaster, the Great East Japan Earthquake, which shook the whole country. It is the costliest earthquake in world history with a direct economic cost of $210 billion. Japan coped with Great East Japan Earthquake with its advanced Disaster Risk Management system built up during nearly 2,000 years of coping with natural disasters. The main elements of Japan's DRM system are 1) investments in structural measures, cutting edge risk assessments, early warning systems and hazard mapping, 2) a culture of preparedness, 3) stakeholder involvement, 4) effective legislation, regulation and enforcement, and 5) the use of sophisticated instrumentation to underpin planning and assessment operations. While these seem perfect, the system had several improvements after the Great East Japan Earthquake. These are: spreading a better understanding of the nature and limitations of the risk assessment among the people and local authorities, coordination mechanisms on the ground should be agreed on before the fact and vulnerable groups must not only be protected but engaged (Ranghieri, 2014).

WHAT SHOULD WE DONE MORE?

As stated earlier, the local government units only have a 5% allowed fund to be utilized for DRRM programs and projects from their annual Income Revenue Allotment (IRA) which is deemed very small to be able to function effectively. Hence, more resources should be allocated for DRRM-related programs, projects and activities. This will enable them to cope-up with the ever-increasing intensity of disasters due to climate change. Special attention must be given to lower-class municipalities as they have the very limited resources and assets for DRRM.

During my stay in Japan, I have observed the very important role the academe has been playing in DRRM. My professors are part of the government's planning and evaluation activities and that the government is acknowledging the contribution of the academe. Given this, I'd suggest that more research should be funded by the academe toward DRRM. These researches should be shared with local government units for them to use as reference in their development planning and decision making.

Now, we have been talking about climate change and studies say that an increase in global temperatures may boost hydrometeorological disasters. Furthermore, we have been

anticipating the Big One which could happen anytime without warning. It is then imperative for us to review our building codes and redesign our infrastructure projects to be more resilient against climate related and ground shaking disaster events.

It is but a sad reality that some of our elected leaders at the local level lack the necessary knowledge and understanding on how to effectively deal with and manage disasters. We have been talking about proactive and building back better concepts but these are not yet fully institutionalized in local development and land-use plans. The Gawad Kalasag is a good tool to encourage the local government executives to seriously take into their political platforms the DRRM. With the elections coming near again in 2022, there will be changes in leadership hence there is a need for the newly elected to learn about DRRM.

LEARNINGS AND OBSERVATION IN JAPAN

My stay and exposures in Japan provided me new perspectives on where my country is headed in the future. I was impressed with the transport system of the country, especially the subway systems. As a student in the Nagoya University taking up environmental studies, I've been

exposed in my laboratory about disaster management and risk reduction researches. I was amazed on how the Japanese students treat disasters seriously. Among the disasters they were studying are earthquakes, flood, tsunami and the factors that affect the effectiveness of disaster management and preparedness. What struck me most was the availability and accessibility of historical data of past disasters even 100 years ago. Aside from the classroom discussions on disaster management, I was lucky to visit flood mitigation infrastructures such a dam, levee systems and pumping stations. I noticed that Japan has a vast levee system along major river systems that provides protection to the community against flood events. We once visited a site in Kyoto to see the ongoing construction of a mega levee system that is designed to withstand a 100-year flood event! Another observation I had was the environmental management specifically in how they ensure that the mountains are well forested. They acknowledge the role of healthy forests in flood mitigation. Ponds can be seen in city areas to serve as aesthetic and water catchment.

The warning systems in Japan are superb in such a way that notices of incoming typhoons and earthquakes can be received to give enough time to prepare for it, in addition to

installed load speaker systems and tsunami evacuation facilities. I once visited a disaster museum and appreciated how people, young and old, learn about past disasters. Moreover, engineers and scientists study infrastructure and systems failure to adjust and improve for future disasters.

My stay in Japan is somewhat short but still fulfilling as I have learned a lot not only from my lessons in school but by observing their DRRM systems and interacting with fellow Japanese and international students. I will keep these lessons and hope to see those systems in my country very soon.

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Chapter 8

Environmental Management for Sustainable Economic Development "Case of Central Visayas"

Maria Gracia C. Dabon

08

ENVIRONMENTAL MANAGEMENT FOR SUSTAINABLE ECONOMIC DEVELOPMENT "CASE OF CENTRAL VISAYAS"

It was spring of 2017, I visited Japan for a short vacation, with the main intention to experience the countryside, away from the more famous finance and business center, Tokyo. On top of my list were the hanami experience and, should I get lucky, skiing at some snow-capped mountain. I considered myself more than lucky because I was able to experience everything in my bucket list. I enjoyed the beauty of cherry and plum blossoms in various parks and gardens in the Kanto and Tohoku regions, from Tochigi to Aomori, and of course, went snowboarding at Gala Yuzawa in Niigata.

It is common knowledge that Japan is among the most modern and progressive economies, a world leader in manufacturing electrical appliances and electronics, automobiles, ships, machine tools, name it! The towering iconic buildings, the menu of mass transportation options and the busy business districts speak of wealth and power. But what really struck me

was how a country of such economic progress, equally valued the natural environment. It is amazing how people were so conscious of keeping the environment beautiful and healthy. I could never forget the enchanting cherry blossoms in a public park in Hirosaki, the hill of baby blue eyes in Ibaraki and the stunning wisterias in Ashikaga. I read that a 150-year-old tree in Ashikaga City, likened to the fictional Tree of Souls featured in the 2009 film "Avatar", is the park's pride. In fact, it is considered to be Tochigi's designated natural treasure. In the 90s, there was said to be a development effort in the city and that particular tree was on its way. But instead of just cutting the tree, which is a convenient option, it was saved and was safely relocated at the park.

That Spring experience actually tickled my curiosity, an economic superpower putting so much value and importance to its physical environment, right before my very eyes, surreal! Before I could even go back home, I already penned my next dream getaway, you bet, Japan still.

Around that time, I received one of the best news of my life, I got accepted as a JDS scholar to pursue post-graduate studies at one of the most prestigious universities in Japan. I was on cloud nine. Fast forward, I went back to the land of the rising sun in early autumn of 2017, this time as a postgraduate student at the Graduate School of Environmental Studies at

the Nagoya University. During my two-year stint, we would occasionally visit other prefectures and check out best practices in terms of engineering and environmental preservation. As a member of the Nagoya University Global Environmental Leaders Program, I also had the chance to travel to other countries like Australia and Sri Lanka to exchange ideas with other students, discuss development issues, and learn about modern technologies and sustainable development strategies.

I also spent a month at the Institute of Global Environmental Strategies (IGES) Kitakyushu Urban Centre in Fukuoka for my global research internship, with the goal to study cases and identify strategies and best practices for sustainable development. During my internship, I learned that modern industry in Japan began in the City of Kitakyushu when government-owned Yahata Steel Works, boasting the nation's first modern blast furnace, was established in 1901. The Kitakyushu Industrial Zone supported national high growth as one of the country's four major industrial zones. On the other hand, this high growth was accompanied by serious industrial pollution. The citizens, local government, and businesses have all joined forces to combat this damage to the environment. In the past, not even bacteria could live in Dokai Bay area, known as the Sea of Death. Now, over 100 species of fish have returned to the bay. While once the sky rained

down the highest level of polluted precipitation in Japan, earning it the moniker of The Seven-Colored Smoke, the skies improved to the point where the city has been officially recognized for its starry sky, just like a fairytale.

ALL ABOUT CENTRAL VISAYAS

Most often than not, economic growth is coupled with the increased use of natural resources and undesirable environmental impacts. In the national and regional news, I have heard horror stories of how the environment was used and abused in pursuit of economic progress. At times, I see it with my own eyes. However, it is not necessarily true for some economies. I have seen unimaginable possibilities during my stint in Japan which may be applicable to a country or region like ours.

In this chapter, I will talk about environmental management for sustainable economic development, particularly in the Central Visayas region of the Philippines. Environmental management means different things to different people, especially depending on the context and the purpose or objectives for which it is used, as emphasized by Louis Kotze's article on environmental management. For this chapter, I am defining environmental management as the

implementation of environmental policies and strategies affecting the society and the natural environment.

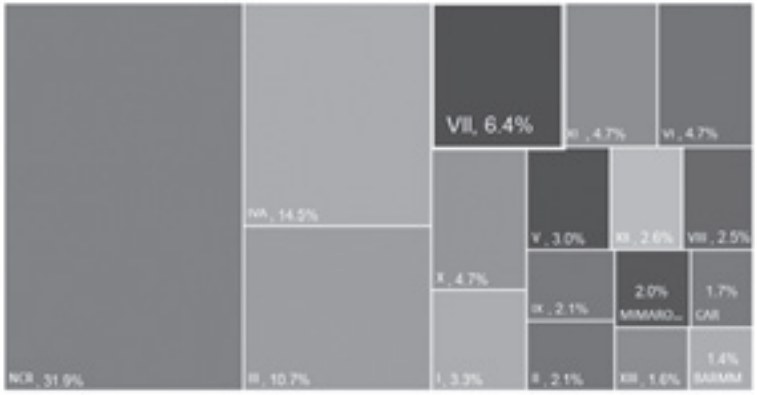
Natural resources support our economy by providing raw materials, food, water, land and energy. Thus, it is imperative to manage these resources well and use them efficiently to maintain environmental quality while pursuing economic development.

Environmental management plays a crucial role in attaining sustainable development or development that takes into consideration not only the present needs of the society but the future as well. Specifically, I will be looking at resource efficiency as it poses a significant impact on both the physical environment and the economy. Resource efficiency means using the earth's limited resources in a sustainable manner while minimizing impacts on the environment. It allows us to create more with less, and deliver greater value with less input. Resource efficient technologies play a key role in reducing the environmental impacts of production and consumption while promoting sustainable economic growth. I am taking the case of Region VII or Central Visayas as it boasts of rich natural resources and is an active player in the Philippine economy. Thus, the challenges and best practices of the region are significant to the national government. The sub-national economies, particularly the other regions which are almost

similarly situated with Central Visayas in terms of economic status, may refer to the challenges and solutions discussed in crafting their own plans and policies and proposing strategies and interventions related to resource efficiency. Other regions and local governments may also learn from the common plan and policy issues presented in the study and may consider suggested solutions and ways forward applicable to them.

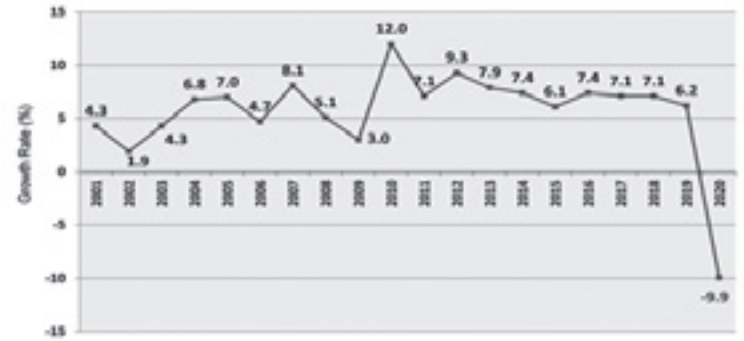
Central Visayas is known for its rich natural resources, especially the abundance in metallic and non-metallic minerals. However, it is worthy to note that about 50 percent of imports in the region in recent years are fossil fuels, particularly coal, which is mainly used in the power sector. Fossil fuels also accounted for the largest share of the Visayas Grid capacity mix.

Figure 1. Regional Share to total GDP at Constant 2018 Prices, in Percent, 2020



Source: PSA (2021)

Figure 2. Growth Rate of GRDP
at Constant 2018 Prices



Source: PSA (2021)

In terms of economic performance, the region is among the biggest contributor to the total Gross Domestic Product (GDP). Figure 1 shows the share of Central Visayas to the GDP, at constant 2018 prices, in 2020.

From 2010 to 2019, the average annual growth rate of the regional economy (at constant 2018 prices) is at 7.76 percent, with the highest growth rate in 2010 at 12 percent and lowest in 2015 at 6.1 percent. In 2020, however, the growth rate contracted by 9.9 percent due mainly to the COVID-19 pandemic. This contraction of the regional economy was the only contraction recorded over the 20-year period since 2000. Figure 2 shows the growth rate of the Gross Regional Development Product (GRDP) from 2001 to 2010.

In terms of population, Central Visayas is the fifth most populated region in the country. The total population of the region is estimated to be 7.4 million or about 7.3 percent of the total population of the country. The population of the Philippines, including central Visayas, is expected to continue growing, which translates into more pressure on material and energy resources. Table 1 shows the total population of Central Visayas based on various censuses of the Philippine Statistics Authority (PSA, 2021).

Table 1. Population of Central Visayas
Census Years 2000, 2010, 2015 and 2020

Census Year	Census Reference Date	Total Population
2000	1 May 2000	5,706,953
2010	1 May 2010	6,800,180
2015	1 August 2015	7,396,898
2020	1 May 2020	8,081,986

Source: PSA (2021)

As a key player in the Philippine economy, it is imperative to scrutinize the region's existing strategies and policies, especially since it is also a significant contributor to waste and consumer of energy considering its robust economic activities and growing population. Further, it is also important to note and consider contemporary issues affecting both the environment and the economy such as the global pandemic, COVID-19.

In this chapter, I will try to identify gaps in the existing national and regional development plans and policies, particularly related to resource efficiency, and come up with recommendations to address these gaps for sustainable economic development.

DECOUPLING RESOURCE USE AND ECONOMIC GROWTH

To achieve sustainable development, it is important to delink resource use and economic growth; hence, it is crucial that our natural resources are used efficiently. The United Nations Environment Programme (UNEP) defines decoupling as the reduction of the use of fossil fuel or water to produce economic growth, thus, delinking the latter from resource use.

The physical economy and economy have been extensively discussed and studied in the Philippines. At the metropolitan level, a study on the urban metabolism of six Asian cities, including Metro Manila, was conducted by the Asian Development Bank. The study assessed metropolitan areas in Asia: Bangalore, Bangkok, Ho Chi Minh City, Metro Manila, Seoul Metropolitan Area, and Shanghai Metropolitan Area, using metrics such as demographics and economic and physical structure for the year 2000. A study on the material flow approach to monitor progress in decoupling economic

growth from environmental pressures in the Philippines, highlighting trends and discussing the latest and emerging issues in terms of material consumption and economic growth was also published by a former JDS scholar in 2018. In 2019, I completed my master's thesis studying the socioeconomic metabolism of the Central Visayas region. In my study, I concluded that Central Visayas managed to separate environmental pressure and economic growth at some point, which is a good indicator that with a good mix of policies and strategies, resource decoupling may be achieved.

However, a thorough examination of the existing development plans and policies related to resource efficiency in Central Visayas has not been conducted yet. Also, previous studies have not considered issues haunting both the environment and the economy in recent times such as COVID-19. Further, this study would be relating the gaps and issues identified to possible solutions actually observed in Japan.

DEVELOPMENT STRATEGIES AND POLICIES RELATED TO RESOURCE EFFICIENCY

Philippine Development Plan 2017 – 2022

Chapter 20 of the Philippine Development Plan (PDP) focuses on ensuring ecological integrity, clean and healthy environment. To support the accelerated economic growth that the administration aims to achieve, it is critical that environmental health is improved and integrity is ensured. The PDP includes aggressive strategies to rehabilitate and restore degraded natural resources, and protect fragile ecosystems while improving the welfare of resource-oriented communities.

Expanding the development of resource-based industries, strengthening enforcement of environmental laws and promotion of sustainable consumption and production were among the strategies identified to ensure a sustained biodiversity and functioning of ecosystem services and improved environmental quality. These strategies broadly support efficient use of resources.

In terms of land quality management, the improved management of solid, toxic and hazardous wastes, including electronic wastes was stressed. This is especially relevant with the emergence of COVID-19 which posed a great challenge not only to the economy but to the environment as well. It is, thus, important to improve the management and disposal of electronic, hospital and toxic wastes.

For the promotion of sustainable consumption and production, the government is pushing for the development and implementation of policies and initiatives, particularly practices and technologies that will facilitate the attainment of both economic goals and environmental standards. The following strategies were highlighted in the PDP: establishment of a sustainable market for recyclables and recycled products; strengthening the promotion, development, transfer, and adoption of eco-friendly technologies, systems, and practices in the public and private sectors by increasing access to incentives and facilitating ease of doing business and other related transactions; and intensifying the use of renewable energy and increase its share in the energy mix.

Central Visayas Regional Development Plan 2017 – 2022

The Central Visayas Regional Development Plan (RDP) 2017-2022 emphasizes that the attainment of sustainable development requires the region to maintain the integrity of its ecology as this provides the physical basis of the region's progress and survival.

The RDP noted society's growing environmental awareness. An increasing interest and commitment among businesses, organizations, individuals, as well as local governments to adopt sustainable principles and practices is observed. Many local governments, for instance, have passed ordinances reducing or banning single-use plastic, instituting sound solid waste management practices, and promoting green buildings. A growing number are also implementing green projects and incorporating sustainable principles into their planning. Businesses, for their part, have come up with their own sustainable goals and undertakings. With the government enforcing stricter environmental standards, businesses are obliged to embrace sustainable norms and practices.

However, despite the gains being highlighted, the region still faces a long list of environmental issues. Among

the main challenges identified are the weak implementation of environmental laws and poor solid waste management, especially considering the volume of waste generated in urban centers. The RDP suggests exploring the environmental viability of putting up waste-to-energy facilities and the adoption of modern incineration technologies to combat the latter. These strategies not only address our solid waste disposal concern, it also responds to issues identified in the energy sector, particularly the rising electricity demand in the region.

Halfway towards the RDP's implementation, the COVID-19 pandemic disrupted all development efforts and posed very serious threats to the economy and the environment. To address these issues, the Regional Recovery Program (RRP) was prepared by the Central Visayas Regional Development Council (RDC). The RRP serves as a guide for each sector of society to solve socioeconomic issues and in shaping the region's resiliency against similar threats in the future.

With the emergence of COVID-19, the economy is struggling and environmental issues are magnified. This includes the increased volume of solid waste generated at the household level due to the packaging of food takeaways and

deliveries from online shopping, which soared during the implementation of strict community quarantine in urban centers like Cebu City. Moreover, the new normal of wearing disposable face masks, face shields and hand gloves generates infectious waste at the households. Among the strategies identified by the RRP to address these concerns are ensuring compliance of private and public hospitals with hazardous waste management standards and encouraging private sector investment in the establishment of treatment, storage and disposal facilities that can handle new pathogens and viruses.

Environmental policies in the Philippines, including the Clean Air Act and the Clean Water Act and the Ecological Solid Waste Management Act of 2000 are intended to protect and preserve the environment. These laws are comprehensive enough to ensure ecological integrity and maintain a clean and healthy environment. However, implementation or enforcement of these environmental laws and regulations remains to be a challenge. As pointed out in the discussion paper of the Philippine Institute of Development Studies analyzing regulatory policies on solid waste management in the Philippines, the provisions of the Ecological Solid Waste Management Act of 2000, if properly implemented, would have conveniently and strategically allowed for the imposition

of systematic and structured remedies. But positive outcomes rarely come those easy given bureaucratic realities. The overly simplistic transfer of responsibility to local government units, even just to complement the local government code, has resulted in two decades of mediocre policy grounding.

