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# Towards the Attainment of Sustainable Consumption and Production in the Philippines: A Desk Review of Trends and Issues

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Asian Development Bank

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The views expressed in this paper are those of the team of consultants and do not necessarily reflect the views and policies of the Asian Development Bank (ADB) or its Board of Governors or the governments they represent.

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## Acronyms

| | |
|---|---|
| 10YFP | 10-year Framework of Programmes |
| AccGED | Acceleration of Green Economic Development |
| ADB | Asian Development Bank |
| APRSCP | Asia Pacific Roundtable for Sustainable Consumption and Production |
| ASSIST | Asia Society for Social Improvement and Sustainable Transformation |
| BOD | Biochemical oxygen demand |
| BSWM | Bureau of Soils and Water Management |
| CHED | Commission on Higher Education |
| CIEMAT | *Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas* |
| DA | Department of Agriculture |
| DENR | Department of Environment and Natural Resources |
| DepEd | Department of Education |
| DMC | Developing member countries |
| DOE | Department of Energy |
| DOH | Department of Health |
| DOST | Department of Science and Technology |
| DOT | Department of Tourism |
| DSWD | Department of Social Welfare and Development |
| DTI | Department of Trade and Industry |
| EE | Environmental Education |
| EEID | Environmental Education and Information Division |
| EMB | Environmental Management Bureau |
| EMB-DENR | Environmental Management Bureau-Department of Environment and Natural Resources |
| EMP | Environmental Management Plans |
| ENR | Environment and natural resources |
| EO | Executive Order |
| EPI | Environmental Performance Index |
| EU | European Union |
| EUF | Environmental users' fees |
| FIES | Family Income and Expenditure Survey |
| GDP | Gross domestic product |
| GED | Green Economic Development |
| GHG | Greenhouse gases |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GPAM | Green Purchasing Alliance Movement |
| GPIoS | Green Philippines Islands of Sustainability |
| GPP | Green Public Procurement |
| GPPB-TSO | Government Procurement Policy Board-Technical Support Office |
| GrAT | Gruppe zurFörderung der AngepasstenTechnologie (Center for Appropriate Technology) |
| GSC | Green supply chains |
| HFCE | Household Final Consumption Expenditure |
| IGPN | International Green Purchasing Network |
| IIRC | International Integrated Reported Council |
| JFGE | Japan Fund for the Global Environment |
| LGU | Local government unit |
| MBI | Market-based instrument |
| MCM | Million cubic meters |

| | |
|---|---|
| MDG | Millennium Development Goal |
| MRF | Materials recovery facility |
| MSME | Mico, small, and medium enterprises |
| MWSS | Metropolitan Waterworks and Sewerage System |
| NEDA | National Economic and Development Authority |
| NEEARSD | National Environmental Education Action Plan for Sustainable Development |
| NELP-GCP | National Ecolabelling Program-Green Choice Philippines |
| NRSSEFS | National and Regional Search for Sustainable and Eco-Friendly Schools |
| NSCB | National Statistical Coordination Board |
| NWRC | National Water Resources Council |
| OPMBCS | Operational Plan for the Manila Bay Coastal Strategy |
| PBE | Philippine Business for the Environment |
| PCEPSDI | Philippine Center for Environmental Protection and Sustainable Development, Inc. |
| PDP | Philippine Development Plan |
| PEPP | Philippine Environment Partnership Program |
| PES | Payment for ecosystem services |
| PhilExport | Philippine Exporters Confederation |
| PhP | Philippine Peso |
| PISM | Philippine Institute for Supply Management |
| PLC | Publicly-listed company |
| ProGED | Promotion of Green Economic Development |
| PSA | Philippine Statistics Authority |
| PSC | Policy Support Component |
| QSR | Quick Service Restaurants |
| RCE | Recyclable Collection Events |
| Rio +20 | UN Conference on Sustainable Development 2012 |
| SASB | Sustainability Accounting Standards of the Sustainability Accounting Board |
| SCEM | Supply Chain Environmental Management |
| SCP | Sustainable consumption and production |
| SD | Sustainable development |
| SDG | Sustainable Development Goal |
| SEC | Securities and Exchange Commission |
| SEEA | System of Integrated Environmental and Economic Accounting |
| SME | Small and medium enterprise |
| sq. km | square |
| TA | Technical Assistance |
| TESDA | Technical Education and Skills Development Authority |
| TFCFD | Task Force on Climate – related Financial Disclosure |
| UN | United Nations |
| UN ESCAP | UN Economic and Social Commission in Asia and the Pacific |
| UNEP | United Nations Environment Programme |
| UNESCAP | The United Nations Economic and Social Commission for Asia and the Pacific |
| WHO | World Health Organization |
| WSSD | World Summit on Sustainable Development |
| WWF-PH | World Wide Fund for Nature-Philippines |

## Executive Summary

Many believe that the world has now reached Anthropocene, a period of human history wherein humanity has the ability to alter the shape and form of the planet's natural environment and climate[7]. This is based on the growing body of scientific evidence that link economic activities with various types and degrees of environmental disturbances including: the rising rate of deforestation to give way to agricultural production, demand for timber goods, space for settlements and other economic activities; air and water pollution due to production and waste from consumption; sea level rise because of the melting of Artic ice due to greenhouse gas-related warming of the earth; and the extinction of species and loss of biodiversity because of agricultural impacts. These links between man and the environment will be further tested as global income changes, and nations all over the world continue to pursue continuous economic growth and progress within the backdrop of rising population and increasing complexity of human wants and preferences.