Policies responsive to the strategies highlighted in the national and regional development plans, such as the proposed "Waste-to-Energy (WtE) Act", are currently being deliberated and considered. The Bill allows the use of WtE facilities in waste treatment and disposal, and to generate sustainable energy. In line with the WtE proposal, the Department of Energy recently released a draft policy that will enhance the development of waste-to-energy facilities in the country.

The development plans also identified the following legislative agenda to support its proposed strategies:

Table 2: Legislative Agenda in the Environment Sector

Legislative Agenda	Rationale
Electronic Waste Recycling	Address improper disposal of e-waste and facilitate the advancement of existing efforts to strengthen solid waste management
Amendment to RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act)	Address the emerging toxic and hazardous wastes which are not covered by the current provisions of the law.
Philippine Environmental Assessment System	Ensure that possible environmental consequences of policies, plans and programs are fully-accounted at the earliest stage of decision-making consistent with economic and social considerations. This will also strengthen the use of Environmental Impact Statement System as a planning and monitoring tool.

Source: Central Visayas Regional Development Plan 2017 - 2022

The amendment to RA 6969, specifically addressing the emerging toxic and hazardous wastes is crucial in the emergence of pandemics, like COVID-19.

ENVIRONMENTAL MANAGEMENT IN CENTRAL VISAYAS

A review of the national and regional development plans reveals that Central Visayas and the Philippines as a whole have laid down strategies and policy recommendations responsive to the goals of resource efficiency and sustainable economic development. These strategies promote sustainable development through the sound use of resources while minimizing impact to the environment.

The proposed establishment of a sustainable market for recyclables and recycled products; strengthening the promotion, development, transfer, and adoption of eco-friendly technologies, systems, and practices in the public and private sectors; and intensifying the use of renewable energy and increasing its share in the energy mix should top of the list of priorities.

In terms of policies, I think our existing laws could address most of our environmental concerns; we just need to

take monitoring and enforcement to the next level. With the implementation of the Mandanas Ruling in 2022, we are expecting our local governments to be more empowered which could later translate into improved enforcement of environmental laws at the local levels.

The global pandemic, COVID-19, has placed our issue of waste management in the spotlight. Thus, it is also important to take into consideration adoption of new strategies and technologies to fill the gaps and address economic and environmental challenges which may not be covered in our existing policies and strategies, such as the Waste-to-Energy (WtE) technologies. WTE facilities address our solid waste management woes, especially in times of pandemic, and the need for additional sources of power supply to complement the robust economic activities in the region, particularly in the urban centers. According to the ADB WtE in the age of circular economy; best practice handbook, WtE can be more broadly described as taking something someone does not want and transforming it into something someone else needs or wants, that is resource efficiency defined. WtE technologies and pathways in the context of circular economy principles address a number of SDGs, including good health and well-being, clean water and sanitation, affordable and clean energy,

industry, innovation and infrastructure, sustainable cities and communities, responsible consumption and production, climate action, life below water, and life on land. I understand that there are valid environmental concerns raised, such as the possible negative effect to our air quality, and I truly hope that these are also taken seriously by concerned entities.

The year 2022 will be a fresh start for planners and lawmakers. New development plans to cover the next six years of the new administration will be crafted at the national and sub-national levels. The implementation of the Mandanas Ruling is also expected to empower the local governments. This chapter could be a helpful reference and guide in development plan formulation, policy-making and identification and prioritization of development interventions for national and sub-national government agencies and local government units. It discusses an array of challenges, strategies and policies related to resource efficiency for sustainable economic development, especially this time that the government discusses ideas on future-proofing the country against pandemics.

This study uses secondhand data and references that are readily available due to time constraints and limitations due to

the implementation of strict community quarantine brought about by the COVID-19 pandemic.

OVERCOMING ENVIRONMENTAL WOES IN CENTRAL VISAYAS, WAYS FORWARD

To wrap up this chapter, I am sharing my experiences, highlighting lessons I learned in terms of resource efficiency for sustainable development in Japan. After reviewing the development plans and policies, I knew I had to look back on my Kitakyushu experience which opened my eyes to a lot of possibilities and solutions. I identified the following strategies and best practices in sustainable development planning, particularly related to resource efficiency, which may be applicable to Central Visayas and the Philippines as a whole.

Strong partnership among the government, residents and private sector in addressing environmental concerns

Even though Kitakyushu has faced a number of crises, it was able to fight adversity because of its indomitable spirit and collaborative partnerships among industries, the local government, academia and local residents. Over its history, Kitakyushu has often been ahead of the times as it experienced issues earlier than other cities and is often referred to as

"microcosm of Japan" or the "future of Japan". The city has raised its visibility in and outside of Japan as it continues to contribute to the creation of a sustainable society by widely disseminating its knowledge, experience, and technologies developed in the process of addressing local challenges.

Establishment of eco-towns which produces superior quality products

The City of Kitakyushu has been promoting the Kitakyushu Eco-Town Project in the Hibikinada area of Wakamatsu since July 1997 as a unique regional policy, integrating an "Environmental Conservation Policy" and an "Industry Promotion Policy", with the aim to construct a resource-recycling-based society. This project utilizes industrial infrastructure and technological capabilities accumulated throughout the long history of this well-known manufacturing city, in addition to human resources, technologies and know-how acquired while overcoming the industrial pollution that once cast a shadow over the city. The Eco-Town Project has also been developing a comprehensive range of initiatives, from education and basic research in the environmental field to technology and demonstration research and commercialization efforts through cooperation with the Kitakyushu Science and Research Park.

The city seeks to create a resource recycling network by joining cooperative zero-emissions environmental industries together in a structured organization to further promote the development of environmental industries. Figure 3 shows examples of recycling projects in the Eco-Town.

Industry-government-academe collaboration in developing and promoting technologies and local industries (e.g., Kitakyushu Research and Science Park and research centers at Ecotown)

The Kitakyushu Research and Science Park brings several national, local and private universities, graduate schools and research institutes together under the two main themes of environment and information in order to develop human resources with the skills useful for the future. Some environmental research initiatives include the development of more efficient fire extinguishers, light-weight and high-technology automobile parts processing technology research group, and Kitakyushu thin-film solar cell research group, among others. Figure 4 shows the cooperative structure within the Science Park.

Figure 3. Examples of Recycling Projects in Eco-Town

Source: Global Internship Report (Dabon, 2018)

Shifting to greener alternatives for energy source

Central Visayas is highly dependent on fossil fuel carrier imports from local and international sources. Around 60% of the total imports for the 2000 to 2015 are fossil fuel carriers. Around 99 percent of the total fossil fuel carrier consumption came from imports. This makes the regional economy vulnerable to external factors, such as the economic and political powers of other socio-economic systems. To combat the environmental issue of global warming and fossil fuel depletion, Kitakyushu City has established a Next-Generation Energy Park in Wakamatsu-ku, Kitakyushu. Here, natural energy sources such as solar wind and biomass are showcased.

Further, to broaden my exposure, I was also given the chance to learn about modern technologies and sustainable development strategies outside Japan, I was able to explore and learn from other countries shaping the future in terms of environmental management, such as Australia, through the international study tour facilitated by the Nagoya University Global Environmental Leaders' Program (NUGELP).

I was able to visit the Mugga Lane Solar Park in Canberra, Australia. It is the third of its kind in Canberra and boasts 53,000 solar photovoltaic panels and provides electricity to over 3000 households. It is a 13-megawatt solar farm, including half a megawatt attached to ground-mounted tracking units. The technology applied is innovative as it increases electricity output by tracking the sun over the course of the day through the combination of Single Axis trackers and ground-mounted solar arrays housing over 53,000 solar photovoltaic panels injecting energy into the distribution network. Below is an actual photo of the solar park.

To attain sustainable development, it is imperative for Central Visayas to explore means to minimize import dependency on fossil fuels and shift to renewable sources.

Figure 4. Cooperative Structure within the Science Park

Source: https://www.kitakyu-u.ac.jp/cm/lang-cn/about/park.html

Promotion of environment-friendly waste-to-energy technologies and facilities

Committed to environmental friendliness, the city has advanced from a "disposal-oriented system" to "recycling-oriented system" to a "resource circulation-oriented system". They have established an incineration facility that contributes to the reduction of environmental burdens and effective utilization of thermal energy. Through the melting treatment of refuse, resources and thermal energy are recovered and effectively utilized. The gas generated in the shaft furnace type gasification and melting furnace is combusted in the combustion chamber and the steam is recovered from the broiler to be utilized for heating as well as electric power generation. The residues are melted at the bottom of the melting furnace, and the molten materials are separated into

slag and metal that are recycled as resources. The exhaust gas is detoxified through a series of treatment processes and the melting furnace fly ash, a very small amount, is also detoxified and sent to a final disposal site. I had the chance to observe these processes inside the facility as part of my internship.

Another facility uses a computer-controlled, automated system for a smooth and safe operation and management. The production of dioxins is curbed by using a bag filter (filtration-type dust collector). A steam turbine generator is installed to efficiently utilize the heat generated by waste incineration. Collecting heat to utilize as electric power suppresses the emission of carbon dioxide. It also utilizes a semi-dry toxic gas removal system to eliminate hydrogen chloride, sulfur oxides, mercury, soot and dust, and other substances which are contained in the exhaust gas. In addition, the group of polychlorinated-dibenzo-p-dioxins is controlled and removed. Through these countermeasures, the facility commits itself to preventing pollution caused by exhaust gases.

For issues on hazardous hospital waste disposal, magnified by the COVID-19 pandemic, a two-stage combustion-type gasification incinerator could also be explored. Due to the gasification combustion system, there is a good combustibility which leads to complete combustion.

Consequently, the concentration of dioxin and dust would be at a very low level. Since cinders cause the ember combustion at 1,200 degrees Celsius, dioxin in residue is also extremely low.

Further, the Mugga Landfill in Canberra, Australia which I had the chance to visit, could also be an option. The city has achieved one of the highest rates of resource recovery in Australia, at over 70 percent. Organic waste disposed of in landfill produces methane – a potent greenhouse gas. Methane is extracted from Canberra's Mugga Lane landfill and is burned to generate renewable electricity. Canberra's Mugga Landfill uses best practice techniques to capture most of this methane and the Government receives an annual royalty on the renewable energy generated from the landfills.

City-to-City Collaboration

City-to-City collaboration especially related to technology transfer and technical assistance e.g. The City of Kitakyushu and the City of Davao signed a Memorandum of Understanding creating a Green Sister City relationship that aims to create cooperative partnerships in the environmental field for the purpose of expanding mutual benefits and positively driving development through low-carbon societal

initiatives, resource initiatives, resource circulation projects and development of local human resources. Cooperation between the cities of Kitakyushu and Cebu was also established for e-waste recycling, including the capacity building and implementation of an improved waste management system using the Takakura composting method.

These are only a few of the strategies and policy recommendations that we, in Central Visayas and the Philippines as a whole, could explore and consider in order to separate resource use from economic growth, and ultimately attain sustainable economic development.

I am in awe of how Japan implements these strategies and interventions to maintain the balance between economic growth and environmental preservation. I cannot wait to go back in a few years and see how the development plans were ultimately translated into completed projects in Kitakyushu, and of course, check out the latest proposed strategies as well. That said, aside from a repeat of the magical Sakura experience in Japan, a visit to Kitakyushu's Eco Town Center, especially the Next-Generation Energy Park, is definitely on top of my list.

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Chapter 9

Gender and Development: Contemporary Issues of Female OFWs DURING THE COVID-19 Pandemic

Carlos, Jean Clarisse T.

09

GENDER AND DEVELOPMENT: CONTEMPORARY ISSUES OF FEMALE OFWS DURING THE COVID-19 PANDEMIC

"Tomodachi" is a Japanese word for "Friend". When living overseas away from family and friends, people can get by with the company of new tomodachis.

My experiences in Japan were made richer because of the friends I made along the way. School, food, places, train rides, long walks, and seasons became more meaningful because I shared it with them. Meeting friends in a foreign land whom I shared my young dreams and experiences with was life changing. Japan gave me an opportunity to make lasting relationships with my fellow JDS batchmates, senpais, kouhais, classmates, and fellow Filipino students. It also opened doors for me to connect and reconnect with old and new friends from different cultures with their own meaningful journeys.

These friends made me feel secure and at home away from home. The comfort they gave through cooking different dishes, spending the holidays together, exploring different festivals,

shopping for pasalubongs, and especially having them to turn to when life gets rough was a blessing. As the saying goes, friends are the family you choose.

Across different cultures, friendship is one of the most important treasures but most especially for Filipinos overseas. When life gets hard, the kababayans are always there to help because they know how tough life can be. When I was in Japan, my thesis was about the Filipina single-mothers who at one point resided or were still living in Japan. These mothers opened their arms and welcomed me into their lives and communities. They shared their greatest struggles and proudest achievements.

Like me, most of them longed for their friends and families whom they left in the Philippines. Their struggles and drive to provide the best lives for their families are very selfless. The challenges they have faced and are still facing made me believe how strong and resilient these women are but at the same time I believe they deserve better. Their hard work and empowerment are really admirable. Their love and passion for their families are beyond measure that is why whatever hardships and inequality they face in a foreign land, they endure it. When I asked them that whenever life gets hard, where do they turn for help? They said, oftentimes they turn to their Filipino friends since the sense of community among

Filipino communities overseas is strong. They ask each other for help more than the Philippine embassy or the Japanese authorities because it is easier, faster, and they have low trust in government services.

Upon discovering their braveness, these women inspired me and became my tomodachis. The journeys of most of these strong women started either being a wife to a Japanese, or working in the entertainment or domestic work sector which have little to no legal protection. Now that they are raising their children alone and also with the responsibility of sending money back to their families at home, these women work multiple baitos and often disregard their physical and mental health just to make ends meet. They are strong and empowered but they also need institutionalized support from both governments.

…The experiences of these Filipina single-mothers in Japan are often shared by other Female Overseas Filipino Workers (FOFWs) around the world. Their journeys have advantages and disadvantages for individuals, families, and societies. FOFWs having mobility and choices to work abroad can be considered as empowering in terms of exercising their freedom and rights. However, women in general are more prone to being stereotyped and concentrated in vulnerable

sectors, such as domestic work, healthcare, and other jobs which are attributed as women's work. Most of these jobs are not covered in labor laws in many countries, and it pushes women into illegal set-ups and dangers (Asis, 2004).

Given this, it is very critical to explore the latest trends of challenges being faced by female FOFWs coupled with the addition of the COVID-19 pandemic. I will try to answer the question: "What are the Gender and Development (GAD) issues female OFWs faced during the COVID-19 pandemic, especially how the cross-country mobility restrictions and measures to fight the virus aggravated their state and worsened the gender inequalities?" By understanding the current GAD issues which female OFWs face, I will map out recommendations relevant to the Philippines to cater to the improvement of well-being of FOFWs.

THE FOFWS AND THE CHALLENGES THEY FACE: PRE AND DURING THE COVID-19 PANDEMIC

Growing up in the Philippines, you may have at least one family member who is a FOFW. According to Philippine Statistics Office (PSA) (2020), there are 2.2 million OFWs

who worked abroad at any time during the period April to September 2019. The proportion of FOFWs (56.0%) was higher than male OFWs (44.0%). Abao (2021) stated that FOFWs are in jobs of healthcare, domestic work, hospitality and accommodation where social distancing seems impossible.

I have friends who are nurses in Europe, friends who grew up with their mothers working in Hong Kong as domestic workers, and friends who are in the hospitality industry in the United Arab Emirates.

However, in contrast to what most Filipinos think of FOFWs working overseas having glamorous lifestyles all the time, it has been challenging for most especially during the pandemic. Healthcare and domestic workers, being at the forefront of the battle against the pandemic, are at great risk since there are restrictions in mobility. Also, the issues which were already present before were aggravated due to these restrictions imposed during the lockdown measures by different countries (Abao, 2021; Baclig, 2021).

Research of the International Organization for Migration (IOM) (2020) said that the issues which were the most common for FOFWs are contract violation, maltreatment or

mistreatment, immigration or document-related problems, contract substitution, health or medical-related problems, personal problems, sexual abuse or harassment and rape during the pandemic. Moreover, FOFWs also face gender-specific restrictions in migration policies, such as limited access to culturally-sensitive essential health services in different languages and are more prone to abuse and sexual and economic exploitation with stricter movement measures, both within nations and across borders (UN Women, 2021a).

Distribution of Overseas Filipino Workers Place of Work Abroad: 2019	
Place of Work	**100.00**
Africa	1.0
Asia	81.1
East Asia	21.7
Hong Kong	7.5
Japan	3.8
Taiwan	6.7
Other countries in East Asia (including China, South Korea)	3.7
Southeast and South-Central Asia	8.0
Malaysia	2.1
Singapore	4.1
Other countries in Southeast and South-Central Asia (including Brunei)	1.8
Western Asia	51.4
Kuwait	6.2
Qatar	5.6
Saudi Arabia	22.4
United Arab Emirates (UAE)	13.2
Other countries in Western Asia (including. Bahrain, Israel, Lebanon, Jordan)	4.0
Australia	2.1
Europe	7.7
North and South America	8.1
Notes: Details may not add up to totals due to rounding. Source: PSA, 2019 Survey on Overseas Filipinos	

Even before the pandemic, FOFWs were more likely to hold insecure jobs in the informal economy, especially in essential but low-paid jobs as domestic workers. They are generally excluded from social protections and insurance schemes, which leaves them with limited or no access to health care, lost income benefits and other social and economic safety nets. Also, domestic workers in the pandemic have led to loss of income and jobs with their health, safety and well-being often ignored. The economic downturn has left FOFWs sending fewer remittances, a lifeline for families and communities in the Philippines especially during times of crisis (UN Women, 2021a).

FOFWs are also mostly healthcare professionals and in the frontlines of the COVID-19 response. Globally, women make up 70% of the health workforce, especially as nurses, midwives and community health workers, and account for the majority of service staff in health facilities as cleaners, launderers and caterers. Despite these numbers, women are often not reflected in national or global decision-making on the response to COVID-19 (UN Women, 2021a).

Furthermore, women are still paid much less than their male counterparts and hold fewer leadership positions in the health sector. The needs of women frontline workers must be prioritized: this means ensuring that health care workers and

caregivers have access to women-friendly personal protective equipment and menstrual hygiene products and are afforded flexible working arrangements to balance the burden of care (UN Women, 2021a).

I have some friends who are healthcare workers overseas who have been longing to go home since the pandemic but scared to go back not because of the threat of the COVID-19 to their health but the travel restrictions both of the Philippines and their work countries.

According to Abao (2021), it is estimated that 25% of the total deployed OFWs, roughly 500,000 in total, are healthcare workers. Healthcare work – especially the nurses' sector —has been highly feminized and thus, it is women OFWs who are at great risk. Despite the pandemic or perhaps because of the pandemic, there is continuing demand for Filipino health workers. Abao (2021) also cited that Department of Labor and Employment (DOLE) officials claimed that the Philippine government is willing to lift its 5,000 persons-ban of OFW health workers to countries like the United Kingdom and Germany, in exchange of 600,000 vaccines supposedly for OFWs who want to continue to work abroad, which outraged the sector. Most FOFWs healthcare workers are deployed to developed countries such as Europe,

UAE, Australia and North America, and serve as the backbone in dealing with the pandemic.

In comparison to the place of work of most domestic workers, most of the FOFWs domestic workers are deployed in Hong Kong and Western Asia where the patriarchal culture is still oppressive to women and where policies are not yet tailored to cater to FOFWs. Two in every five (39.6%) OFWs belonged to elementary occupations where the domestic work belonged to (PSA, 2020). Abao (2021) cited that 41.6% of total OFW returnees were female, at least half of whom came from the Middle East. 22.9% of the returnees were domestic workers who were displaced during the pandemic.

To summarize, most of the issues and challenges of the FOFWs abovementioned already existed pre-pandemic. However, mobility– limited and/or lack thereof– is one of the most consistent issues that aggravated the state of the FOFWs.

WHY IS MOBILITY THE BIGGEST ISSUE ADDING TO THE ALREADY CHALLENGING LIVES OF FOFWS?

During this pandemic, news about the struggles of OFWs were all over. There are OFWs who either want to go home or go work overseas who are being challenged by the different travel restrictions and vaccination requirements.

Firsthand stories of my family and friends who are working overseas who long to go home, and some who fought and are still fighting hard to get a slot to leave the Philippines for work validate the news.

A high school friend of mine who is working in a small town in Ireland as a nurse has been longing to go home since the pandemic started. Though the travel restrictions have been more relaxed and vaccinations have been rolled-out, her primary concern is the mandatory quarantine in facilities. She cited that it was time consuming and a waste of money. In addition, I recently read an article from the Guardian citing homelessness in Manila City skyrocketing due to people who lost their jobs in Manila and Overseas ended up being displaced. While trying to go back to their provinces but due to limited transportation and different quarantine restrictions, these people struggle to go and even to obtain their food for the day, and to find shelter. Also, they are still worrying about what to send to their families who are also starving. These case studies are reflections of how different FOFWs are being affected by COVID-19 pandemic through *labor mobility*. Sadly, this pandemic displaced a lot of them due to mobility restrictions and loss of livelihood, and the social safety nets to support them are not enough both in the Philippines and their place of work.

What Is Labor Mobility? Labor mobility refers to the ease with which laborers are able to move around within an economy and between different economies. There are two primary types of labor mobility: geographic and occupational. Geographic mobility refers to a worker's ability to work in a particular physical location, while occupational mobility refers to a worker's ability to change job types (Radcliffe, 2021).

From a policymaker's perspective, geographic mobility can have important implications on the economy of a particular country. For the sending countries, their remittances economy will improve which means the more money their citizens send home, the more it will contribute to their local economy because more cash is flowing. For the receiving country, there would be an increase in the supply of labor. As more workers enter the economy, the general labor supply increases. An increase in labor supply accompanied by a static labor demand can decrease wage rates. This instance may be good for the receiving countries, but however, the decrease in wages coupled with inflation may not be enough to sustain a decent living, what more if you are sending extra money home (Radcliffe, 2021).

Moreover, occupational mobility may play a huge part regarding the previous case, if the salary becomes

uncompetitive, one must have an ability and opportunity to get a better job. This should be highlighted during the pandemic as well. However, due to loss of livelihoods, fragility of businesses and economies, people especially the overseas workers do not have the ability for occupational mobility. Oftentimes, the choices are only among being displaced due to loss of livelihood, staying in an exploitative set-up to get minimal to no pay, or/and engaging in illegal set-ups to make ends meet.

Given this, women are more prone to the said set-ups. In many parts of the world, women are unable to move freely. Freedom of movement is not only a human right emphasized in the Universal Declaration of Human Rights (Article 13) but is also an economic imperative. When countries impose legal restrictions on women's ability to move freely, do not provide workplace flexibility for parents with children or fail to protect women from sexual harassment in public places, women's economic empowerment is impaired. Social norms may also limit women's ability to move freely and get a job or start a business (Bellman et.al, 2020; Empower Women, 2016).

Women in many parts of the world find that their mobility is restricted – whether by legislation, by social or cultural norms, or by their communities' toleration of

threatening or even violent behavior towards them like for FOFWs in Western Asia and in Hong Kong. A woman's mobility may have been curtailed from childhood, and this disempowerment will follow her throughout her life. Shared social norms that girls belong at home will inhibit girls' participation in education, damaging their potential for economic empowerment. If they do go out in public, the threat of social harassment and violence may reinforce their isolation like the photo I shared early on in Hong Kong. Ultimately, offered little or no protection by the law, many women will accept the domestic role assigned to them by tradition (Empower Women, 2016).

In the case of FOFWs, I would cite two powerful case studies. The first one is in Lebanon (pre-pandemic era) and the other one is in Hong Kong (pandemic era).

Lebanon is one of the most popular destinations for FOFWs even if mistreating Women Migrant Domestic Workers (WMDWs) coming from different African and Asian countries is prevalent. Human Rights Watch and other watchdog organizations documented thousands of human rights violations against WMDWs by their employers – they often work for long hours with no breaks; they are not entitled to the average wages; they are often exposed to sexual and verbal abuse, often stripped from their traditions

(food, clothes and hair care) and most importantly they are not protected under the Lebanese labor code (Patel, 2019).

Lebanon's 250,000 migrant domestic workers fall under the abusive "Kafala" or Sponsorship system that is the leading cause of the violence against MDWs; this may be true for many other Arab receiving countries. Many reports have argued that Lebanese "Madams' ' reflect their own abusive experiences and frustrations on the vulnerable WMDWs. Yet, it is quite problematic to assert that the violations of these workers' basic rights are inherently embedded in this employee-employer relationship. Indeed, this might lead to the violations being privatized and delegated to the household, ignoring the responsibility of the state in incentivizing violence against WMDWs' and increasing their vulnerabilities. By focusing on this abusive type of relationships, we are ignoring the root cause of the problem – the Kafala System – and how it is incentivizing violence against WMDWs' and further creating a new category of "*exploitable, cheap, flexible and vulnerable workers"* (Patel, 2019).

Moreover, during the pandemic, the Hong Kong government received strong resistance after announcing compulsory testing and vaccination policies for 370,000 domestic workers, but not for other non-resident migrants such as the city's white-collar financial workers. The domestic

helpers also have been blamed for outbreaks and are facing growing discrimination. Hong Kong officials said that domestic workers are "high risk" because they enter from abroad and gather in large numbers on Sundays, their one day off in the week (Lau, 2021).

Domestic workers – mostly female and from the Philippines, Indonesia, and other Southeast Asian countries – are required to live with their employers. For over a year now, many have been prevented from social gatherings with friends, as a result of continuous lockdowns to contain the spread of the virus (Lau, 2021).

In addition to shouldering extra cleaning work, some have also been forced to pay out of pocket for masks, alcohol gel, and other personal protective equipment. Cases of abuse are also rising. According to a study by the Mission or Migrant Workers (2021), 17% of workers reported being physically abused or assaulted last year, up by 2% since 2019. Reports of rape or sexual abuse also increased from 2% to 6% due to quarantine restrictions and other factors. About 98% reported working longer hours, with about 40% reportedly being made to work during their days of rest and holidays (Lau, 2021).

To make sense, according to Empower Women (2016), the three main issues that can have a profound effect on women's mobility are as follows:

1. Legal and social barriers to women's freedom of movement like the *Kafala System;*
2. Affordable, good quality childcare and flexible work arrangements which are mostly applicable to OFWs because they cannot legally bring their families neither in Hong Kong and Lebanon; and
3. Attitudes towards women in public spaces, which is often everywhere, still not friendly to women.

To summarize, the FOFWs in Hong Kong do not only experience mobility challenges from the Philippines to Hong Kong and vice versa, but also are very restricted and discriminated against within Hong Kong. On the other hand, the Kafala System in West Asia not only oppresses their right to mobility but their rights to decent work and job security. If these oppressions were already happening pre-pandemic, what more when FOFWs are more vulnerable at the COVID-19 times? With this, mobility restrictions due to the pandemic, labor mobility and its unequal opportunities for women in general, and the challenges of women in mobility as a whole gravely affect their chances for better opportunities in the New Normal.

DIFFERENT GAD FRAMEWORKS: HOW TO TAILOR FIT POLICIES TO THE NEEDS OF FOFWS IN THE NEW NORMAL?

Throughout my academic journey–Miriam College, University of the Philippines-Diliman and Meiji University–gender has always been my area of interest and study. Though I have focused on different majors, the study of Gender and Development (GAD) has been consistent.

GAD can be applicable to all areas of expertise which is why in academic training, what is being honed is the *GAD lens* which is the ability to see and incorporate GAD theories from everyday life to all the intersections of the studies and aspects of the world. The Magna Carta of Women (Philippines Republic Act No. 9710) defines Gender and Development (GAD) as development perspective and process that is participatory and empowering, equitable, sustainable, free from violence, respectful of human rights, supportive of self-determination and actualization of human potential. It seeks to achieve gender equality as a fundamental value that should be reflected in development choices and contends that women are active agents of development, not just passive recipients of development.

The GAD approach is not concerned specifically with women, but with the way in which a society assigns roles, responsibilities, and expectations to both men and women. GAD applies gender analysis to uncover the ways in which men and women work together, presenting results in neutral terms of economics and competence (DOH, n.d).

To support highlighting that gender equality is the backbone of GAD, the International Labor Migration (ILO) (n.d) highlights that gender equality refers to equal rights, responsibilities and opportunities that all persons should enjoy, regardless of whether one is born male or female. In the context of the world of labor, equality between women and men includes the following elements:

1. Equality of opportunity and treatment in employment;
2. Equal remuneration for work of equal value;
3. Equal access to safe and healthy working environments and to social security;
4. Equality in association and collective bargaining;
5. Equality in obtaining meaningful career development;
6. A balance between work and home life that is fair to both women and men; and
7. Equal participation in decision-making at all levels.

Why is this important to discuss? Women are usually in a disadvantaged position in the workplace compared to

men, promotion of gender equality implies explicit attention to women's needs and perspectives. At the same time, there are also significant negative effects of unequal power relations and expectations on men and boys due to stereotyping about what it means to be a male. Instead, both women and men, and boys and girls, should be free to develop their abilities and make choices – without limitations set by rigid gender roles and prejudices – based on personal interests and capacities (ILO, n.d.).

How is this applicable to the case of FOFWs? Since most of our FOFWs are concentrated on jobs which are stereotypical "work" of women which are mostly in the care sector, these jobs are also low-paying. To add, with regard to their destination countries, there are also gendered-policies and mobility restrictions which are oppressive to them.

Why is it important for the FOFWs? As discussed in earlier paragraphs, FOFWs already experience a multiplicity of issues. effects of the COVID-19 pandemic accelerated and at the same time added new dimensions to the gender inequality and gender-based violence they face in their workplaces. Having mobility restrictions and being displaced due to it, GAD has a huge role to play. In its essence, men also experience challenges FOFWs face, but since there are certain oppressive stereotypes towards women and how society treats

women in general, there is another layer which needs to be addressed.

Moreover, the UN Women (2021c) released the *''Beyond COVID-19: A feminist Plan for Sustainability and Social Justice*[3]*''* which I see to be applicable to address the contemporary issues of FOFWs.

According to UN Women (2021c), as the world learns to live with COVID-19, to emerge from the current crisis, and to *"build back better",* UN Women's new "Feminist plan" provides a visionary but practical roadmap for putting gender equality, social justice, and sustainability at the center of the recovery and transformation. The COVID-19 pandemic has revealed and worsened inequalities and is a reminder of just how unsustainable and fragile the world's economies and democracies are. To get there, it calls for context-specific policy pathways, tailored political strategies, and financing. The plan identifies key levers that can create change and the actors at global, national, and local levels that need to take action to move towards this vision.

I will focus on the fifth chapter of the plan which discusses the feminist politics for a post-COVID-19 world. It highlights the paradigm shift needed to achieve sustainable

3 https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2021/feminist-plan-for-sustainability-and-social-justice-en.pdf?la=en&vs=1423

livelihoods for all, a thriving care economy and gender-just transitions that require healthy and robust democratic processes at national level as well as global governance institutions that can foster solidarity and cooperation. To be able to achieve this, women should be well-represented in decision making and instead of being dominated by the voices of male elites and corporate interests, decision-making spaces would include historically excluded groups, and women would have equal voice to men over all decisions that affect their lives (UN Women, 2021).

Furthermore, according to UN Women (2021) this new feminist plan won't materialize overnight. As countries emerge from the multiple crises brought about by COVID-19, three key levers can help them strengthen both state institutions and the civil society mechanisms to counterbalance them. Thus, state and civil society actors would have a relationship not of conflict or of uncritical support but instead of productive tension to ensure accountability and gender-responsive governance. Boosting women's representation and feminists' presence across institutional spaces Women's representation in political decision-making matters because when women are not consulted or included in decisions on issues that have direct impacts on their lives, policy outcomes are likely to be ineffective or even harmful.

In the next part, the summary of all frameworks will be presented together with the highlights of the contemporary issues being faced by FOFWs during the COVID-19 pandemic.

SUMMARY AND POLICY RECOMMENDATIONS ADDRESSING THE CONTEMPORARY ISSUES OF FOFWS

I will marry the elements of the recommended approaches of the International Labor Migration, Magna Carta of Women, and New Feminist Plan to the contemporary issues discussed earlier. I will summarize the discussions, and recommend policy approaches which may help address the mentioned issues.

Table 1 below connected and provided a holistic view of trends among different institutions on GAD. It pointed out policies to improve certain issues which the FOFWs face today. Given this, the four policy meeting points are on *equality, security, representation, and paradigm shift*. These are very important to note since it might help in addressing the contemporary issues of the FOFWs.

Table 1: Trends of GAD Approaches to Address the Contemporary Issues FOFWs

Magna Carta of Women	International Labor Migration	Feminist Plan
• Guarantees all the human rights of women and fundamental freedoms in the civil, social, political, economic, cultural, and other fields; • Advocates for equal treatment for men and women		Believes that men and women should have equal rights and opportunities. It is the theory of the political, economic and social equality of the sexes
• Guarantees the security of women during times of crisis and disasters; • Protects women from all forms of violence		Centers gender equality, social justice, and sustainability at recovery and transformation
Encourages women leadership and provides incentives to political parties with women's agenda	• Equal participation in decision-making at all levels; and • Equality in association and collective bargaining	• Creates change and the actors at global, national, and local levels that need to take-action; • Advocates for women well-representations on the decision making and instead of being dominated by the voices of male elites and corporate interest; and • Strengthens both state institutions and the civil society mechanisms to counterbalance them
Prohibits discrimination in employment	• Equality of opportunity and treatment in employment; • Equality in obtaining meaningful career development; • A balance between work and home life that is fair to both women and men; • Equal access to safe and healthy working environments and to social security; and • Equal remuneration for work of equal value.	Needs a paradigm shift to achieve sustainable livelihoods for all, a thriving care economy and gender-just transitions require healthy and robust democratic processes at national level as well as global governance institutions that can foster solidarity and cooperation.
Source: collated by me, Jean Carlos		

Therefore, I will summarize the most highlighted trends of issues then I will apply the four policy meeting points:

1. **The patriarchal system of some of the most popular destinations for FOFWs such as Western Asian countries affects the freedom to move, whether within the society or in and out of the country. Also, the rising abuses due to the lack of ability to move safely.** According to the table, men and women should have equal rights and opportunities in all realms of society. Given that each country has their own set of cultures, norms, and policies, and unfortunately not all destination countries for the FOFWs have friendly and enabling policies which help them navigate through the COVID-19 pandemic, *I strongly recommend for the Philippine government to deploy personnel who have expertise in women rights and strong background in lobbying for their well-being. Being responsive is not enough, pro-actively advocating for equality for our FOFWs is a must. Also, for pro-active awareness raising among FOFWs on what to do in case they experience different types of abuses with comprehensive publication materials, and among other medias;*

2. **The COVID-19 mobility/travel restrictions posted by different countries including the Philippines aggravated even the already existing challenges of FOFWs.** Security, protection, and social justice are said to be pathways to recovery and transformation. Therefore, *I strongly call for the protection of the FOFWs from all kinds of harms and abuses. Given that there are limitations and there are already systems and policies in place to reinforce this, the government should take a look at it from the public health, displacement, and heightened discrimination and abuses point-of-view. Meaning beyond repatriation, the help should be more meaningful and shall be towards social justice;*

3. **The lack of proper representation of FOFWs.** FOFWs representation in all levels of leadership, social mobilization for collective voice, and partnership with the civil society shall be enabled, therefore, *I recommend tapping the leaders of the civil society sectors of FOFWs and providing them meaningful and transformative platforms. The government should not be apprehensive and not only see them as critiques but partners and agents for change; and*

4. **The disconnect of the actuality on the ground (such as displacement) to the current policies which some cause more harm than help (medium and long-term), and lack of social safety nets (short and medium-term).** There is a need for a paradigm shift in rethinking sustainable livelihoods for the FOFWs who are victimized by the effects of the COVID-19 pandemic. There is also a need to tailor-fit and recalibrate policies which better fit their actual state. *Therefore, I recommend stakeholder consultations with different experts, civil societies, academies, and diplomats as well as proactive involvement of FOFWs to: (1) identify social safety nets for alternative livelihoods of the displaced FOFWs (short and medium term); and (2) recalibrate the set of policies and strategize how to approach receiving countries to better the state of our FOFWs especially during the COVID-19 pandemic. Also, taking a look at our policies which are already obsolete, and those which harm more than help.*

These contemporary issues and policy recommendations I highlighted in this chapter are nothing new. It just goes to show that the other underlying issues which were not addressed before were aggravated and the possible

solutions were already presented. This chapter may serve as a reminder to pro-actively address existing issues to avoid its escalation in case of another unforeseen phenomenon and maximize the already excellent policies and frameworks to address those.

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Chapter 10

Technology Transfer and Innovation for the Philippines' Economic Growth: Challenges and Recommendations

Osric Primo Bern A Quibot

10

TECHNOLOGY TRANSFER AND INNOVATION FOR THE PHILIPPINES' ECONOMIC GROWTH: CHALLENGES AND RECOMMENDATIONS

I left the Philippines sometime in August of 2014 to pursue my postgraduate studies at Nagoya University through the Japan International Cooperation Agency (JICA) scholarship. During that time, a lot of road network construction was being implemented. The Ninoy Aquino International Airport Expressway and North Luzon and South Luzon Connector Expressway to name a few. The roads were congested with motorcycles, cars, jeepneys, buses, and earthmoving equipment. Roads were blocked and/or diverted due to the on-going construction. Limited mass transport systems were available for commuters at that time, resulting in heavy usage of road infrastructures. The Light Rail Transit 1 and 2 (LRT) is only serving Baclaran to Roosevelt and Recto to Santolan, respectively, and the Metro Rail Transit (MRT) is only serving

commuters along EDSA (North Avenue to Taft Avenue). The Philippine National Railways (PNR), on the other hand, had very limited operations, with headways of more or less an hour, and was serving only Tutuban to Alabang at that time. Commuting back then was very difficult. There are no definite train or bus schedules within the metro. Commuters will have to compete with each other just to go to work or to go home, especially during peak hours.

When I was preparing for my medical examination required by Japan International Cooperation Center (JICE) for the scholarships, I had to allocate at least 3 hours of travel time, just to be at the Lung Center of the Philippines from my workplace in Bicutan, Taguig City. The Lung Center is only 24 kilometers away from my workplace, but due to the indefinite schedule of the existing transport system, I have to leave as early as 9AM, just to be sure I am at the Lung Center by 1PM.

My commuting experience back then is very much different from my commuting experience in Japan. Schedules are very much predictive. Trains arrive and depart on time and as scheduled. City bus schedule is in sync with the arrival and departure of the trains. There is a good network of subways, city buses and trains operating inter-city across the prefecture. I can even look up the schedule of the trains

and buses through the internet (www.hyperdia.com/en). You just need to key in your origin, destination and expected departure time, and the application will provide all necessary information, including the name of the train, departure time from origin, arrival time to destination, fare, and other useful information for your journey.