Indeed, the rise in economic activities—production and consumption—through the years has placed tremendous pressure on the environment to supply food and the needed inputs for production, and to assimilate the waste and residuals from these activities. The welfare results have been mixed given while there is a rise in consumption and production, there is also an unfortunate toll on the health of the natural environment. The world, however, has not been blind to this "trade-off," and there have been efforts by the international community to seek ways to strike the balance between expanding economic activities without compromising the health and capability of the environment to function normally. This is an important aspect of the millennium development goals and, currently, the sustainable development goals.

The international community's efforts to find the necessary balance between achieving economic growth and development objectives with the care for the natural environment formally began in 1972 with the adoption of the principle ensuring the equitable and efficient use of the world's resources by the United Nations Conference on Human Environment. These were later to be translated into a global agenda which were adopted as the Millennium Development Goals (MDGs) in 2000, with eight measurable and time-bound objectives that sought to address the issues regarding poverty and human welfare, and the sustainable use of the environment by 2015. With the many of the MDG objectives not fulfilled by the time the initiative was to expire, the world met once more, this time under the UN Conference in Sustainable Development in 2012, and crafted the 17 Sustainable Development Goals (SDGs)—based on the spirit of the MDGs—with 169 targets. The SDGs are stronger in terms of their

[7] Waters, C. N. et al. (2016). The Anthropocene is functionally and stratigraphically distinct from the Holocene. *Science*, *351*(6269), aad2622. doi: 10.1126/science.aad2622

emphasis on sectoral inclusion and the preservation of the planet's natural environment, and with an appreciation and understanding of the interdependence of the environment, the economy, and society[8]. The SDGs commit to environmental sustainability particularly in SDG 12 (responsible consumption and production), SDG 13 (climate change), SDG 14 (life on water), and SDG 15 (life on land), with clear recognition of the interlinkages between the different environmental issues and other socioeconomic priorities.

This report provides the background material in framing a sustainable consumption and production (SCP) blueprint for the Philippines, in accordance and compliance with the objectives and spirit of SDG 12. The ultimate objective of this report is to serve as a basis for the formulation of the National SCP Framework and Action Plan to lead the policy direction of the Philippines toward long-term economic growth and development that are sustainable not only terms of securing human welfare, but also in terms of preserving the quality and integrity of the natural environment. In its barest form, SCP is aligned with the idea of promoting natural resource use and the utilization of the environment in the pursuit of increasing human welfare, with the least amount of residuals and minimal impact on the quality and long-term ability of the environment to function and supply environmental services. With increasing population and complexity of human wants and preferences, and overall rise in household income, it is reasonable to expect that economic activities—consumption and production—will continue to expand, thus increasing the pressure on nature to feed these activities.

The threats to the country's natural resources and environment are real, and continue to increase with time and social changes. Reports from various news agencies indicate that the need for forest products and agricultural production, natural causes and neglect, have resulted in approximately 47,000 hectares of forest lost every year.[9] Croplands have been halved in size by continued degradation of soil from a combination of factors, from deforestation to flooding that have removed the fertile topsoil. The rate of harvest of renewable resources in the country, both terrestrial and marine, has been at the level that continuous to diminish the size of the stock which, if not checked, could push these resources to a point of extinction.

In addition to the threat to the stock of natural resources, water access, waste accumulation and pollution have increased the gravity and urgency for action to protect the country's natural environment. Indeed, from different vantage points, the threat against the health of the Philippines's once-abundant natural resources and pristine environment is palpable, and needing to be addressed. These threats

[8]Alcamo, J. et al. (2013). *Embedding the Environment in Sustainable Development Goals*. *Embedding the Environment in Sustainable Development Goals*. United Nations Environment Programme (UNEP). Retrieved from https://sustainabledevelopment.un.org/content/documents/972embedding-environments-in-SDGs-v2.pdf
[9]Cabico, G. K. (2018, March 4). Recovering the Philippines' forest cover. *Philstar*. Retrieved from https://www.philstar.com/headlines/2018/03/04/1793446/recovering-philippines-forest-cover

emanate from economic activities, which have been accelerating across the decades. The need for resources for production and consumption, the use of the natural environment as waste receptacle, and the growing need for food and area for settlement and industry use, and the release of gases that have sped up the warming of the planet, can all be traced from the different human activities that exist. It is unlikely, however, that these activities would be given up by majority of society as that would be widely perceived as a step-down in development, at this time in history when there is a greater desire to consume different goods at greater quantity, to travel, to communicate, and to gain more sensory experience.

Closer inspection of the threats to the country's natural environment and resources indicate that the factors contributing to the Philippines's resources could be grouped together under several categories of contributors. The first is internal to natural resource, pertaining to the common-pool characteristics of some the resources, a characteristic that allows any user access to the resource without any cost to access. This has led to the overuse and, ultimately, the destruction of the resource which the literature refers to as the "tragedy of the commons."[10] Many of the country's resources, because of the sheer size, are impossible (read: extremely costly) to completely protect, allowing any user to exploit and overharvest the resource.

The second factor that has resulted in the degradation of the resource, is the rising demand fueled by increasing population growth. An estimated 108 million people live in the Philippines currently, and this is expected to rise to 140 million by 2040, according to the Philippines Statistics Authority.[11] The demand for natural resources would grow exponentially and the country's once-abundant resources are expected to struggle to provide food, land, and inputs for production. Poverty exacerbates the situation because the poor, who, empirical studies show, register high population growth than any other sector and also rely more on the harvest of natural capital for income.[12] With the increase in demand and with a large segment of Philippine society in poverty, the rate of harvest and extraction of resources are bound to exceed the sustainable level.