During my first winter break from the university, I was able to go around Japan, with my fellow JICE scholars, using the subways and Japan Railway (JR) Trains. At the university, we were informed by fellow graduate students that there is a special discount ticket that allows students for a five-day unlimited train ride for all local trains operated by Japan Railways Group (JR). This is called the Seishun Juhachi Kippu, and is only sold during a specific season. The JR local train connects all parts of Japan. My friends (fellow JICE scholars) and I decided to tour around Hiroshima, Kobe, Osaka and Tokyo using our Juhachi Kippu and using the hyperdia site for the train schedule. Our journey is very convenient because of the technology being implemented in Japan. The local trains are running smoothly with speeds up to 100km/hr (for certain areas) and with average running speed of 60-80 km/hr. We were able to visit a number of Japanese historical sites, museums and theme parks which are hundreds of kilometers away from each other in just 7 days. What a

convenient way to travel around Japan. On this journey, we did not use the famous Shinkansen of Japan. It is not covered in our Juhachi Kippu. But even so, using local trains, it is very convenient. We did not experience getting lost (thanks to hyperdia and the very accommodating assistance of Japanese who did not hesitate to assist our needs for directions).

So how does Japan manage to provide its people with a very convenient and efficient transportation network? Is it because they are one of the most advanced economies in the world? How were they able to run and operate one of the fastest and safest trains in the world? Well, the answer is simple. Japan developed its railway system from 1942 up to present. They acquired rolling stocks from European companies and later on developed their own rolling stocks sometime in 1949. This is spearheaded by the Japanese government through the Japanese National Railways and the Railway Technical Research Institute (Soejima, 2003; Sone, 2001).

Conversely, we (Philippines) also attempted to develop our own rolling stocks. Between 2011 to 2016, the Department of Science and Technology funded the Design, Development and Promotion of Alternative and Economical Mass Transit System amounting to PhP 569

million Pesos. Under this R&D program were the development of the Automated Guideway Transit, Hybrid Electric Road Train and the Hybrid Electric Train.

In this chapter, we will try to determine the factors affecting innovation and technology transfer in the Philippines by looking at the lessons learned from the design and development of the alternative and economical mass transit system. But first, let us see how technological development relates to the economic growth of a country.

RELATIONSHIP OF TECHNOLOGY AND ECONOMIC GROWTH

According to Romer (1990), growth is driven by technological change from intentional investment decisions for profit maximization. This supports the growth of developed countries which is a result of their technological progress. A number of studies on economic growth have been conducted in the past and are divided into groups (Evenson, 1997, Jones, 2007, Bozkurt, 2015, as cited by Ildirar, et.al., 2016). The Post-Keynesians growth models, the Neo-Classical growth models and the New Growth Theory, also known as the Endogenous Growth Theory. The New Growth Theory emphasizes the important effects of technological development,

knowledge accumulation, and innovation on economic growth (Liberto, 2021). According to this theory, the primary driver to sustain growth is based on the results of its research and development (R&D) activities. This means a small and incremental increase in technology (as a result of R&D) reduces the unit cost, but also influences production capacity, quality and other variables in the economy (Ildirar, et.al., 2016). In other words, the use of technology with the same amount of labor and capital will result in higher production output and quality.

In addition, Bayarcelik and Tasel (2012) cited the works of Todaro (1997) on the three important factors supporting economic growth. These are (1) capital accumulation, (2) growth in labor force, and (3) technological progress. Based on their study, there is a positive and significant relationship between R&D expenditure and the number of R&D personnel with economic growth. This signifies that those countries with higher spending on R&D and higher number of R&D personnel have higher economic growth.

With this in mind, technological changes in an economy have an effect on its growth. And these technological changes are attributed to R&D activities. Many contemporary economists have credited sustained

growth in developed countries with their R&D activities. Thus, if a country aims to improve its economic performance, they should put emphasis on its R&D activities (Tuna, et.al., 2015).

INNOVATION, ONE STEP FURTHER FROM R&D?

Innovation, on the other hand, is closely related to technological changes, and is considered to be a key driver for organizations and nations (Bayarcelik & Tasel, 2012). According to Katila and Shane (2005) innovation is a "process that begins with an invention, followed by development, which results in a new product, process or service to the marketplace" (as cited by Bayarcelik & Tasel, 2012). This is further explained by Josiah Go (2021), he said, that innovation goes one step further than invention. Invention is a result or output of R&D, but innovation includes commercial success. This means that the output of R&D has commercial value. Therefore, a product or an output of R&D should not always be considered as innovation. According to Go (2021), it must always have commercial success.

The claims of Go (2021) are in line with the work of Nobuya Fukugawa (2018), which emphasizes on the two

opposing forces shaping innovative activities. The first is the appropriation of knowledge or the demand-side factor. This focuses on profiting from the created knowledge. These are inventions or innovations that are immediate solutions to pressing problems. These include technologies that offer solutions to problems of society or a number of players in the market, be it in agriculture, food sector, transportation, among many others. Others call this as technology-pull innovation. This is where developed technology has immediate usage, demand, or market. Normally, we see these technologies as an output of product development.

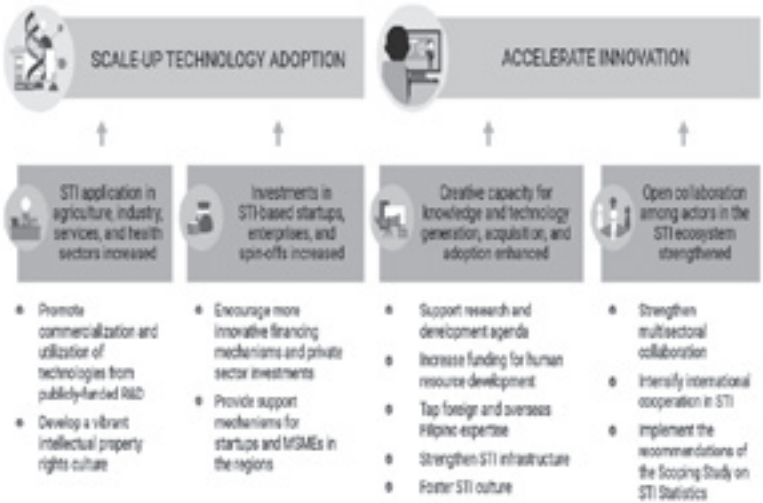
The second one is access to knowledge or the supply-side factor. This focuses on identifying technological opportunities. These are outputs of basic and applied research where it aims to identify or test potential technologies or solutions to pressing problems. However, specific requirements of the market are not yet fully considered. Others call this as technology push-innovations. We can see these types of technology push-innovations in crop development where research institutes develop a new variety of a crop that offers higher yields, or better resistance to diseases and/or to environmental conditions.

Now that we understand how technology and innovation contribute to a country's economic development, let us now look at how our country promotes technology and innovation.

R&D, INNOVATION AND TECHNOLOGY TRANSFER IN THE PHILIPPINES

Our updated Philippine Development Plan 2017-2022, has allocated a specific chapter to vigorously advance Science, Technology and Innovations under the pillar of Increasing Growth Potential *(Patuloy na Pag-unlad)* by scaling-up technology adoption and stimulating creativity and innovation in the country. A number of strategies were identified including the commercialization and utilization of technologies from publicly funded R&D, developing a vibrant intellectual property rights culture, investment on STI-based enterprises, enhancing the capacity to produce knowledge and generation of technologies, promoting collaboration and partnership among actors in the STI ecosystem, among others.

Figure 1. Strategic Framework to Vigorously Advance Science, Technology, and Innovation



Source: Philippine Development Plan 2017-2022

With this, the Department of Science and Technology (DOST) is tasked to implement programs and projects that will contribute to the attainment of the strategies listed in the Philippine Development Plan. But who is DOST? The DOST is a S&T body in the country mandated to (1) provide central direction, leadership and coordination of all scientific and technological activities of the country, and (2) formulate policies, programs and projects that will support national development. It has three (3) sectoral planning councils tasked with formulating policies, plans, programs and strategies; programming and

allocation of funds; monitoring R&D projects; and generating external funds. It also has seven (7) research and development institutes who are implementing basic and applied research in various fields. It also has six (6) S&T service institutes rendering S&T-related services, two (2) collegial bodies mandated to provide advisory assistance, recognition and establishment of international linkages. Lastly, it has 16 regional offices and 80 provincial offices that serves as the frontliners of DOST in the implementation of S&T programs and projects at the grassroots level.

Source: https://www.dost.gov.ph

In order to advance STI in the country, the DOST has implemented various programs in line with the strategies and activities listed in the Philippine Development Plan. One is the Science for Change Program (S4CP) which focuses on accelerated R&D programs to capacitate R&D institutions and promote industrial competitiveness. It is composed of four (4) programs: (1) Niche Centers in the Regions for R&D (NICER) program - which supports the establishment of R&D centers in the regions to stimulate collaborative STI ecosystem in promoting regional development; (2) Collaborative R&D to Leverage the Philippine Economy (CRADLE) - which promotes industry-academe R&D collaborations; (3) R&D Leadership (RDLEAD) Program - which promotes synergy among HEIs, RDIs and other government line agencies in doing relevant research activities; and (4) Business Innovation through S&T (BIST) for Industry - which supports Filipino private companies so they can undertake their R&D activities (see Science for Change Program (dost.gov.ph)).

Other programs implemented by DOST to promote economic development through science and technology includes the Small Enterprise Technology Upgrading Program (SETUP) which provides technical and financial support to acquire appropriate technologies and other S&T

interventions to increase productivity and efficiency of our micro, small and medium enterprises. Another is the continued implementation of the scholarship programs at the undergraduate, graduate and post-graduate levels. This is aimed at increasing the number of students in various S&T fields, and later on increasing the number of researchers per one million population. At present, we are below the UNESCO norm of 380 researchers per one million of population and East Asia and the Pacific average of 1,020 per one million of population. With a greater number of S&T personnel in the population, our human capital will be ready to manage the Fourth Industrial Revolution (FIRe).

DESIGN AND DEVELOPMENT OF ALTERNATIVE AND ECONOMICAL METRO TRANSIT SYSTEM

As mentioned earlier, one of the strategies in the Philippine Development plan is the commercialization and utilization of technologies from publicly-funded R&Ds. Between 2011 to 2018, the DOST has funded roughly 569 million Philippine Pesos for the design, development, and promotion of alternative and economical mass transit systems. Under this R&D program, the Metals Industry Research and Development Center, one of the research and

development institutes of the DOST, have implemented the design and development of the (1) Advance Guideway Transit (AGT), the (2) Hybrid Electric Road Train (HERT), and the (3) Hybrid Electric Train. These mass transport systems aim to offer alternative solutions to the continuously growing traffic problem in Metro Manila and two adjoining regions of Central Luzon and CALABARZON. According to a study conducted by JICA (2014), the Philippine economy is losing PhP2.4 billion per day due to traffic congestion and inefficient mass transport systems. This was computed based on vehicle operating cost (estimated depreciation cost, fuel and lubricant consumption, cost of tires, maintenance cost, insurance, etc.) and time cost (the value of people's productive time spent on roads due to traffic). If the government does not address these transportation problems, it is estimated to reach up to PhP 6 billion per day by 2030.

Considering these losses, the DOST has funded the research and development of the AGT, HERT and HET as alternative and cost-effective options for mass transportation. These technologies are developed by Filipino engineers utilizing locally available materials, components and parts, in partnership with local bus manufacturing companies, and local parts and components suppliers.

Design and Development of the Automated Guideway Transit

An AGT is a class of transport system characterized as driverless transport vehicles operating under computer controls on an exclusive right-of-way either above, below, or at ground levels (Pastor, 1988). In the case of the locally developed AGT, it excludes the driverless feature of the system. The R&D focused on making its production cost cheaper than its imported counterparts (Light Rail Transit (LRT) & Metro Rail Transit (MRT). Another design consideration is that the AGT system can be operated on narrow streets and will require less space on its structural support (tracks) and must have a small turning radius for easy maneuverability within tight city streets (elevated tracks).

The locally developed AGT is powered by electricity and can run up to 60 kilometers per hour at full load capacity. Each coach can accommodate 120 commuters making a total of 240 commuters per trip. It uses rubber tires to carry the coaches along an elevated-track. All of the parts and components were acquired through local suppliers. The body of the AGT is manufactured by a local bus manufacturing company

utilizing the same material used in bus body manufacturing.

Its main selling point is that the cost per set of the AGT is 25-30% cheaper than its imported counterparts. Its acquisition period is faster than its imported counterparts (18 months vs 26 months). And finally, its maintainability will be less given the availability of local parts and components. The AGT system was developed not to replace existing mass transport currently utilized in the country. The technology is envisioned to operate or act as feeders to the main transport arteries in Metro Manila (MRT and LRT). The reason why it is designed to have smaller structural support requirements in order to be operated and built on narrow streets of Metro Manila and other LGUs in the Philippines.

Design and Development of the Hybrid Electric Road Train

Like the AGT, the HERT is another R&D funded by DOST and implemented by MIRDC which aims to contribute to solving the worsening mass transport conditions in the Philippines. The HERT is a technology for the synchronization of axle drive motors with different power sources and hybrid power sharing from a diesel-generator set and a deep-cycle lead-acid battery.

The DOST and MIRDC were able to produce two prototypes of the HERT. The first is the 260-passenger capacity with a length of 40 meters, and the second is the 160-passenger capacity with a length of 30 meters. Each prototype is composed of five-coaches, linked together, just like that of a train. The HERT has a maximum designed speed of 50 kilometers per hour and a minimum turning radius of 20-25 meters (depending on the length of the HERT). Unlike the AGT, the HERT cannot move instantly in opposite directions. Its design is patterned to a bus that is linked together. Thus, it can only run in one direction and will require a roundabout to change to opposite directions. Based on functional testing of the HERT, it requires a standard three-lane road to operate and change directions (left or right).

The main selling point of the HERT is its hybrid system through which it reduces GHG emissions due to the power sharing from the diesel generator set and the lead acid batteries. The batteries are charged using (1) excess power produced by the generator set during cruising and/or downhill movement, and (2) its regenerative braking system.

Just like the AGT, the HERT is continuously being promoted to LGUs as an alternative inter-city/municipality

mode of mass transportation system. At present, the two prototypes are currently deployed in General Santos City in Region 12 and in the Province of Isabela in Region 2.

Design and Development of the Hybrid Electric Train

Lastly, the DOST through MIRDC has funded and implemented another R&D project on the design and development of the Hybrid Electric Train. The HET is a technology similar to that of the HERT. It also utilizes the same hybrid system but applied and installed to a locally manufactured rolling stock or train system. The rolling stock is designed to be operated using the existing rail configuration of the Philippine National Railways. It's designed commuting capacity is 220 passengers per coach. Each train set is composed of 5 coaches, four passenger coaches, and one power coach that houses the hybrid system. A total of 880 passengers can be transported from point A to point B by the 60 meter long HET.

During the developmental stage of the HET, the existing headway of Philippine National Railways (PNR) is roughly one hour. This means that the waiting time at every train station is one hour before the next train will arrive. This also signifies that the PNR has a very limited number of rolling stocks servicing the 28-kilometer tract of Tutuban to Alabang Stations. With this, the DOST,

MIRDC and the PNR have partnered to develop and test the locally manufactured rolling stocks (HET) in the existing railways owned and operated by PNR.

The goal of this R&D project is to design, develop and locally manufacture rolling stocks for the PNR that is also utilizing hybrid systems to reduce GHG emissions. Same as with the AGT and HERT, its body is manufactured by a local bus manufacturer and its parts, components, and auxiliaries are sourced from local suppliers.

The main selling point of the HET is its acquisition cost. The production cost of one HET is 40-45% lower compared to the imported Diesel Multiple Units (DMUs) currently used and acquired by PNR from Indonesia. Operating and maintainability costs are also expected to be much lower given the availability of local suppliers and body manufacturers. Unlike the AGT and HERT, the HET does not require specialized infrastructure to make it operational. The AGT will require an elevated track just like that of the LRT and MRT, the HERT will require wider roads and roundabouts to transport people from point A to point B. The HET, on the other hand, can be operated using the existing railways of the PNR. Since the power source to run the HET is already on board, there is no need to construct power lines just like that of the LRT and MRT.

Considering that the PNR tracks are at ground level, running an Electric Multiple Unit will require a certain degree of protection to ensure no incidence of electrocution will happen.

After numerous hours and kilometers of test runs to test its reliability, availability, maintainability and safety, the HET successfully passed all stages of the testing requirement of PNR. Therefore, last June 20, 2019, the HET was officially turned over to the PNR to be used in commuting passengers from Calamba, Laguna to Alabang Station.

Among the three developed mass transit options produced from the R&D activities funded by the DOST and implemented by MIRDC, the most promising technology to be adopted and commercialized is the Hybrid Electric Train. However, full commercialization of the technology has not yet materialized as of today.

CHALLENGES AND LESSONS LEARNED

Each developed technology (AGT, HERT, & HET) has encountered a number of difficulties in the design and development stage. This includes government regulations,

delays in the procurement process, and availability of longer test tracks, among others. However, with these challenges, the MIRDC project R&D teams were able to produce prototypes of each technology and were able to actually test it in actual operating conditions. But why is it that these technologies are not yet seen as commuting passengers? To answer this question, let us understand first what factors affect technology transfer of developed technologies.

Based on a study conducted by Shinghai, et.al. (2021), there are five factors affecting technology transfer. The top-rated factor affecting technology transfer is communication between the transferor (owner of the technology) and the receiver (taker of the technology). The subsequent factors include innovativeness of the technology, knowledge, quality of product (technology), and motivation. These factors were identified based on the response of respondents who have experience and exposure to technology transfer and other related activities from publicly funded R&D to small and medium enterprises. However, in the case of AGT, HERT and HET, technology transfer will occur between institutions of the government (DOST-MIRDC with DOTr, PNR, LGUs, among other government institutions). These developed

technologies are affected now by the following conditions based on our technology transfer experience:

1. Varying priorities of government institutions
   In the case of the HET, during the design and development process, between 2012-2015, the DOTR and the PNR had no definite plans on its rolling stocks. Therefore, the R&D team from DOST and MIRDC patterned the dimensions of the rolling stocks based on the length of a bus, considering bus manufacturing companies were tapped as one of the contractors of the body of the rolling stocks. Basically, PNR gave a lot of freedom to the design team on what should be considered and included in the design and development process of the HET. But when the new administration came in 2016, specific requirements for each rolling stock must be achieved, such as dimensions, number of doors, height of the floor versus the platform of the stations, number of passengers per coach, among others. During this time, the prototype is already manufactured and is already in the functional testing phase. Some of the technical requirements set by PNR were included in the design alterations and revisions. But the major ones were impossible to be incorporate.

Notably, the PNR were understanding enough given there were no inputs given during the initial stage of the design and development process. The PNR still accepted the transfer of ownership of the HET for possible inclusion in their fleet of rolling stocks serving passengers from Calamba to Alabang stations, provided that all safety requirements are met.

2. Change of leadership in the local government
   As mentioned earlier, the AGT and the HERT are targeted to be adopted by LGUs and other major land developers to act as feeders to main transport arteries or for inter-city/municipality mode of transportation. In the case of the deployment of HERT, change of political leaders and LGU priorities affected its transfer and utilization. In 2015, the LGU of Cebu City has agreed to partner with DOST and MIRDC for the deployment of the HERT in their city. However, in 2016, after the election, there were changes in political leaders. With the new administration, plans to improve traffic congestion and mass transportation changed. However, the new administration still honored the agreements that were entered into by the previous

administration. But the focus was only to test the feasibility of operating the HERT in the busy and narrow streets of Cebu City. DOST-MIRDC conducted demonstrations runs and found out that the streets of Cebu are not ready to accommodate the HERT. It will require further infrastructure development that will be costly for the city to invest in at that time. So, the HERT was set aside temporarily for future development. A year later, the HERT was then transferred to General Santos City by virtue of the request of the City Council Committee on Transportation. After it was transferred to General Santos City, testing and demonstration runs were conducted. However, there were changes in LGU priorities in the middle of the testing and demo run. The Councilor handling the Transportation Committee, who was the strong advocate of the HERT was reassigned to another committee, therefore, the adoption of the technology was set aside for future development, again.

As identified by the study of Shinghai, et.al (2021), quality of the technology affects the success of technology transfer. Admittedly, the AGT, HERT, and HET are technologies developed by Filipino engineers in a very

short span of time, between 3-4 years. There are still a number of areas that need to be improved and addressed, which may be some of the reasons (at present condition) is not that appealing to LGUs and other transport operators. Comparing it now with rolling stocks available in the market, it has a lot of features that are needed to be incorporated into the existing design and prototype. The AGT, HERT and HET require further development activities to improve its efficiency, capacity, and features to meet passenger and transport group operators' and regulators' requirements and expectations for mass transport technologies.

But with changing policies and priorities, these R&D initiatives are deprioritized. Considering the current response of the stakeholders of the developed technologies, it is unreasonable for DOST to put in more R&D funds to support its further development activities. Based on the proposed North-South Commuter Railway Project, the current PNR right-of way will be used for elevated track for modern high-capacity trains using a different system. The hybrid system developed by DOST-MIRDC may have not been considered in the plan.

MOVING FORWARD

Looking at the experience of the development of the railway system of Japan after the war, they started by importing foreign technologies, hiring top technicians and engineers from former army, navy and private companies, and developing what is necessary for the transportation needs of Japan that later on led to the development of their commuter trains and its Tokaido Shinkansen (Soejima, 2003). This was spearheaded by the state-run Japan National Railways which implemented the construction of a shinkansen network throughout the nation as stipulated in the Nationwide Shinkansen Development Law in 1970 (Soejima, 2003).

From our experience in the design and development of the AGT, HERT, and HET as an alternative mass transit system, we can say that our Filipino engineers, technologists, and our existing business enterprises can produce our own locally developed and assembled rolling stocks. It only needs strong collaboration, partnership and support from its stakeholders (both government and private) to ensure its further development and full utilization of the technology. Comparing our experience and Japanese experience in railway development, we are just getting started. If we could further develop the hybrid

system DOST-MIRDC has produced from its R&D activities, then railway expansion will be implemented not only in the Greater Capital Region, but also in other regions of the Philippines. Train production and manufacturing will be opened and established that will offer job opportunities for our technicians and engineers. Lesser investment cost for rolling stocks is expected given the availability of local suppliers of parts and components are established. But how can we make these things happen?

In order to make our country's investment in research and development beneficial to the Filipino people and ensure the adoption and transfer of developed technologies, our Philippine government should (1) consider the capabilities of locally funded and developed technologies in the national plan, and in solving pressing national or local problems. If existing technology(ies) needs further development, invest on it with intentions to utilize it. The government should always patronize the output of its R&D results. While reliance on foreign technologies is inevitable, (2) the government must ensure that knowledge gained from the utilization of foreign technologies is documented, retained, and used to further develop said technology(ies). The government must continue to (3) improve and increase the number and quality of workers in the Science and Technology

community through foreign scholarships and internships in S&T based multinational companies. Knowledge gained from foreign scholarships and internships will greatly help in improving the quality of R&D output of a country. And lastly, the government (4) must develop a whole-of government approach-long term R&D agenda for pressing national problems such as transportation, food security, energy, climate resilience, among others. In this way, all instrumentalities of the government will identify, support and adopt the output of R&D activities conducted.

With this, we can ensure that publicly funded R&Ds and technologies will be adopted and transferred for the benefit of the Filipino People.

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Chapter 11

Increasing Intergovernmental Fund Transfer to Spur Local Development in the Philippines

Arce P. Fajardo

11

INCREASING INTERGOVERNMENTAL FUND TRANSFER TO SPUR LOCAL DEVELOPMENT IN THE PHILIPPINES

I have been one of the few government scholars who were given a very rare opportunity to study at Meiji University in Tokyo, Japan through the JDS scholarship from 2018-2020. This chapter revolves around my thesis as well as my experiences while I earned my Master's Degree in Public Policy. This academic endeavor came from seeing first-hand the amazing culture and way of life of one of the most advanced countries in the world and utilizing these learnings to better myself and contribute more effectively in my line of work.

CHANGE IN SCENERY

I have been working for the Department of the Interior and Local Government (DILG) in the Philippines

for almost two (2) decades now. Back in 2016, I was heavily involved in the crafting of a Joint Memorandum Circular (JMC) that essentially harmonizes and strengthens the Public Financial Management processes of the four (4) oversight agencies (OAs) namely the Department of Budget and Management (DBM), National Economic and Development Authority (NEDA), the Department of Finance (DOF) and the DILG. These OAs are the agencies of the Central Government that primarily oversee Local Government Operations since the advent of the Local Government Code (LGC) of the Philippines in 1991. The LGC is the principal law that laid out how decentralization and devolution in the Philippines is to be carried out as enshrined in the Philippine Constitution.

The said JMC provided for tools and guidance for use by Local Government Units (LGUs) in the Philippines. Though these guidelines are based on studies and actual assessments of local government conditions, a provision in the JMC necessitates a review of the policy after four (4) or five (5) years to make it more responsive and to make up for unforeseen development and changes not considered in its crafting.

In 2018, I felt I was stagnating both personally and professionally. Somehow, I was looking for a CHANGE IN SCENERY if you may. I thought of taking a break and going somewhere while not leaving work. I love my work. Maybe I just need space or to do something worth the while. I thought of trying again for a scholarship. I tried a few times before, but never made it. Then the opportunity came just as I needed it. JDS it is called.

While applying for the JDS scholarship and thinking of a research topic, I approached my supervisor, then Assistant Director of the Bureau of Local Government Development (BLGD) Dennis D. Villaseñor and asked if he had any topic in mind. He said that it will help the Bureau if I can look at the state of Local Development Planning in the Philippines and recommend policies that will improve it. This, he said, can be taken as one of the policy improvements we can suggest in the updating of the JMC. I followed his advice and fortunately, the JDS Operating Committee and Meiji University approved of the initial research topic (Strengthened Local Development Plan to Budget linkage thru policy-based investment program) and I got selected as one of the JDS Fellows for the 16th Batch.

GO OUT AND EXPLORE

I finally got to Japan after a series of orientations including learning Japanese customs, traditions and a bit of their language. I was confident that I had a very robust research topic and a game plan on how I would go about it. I was, in fact, excited to meet my thesis supervisor, Prof. Ryuta Rae Kato (*Sensei*) and start my research right away. The first meeting with my *Sensei*, though, was not what I expected. He said that my topic was very broad and I needed to refine it more. He advised me to GO OUT AND EXPLORE and take courses that were related to my topic so that I could get ideas on what specific process or concept I should focus on.

Heeding my *Sensei*'s advice, I took Comparative Local Government and Public Policy as part of the courses for my Fall Semester 2018. From these courses, I learned more about *Decentralization* and *Devolution*. The two (2) core principles or concepts to which Local Government (LG) processes and operations in the Philippines adhere to. The Philippines had already implemented decentralization since 1991 by virtue of the passage of the Local Government Code (LGC). The law seeks to spur local

development by empowering subnational local government units as they are deemed more knowledgeable about local unmet needs and the corresponding solutions, they intend to undertake to address these needs. Based on the study of Schroeder (2003), the Philippines has been relatively advanced in decentralizing governmental powers to its subnational units for almost thirty years.

In most decentralized countries in Europe and in South America, local authorities represent an entity creating local development in the local perspective by taking advantage of the available set of established systems and resources, as well as administrative compulsory instruments, so that they could bring about local development. These activities are classified as one of the manifestations of modern public governance and most often referred to as local development governance (Sztando 2017). Local Development Governance also involves the cyclical process of strategic planning (Local Development planning in the case of the Philippines), the implementation of planned actions and finally the evaluation of implementation and its effects. Another way to smoothen the implementation of decentralization is to establish a system of intergovernmental transfers. In

principle, these transfers perform three (3) major roles (NTRC 2007). First, is to fill the fiscal gap that arises from decentralization such as the difference between the devolved expenditure assignment and the revenue-raising responsibility. Second, is to act as an equalizer since local governments have different fiscal capacities. Lastly, transfers can be a means for the central government to oversee or influence state programs for local governments.

Based on these studies, I realized I can focus on two (2) of the processes that operationalize decentralization, *intergovernmental fund transfers* and *Local Development Planning*.

During the early stages of my stay in Japan, I also became comfortable with the new environment. I began to GO OUT AND EXPLORE my neighborhood, the other prefectures of Japan, find other restaurants for new culinary adventures, visit parks and nearby heritage monuments and try to watch anime and read manga as a hobby soon. All these new things we get to explore with the help of our *Senpais* (Seniors). In my mind, we are here to study Japan, its people and how they do things anyway,

why not try something or go to someplace new when you get the chance?

FINDING PURPOSE

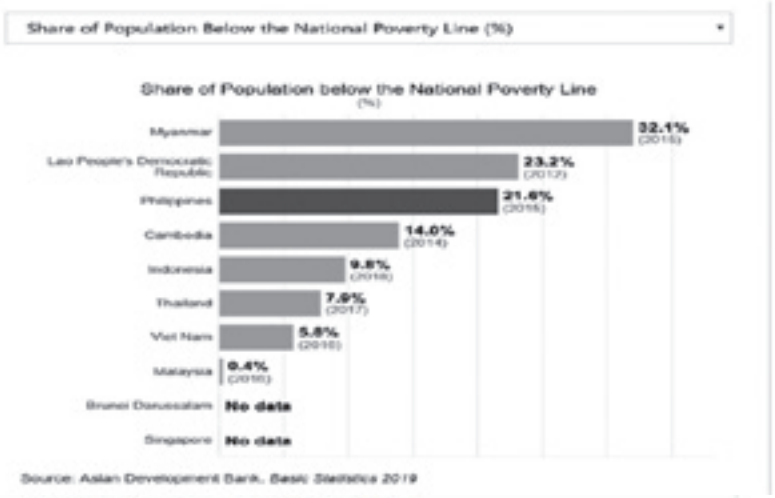
I thought I knew why I went to Japan: to get my Master's Degree, to experience Japan and all it has to offer. But the longer I stayed, especially when I was alone in my apartment, you get to think more about life. You begin to think deeper, you try FINDING PURPOSE. You not only think about why you went to Japan, but what you will do while you are there and more importantly, when you get back.

The same goes for my research. Although I knew that I needed to study local development planning and intergovernmental fund transfers, I was not sure of its true significance in the general scheme of things. I just knew that I could use it in improving the JMC that needs to be updated when I get back (2020), but that was all I could think of. Suddenly I felt that I needed to find a deeper purpose, meaning or significance to my studies. By this time, I was looking for what was ideal. I began to look for drivers of development. I took courses in Environmental

Management, Social Development and Urban Planning and Development. What was it that made a community or a country develop?

Looking at the Philippines, while it seems that the country is institutionally advanced when it comes to Decentralization (Schroder, 2003) compared to its Southeast Asian neighbors such as Indonesia, Thailand and Malaysia, the Philippines came in third (3rd) in poverty prevalence in the region following only Myanmar and Lao People's Democratic Republic as shown in Figure 1.

Figure 1. Comparative Graph of Poverty Prevalence in South East Asia



This information only shows that while institutions for meaningful local government empowerment are in

place, local communities in the Philippines are still not seeing development.

Of course, there is a multitude of reasons you can infer but I would like to focus if it also has something to do with intergovernmental fund transfer and local development planning as these two (2) were also identified as mechanisms that should have made local development through decentralization work (Swianiewicz, 2011). The next thing to do now is to formulate a research objective and to convert the same into a workable research question.

The first question that I thought of was whether or not Intergovernmental Fund Transfer triggered local development. Another is if local development planning also spurs local development. I consulted my *Sensei* about it but he said that the answer is obviously yes, that is why it is already in the related literature. He advised me instead to study this related literature and look for a framework or hypothesis that I think applies to the Philippines.

Thankfully, I found one literature that covered both local development planning and intergovernmental fund transfers, the study by Sztando on Local Development Planning of Polish Municipalities in 2017. Sztando argues

that Polish Municipalities tend to be motivated to do local development planning if they are given access to additional sources of funding (in their case, access to European Union Funds). This means that access to additional fund sources can influence Polish Municipalities to properly plan the development in their communities. If they do development planning properly then local development is expected to happen, which is the ideal scenario. To me, these findings, if true in the case of the Philippines, can help me provide policy recommendations in improving local development planning in my country as well.

With this information, I was able to limit the scope of my study and determine my research objectives. After a few more consultations with my *Sensei*, I decided to find this out:

> *If intergovernmental fund transfers in the form of Assistance to Municipalities Program (AMP) serve as a development planning motivation for select Municipalities in the Philippines the same way as EU funds motivated Municipalities in Poland*

To probe this, I would have to answer this question:

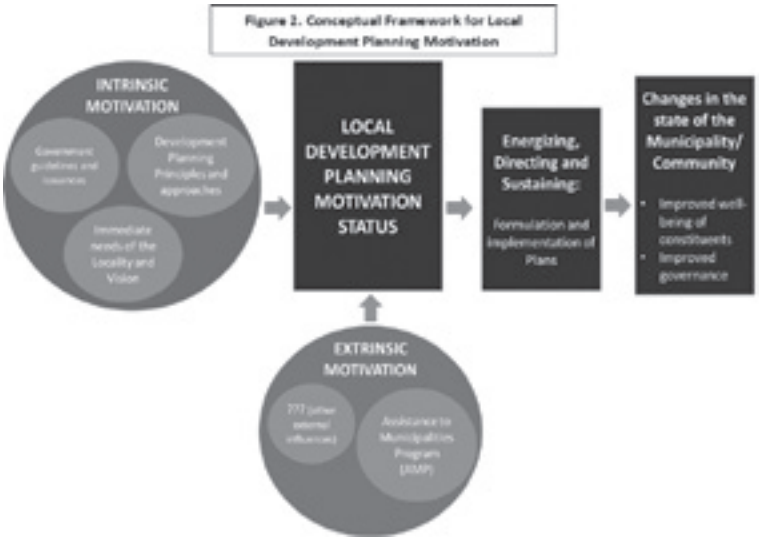
> *Does the Assistance to Municipalities Program (AMP) serve as a planning motivation for Municipalities in the Philippines?*

Having identified my research objective, I began to realize the true purpose of my research and my scholarship. I did not think of these as purely an academic endeavor. These are means to improve policies in my line of work and to also improve myself as a person through the knowledge I will gain with the people I meet and the experience I will get while in Japan. Having this purpose now set, I began to realize having a sense of direction every day. It made my stay in Japan even more fulfilling as I see purpose and meaning in everything I do. It helped me cope with living alone while in a foreign country. It gave me a sense of motivation whenever I was feeling down or lonely.

ESTABLISHING RELATIONSHIPS

Having now identified the things I wanted to focus on, my *Sensei* advised me to take courses that can help in ESTABLISHING RELATIONSHIPS between concepts and variables. He said that only through certain research methods can you establish relationships among concepts and these are invaluable in proving a point or a hypothesis. So, I took courses that taught qualitative research methods, evaluation theory, financial management and economics. I was able to find a concept that interests me, *motivation*. So,

I began looking at the Framework of Motivation. According to Reeve (2018), motivation as a behavior creates more positive motivational and emotional states, which reinforce the behavior through a positive feedback loop and increase the likelihood of repetition. I began to draw my own theory based on this framework. *Sensei* always motivated me to not be afraid to question theories or to theorize on my own if I think that it is an explanation for something.



Using the Framework of Motivation as espoused by Reeve, I began substituting the concept of intergovernmental fund transfers and local development planning to the general framework. The figure above

argues that Local Development Planning Motivation Status is not only influenced by intrinsic motivation factors but also extrinsic motivation factors, such as intergovernmental fund transfers, in the Philippines' case, the Assistance to the Municipalities Program (AMP). In other words, you can motivate LGUs to do Local Development Planning by providing them with more funds. This is similar to the findings of the study of Sztando, only now, it is presented in a conceptual framework based on Motivation.

As I continued to refine this framework and try to convince my *Sensei* that this was worth pursuing, I also began to ESTABLISH good RELATIONSHIPS not only with my professors but with my classmates as well. Meiji University has these intensive classes where you go on study trips with your professors and classmates as you experience and learn from Japanese best practices. With those trips and a few drinks and dine-outs after class and on special occasions, we gradually developed bonds and memories that will last for a lifetime.

LEARNING FROM THE OLD AND THE NEW

With the preliminaries of the research already established, it is now time to put the questions and the framework to the test. My *Sensei* reminded me that we can LEARN FROM THE OLD AND THE NEW. Yes, there are already established theories from the past that you can learn from but there are also a host of new things that are waiting to be discovered and learned. I should be open minded and not be limited with established trains of thoughts. With that in mind, I tapered my expectations with my research and was now open to the possibility that the case in Poland might not be the case in the Philippines. If that happens, I thought, then maybe it is a new learning waiting to be studied more as to its whys. I began telling myself that. This, I thought, is about managing your expectations and finding opportunities in instances you otherwise did not expect. More of finding the silver lining in the bleakest of situations.

From there began my data collection. I was limited to one (1) region in the Philippines as my time to collect data was only enough for these sample sizes. I chose Region 3 in the

Philippines as it is one of the regions with the greatest number of Municipalities with the widest range of income classes and the nearest to my workstation. It is more or less the closest in approximating the country's municipalities as a whole.

It took me almost five (5) months to collect data and analyze them using a five (5) stage document analysis to determine the planning motivation of 128 municipalities in Region 3. The documents I reviewed consist of the Comprehensive Development Plans (CDPs), Local Development Investment Programs (LDIPs) and Annual Investment Programs (AIP) of these municipalities totaling close to 384 documents in thousands of pages.

Then came the initial results. Out of the 128 Municipalities, 29 (25%) are considered to have *'For AMP fund Strategy Situation'* in Fiscal Years 2018 and 2019. These results suggest that the AMP serves as a motivation to a relatively few Municipalities (29 or 25%) in the case of Region 3 in the Philippines compared to Sztando's research in Poland which pegged at 68.6%. Based on the initial results, it seemed that the case in Poland was not comparable to the case in the Philippines. It seemed that

Intergovernmental Fund Transfers, the AMP in particular, do not motivate Municipalities to do development planning in the Philippines. Honestly, I was surprised by the result. I was really hoping that it would turn out to be the same, or close to the result of Sztando somehow. I submitted my findings to my *Sensei*. He said that this was what he meant by LEARNING FROM THE OLD AND THE NEW**.** He said that we can learn something new out of this. He asked me to think of another set of probing questions and find out why this is the case in the Philippines. I formulated a few more questions and conducted Key Informant Interviews (KIIs) to serve as the second phase of my study. Key Informants came from the national government, Department of the Interior and Local Government (DILG) field offices and from the Municipalities themselves.