The rise in economic activities—both consumption and production—inevitably, leads to more waste residual generation, and more than what could be sustainably disposed and managed, given the current waste management system of the country. This unregulated waste disposal is what is considered the third factor that causes the degradation of the natural resources, as the waste assimilation capacity of

[10]Hardin, G. (1968). The Tragedy of the Commons. *Science*, *162*(3859), 1243–1248. doi: 10.1126/science.162.3859.1243

[11]Philippine Statistics Authority. (2006). *Philippine Population Would Reach Over 140 Million by the Year 2040 (Final Results from the 2000 Census-based Population Projections)*. Philippine Statistics Authority. Retrieved from https://psa.gov.ph/content/philippine-population-would-reach-over-140-million-year-2040-final-results-2000-census-bas-0

[12] Lee, D. R., Neves, B., Wiebe, K., Lipper, L., & Zurek, M. (2009). *Rural Poverty and Natural Resources: Improving Access and Sustainable Management . Rural Poverty and Natural Resources: Improving Access and Sustainable Management* . The Food and Agriculture Organization of the United Nations. Retrieved from http://www.fao.org/3/a-ak422e.pdf

the country's natural environment would be pushed to the limit. This situation could lead to damage and decline in the quality of the natural environment in the Philippines.

Policy gaps have also been tagged as one factor that has caused the decline in the quantity and quality of the country's natural resources. For decades—and perhaps throughout its modern history—the Philippines has been struggling with the translation of laws and regulations pertaining to the environment into action due to weaknesses in enforcement, lack of coordination and communication among government institutions, and funding. These have blunted the sharpness of regulation governing use of the country's natural resources, especially those that are nearing extinction.

The fifth contributing factor to the degradation of the country's natural resources is the lack of information and a reliable monitoring design. Simply said, no effective and efficient management of resources is possible without the appropriate and timely monitoring, and no effective monitoring is possible without data. While there have been initiatives from the international community to institutionalize natural asset and wealth accounting, the Philippines has not been consistently and regularly collecting information and data on its various natural resources. This, essentially, forces the country's policy makers to create and implement policies and regulations without the guidance of evidence and facts—the very unideal situation that has contributed to misuse and overharvest.

Finally, the assessment done points to the Filipinos' general apathy and lack of cooperation has been a major factor in the degradation of natural resources. This is apparent in waste management, even as there has been a lot of effort—both from government and civil society—to inform citizens of the damage that improper waste management and abuse of the environment inflict on the environment and society as a whole. The lack of cooperation—perhaps, we could refer to it as the lack of environmentalism—creates difficulty in managing the country's natural resources effectively, leading to damage and, eventually, destruction.

Now, center to all the discussions about the economic activities—which are basically consumption and production—that have been linked to the state of the natural environment, is the economic good. It is the characteristics of the good, acquired when it was produced and determined by how it was produced, which essentially define the impact of economic activities on the environment. A good that was produced through processes that do not generate much greenhouse gases, and with renewable resources and residual characteristics that the environment can safely assimilate, is very much different from another good that provides the same basic benefits to humans but was created using a technology that uses processes that could harm the natural environment. As such, if policy action were to be crafted to address the increasing environmental impacts of consumption and production, it must use the good as the starting point.

This scoping study for the Philippines was written to serve one basis for a strategic action plan for the country to comply with SDG 12 and the other connected SDGs, keeping the situation of the country in county as the background. It is now apparent that the country's ecological balance, supply of natural resources, and environmental quality are under threat from the increasing economic activities brought about by relative economic prosperity, population growth, and changing preference for more complex goods that require more resources to produce. This is the context that surround the question why a strategic action plan is needed to re-shape the current trend of consumption and production from one that generates much negative externalities and, as such, high social costs; to one that leaves minimal environmental footprint and will preserve the ability of the natural environment to persist for the next generation to use.

There are three themes that have been identified for the strategic action plan to consider: 1) environment and natural resources (ENR); 2) waste management; and finally, 3) sustainable business and lifestyle. Each of these themes—or categories of common ideas— encompasses the issues that are relevant to SCP. The ENR theme pertains to the trends and relevant issues about the country's natural resources, environmental quality, and energy sources which, in turn, are one facet of the SCP. The theme on waste management refers to waste management issues and challenges brought about by households (or individual) and firms through their consumption and production activities. Lastly, the theme on sustainable business and lifestyle focuses on the trends and issues that pertain to the behavior of firms with regard to their decisions on procurement and operations systems among others, and how individual consumers buying behavior and decisions are shaped by factors such as education, information, media and information.

Ultimately, the objective of this scoping study is to serve as an input to a strategic action plan that the country could adopt in order to attain SCP. This action plan, in turn, would be used to help prepare the Philippine Medium Development Plan where the idea of a resilient Philippine society that strikes a balance between economic growth and protection of the environment is attained. Based on the information collected—both the review of secondary information as well as the interviews conducted—this action plan would have general outcomes namely: 1. Equitable distribution of benefits from the country's natural wealth for generations of Filipinos, achieved through ecosystem resiliency and environmental stability; 2. Efficient and clean transformation of inputs that will feed the country's economic growth; and, 3. A proactive conservation attitudes and behavior of Filipinos. These outcomes need to be translated into specific threads of action per theme, all of which combined, would lead toward a Philippines that is not only in successful in pursuit of the world's SDGs on sustainability, but prosperous as well.

This review proposes broad strokes of potential interventions that could be considered for the strategic action plan that will be crafted in the areas of governance and regulations, technology development, promotion of environment-friendly lifestyle and production processes based on the life-cycle assessment. In addition, this desk study also points to the issue related to information and data generation that has been neglected in the country, but is essential in tracking whether the country is moving towards environmentally-sustainable growth and development. Foremost among the information needs of the country pertains to the natural assets' accounts and data, which have started in the Philippines, but still needs to be mainstreamed.