From the second phase results, I learned that the AMP as an intergovernmental fund transfer, was very limiting in a sense. Why? Because the AMP requires municipalities to choose from a limited shopping list of projects and most municipalities do not see them as applicable to their localities. As such, they do not have the motivation to access them at all. I also asked the key informants what would motivate them to do development

planning? Almost all of them said if only the AMP does not have a shopping list and that they are given a freehand how to use it instead, then it will be more enticing to Municipalities.

With these findings, I felt I indeed had learned from both the old and the new. It was really fulfilling to have learned all these by allowing myself to dig deeper. By being open to learning more when the opportunity presents itself. I was convinced that it would be worth the while if you just went the extra mile. This was also particularly true when I started hanging out with a few Japanese friends longer and more often. You start to learn something new about Japanese people and culture every time you open your mind to it. The same goes with my other JDS friends from different countries. You will be surprised that they can have very distinct personalities of their own, different from what you read or watched and how they are portrayed to be in movies and books. I realized that this is what learning should be: to not be limited by the bounds of established conventions and perspectives but to personally push it beyond these lines as there is so much to learn outside of it too. You just have to be willing to learn these new ideas.

TRUSTING IN OURSELVES

Having written almost every section of my thesis, I cannot help but worry if I am doing it correctly. I was thinking, what if I messed up somewhere along the way. My *Sensei* just kept telling me to go on whenever I got stuck in my write-up and asked him for advice. Somehow, I was beginning to doubt myself and for that matter, my *Sensei* and everything I did. Plus, the initial feedback I had when I presented my thesis progress to a number of Meiji professors was not very encouraging and it did not help at all. But those doubts slowly went away when I got to talk with my classmates and my fellow JDS scholars. I learned we are in fact experiencing similar concerns and issues at the same time. I figured then that it was encouraging to have peers that share your thoughts and worries at the same time you do. After learning this, we began to encourage and help each other. Through all the thesis writing time of almost a semester and a half, we regularly checked on each other and provided advice to one another. Each one the critique of the other. The process slowly but surely built trust in each other, then eventually it gave you confidence and we began TRUSTING IN OURSELVES more.

The date of the proof-reading came and went, not much revisions there, thankfully. Then came the submission of the final draft of the thesis to your *Sensei* for his approval and endorsement to the faculty. As it closed in, doubt began to creep in again. You have to submit it initially online and then you have to meet him personally for final instructions in your thesis defense. We met and *Sensei* asked me if I was ready for the defense. I was wondering why he did not ask me about my thesis at all. I was expecting that he would say "You could have done this or that". None. Nada. I asked him, "*Sensei* if you will say my thesis is ok, then I am ready for the defense". He asked "For you, is your thesis fine?" to which I said "Yes, I think so." He said that if I honestly think that it is ok then it is ok and I can defend it to whoever is on the panel. He smiled and said that I would do good in the defense since I did what was possible given the time and the pandemic. This is when I realized that he puts so much trust in me that I should also put my trust in him, in that we both did our part to make this work. This is all the confidence booster I need. I even wondered, why did I ever doubt myself or even *Sensei* in the first place? So long as you did something with

due diligence and that you gave everything and put your best into it, then you can live by the results, whatever it is.

Then came the defense. The only questions the panelists asked that stuck with me were if I could expand my research to cover the whole country and if I could make my policy recommendations be adopted by my agency. I said yes and they congratulated me. That was it. The rest of the questions I answered pretty easily and most of it I don't remember at all. I thought that was confidence all right.

APPRECIATION THROUGH APPLICATION

After the thesis defense, the time left for our stay in Japan was slowly coming to an end. Going out was really not an option anymore because of the pandemic. So, most of the time, we are left to stay in our apartments and enjoy the company of our *Kohais* (Juniors). Talking and giving them advice over dinner or some drinks made me appreciate my stay in Japan and life even more.

I also think that appreciation does not stop with acknowledging what is ideal, beautiful or what works or not. It also includes realizing what is wrong and not

applying things to something that would make it worse than what it was before. This is what is called a do-no-harm policy (Anderson, 1999) approach which is something I learned in the Public Policy course. It is an approach in policy making that considers every stakeholder in that when you introduce a policy, you must not affect the situation negatively and make it worse than what it was before you applied the policy. This approach makes you think more holistically and not with a single lens only.

For the myriad of things, I learned in my two years of stay in Japan, I came to believe that the best form of APPRECIATION is THROUGH the APPLICATION of these learnings in my line of work and in my personal life as well.

As for the findings of my research, the best way to appreciate all the learnings I had is to apply the policy recommendations I made. While my research is an instrumental case study which gave insights as to the planning motivation of Municipalities in Region 3 in the Philippines, it will be more helpful if it can be expanded to the rest of the Municipalities in the country. This research proved that the methods of Sztando can be adopted to gain information on the Municipalities' planning motivation.

There are 1,488 Municipalities in the Philippines and Region 3 only comprises 9% of its totality. Knowledge on the planning motivation and its corresponding categories for all Municipalities in the country can help the national government in pinpointing policy to address perceivable gaps in the process of development planning and could subsequently raise the level of planning motivation of these municipalities in the future.

Another thing that is worth looking into is the role the provincial government is playing in the planning motivation of their Municipalities. Looking into the details of the results in Phase I, it can be seen that there are provinces that have municipalities that have exhibited relatively high planning motivation compared to others. Could the provincial government be playing a part in this? This can further be the subject of subsequent studies on planning motivation having the influence of provinces as another extrinsic factor in motivating its component municipalities to do development planning.

As for the AMP as a planning motivation, further studies can also be conducted but the subject area should be expanded and the time period should cover a time series

that could check for significant trends. My study only covered two (2) Fiscal Years. It would be better if the period could be extended to 3-5 years. The research also found a dip in the motivation of the subject Municipalities from 2018 going into 2019 and it could be based on several factors that need to be further examined. If the motivation continues to dip further, then the AMP would not serve its purpose as lesser Municipalities will access it, wasting the resources allotted for the program. The AMP as a program also intends to further empower Municipalities by giving them additional external sources of funding. But if the municipalities are not very keen on accessing them as proven by the study, it will be for naught. So, there is a need to study the impact and influence of AMP to Municipalities so that it can be made to be more enticing to Municipalities in the future. In particular, I would recommend getting rid of the shopping list of programs and projects as these are not based on local priorities in the first place. In fact, it even discourages them from accessing the AMP. These are the policy recommendations I intend to raise to my superiors when I get back to work.

When I finally got back to the Philippines in September of 2020, I realized that the AMP was,

unfortunately, discontinued. I thought then that the necessary policy recommendations I had to improve the AMP and local development planning were already moot as the program is no longer existing. But then came the Supreme Court Ruling on the Mandanas and Garcia Petitions. The Supreme Court Ruling basically provides for an increase in intergovernmental fund transfers to Local Government Units (LGUs) effective 2022. This is by virtue of the Ruling agreeing with the petitioners that the share of LGUs should not only involve internal revenues but as well as customs duties and taxes. This was way more than my supposed policy recommendations. Aside from providing more financial resources compared to the AMP, there are no longer any shopping lists limiting the municipalities. I thought to myself that this is somewhat related to being open minded and finding the silver lining in the bleakest of situations. Although my recommendations are already not applicable because of the SC Ruling, it turned out for the better in the end albeit without me doing anything yet. While the AMP was discontinued, it was replaced by an even more ideal development. In addition, the SC Ruling covers not only municipalities but all LGUs including Provinces, Cities and even the Barangays (smallest

political unit at the community level). On average, LGUs will have an increase of 37.89% on average compared to what they are getting in FY 2021 based on the computation of the DBM and BLGF. The only thing left for me to do is to monitor the LGUs to see if they will do development planning given the additional financial resources that they have as my research suggested. Whatever the result may be, it is imperative for me to find opportunities to learn from and improve on it, the way *Sensei* would have said it.

For all these all I can say is that I can only be grateful to have gained not only knowledge but more importantly, friends and mentors for life and for that I consider Japan as my second home. All the experiences may be good or bad, I will cherish them for the rest of my life. I cannot thank the JDS Scholarship enough. I believe that I have changed for the better because of my two-year stay in the Land of the Rising Sun. I will forever be indebted to the government and people of Japan for this once in a lifetime opportunity not all are given the chance to experience. Rest assured that as a way to show my appreciation, I will always apply all my learnings in the way I live my life and in my work. I promise to be an ambassador for Filipino-Japanese cooperation in any way I can. Having to write for

this publication is a privilege and part of my appreciation too. And for that, from the bottom of my heart, *Dōmo arigatōgozaimashita*!

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Chapter 12

People to People Exchange in a Changing World

JICA Philippine Office

12

PEOPLE TO PEOPLE EXCHANGE IN A CHANGING WORLD

In the Philippines, it is not uncommon for Japan International Cooperation Agency (JICA) to sit down with high-ranking government officials to discuss project updates, but on one auspicious day in 2019, JICA found itself face-to-face with an Assistant Secretary with an interesting backstory.

Although most government officials are familiar with JICA's Official Development Assistance in the country, it is quite rare to come across an individual with a deep personal connection to Japan. This made JICA's meeting with Asec. Francisco R. Cruz of the Department of Interior and Local Government (DILG) particularly memorable. Upon arrival at his office, JICA immediately noticed that the walls and shelves were lined with photos, dolls, and other mementos from Japan. A diploma for a master's degree in media and governance from Japan's Keio University was also on display. On that day, Cruz fondly

narrated to JICA his memories as a scholar under the Project for Human Resource Development Scholarship by Japanese Grant Aid or JDS. Cruz was an information officer at DILG when he was accepted to JICA's JDS program.

Although the JDS application process for Cruz involved many steps, like a challenging math examination and submission of a research proposal, he said that studying in Japan "gave him the opportunity to advance in his career." After returning home from Japan, Cruz moved up the ranks at DILG where he now serves as Assistant Secretary for Plans and Programs. During his studies, Cruz learned not only from Japanese professors but also from his fellow international students from countries with similar development issues as the Philippines. It is this type of knowledge sharing that JICA hopes to promote through JDS. By creating a system where academic exchange becomes a tool for strengthening international relations, the JDS program has become an integral component of Japan's Official Development Assistance to the Philippines.

THE SEEDS OF PHILIPPINES-JAPAN RELATIONS

As early as 1954, Japan and the Philippines have already been planting the seeds of friendship through the spirit of cooperation when both countries joined the Colombo Plan for Cooperative Economic and Social Development in the Asia and the Pacific. The plan aimed to facilitate the transfer and sharing of the developmental experiences among member countries within the regions.

The establishment of Japan International Cooperation Agency (JICA) in 1974 was monumental as the delivery of Japan's Official Development Assistance (ODA) became broader to include economic and social assistance.

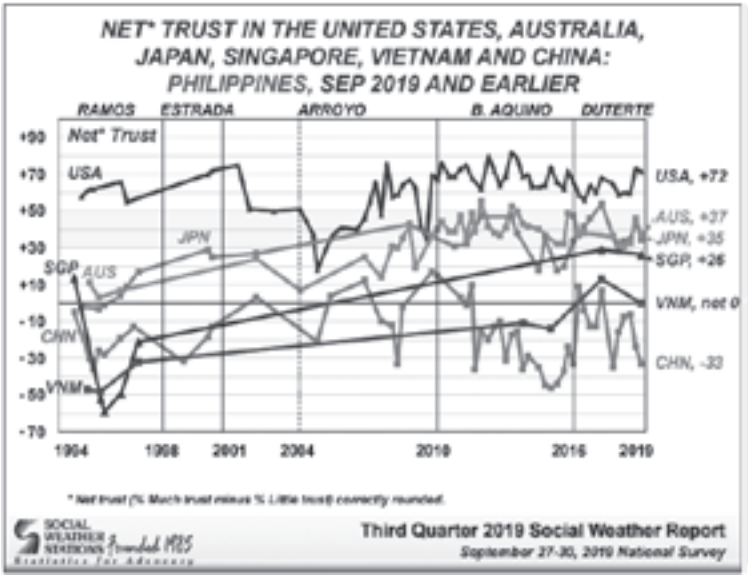
Japan's economic cooperation is guided by two motives: humanitarian and moral considerations, and the recognition of interdependence among nations[4]. Based on Japan's own experience of overcoming a range of developmental challenges, Japan recognizes that it has to play a more proactive role in building peace, stability and prosperity in other countries. Serious efforts anchored in

[4] Ministry of Foreign Affairs – History of Official Development Assistance

mutual friendship and collaboration through ODA are one of the most important means to contribute to this ultimate agenda.

Japan is the very first country and still is one of the very few countries that has modernized from a non-Western background to establish a free, democratic, prosperous, and peace-loving nation based on the rule of law, while preserving much of its own tradition, culture, and identity. However, this did not happen overnight. In the 1950s, Japan was also a recipient of development assistance like the Philippines from the World Bank. Through the Japanese' government's staunch leadership and proactive industrialization policy, it was able to achieve steady socioeconomic growth. As Japan's economy continued to strengthen during the 1960s to the 1980s, it became one of the world's leading industrialized nations. Its role as a beacon and a source of development aid to many developing countries likewise grew. In 1989, Japan became the world's top donor nation. At present, JICA, the executing agency of Japanese ODA, is one of the world's largest bilateral aid agencies working with over 150 countries and regions, including the Philippines.

REDEFINING COLLABORATION



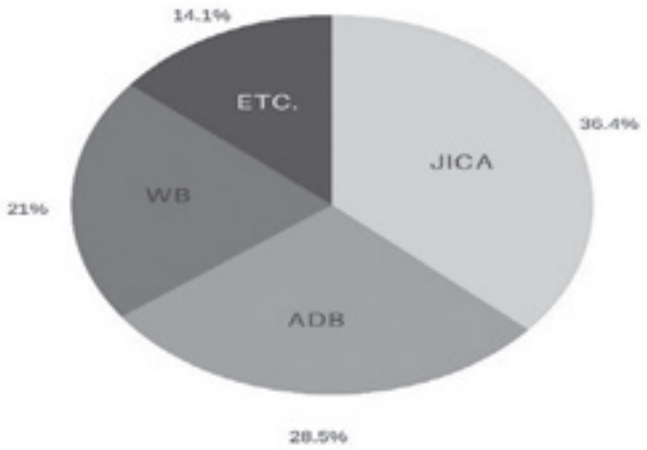
The Japan-Philippines cooperation is built on more than 65 years of solid legacy and friendship. Both countries share strategic interests as well as fundamental values such as democracy, rule of law, and free market economy. This is what makes the bond between Japan and the Philippines stand out. According to a Social Weather Station (SWS) Special Report last 2019[5], Japan enjoyed a *very good trust rating* in the Philippines. SWS first surveyed Filipinos'

[5] Third Quarter 2019 Social Weather Survey

public trust to Japan in December 1994, where it started at a *neutral level* of -2. As the years passed, it steadily rose until it peaked at +54, *very good levels* last December 2017. Although it fell to moderate +28 in September 2018, it regained its momentum by rising to *good levels* from December 2018 to September 2019, ranging from +34 to +45. Comparing the trust levels to other developed nations such as the USA, Australia, Singapore, and China, it can be seen that the two Western nations enjoy higher trust ratings than Japan. Yet, among the developed nations in Asia, Filipinos give the highest trust to Japan. It could be said that the ODA projects of the Japanese government in the Philippines have contributed to this high trust rating. In turn, the affinity of Japan to the Philippines is high to the point that it enables both countries to efficiently collaborate with regards to a plethora of subject matter, most especially those that pertain to the development challenges and goals of both countries.

For more than 20 years, Japan has been the Philippines' top donor country. A large part of this was administered by JICA, as it implemented hundreds of cooperation projects all over the country which shows JICA's sincere commitment as a trusted partner of the Philippines for sustainable development. According to the

2020 ODA Portfolio Review[6] released by the National Economic and Development Authority (NEDA), Japan remained the top provider of ODA to the Philippines accounting for 36.44% of the total assistance received which amounted to USD 11.18 billion for 30 loans and 15 grant projects, and several technical cooperation projects.



1 Philippines total ODA ratio by Fund Source (2020) (source: NEDA)

The Philippines is an important ODA target country for Japan. Every project that Japan undertakes in the Philippines is consistent with its development needs. JICA's programs are aligned with the long-term

[6] 2020 ODA Portfolio Review – National Economic and Development Authority

development goals espoused in the *AmBisyon Natin 2040*, the medium-term development goals formulated in the Philippine Development Plan (PDP) every six years, sector development plans, and Mindanao strategic development policies.

Likewise, the reception of Japan's ODA in the Philippines is quite positive. Japanese aid is perceived to be more responsive to national priorities exemplified through the regular holding of high-level policy consultations such as the high-level committee meetings about the continuing infrastructure projects of the "Build, Build, Build" initiative. Japanese loans are preferred for their highly concessional nature, long period of maturity and long-standing strong relations with JICA. The policy framework that guides Japanese ODA is aimed at strengthening the foundation for sustainable growth, ensuring human security for inclusive growth, and promoting peace and development in Mindanao.[7]

Through JICA's past and ongoing ODA projects in various sectors, Japan hopes that the next generation of Japanese and Filipinos will learn from other models, experiences and best practices as well as find inspiration in

[7] Background Paper No. 12 - Japan's Development Cooperation: A Historical Perspective, May 2021

exploring new ideas and opportunities to address the challenges both countries are facing. Building on friendship and strong bilateral relations, both countries are entering the so called 'golden age of strategic partnership' that shall transform Philippine economic development and prosperity in the region.

PILLARS TO CATALYZING GROWTH

In the Philippines, JICA implements Japan's ODA anchored on three pillars:

1. *Achieving sustainable economic growth through further promotion of investment*

   In an effort to improve the Philippines' investment climate, and help the country achieve sustainable economic growth, JICA provides assistance focusing on (1) improvement of traffic and transport network of the National Capital Region and major cities outside the NCR; (2) improvement of energy and water infrastructure; (3) securing maritime safety; and (4) human resource development for industries.

2. *Overcoming vulnerability and stabilizing bases for human life and production activity*

   JICA also assists to help overcome vulnerability to risks affecting the impoverished sector, and stabilize the foundation for human life and production activities. This is met through JICA's help on the (1) improvement of hard and soft infrastructure to address the risks of natural disasters and to take care and sustainably harness the environment; (2) development of safety nets including healthcare and education; and (3) enhancement of agriculture productivity and processing and distribution of agricultural products.

3. *Peace and development in Mindanao*

   Lastly, to help stabilize peace in Mindanao through peace process and socio-economic development in conflict-affected areas, and poverty alleviation, JICA assists the Philippines in (1) reducing poverty through improvement of access to social services; (2) community development through improvement of infrastructure and industry promotion; and (3) strengthening local governance.

JICA'S ROLE IN A CHANGING WORLD

The Philippines is among the countries that has benefitted immensely from Japan's assistance and cooperation programs – from infrastructure, health care, education, food security, and capacity-building of many government agencies. This comes in the form of different assistance schemes such as technical cooperation, grant aid, and finance and investment cooperation based on key pillars. Projects are implemented around medium-term plans on five-year cycles, and international frameworks such as the Sustainable Development Goals (SDGs), the blueprint for development set by the United Nations (UN).

In many ways, Japan demonstrates a comparative advantage over other donors that provide ODA to the Philippines, especially in providing comprehensive support in a wide range of fields. First, the use and sharing of advanced Japanese technology has been instrumental in the pursuit of various projects in transportation, maritime safety, disaster risk reduction, among others. Second, Japan's support for system and capacity strengthening by sharing Japanese expertise through technical cooperation has also been valuable to Filipinos. Finally, Japan's role in human resource development in the Philippines through

people-to-people exchange inspires new ways of thinking and encourages Filipino civil servants to develop ideas that can make an impact in a changing world.

INVESTING ON HUMAN RESOURCE DEVELOPMENT

Since the normalization of diplomatic relations between Japan and the Philippines in 1956, the friendship and cooperation of the two countries have evolved into strategic partnerships. This strong partnership is further affirmed through active people-to-people exchanges, and the continuous sharing of Japanese knowledge and experiences through Japan's capacity building programs in the Philippines. In the Development Cooperation Charter[8] which was released by the Japanese Cabinet on February 2015, it is espoused that "In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with

[8] Ministry of Foreign Affairs – Official Development Assistance (ODA) Development Cooperation Charter

developing countries in which both sides learn from each other and grow and develop together."

As the Philippines' staunch partner in development, Japan has continuously expressed its commitment to help the country pursue inclusive growth through all levels of the development process. To assist partner countries in narrowing the development gaps, JICA implements a comprehensive strategy on capacity building aligned with its country assistance pillars.

Over the years, such capacity building activities have helped meet the supply and demand of human resources in the Philippines and ASEAN region and have fostered cooperation among countries. More than 40,000 Filipinos, primarily government officials, have participated in JICA training in Japan. Philippine development continues to reap the fruits of practical knowledge and experience through JICA training and scholarship opportunities in Japan:

Knowledge Co-Creation Program

The JICA Knowledge Co-Creation Programs (KCCP) are a form of technical cooperation that JICA carries out in Japan. This allows participants to see first-hand the unique systems, methods, and technologies that

Japan has developed over the year by adapting foreign knowledge and expertise to its own circumstances. In the Philippines, there are roughly 120 KCCP participants accepted each year. The COVID-19 pandemic has led to a recent temporary shift to an online format for some types of KCCP, a move that has allowed the programs not only to continue, but for some courses, reach an even wider audience than before.

1. KCCP-Group and Region Focus

   The KCCP-Group and Region Focus is a type of technical cooperation that aims to provide trainees unique knowledge and experiences about Japanese society and organizations. Participants visit Japan to understand better the development issues in their country and gain a new perspective on social conditions different from their own.

   In light of the new challenges stemming from the COVID-19 pandemic, the KCCP-Group and Region Focus technical cooperation programs have evolved to accommodate trainees even in the comfort of their homes and/or offices, through online trainings composed of both synchronous and asynchronous sessions.

2. KCCP-Young Leaders

   The program began as Youth Invitation Program (formerly ASEAN-Japan Friendship Program for the 21st Century) in 1984 for ASEAN countries, and it eventually expanded to 120 other nations. Through the years, the program has helped nurture the friendship and mutual trust between Japan and participating countries around the world.

   Today, the program continues to enrich the experiences of the youth by introducing them to Japanese technology and practices during their almost 3-week stay in various prefectures all over Japan. The program exposes the youth to the issues and challenges facing their sector and prepares them for future global challenges.

   Although the COVID-19 pandemic has temporarily prevented the youth in going to Japan to attend the trainings, the implementing agencies who partnered with JICA remain committed to knowledge sharing through various online tools.

3. KCCP-Long Term and other Graduate Degree Programs

KCCP-LT are characterized by higher academic degrees offered by prestigious Japanese universities to select government officials who are involved in multiple sectors such as the transport (Sustainable Urban Planning and Urban Transportation Development and Core Human Resource Development for Road Asset Management), mining (Human Resources Development for Governmental Officers and Researchers in Mineral Resources Rich Countries), space technology (Human Resource Development in Space Technology Utilization), agriculture (Agriculture Studies Networks for Food Security), DRR (Disaster Risk Reduction Leaders Capacity Development for the Sendai Framework Implementation), and energy (Human Resources Development for Electricity and Energy Sector).

Innovative Asia is another KCCP-LT that provides master's or doctor's courses at Japanese universities. It also offers internship opportunities at Japanese companies, research institutes or governmental organizations in the following study fields: Science and Technology,

and Engineering, especially, Information Technology, Internet of Things, Artificial Intelligence, etc. This program aims to enhance the circulation of capable young personnel between Japan and Asian countries and to promote innovation in the whole Asia.

Meanwhile, the Sustainable Development Goals: Global Leadership Program (SDGs GLP) aims to develop high-level human resources who will contribute to appropriate policy decisions and its implementation for tackling political and developmental issues in their respective fields. The scholarship offers numerous opportunities to civil servants who have deep backgrounds and expertise in the technical fields to pursue higher studies in the form of master's and doctoral degrees in premier universities in Japan.

ASEAN University Network/Southeast Asia Engineering Education and Development Network (AUN/SEED-Net) provides engineering professionals and academic institutions opportunities for advancement of personnel and collaboration under the AUN/SEED-Net initiative.

The Japanese Grant Aid for Human Resource Development Scholarship (JDS) is bestowed to qualified young government officials who have the potential to spearhead the Philippines' development towards the future. It aims to develop and supplement the human resource development of highly capable young officials who are expected to contribute to the Philippines development through implementing social and economic development plans through policy-making.

THE PROJECT FOR HUMAN RESOURCE DEVELOPMENT SCHOLARSHIP (JDS)

Among all the numerous training schemes of the Japanese government, one of the most prestigious is the Project for Human Resource Development Scholarship (JDS). It is a grant aid that was first implemented in Uzbekistan and Laos in fiscal year (FY) 1999 as part of the "100,000 International Students Plan" of the Japanese government. The Philippines was first recognized as a target country for the JDS back in 2002. At its infancy, the purpose was solely to build international students' (hereinafter referred to fellows) individual capacities.

Through time, the project steadily evolved and gained a deeper purpose that revolves around the enhancement of administrative capacity building of young government officials who play core roles in the formulation and implementation of social and economic development policies in developing countries, through the effective use of the acquired knowledge and experience of the returned fellows to their agencies and organizations. Since its first intake in FY 2000, the JDS program has sent 3,970 fellows from a total of 15 countries, 399 of which represented the Philippines as of 2021.

The current framework for the 17th to 20th batches is characterized by Sub-Programs and Components that are established in each target country based on ODA priority areas, the target country's issues and human resource development needs, Target Organizations (national government agencies) and Accepting Japanese Universities. Participants are selected and dispatched to universities that are suitable according to the programs and components in the framework (see table below). JDS participants are dispatched under the same schemes, with the same Sub-Programs/Components, Target Organizations and Accepting Universities for four years. This results in the improvement in the core human resources' abilities to make policies and manage projects,

which leads to improvement of Target Organizations' ability in policy-making. In addition, Accepting Universities can provide education through programs suitable for target countries through the acceptance of JDS participants from the same countries and Target Organizations for four years as shown in Table 1 below.

Table 1:

The JDS Project Framework for Batches 17-20

Sub-Program	Component	Expected Research Topic
1. Public Policy + Science and Technology for Sustainable Economic Growth	1-1. Enhancement of Public Administration and Finance	Public policy in general (other than industrial policy), law, public fiscal management
	1-2. Enhancement of Industrial Promotion	Promotion of investment and trade, automobile industry, IT industry, SME promotion
	1-3. Improvement of Transportation Infrastructure Development	Urban planning, traffic planning, traffic engineering, etc.
2. Overcoming Vulnerability and Stabilizing bases for Human Life and Production Activity	2-1. Disaster Risk Reduction and Management	Weather, marine weather, earthquake, tsunami, volcano, disaster prevention policy, coastal engineering, flood control, erosion control, etc.
	2-2. Environmental Management, Infrastructure Development in Regional Cities	Construction engineering (water and sewerage commission), environmental sanitation engineering, climate change countermeasures, etc.

JDS FOR THE PHILIPPINES DEVELOPMENT

As a human resource development program, the JDS' primary goal is to address the various Philippine development challenges through capacitating the fellows who will contribute to the nation's medium-to-long-term growth. This idea of growth is espoused in the AmBisyon Natin 2040, which is a long-term manifestation of the development goals of the Filipino people for themselves and for the country in the next 25 years, the Philippine Development Plan (PDP), which is a six-year road map outlining development goals that needs to be achieved in order to get closer to the AmBisyon Natin 2040 goals.

Looking at the PDP 2017-2022, it has several goals for 2020 including inclusive growth, achieving a high-trust and resilient society, and a globally competitive knowledge economy. These goals are based on the three drivers of enhancing the social fabric, inequality-reducing transformation and increasing potential growth. One way to enhance the social fabric is by ensuring people-centered, clean and efficient governance. JDS is designed to equip civil servants with key skills and competencies in this area through the comprehensive subjects and courses available in its Masters' and Ph.D. courses.

Building up on this goal of PDP, the Japanese Government's Country Assistance Policy [9]for the Republic of the Philippines sets three priority areas under its basic assistance policy: "strengthening a foundation for sustainable economic growth", "ensuring human security for inclusive growth", and "peace and development in Mindanao". JDS takes into account these priority areas as it provides training and development for core personnel to operate in fields pertaining to the development issues of the Philippines.

JDS in the Philippines is situated as a project contributing to the development issue by "strengthening the foundation for sustainable economic growth" in the priority area "enhancement of industrial promotion/enhancement of public administration and finance" in the rolling plan set under the Country Assistance Policy for the Republic of the Philippines.

FRUITS OF THE JDS

It is evident on how the JDS influences young government officials. The 399 Filipino JDS scholars have had unforgettable experiences in Japan that supplemented

9 Ministry of Foreign Affairs - Country Development Cooperation Policy for the Republic of the Philippines, April 2018

and formulated their capacities as young policy-makers who are expected to solve the biggest developmental challenges in the Philippines.

According to the Preparatory Survey[10] conducted last 2018 among the Filipino JDS fellows in which 107 were respondents, 73 JDS fellows were promoted since returning to the Philippines. According to the majority of respondents who were promoted, JDS has helped in their promotion as it (1) gave them the means to meet the Master's Degree requirement for promotion to division chief (or higher); (2) helped boost their confidence from the recognition given by their organization and peers having earned a Master's Degree from a prestigious Japanese university; (3) it has significantly improved their technical and leadership skills that contribute to better quality in their job performance. Many JDS alumni, in addition, pointed out that promotion alone does not completely measure the JDS's impact on one's career. High performance evaluation, as well as high level of trust given by peers and superiors, and increase in responsibility also indicate successful impact of the JDS program.

[8] Survey on the Project for Human Resource Development Scholarship in the Republic of the Philippines, July 2018

Building from the experience of Assistant Secretary Cruz of DILG, there are many other fellows who have had stellar accomplishments since coming back from the JDS[6]. Through the Survey conducted to review the status of the JDS in the Philippines, several fellows have shared the fruits and results that they have reaped through the JDS program.

One JDS fellow from CSC who studied at Meiji University was involved in the Anti-Red Tape Act (ARTA) audit, also known as the ARTA Report Card Survey (RCS) conducted by the CSC annually. She mentioned that her study at Meiji University is highly relevant to her current job as she is directly handling policy issues through the ARTA RCS, where her tasks include data analysis of the results of the survey for policy recommendation.

Another JDS returned fellow, a Division Chief at the Department of Social Welfare and Development (DSWD), shares an example of his contribution to policy planning and implementation after studying at Waseda University. His initiative to apply the concept of Data Warehousing, which he learned in his Master's degree course, paved the way for the Central Office to adopt an Enterprise Data Warehouse that provides a holistic view

and quick dashboard reports of DSWD programs and services.

Furthermore, Director of Planning Service of the Department of Interior and Local Government (DILG) explained that JDS allowed him to interact with different groups of people which enabled him to hone his skills in engaging and interfacing with various stakeholders both in government and outside of it. His work today requires him to work closely and collaboratively with key offices such as the Office of the President, oversight agencies, the Congress, etc. Such interaction is critical in making sure that the plans and programs of the Department are closely linked to and contributory to the fulfillment of the President's priorities for the country and the people.

A JDS scholar from the Development Bank of the Philippines (DBP) studied economics from the International University of Japan in 2011. When he returned to the Philippines, he introduced an IT platform that connects all DBP operations into a seamless system to manage risks and serve the customers better. In his own way, he implemented a system that made an immediate impact and difference to the Philippines' banking system.

Lastly, a JDS scholar who worked at the Philippine National Police finished a master's degree in Global

Information and Telecommunications Studies in 2010. Few years later, he was appointed as the Assistant Secretary at the Department of Information and Communications Technology (DICT), wherein he envisioned a holistic approach in tackling the security development challenges in the country by applying his experience in law, policy, and technology. The Japanese discipline and attention to details were also factors that supplemented this approach. He then became a contributor to the crafting of the Philippines' National Cybersecurity Plan 2022, which is considered a milestone in the country's cybersecurity efforts that ensures the rights to privacy of Filipinos through the security of critical information infrastructure.

Building up from the JDS fellows' contributions to their respective government agencies, there are also experiences that enabled them to work together with outside organizations, most notably with international organizations and private sectors in Japan. A JDS fellow from NEDA relayed her experience in providing technical advice on the design of project proposals as well as in facilitating approval by the Investment Coordination Committee (ICC).

In summation, although there are challenges in quantifying and measuring the definite effect of the JDS, the glimpses of excellence can be found in the JDS fellows' career advancement, heightened confidence in tackling tasks, and the higher technical skills and abilities that they directly apply to their designations in their respective agencies. The effect of the JDS program is expected to manifest itself in the long term, which is towards the overall socio-economic development of the country. From the experiences of people relayed in this chapter, to the colorful and comprehensive commentaries of the book's co-authors, it is evident that the cumulative experiences of the JDS fellows at present are proof that small fragments of solutions are beginning to slowly come together to form a bigger picture that frames the Philippines' development and success towards the future.

JAPAN'S HUMAN RESOURCE DEVELOPMENT MOVING FORWARD

JICA, through the partnership with premier Japanese universities, is steadily improving its human resource development programs by constantly evolving and finding a deeper purpose, without forgetting its foundation that is rooted in the rich Japanese experience. To further augment the human resource development

capacities of the JDS and other long-term training schemes, a unique program was formulated back in 2018 in the form of the JICA Development Studies Program (JICA-DSP)[11]. Its main purpose is centered in the development of future leaders in partner countries, including the Philippines, where they can learn development studies rooted in Japan's experience in light of its historical and cultural background. Another purpose is to establish strong and long-lasting human networks and ties between partner countries and Japan. Through the JICA-DSP, JDS fellows and other participants of long-term training programs are given opportunities to learn about the good lessons and challenges of Japan's modernization, as well as to be enlightened about the experience and contribution of Japanese government's ODA to the world.

One of the dynamic changes that have enveloped the world the past two years is the COVID-19 pandemic. In a time where human resource development and people to people exchange needed to evolve, JICA has successfully adapted. KCCP GRF short term courses, as well as LTP are conducted in an online manner. This ensured the continuation of the facilitation of human resource development programs, even if there are country-

[11] JICA-Development Studies Program / JICA Chair

specific restrictions and protocols in place that prevented trainees and scholars from going to Japan directly to attend the trainings or pursue their further studies. As the world continues to chase normalcy amidst the threat of the virus and the challenge of living with it, the Japan trainings are expected to be offered once again. However, the presence of online trainings may continue to be an option for the foreseeable future as it makes the facilitation of human resource development more accessible and safer for the trainees' and scholars from partner countries.

On the matter of JDS, as of 2017, it enjoys a stunning 99.3% completion rate among all the JDS fellows since its inception back in 2002 in the Philippines. JICA is looking to maintain this high completion rate by continuously reaching out to various government agencies in the Philippines in order to identify highly skilled policy leaders who are expected to contribute in solving the developmental challenges of the Philippines. Applicants from the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) are also expected to be invited to apply to the JDS given that the new region needs to further increase the number of capable and highly skilled leaders who are well versed in policy-making at this early stage of the autonomous region's development.

Moving forward, it remains continuously important to forge and maintain a strategic partnership between the two countries because of the Philippines's and Japan's shared attributes such as the principles of democracy and peace, among many other shared strategic interests. The JDS remains to be an excellent avenue for Filipino civil servants to improve their individual abilities and expertise for the overall betterment of the country.

Amidst a changing world, where the complexity of developmental challenges evolves every day, people to people exchange remains as crucial as ever. The emergence and presence of competent and skillful leaders is most needed, especially in a time where countries need to fortify their approaches in handling and addressing developmental goals because of ever changing challenges. Japan, as a steadfast partner of the Philippines, remains committed in improving and sharing its human resource development initiatives to help address this. JICA commends the Philippines in its continued commitment and interest to the JDS. Looking forward, we are optimistic in producing more civil servants like Asec. Cruz, whose deep personal connection with Japan helped produce fond memories and experiences that not only helped propel his career, but ultimately, also contributed to the Philippines' development.

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Conclusion

HARA MASATOSHI

HOPE…

On October 29th, 2021.
We finished our periodical meeting with the co-authors via Zoom. It was in August when we met and discussed the possibility of the publication project. We asked our co-authors to make a short report within five minutes. I was so happy to see that since the time they joined the project, they have become more and more confident and passionate in keeping their motivation to write up each chapter.
Over the past four years, I have promoted the JDS project here in the Philippines. So, before I finish my appointment here, I am eager to do something innovative even as a small step outside the regular project activities. In this way, I am filled with a sense of achievement and confidence, and we appreciate all the stakeholders who were involved with this publication project.

Most of us have been depressed with the outbreak of the COVID-19 pandemic since the beginning of 2020. We needed to work remotely having online meetings via Zoom without face-to-face communication. Still, because of the state-of-the-art technology, it has been feasible for us to conduct the online meeting for report and discussion. I was impressed to see some of the co-authors were so industrious that they tried accepting our inputs and advice on how to improve their proposals and manuscripts accordingly.

Honesty and maturity are the most important factors predicting the success of any projects or plans. Admitting mistakes or failure can lead to the next step for success. Yes, our co-authors showed their honesty to access our advice for further improvement again and again, resulting in crystallization of their chapters to be complete. This is what I learned from the co-authors during this publication project. It is necessary for us to keep humble and hungry to achieve something great.

… Finally, in this concluding chapter, we will wrap up our discussions by showing the summary of each chapter, study limitations, and suggestions for the Philippine development, and final messages towards the end.

SUMMARY

We discussed 12 topics per chapter as follows for a quick review.

In Chapter 1, Dr. Quimba and I, explained an economic development mechanism in developing countries by employing existing theoretical studies and addressing it as one of the most significant contemporary development issues in the Philippines. The mechanism further extended to the issue of the middle-income trap (MIT) (Gill and Kharas 2017). We pointed out that the Philippines has been under the lower-middle income trap (LMIT) with the figure of less than GNI per capita 4,000 US$ for almost 35 years since 1987. Based on the economic development theory, we reviewed some socio-economic policies under the current PDP from 2016 to 2021 and forecast of 2022, especially in consideration of the COVID-19 pandemic, pointing out some issues and challenges on the PDP.