Finally, the study has several conclusions regarding the pursuit of SCP in the country, and the issues that have emerged regarding the creation of an SCP strategic action plan for the Philippines. First, that the state of the country's natural assets and environmental quality are under constant threat from an ever-increasing demand that remains centered solely on current needs and wants, with minimal regard for the future generation and sustainable use. This rising demand, fueled by rising income, increasing population, and rising preference for more complex goods and energy consuming devices, is the permanent factor that policy makers must contend with in shaping the economy toward SCP.

Second, the country's public governance and political will be tested in the pursuit of sustainable development and growth. Most of the Philippines's natural assets possess common-pool characteristics, and hence, the "tragedy of the commons" will likely happen, unless the government effectively creates boundaries of use that will prevent the complete destruction and depletion of the natural resources. To do this, the government must step-up in its strategies to enforce laws and regulations regarding uses of resources, pollution, and waste disposal, and to install an efficient and cost-effective system of penalties and incentives to shape behavior that direct regulations cannot affect. It must also be able to track whether its actions and strategies are effective or not, and to be able to make adjustments as the situations call for it. In this regard, the country's information and data collection systems must be re-visited to make the necessary adjustments to improve their capacity to provide the needed inputs for monitoring activities of the government and the private sector of the country's that would lead to the attainment of the SDGs.

The third conclusion pertains to the country's current state of technologies that are needed as the base for SCP, and sustainable growth and development as a whole. From the results of this review, it is apparent that the country's technology base is not green, and must somehow be directed towards that pathway. Investment in technology, however, takes a lot of financial resources, which many, if not most, sectors in the country are not willing, and cannot afford to expend. This means that it must be government that spearheads and invests in technology development in the Philippines, especially green technology for agriculture, manufacturing, and waste management that must be the base of the country's development and economic growth.

Fourth, while there have been efforts regarding the greening of business and lifestyle, these still need to be mainstreamed, if SCP is to be achieved in the Philippines. Green consumerism remains elusive with environmentalism being weak among Filipinos, and needs to be reinforced with information and education through the media and information dissemination institutions, and the educational system. Among businesses, the adoption of green procurement and other shapes of green behavior among firms are uneven at best, with some firms embracing the sustainable business behavior, while others remain on the fence. The government has made some attempts to encourage more greening of business behavior and lifestyle, but the efforts appear to be uncoordinated and, as such, not effective.

Finally, it is apparent from the information and insights gathered for this desk review, that the government alone cannot push for the adoption of SCP in the country. Even the experience in other countries indicate that while the government takes the lead in order for the Philippines to attain its SDG targets, it needs the cooperation and support of firms and the Filipino citizenry to make SCP-related (as well as other SDGs) programs and projects succeed. No lasting solution and strategies could be put in place without government, the various members of civil society, and the private firms, working together toward a common goal.

# Part 1: Introduction

Sustainable consumption and production (SCP) was first recognized during the 1994 Oslo Symposium, wherein SCP was described as "…the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations"[13]. It was to be later adopted during the World Summit on Sustainable Development (WSSD)[14] in 2002, wherein SCP was identified as one of the key ingredients in global sustainable development, along with poverty eradication and correct management of natural resources. It was included in the Johannesburg Program of Implementation during the Summit, wherein all countries were called on to strive for SCP, and urged governments, international organizations and all sectors to take the lead in changing unsustainable consumption and production toward social and economic development that does not destroy the ecosystem.

The rate of income growth in real terms worldwide has been positive and, in many instances, rising rapidly. This means that the Philippines can expect rapid rise in economic activities, as the purchasing power of individuals increases, and the changing tastes become more complex. While this is desirable from the perspective of human welfare, the rise in these activities—in terms of production and consumption of goods and services—will undoubtedly create challenges in terms of managing the natural environment that support all economic activities. As what the world has been witnessing in the last few decades, the rapid increase in the demand for the resources that the environment provides has been taking a toll on the health of the environment in various forms—prompting world leaders and policy makers to call for an environmentally-sustainable way to increase welfare through production and consumption. This current situation would be the take-off point of the global initiative to achieve SCP, and sets the tone for this report.

In its most basic form, SCP is about promoting resource and energy efficiency, infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation is integral to achieving overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. Since sustainable consumption and production essentially aims at efficiency with sustainable use of the environment and natural resources while increasing the quality of life, it cannot be helped but to examine the supply chain and the processes and operations within it, as well as how to stimulate green

[13] The United Nations' Division for Sustainable Development Goals. (n.d.). Sustainable consumption and production. Retrieved from https://sustainabledevelopment.un.org/topics/sustainableconsumptionandproduction.
[14] Also referred to as the 2002 Earth Summit.

consumerism. For the latter, there would be a need to educate consumers regarding sustainable consumption and lifestyles, and to provide them with adequate information through standards and labels.

## A. Towards a World with Sustainable Economic Activities

The world's effort toward striking the balance between improving human welfare through economic growth and development, and the care for the natural environment was possibly first formalized in 1972 when the United Nations Conference on the Human Environment adopted the principle of ensuring the equitable and efficient use of planet's commonly-shared resources.[15] This was followed by the Brundtland Report in 1987 which introduced a global agenda for change in which the groundbreaking concept of sustainable development was forged to address the challenges faced within and across generations.[16] It would be fair to say that these global initiatives in achieving sustainable use of resources while increasing welfare through economic growth, had led to international agreements and the creation of institutions focused on addressing the three interconnected dimensions: economic growth, social inclusion, and environmental sustainability. The global mobilization towards transitioning to sustainable development was embodied in the Agenda 21 adopted in the 1992 United Nations Conference on Environment and Development dubbed 'Earth Summit' and the Johannesburg Program of Implementation of the 2002 World Summit on Sustainable Development (WSSD).[17]

In 2000, the UN General Assembly adopted the UN Millennium Development Declaration, which called for a global partnership to reduce extreme poverty. That vision was translated into the Millennium Development Goals (MDGs) with eight measurable and time-bound objectives that targeted mainly global socio-economic and economic development priorities by 2015, with provisions for the protection of the environment. Reflections on the scorecard of the MDGs would arguably reveal an uneven performance, with reduction in poverty and increase in the quality of life in some parts of the world, but not in others. There are indications also that in some cases, the MDGs were weak in addressing global inequality and with some observers concluding that they may actually exacerbated the problem. There is a general recognition from the lessons learned on implementing the MDGs, that further progress requires long-term collective effort and stronger political will of all countries to integrate the economic, social and environmental dimensions of sustainable development.[18]

As such, there remains a challenge in the improvement of the state of environment and to implement policies for sustainability to be translated into action on the ground. Recognizing the wide gaps in action toward an environmentally-sustainable modern world, the United Nations (UN) Conference

[15] United Nations (UN), 1972. Report of the United Nations Conference on Human Development, 1972.
[16]World Commission on Environment and Development, 1987. Report of the World Commission on Environment and Development: *Our Common Future (The Brundtland Report),* 1987.
[17]UN, 2002. World Summit on Sustainable Development: Johannesburg Plan of Implementation, New York, 2002.
[18] UN, 2015. The Millennium Development Goals Report, 2015.

on Sustainable Development 2012 (Rio+20) was organized, and resulted in pushing the wheels of discussion to begin to roll, paving the way for the crafting of the Sustainable Development Goals (SDGs), that built from the MDGs which were ending in 2015.Reflecting on the lessons and building on the success and momentum of the MDGs, the most inclusive intergovernmental process culminated at the UN Sustainable Development Summit in September 2015 where UN Member States adopted the Post-2015 Development Agenda, including the 17 SDGs and its 169 targets. It must be noted that while the MDGs and the SDGs are many ways similar in intent and content, the SDGs have a stronger stand for the environment, emphasizing not just development objectives, but sustainable development goals both in terms of sectoral inclusion and preservation of the planet's environmental integrity.

It is, therefore, no surprise that the SDGs recognize the importance of advancing integration between economic, social and environmental dimensions on development—with focus on three sets of global processes to achieve its objectives, namely: 1) international sustainable development conferences and summits; 2) multilateral environmental agreements; and 3) the MDGs. The SDGs have significantly expanded on the scale and content of the MDGs and have recognized the goals and incentives provided by the multilateral environmental agreements. The SDGs cover more ground intended for global action, with greater understanding thatthe environment, economy and society are embedded systems rather than separate competing "pillars," and there exist a "nested interdependencies" between economic, social and environmental dimensions of development. The SDGs have also put greater attention to goal setting, reporting, and possible financial and other means of implementation (MOI) that are both more familiar to the ways that the multilateral environmental agreements and MDGs helped spur action.[19]

As with the MDGs, the SDGs also necessitate commitments towards meaningful action towards environmental sustainability, particularly through the implementation of environment-related SDGs– including SDG 12 (Responsible consumption and production), SDG 13 (Climate change), SDG 14 (Life belo water), and SDG 15 (Life on land). It recognizes the interlinkages between different environmental issues and other socioeconomic priorities and the need to integrate the environment dimensions of the SDGs into development policies, plans, and programs.[20]

## B. The Growing Threats Against Nature

As stated in the executive summary, humanity's global and lasting impact on the environment has led scientists to dub this period of history as the Anthropocene[21]. This is evidenced by a growing number of instances that demonstrate how human activities have been impacting the earth's systems in terms of

[19]ADB, 2019 (to be published). Strengthening the Environmental Dimensions of the SDGs in Asia and the Pacific: Stocktake of National Responses to SDGs 12, 14, and 15 (Version, September 2018).
[20] R. Koide and L. Akenji, 2018. Assessment of Policy Integration of Sustainable Consumption and Production into National Policies. MDPI, 22 September 2017.
[21]Smith, B. D. & Zeder, M.A. (2013). "The onset of the Anthropocene". Anthropocene. 4: 8–13. doi:10.1016/j.ancene.2013.05.001

greenhouse gas emissions that have sped up the earth's temperature natural rise, degradation of ecosystems and that have been compromising biodiversity by way of massive amounts of pollution and deforestation, the acidification of the oceans, the depletion of water and non-regenerating resources, and extinction of species of plants and animals.[22] All of these have created challenges which are becoming more intense as the human population continues to grow with the growing complexity of human needs and wants increasing through the years—all of these have been aptly described in terms of what is now called unsustainable patterns of production and consumption.[23]

The International Resource Panel (2010) indicates that a large proportion of environmental impacts can be linked to everyday household consumption of goods and services, in particular food, shelter and transport. The growing consensus among scientists is that the level of human activities has now started to breach the capacity of the planet to supply food, resources, and to assimilate waste. An estimated 4 out of 9 planetary boundaries have been surpassed, increasing the likelihood of irreversibly changing the way major Earth systems function.[24] This has elevated the importance of re-assessing and actively altering the processes and trends in human consumption and production, in order to reverse the pathway toward the permanent damage of the natural environment.