In Chapter 2, our co-author, Joy Ya-On, examined the relationship between the Philippines economy and human development. She looked into the Philippines macroeconomic policy choices whether these policies

translate to advancing the welfare of the Filipinos. Remarkably, since the whole world is going through the COVID-19 pandemic, there were more discussions on health and social security policies issues than before by showing some tables and figures that represent economic growth and welfare situation in the Philippines. She concluded that the strength of the effects of economic growth on human development depends entirely on the effectiveness of expenditure targeting and delivery. She suggested that economic growth should lead to improvements in the population's living standards, reduction in poverty, and increased access to goods and public services that satisfy basic needs in her chapter.

In Chapter 3, our chief-editor, Dr. Quimba, discussed the digital economy of the Philippines and how the country can utilize this to foster further growth and development. Recognizing the strengths of the country such as strong use of mobile phones and the accelerated adoption of fintech and digital payments, the chapter provided examples of how the digital economy can increase income, reduce transaction cost and deliver services. The paper also recognized the areas where the country needs to improve such as improving the speed of

the internet, reducing the cost of accessing the internet and improving digital skills. Finally, there are threats ti the use of digital technology and these should be addressed otherwise opportunities could not be maximized.

In Chapter 4, our co-author, Neil Halcon, showed the importance of agriculture. For further agricultural development, he discussed the role of the youth in the Philippines' agricultural modernization efforts, Japan's Modern Farming Techniques and Farm Villages located in Hokkaido, re-aligning Agricultural modernization with social capital and embeddedness, and reforms for generating a National System for Innovation with Agriculture as its main driver along with the collaborative efforts from Academe, Government and Industry sectors. He advocated the modernization of agriculture for further productivity and income by providing the farmers with the complete package of capacity-building. Also, he suggested that a "Thank a Farmer Day" should be recognized nationally in the Philippines schools so children will grow up learning to respect and admire farmers.

In Chapter 5, the chief-editors, Dr. Quimba and I, addressed the importance of education for economic

development, especially the impact of the middle-income trap (MIT) and educational issues as one of the most significant contemporary development factors here in the Philippines, and showing several recommendations for better policy-making for education. Education is one of the major catalysts for development in the developing world, while the achievement is still far from what it needs to be. Thus, we emphasized the significance of promoting educational opportunities, especially secondary education in the Philippines with two implications; firstly, for employees' income to be raised, industrial development through human capital development needs to be addressed as the first implication. The other one is that making a comprehensive framework and the development strategy relevant to educational achievement needs to be addressed for the stakeholders to implement the plans and monitor the effects on the educational outputs, results, and progress frequently and periodically.

In Chapter 6, our co-author, Rosalio Ice, focuses on issues that need to be address during of road closures and recommend possible solutions to lessen or better yet eliminate traffic congestion specially during road construction and maintenance on this publication. The

author emphasized one lesson that settlement is caused by vibration and load applied by vehicles resulting in damage to road and bridges especially cracking and depression. Landslide and road slips usually occur in mountainous areas wherein when widening of road, the soil on both ends gets disturbed. Another lesson was about fatigue and fracture in steel bridges which discusses how Japan studies the history of failure accidents of bridges around the world and derived a better design for bridges as a result of the lessons learned in the past events.

In Chapter 7, our co-author, Eric Cabutaje, discusses what have we done to ensure resiliency of our population from the impacts of natural disasters. He pointed out that every local government unit should be able to improve the resiliency of their areas of responsibilities, while local government units have financial limitations to fund their initiatives as they are only allowed to use 5% of their annual Internal Revenue Allotment for local disaster risk reduction and management funds. The lesson he gained in Japan that can be transferable to the Philippines is that among the disaster they were studying are earthquakes, flood, tsunami and the factors that affect the effectiveness of disaster management and preparedness,

especially from the aspect of the availability and accessibility of historical data of past disaster even 100 years ago.

In Chapter 8, our co-author, Maria Shabon Dabon, raised a topic of environmental management for sustainable economic development by using the case study of the Central Visayas region of the Philippines, suggesting promotion of environment-friendly waste-to-energy technologies and facilities through the shift from a "disposal-oriented system" to "recycling-oriented system" to a "resource circulation-oriented system." She also suggested that for issues on hazardous hospital wastes disposal, magnified by the COVID-19 pandemic, a two-stage combustion-type gasification incinerator could also be explored. Due to the gasification combustion system, there is a good combustibility which leads to complete combustion. Finally, she emphasized the significance of promoting "City-to-City collaboration," which should further be explored to the Central Visayas and the Philippines as a whole to separate resource use from economic growth, and ultimately attain sustainable economic development.

In Chapter 9, our co-author, Jean Clarisse, addressed the latest trends of challenge being faced by female FOFWs coupled with the addition of the COVID-19 pandemic. She clarified what the Gender and Development (GAD) issues female OFWs face are during the COVID-19 pandemic, especially how the cross-country mobility restrictions and measures to fight the virus aggravated their state and worsened the gender inequalities. She made four suggestions; firstly, the Philippine government should deploy personnel who have expertise in women rights and strong background in lobbying for their well-being. Secondly, the protection of the FOFWs from all kinds of harms and abuses should be enforced. Thirdly, tapping the leaders of the civil society sectors of FOFWs and providing them meaningful and transformative platforms are recommendable. Finally, stakeholder consultations with different experts, civil societies, academes, and diplomats as well as proactive involvement of FOFWs should be encouraged.

In Chapter 10, our co-author, Osric Primero, pays closer attention to further development in science and technology in the Philippines, determining the factors affecting the innovation and technology transfer in the

Philippines by looking at the lessons learned from the design and development of the Hybrid Electric Train by observing how technological development relates to economic growth of a country. He emphasized that for the Philippines to be further developed, promoting science and technology is essential, and thereby signifying the investment. Remarkably, investment on mass transport systems aims to offer solutions to the continuously growing traffic congestion in Metro Manila should be the key to success. Repeating technological transfer and innovation will enable the Philippines to realize further growth and prosperity in the long run. In this way, further investment in commercialization and utilization of technologies from publicly-funded R&Ds needs to be further promoted.

In Chapter 11, our co-author, Arce Fajardo, focused on how to improve the function of the Local Government Units (LGUs) as the principal unit laid out by decentralization and devolution in the Philippines. Primarily, he paid closer attention to two of the processes that operationalizes decentralization, intergovernmental fund transfers and Local Development Planning (LDP) by employing the framework of Polish Municipalities for motivating the LGUs to conduct the local development

planning. His conclusion is that as long as intergovernmental fund transfers in the form of Assistance to Municipalities Program (AMP) serve as a development planning motivation for select Municipalities in the Philippines the same way as EU funds motivated Municipalities in Poland. Then, he suggested that knowledge on the planning motivation and its corresponding categories for all Municipalities in the country can help the national government in pinpointing policy to address perceivable gaps in the process of development planning and could subsequently raise the level of planning motivation of these municipalities in the future.

Finally, in Chapter 12, our organizational co-author, JICA Philippines Office summarizes the Official Development Assistance (ODA) project and its actual achievements here in the Philippines, and focusing on the role of the JDS project. They also explain why the ODA is necessary and what makes Japan ODA different as compared to the other ODA donors based on their successful cases.

With these 12 chapters, we covered what the contemporary development issues are and where the Philippines is. Then, all authors showed their recommendations that can contribute to realize further development in the Philippines through the lessons from Japan, especially by raising awareness of how to sustain the economy even under the COVID-19 pandemic. They expressed that the JDS project as a way to human resource development steadily evolved and gained a deeper purpose that revolves around the enhancement of administrative capacity building of young government officials who play core roles in the formulation and implementation of social and economic development policies in developing countries, through the effective use of the acquired knowledge and experience of the returned fellows to their agencies and organizations. They concluded that the significance of promoting the JDS for human resource development in the Philippines is indispensable 2022 onward.

Finally, as study scopes, it is necessary for all co-authors, including our chief-editors, to admit that there are several study limitations that need to be shared before wrapping up this publication, while these limitations can

be significant potentials in further sophisticating the future publication.

Firstly, since we raised this publication to be more readers-friendly, we admit that some readers might think that this publication needs to be more analytical by showing some study results or research questions. However, we believe that the story-telling style enables readers to understand what is written and what is the point per chapter. Also, some of us provided some photos for visualization so that readers can be more intrigued in the discussion. It might be controversial if publication should be more academic or scientific, but it would be a good opportunity to update their studies in a different way.

Secondly, we admit that we were not able to cover all the topics relevant to contemporary development issues in the Philippines, due to the limited time and man-power for publication. Remarkably, we should have covered several important topics, including governance, trade and industry, and medical health. These topics are of essential for further growth and prosperity in the Philippines while it is necessary to assess which problems of these topics need to be addressed as contemporary development issues

in this country. Nevertheless, we believe that we will cover these topics after second edition onward with another JDS returned-fellows.

Finally, the case-studies are limited. We needed to see the entire Philippine development, while it was necessary to make use of some cases of provincial development as well. We covered local government development in Chapter 11, while it needs to be further scrutinized by choosing some provinces or areas as the most beneficial cases for choice. The Philippines has the plenty of islands with the figure of over 7,000. It is next to impossible for publication to cover all the islands or provinces, while choosing more cases of provinces needs to be further considered for better edition.

WHERE AND HOW SHOULD THE PHILIPPINES GO NEXT?

As mentioned in Introduction, the Philippines has still various types of development issues. We can classify the issues into three types; economic, non-economic, emergency-types.

As for the first type of economic issues, the socio-economic indexes have demonstrated challenges for

economic development in the Philippines, and its GNI per capita (US$ 3,430 in 2020) remains within the lower-middle income range (IMF, 2021). Further, it also has a lower Human Development Index (HDI) than other countries than other countries—0.699, ranked 13th (UNDP, 2021) —fares even worse in its business environment, with its Doing Business Index (DBI) ranked 95th out of 196 economies in the world (World Bank, 2021). These indexes suggest the challenges involved in escaping the MIT, thus inappropriate policies to take advantage of its good initial conditions could be a hidden factor perpetuating the Middle-Income Trap (MIT) in the Philippines. In this way, how to be upgrade as the higher-middle income economy (HMIE) should be one of the most feasible goals to be achieve in the coming few years. In this way, the Philippines should go to the higher-middle income stage as early as possible. That is what we truthfully hope.

Secondly, aside from the socio-economic issues, we see some other development issues, which can be "non-economic" sides, from some chapters; digitalization, agricultural modernization, educational attainment, infrastructural development, disaster risk and management,

environmental management, gender equity promotion, science and technology, and regional development. Remarkably, technological advantages under the global economy can be more employed. Approaching to these contemporary development issues with the use of technological harness will further be signified, especially under the pandemic.

Finally, as for the emergency type, striking a balancing between pandemic measurement and economic development would be one of the most key factors predicting the higher-middle income stage, especially in the coming few years. Since March 2020, the Philippine governments, as well as the other countries' governments, have struggled for how to make an economic recovery from the chronicle COVID-19 pandemic. Thankfully, as increasing the fully-vaccinated population, the economic activities have become more activated since May 2021 (WHO, 2021). Nevertheless, it is necessary to make more awareness of how to balance these two opposite activities ahead.

Nevertheless, we strongly believe that the Philippines should have potentials, while it would be beneficial for readers to know how the Philippines goes to

the next stage under this pandemic. Here are four recommendations that we need to address.

Firstly, for government agencies to provide more reliable policy-making, “evidence-based analysis” should always be implemented. Notably, in addressing both economic and non-economic issues, it would be indispensable for them to address what the problems are and where they are, and how to solve the problems by using the evidence. Based on the evidence-oriented analysis, the policy-analysis can be more reliable and easier to provide how to solve the issues with individual, organizational, regional, and national scopes.

Secondly, making a strategy is substantially important. As Porter (1980) said, “strategy” refers to competitive position, “deliberately choosing a different set of activities to deliver a unique mix of value.” (Porter, 1980, p.32) The significance of establishing the strategy in any organization is also emphasized by Bryson (2011). However, as for creating strategies, it is not only private organizations, but also government agencies that needs to develop the national development strategy in a rolling way. Such implementation needs to be cycled daily, monthly,

quarterly, half, and annually (Bryson, 2011). Thus, more awareness of forming appropriate development strategies in each area should hopefully be raised.

Thirdly, budget management and progress should always be centered. In addressing any development issues, money as investment is always considered. Without investment, benefits are no longer available. However, it is challenging for government agencies to create appropriate budget amounts in accordance with the prioritized areas. In these ways, managing the national or regional budgets are inextricably linked to the said problem-solving and strategy-making. These essences will need comprehensively to be inter-linked so that the Philippine government can provide more appropriate budget allocations to each stakeholder.

And finally, it is essential for government agencies to learn from overseas. As Otsuka (2014) strongly suggested, learning overseas can provide the plenty of benefits; investment, technological transfer, human resource, capacity building, mutual cross-cultural understanding, etc. These items are indispensable for the developing world to learn from outside and see the

adaptability to their nations to be further developed. The co-authors of this publication are the JDS returned-fellows. They learned something new during their stay in Japan, and showing some suggestions for contributing to further development in the Philippines from various aspects of their topics they discussed. In this way, accepting other countries would be one of the most significant catalysts for further growth and prosperity in the Philippines. In this way, keeping beneficial relationship between the Philippines and Japan should further pursue ahead.

VISION, PASSION, ACTION, AND REFLECTION

We are going to leave by giving final messages for all the readers with a full of gratitude from the bottom of our hearts; vision, passion, action, and reflection.

Firstly, “Vision” must be the most significant item for all the parties to achieve something greater. Notably, for realizing organizational or national development, sharing the vision and mission are the most integral parts; otherwise, it would be next to impossible to achieve something they pursue. Thus, “Vision” is the most integral part under any circumstances.

Secondly, “Passion” is also an important factor, which is related to inspiration to contribute to achieving something great. Occasionally, some say that passion is not necessary because it is a kind of emotion. Nevertheless, passion is related to their motivation for any agencies to accomplish something they have not realized yet. As of now, the Philippines should upgrade the higher-middle income status. Theoretical approach is of course of importance, while practice is more of significance as a way to encourage the concerned parties to achieve their goals. In this way, “Passion” is indispensable.

Thirdly, “Action” is of essence in promoting further growth and prosperity. “No Action, No Change” is the truth. The point is to make “action plans,” and repeating trials and errors are of more significance. We can learn from errors, mistakes, and failure as well. The saying, “Failure is the mother of success” is the truth. Instead, therefore, we should make more mistakes for better actions.

Finally, “Reflection” would be of more essence. Although we said “Action” is important, the results would never change unless we consider what are the reasons or

factors of errors or mistakes appropriately. When it comes to "Reflection," we would recommend you looking back on frameworks. Making a comprehensive framework along with the development strategy needs to be addressed for all the stakeholders to implement the plans and monitor the effects on the educational outputs, results, and progress frequently and periodically. In this way, the government agencies should be more aware of the positive cycle of feedback, review, and improvement by using the framework and its strategy. "Reflection" is, therefore, the key to making a better choice to be successful.

To wrap up this publication, having "Vision," "Passion," "Action," and "Reflection" are the most integral components for the government agencies to realize further growth, prosperity, and development in the Philippines, especially overcoming the MIT in the future. This publication will, hopefully, be able to make even a tiny contribution to the Philippines to achieve something greater. Well, this is the time for us to leave this chapter to finish this publication.

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大塚啓二郎 (Otsuka, K.). (2014).『なぜ貧しい国はなくならないのか? 正しい開発戦略を考える』(*Why do the impoverished countries never disappear? Thinking about the right choice of development strategies*.), 日本経済新聞社 (The Japanese Economy Newspaper).

Chapter 2:

Photo sources (clockwise): Inquirer, Rappler, Reuters, Philstar

I graduated MA Economics at International University of Japan, Batch 2020. Among my favorites during my two-years as scholar were changing of seasons and school visits which allowed me to share Philippine culture to Japanese children.

Chapter 4:

GK Enchanted Farm
Home
Order fresh produce in bulk & help farmers through BayanAnihan
Send us a message or email
for orders and inquiries.
Bayan Anihan

GK Lifebank Center for Bayanihan Economics
The Lifebank Center for Bayanihan Economics serves as their finance department, Anna Meloto, the founder of Human Nature (my fave hair care brand), said that it's the time of the East and the time for the Filipinos to show their excellence.

5 PHILIPPINE UNIVERSITIES RANKED IN 2021 THE IMPACT RANKINGS
ATENEO DE MANILA UNIVERSITY
DE LA SALLE UNIVERSITY
MAPUA UNIVERSITY
TARLAC AGRICULTURAL UNIVERSITY
UNIVERSITY OF SANTO TOMAS
Congratulations

GSIT encourages farm tourism enthusiasts to learn more about best practices and techniques on farming.

A Japan-trained Philippine farmer makes a future for himself and his home

tricks of the trade. A photo taken in June 2016 shows trainees learning about fertilizing procedures at a farm school in Masbate in the Philippines. | COURTESY OF NEIL ANTHONY ABAD/ VIA KYODO

Pay it forward: Neil Anthony Aban, as pictured in December 2018, converted his small farm into a farm training school in Hasbate in the Philippines. | COURTESY OF NEIL ANTHONY ABAN/ VIA KYODO

Outdoor learning: Filipino farmers attend an orientation for the Young Filipino Farm Leaders Training Program in Ibaraki Prefecture, Japan, in 2014. | COURTESY OF NEIL ANTHONY ABAN/ VIA KYODO

(Photos were taken during the study in Japan)

Chapter 6:

Source: https://japangasm.wordpress.com/2010/07/11/an-introduction-to-japanese-roadwork-part-2

(a) Road closure due to landslide in Pagudpud, Ilocos Norte. Source: DPWH (2021, July)

(b) Bridge collapse in Sta. Cruz, Ilocos Sur. Source: DPWH (2021, October)

(c) Bridge collapse in Bohol due to 7.2 magnitude earthquake Source: Reliefweb, Jason Gutierrez/IRIN (2013, November)

(d) Concrete pavement cracks in Amguid, Candon City, Ilocos Sur due to geotechnical movements Source: Facebook (2018, August)

Fig. 1. Damaged roads and bridges that needs reconstruction and maintenance.

Chapter 9:

Female OFWs domestic workers in Hong Kong pack daily items such as food, clothes, and toys to ship to the Philippines. Source: The China Morning Post, June 2021

Repatriated OFWs placed under mandatory quarantine for COVID-19. Source: Business Mirror, June 2020

The movement to advance women's development and equality is going through a stress test. Source: World Economic Forum, March 2017

Migrant domestic workers take to the streets of Beirut in Lebanon. Source: London School of Economics, 2019

Police patrol central Hong Kong to tell domestic workers enjoying a day off to maintain social distancing.
Source: Guardian, December 2020

Chapter 10:

AGT in Bicutan, Taguig City

HET at Philippine National Railways

HERT at Freedom Park, General Santos City
Source: MIRDC Annual Reports 2015 & 2016

... This publication is to provide some policy recommendations along with the current development issues in the Philippines, especially under the outbreak of the COVID-19 pandemic.

We mainly focused on the contemporary development issues, paying closer attention to some of the most significant development issues either in Metro Manila or in provinces. The co-authors are all JDS returned-fellows who have studied Master's degrees in Japan.

Normally, they are public servants who work in the Philippines, and it was a good opportunity for them to share their ideas of how to approach contemporary development issues based on their own experiences that they learned in Japan through JDS.

SUPPORTED BY:

JICA Japan International Cooperation Agency

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