In addition to the threats to natural resources, the world also began to recognize the effect of countries' economic activities on the global climate, and the potential threat of long-term temperature change on human existence. As such, the Paris Agreement was forged in 2015 that took into full effect on the 4th of November 2016, charting a new course in the global climate effort. The Agreement aimed to strengthen the global response to the threat of climate change by ensuring that global temperature rise in this century are kept well below 2 degrees Celsius, above pre-industrial levels, and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement sought to strengthen the ability of countries to deal with the impacts of climate change, particularly developing countries and the most vulnerable countries.[25]

Perhaps, it is fair to say that the international community has agreed that at the current state of the planet, urgent action is needed to change the direction of the world's residents' activities to integrate the care for the environment. This is the spirit behind why the MDGs and SDGs were created: to push for an expansion of human activities and the world's economic development, without destroying the planet. The

[22] J. Sachs, 2012. From Millennium Development Goals to Sustainable Development Goals. Lancet 2012; 379: 2206–11.
[23] Ibid. According to the report, the human population continues to grow rapidly, by around 75–80 million people per year, and is on a trajectory to reach 9 billion by the middle of the 21st century, and even 10 billion by the end of the century. With the growing population and the pursuit for economic growth, global resource demand has increased at an unsustainable pace from 7 billion tons of primary materials consumed in 1900 to 90 billion tons consumed in 2017. By 2050 primary material use is expected to go up to 186 billion tons if current consumption trends continue.
[24] IRP (2017). Assessing global resource use: A systems approach to resource efficiency and pollution reduction. Bringezu, S., Ramaswami, A., Schandl, H., O'Brien, M., Pelton, R., Acquatella, J., Ayuk, E., Chiu, A., Flanegin, R., Fry, J., Giljum, S., Hashimoto, S., Hellweg, S., Hosking, K., Hu, Y., Lenzen, M., Lieber, M., Lutter, S., Miatto, A., Singh Nagpure, A., Obersteiner, M., van Oers, L., Pfister, S., Pichler, P., Russell, A., Spini, L., Tanikawa, H., van der Voet, E., Weisz, H., West, J., Wiijkman, A., Zhu, B., Zivy, R. A Report of the International Resource Panel. United Nations Environment Programme. Nairobi, Kenya.
[25] UN, 2015. Paris Agreement on Climate Change.

SDGs (sustainable management and efficient use of natural resources), especially SDG 12, recognize the need to decouple economic growth from resource use and environmental degradation, notably through improved resource efficiency and shifting towards more sustainable consumption and production patterns, while improving people's well-being. The primary point of SDG 12 is that dealing with the threats posed by economic activities to the natural environment requires a restructuring of the society's consumption and production patterns. Sustainable consumption and production adopt the life-cycle assessment in production, the circular economy framework that limits waste generation and use of virgin resources, and ensures that the price of goods and services reflect environmental costs.

## C. Understanding What Sustainable Consumption and Production Is

It is fair to say that the understanding and appreciation of sustainable consumption and production (SCP) have evolved over the course of the last four decades. In 2002, SCP was recognized in Agenda 21 of the Earth Summit 1992 under Chapter 4: Changing Consumption Patterns as an overarching objective of and a prerequisite for sustainable development, and in the Johannesburg Program of Implementation of the World Summit on Sustainable Development (WSSD). Since that time at the WSSD, the global community called for a shift towards SCP which means "doing more with less", and during the Summit, SCP was recognized as one of the three objectives of and requirements for sustainable development. To translate SCP objectives into action, the Johannesburg Program of Implementation called for the development of a 10-year Framework of Programmes (10YFP) in support of regional and national initiatives to accelerate the shift towards SCP to promote social and economic development.

In 2012, the SCP-related initiative was further carried forward at the Rio +20 in which the 10YFP on SCP Patterns was formally adopted, including an initial list of programs that focused on: consumer information, sustainable lifestyles and education, sustainable public procurement, sustainable buildings and construction, sustainable tourism, and later, sustainable food systems. The SDGs adopted SCP as a stand-alone goal, "SDG Goal 12: Ensure sustainable consumption and production patterns," and reiterated the importance of SCP as one of the overarching objectives of, and essential requirements for, sustainable development. SDG 12 focuses on ensuring efficient use of natural resources and to achieve more quality of life and economic growth, with less environmental impact. As an adopted policy, it recognizes the imbalances in consumption patterns focusing on meeting the basic needs of man, reducing harmful waste generation, the sustainable harvest of renewable resources, and the efficient use exhaustible resources in meeting the demand of consumers for goods. Tacitly, SCP is a statement not just about proper management and use of the natural environment, but also about the growing imbalance in consumption all across the globe, where portions of the global population consume goods (and use resources) in excess,

while the other members of the population have no access to these goods.[26] SCP cuts across many different sectors and requires the engagement of numerous stakeholders. Implementation of SDG 12 and SCP related goals and targets require collaboration between multiple areas and levels within government to develop, implement, monitor and evaluate successful SCP policies.

## D. Adopting Sustainable Consumption and Production as One of the Pillars in the Development Plan for the Philippines

The Philippines recent emergence as one of the fastest-growing economies in Asia created a number of challenges related to its patterns of consumption and production, economic growth, and environmental performance. According to the 2018 Environmental Performance Index (EPI),[27] the country's rank in environmental management performance dropped from 66$^{th}$ in 2016 to 82$^{nd}$ out of 180 countries. Environmental performance of the country is poorer compared to Malaysia and Singapore, but better performance compared to Indonesia and Vietnam. Cognizant of the continuing environmental degradation and polluted ecosystem despite previous efforts, the government intends to aggressively implement strategies that will restore the country's environment and natural resources (ENR).

The government has put priority in ensuring ecological integrity while the country moves toward economic development targets in the medium-term. This is in recognition of the role of environment and natural resources as a bedrock and foundation of the country's social and economic development as embodied in the Philippine Development Plan (PDP) 2017- 2022, and in the *Ambisyon Natin* 2040 (a long-term vision of the Philippines). The PDP 2017-2022 recognizes that preserving nature's ecological integrity and keeping a healthy and clean environment are essential for a more inclusive growth, a high-trust and resilient society and a globally competitive knowledge economy.

The Philippine Statistics Authority estimates that the country's population grew by 1.5% in 2017, while the Commission on Population expects that there will be 109 million Filipinos by the end of 2019. This means that the pressure on country's natural capital stock (including land) to provide more inputs for production, power, water, and to supply other additional crucial environmental services will continue to become more intense than in the past. Moreover, since urban communities have a disproportionate demand for consumption and other goods, the expected increase in the concentration of people in urban areas in the Philippines—where a little more than half of the country's population reside—would accelerate the demand for food, social services, infrastructure and transport facilities, electricity and power, and other basic needs. The increase in economic activities in the urban areas would undoubtedly generate more solid waste and exacerbate air and water pollution problems of the country—not to

[26] UNEP, 2015. Sustainable Consumption and Production: *A Handbook for Policymakers*. A Second Edition, Asia Pacific Region, 2015.
[27]The EPI is a global metrics for the environment which ranks countries' performance on high-priority environmental issues related to health impact, air quality, water and sanitation, water resources, agriculture, forests, fisheries, biodiversity and habitat, and climate and energy. EPI is issued as a biennial report by researchers at Yale and Columbia Universities in collaboration with the World Economic Forum.

mention the increase the country's contribution to the accumulation of greenhouse gases in the world. Thus, the challenge for the country's policy makers to address the environmental issues posed by the growth in consumption and production in the Philippines has, likewise, risen as time goes by.

In response, the government crafted the PDP 2017-2022 that is expected to rise to the challenge posed by the degrading environment, as the PDP places emphasis on strategies that will holistically address the problems in the environment sector. One of the key strategies put forward by PDP is the promotion of SCP through the formulation and implementation of policies and initiatives, and seeks to implement and eventually mainstream practices and technologies that could push the country toward the attainment of both sustainable economic goals and compliance with international environmental standards.

Since sustainable consumption and production is also one of the SDGs (SDG 12), that the Philippines has committed to attain, a plan devoted to implementing SDG 12 targets without compromising growth targets need to be crafted and rolled-out. One of the country's targets is the implementation of the SDG Target 12.1: 10-Year Framework of Programs on SCP Patterns through the formulation of SCP national action plans and mainstreaming SCP into national priorities and policies. There are perceived obstacles since most of the indicators for SDG 12 on SC—indicators that crucial to monitor and evaluate the country's toward achieving its SGD targets—are yet to be established. Add to this is the fact that the data needed for effective monitoring are not regularly collected.

The support for the formulation of a National SCP Framework and Action Plan is important and needed to address the fact the SCP initiatives in the country—possibly, because of a lack of framework and strategic plan, and a coordinating government agency to lead these initiatives—have been fragmented and uncoordinated. In terms of SCP as a policy development goal, concerted public and private participation and action are needed to achieve that target the SCP impacts that are increase resource efficiency, a fundamental shift consumption patterns and production processes towards sustainability and "greenness", improve waste management systems, and transition toward a more circular economy approach.

## E. Objectives of the Project and the Desk Report

The Philippines has already taken initial steps to prepare for the implementation of the SDG, market with an assessment study conducted in 2015, on how to strengthen the Philippine's institutional capabilities to lead policy reforms and directions on key sustainable development issues. Support from donor agencies is consistently sought with the Asian Development Bank (ADB) as one of the agencies that responded to the Philippine government's call for assistance. The ADB, recognizing the need to mainstream SCP into national development plans, policies and programs to achieve SDG 12 and SCP-

related goals, provided support in the implementation of a pilot project in the Philippines, through its regional Technical Assistance (TA) 9245: *Supporting Implementation of Environment-Related SDGs in Asia and Pacific*. This project's objective is to integrate the SCP and environmental dimensions of the SDGs into the national and sectoral policies, plans, and programs, and aligned with locally adapted priority targets and indicators. The key output of the project is a National SCP Framework and a Strategic Action Plan that will guide the implementation of SCP in the country, and lay down priority strategies and activities to support the attainment of SDG 12 and its targets. The expected outcome of the project is increased capacity and knowledge of the government and other stakeholders in the Philippines to implement SCP and environment-related SDGs, and better performance on the environment-related SDGs.

In order to deliver these outputs, series of inter-agency meetings and workshops, national and regional consultations will be conducted to gather information and solicit inputs from key stakeholders. A project steering committee and technical working groups will be also convened to ensure smooth implementation of project activities and timely delivery of outputs. The mechanisms to cohesively and effectively implement policies and interventions will also be identified for the following areas of SCP: a) sustainable business and lifestyles; c) resource conservation and efficiency; c) waste and chemicals management, among others.

This report serves as a preliminary paper in preparation for the formulation of the National SCP Framework and Action Plan by providing: 1) a contextual background on sustainable development; 2) a mapping of existing arrangements and policies on SCP; 3) an overview on thematic policy opportunities towards SCP; and, 4) an imperative for further policy reforms in advancing SCP implementation in the Philippines.To accomplish this task, a comprehensive desk study and review of the empirical literature on the national level policy initiatives and programs were conducted, as well as key informant interviews (of stakeholders and experts). The objective is to help guide policy makers and technical staff of national government agencies, and other stakeholders who will be involved in the drafting of the National SCP Framework and Action Plan.

## F. Organization of this Scoping Study/Desk Review

This scoping study/desk review is intended to walk its readers and users through a thorough understanding of history and evolution of the movement toward sustainable consumption and production as contained in SDG 12, and its relation with other SDGs, and how SCP could possibly be adopted in the Philippines as the country seeks to attain further economic growth and development. The first part of the study will lead the reader through the problems and issues surrounding environmental degradation, and how the Philippines has fared in this area. This report will explore the possible reasons how these

problems and issues came about, and identify the factors that could be focused on in order to arrest further deterioration of the country's natural environment. There are useful information and facts regarding the country's natural capital which should be of interest to the reader, which also paints a picture of the state of the country's natural assets.

The second main part of this paper is devoted to the experience of countries with adoption of sustainable consumption and production in their national agenda and development plans. The objective is to learn from these experiences, and to find their use and relevance for the Philippines as it seeks to build on its efforts to adopt SCP and fulfil its commitment to the world's sustainable development goals. Ultimately, this section of the paper would be the basis for the crafting of an analytical and strategic framework to map out an SCP action plan for the country.

The third and final main part of this paper lays-out the path toward the creation of an SCP action plan, that would be created based on the findings and learnings collected in this desk review. The thematic opportunities that would be the base of the action plan are presented and discussed in detail. Discussion about the behavior of individual economic agents—the consumer and the producer—is also presented in this section as the take-off point for the crafting of the analytical framework that would be used to create a strategic framework.

# Part 2: Toward Attaining the Sustainable Consumption and Production Goals in the Philippines

This section discusses ways and initiatives that support the mainstreaming and institutionalization of SCP adoption in the Philippines. It begins by placing sustainable consumption and production (SCP) in terms of the Sustainable Development Goals (SDGs) in general, from the spirit behind SDG 12, which is the basis of SCP, and the other sustainable development goals. It also discusses the SCP trends and initiatives in selected countries, and examines what could be learned from them when it comes to green consumption and production.

## A. Relating Sustainable Consumption and Production and the other Sustainable Development Goals: The Interconnections

The expanse of the scope of SCP in the SDG's is wide that it could very well be one umbrella theme for the entire SDGs. This is reasonable given that the end goal of SCP is for the economic agents to have a sustainable lifestyle or system. Using the discussion paper of UN Environment Program (UNEP)[28] as the guiding reference, SCP is directly relevant to goals, targets and indicators which address natural resources, improving efficiency, reducing environmental footprint, and managing waste and chemicals. The report also identifies indirect effects on other targets related to poverty reduction, the maintenance and restoration of biodiversity and ecosystems, and increasing economic prosperity as a result of greening the economy.

Hence, aside from SDG 12, other SDGs that are consistent with SCP are: SDG 2 (Zero hunger), SDG 6 (Clean water and sanitation), SDG 7 (Affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 11 (Sustainable cities and communities), SDG 13 (Climate action), SDG 14 (Life below water), SDG 15 (Life on land), and SDG 17 (Global partnerships to achieve sustainable goals).

With these SDGs in mind, it is necessary to spread awareness of SCP with the government agencies that are currently managing and monitoring the relevant goals. Particularly, the UNEP report has identified the following goals with corresponding targets and indicators that can serve as a guide in establishing the scope of policies that are affected by SCP:

[28] An analytical framework is also presented in the report. Source: https://www.iisd.org/sites/default/files/publications/scp_targets_indicators_unep.pdf.

**Table 1: Targets and Indicators of Selected Sustainable Development Goals**

| GOAL | TARGET | INDICATORS |
|---|---|---|
| **SDG 2. Zero hunger through sustainable agriculture, food security and nutrition** | End hunger, ensure every adult and child receives adequate nutrition, with a focus on local and regional food security | Portion of population below minimum level of dietary energy consumption (%)<br>% of children suffering from stunting, wasting, anemia<br>Average calorie intake of lowest decile/quintile by income<br>Average calorie consumption per region/or country % of locally and regionally grown food in diets |
| | Restore agricultural productivity of one third of severely degraded abandoned land by 2030 | % of restored agricultural land % of degraded land regenerated<br>Land affected by land degradation and desertification mapped as dry land |
| | Reduce excess nutrient release by increasing nutrient use efficiency in agriculture to reduce losses (i.e. close gap between nutrient input and plant uptake) | kg of input nitrogen (N), phosphorus (P), and potassium (K) per kg of N, P, K in crop<br>% waste water treated with nutrient recovery (also linked to sanitation)<br>% of animal waste recycled |
| | Reduce food loss along the food supply chain and waste at the consumption stage by 50 per cent by 2030 | % of food lost prior to consumption: losses on the field, postharvest, storage, manufacturing, processing and distribution stages.<br>% of food waste at the consumption stage. |
| | Limit global cropland to 0.2 hectares per capita | Domestic extraction of biomass<br>Biomass footprint of consumption<br>Crop biomass, livestock fodder, feedstock for biofuels |
| **SDG 6. Clean water and sanitation** | Reduce overall water footprint per capita and per unit of GDP in developed nations by 25 per cent by 2030 and increase water use efficiency in developing nations by 25 per cent by 2030 over 2000 levels | Direct water use in production and consumption (for sectors including agriculture, mining, manufacturing and cities)<br>Rates of groundwater depletion<br>Water footprint - direct and indirect water use of a consumer or producer across the whole supply chain<br>Water footprint per capita ($m^3$; $m^3$/capita)<br>Water footprint per unit of GDP - GDP/water footprint ($ per $m^3$) |
| | Provide universal access to safe drinking water to lower income households in developing countries by 2030 | Proportion of population using an improved drinking water source (%) |
| | Reduce, year-on-year, the water footprint per unit of output in sectors which consume most fresh water taking account of global supply chains - heavy industry, power generation, paper and pulp, irrigation-based agriculture for food, fibre, tourism | Cubic meters of fresh water consumed per unit of output in:<br>• Iron and steel making and other heavy industry<br>• Power generation<br>• Paper and pulp making<br>• Agricultural water withdrawals |

| GOAL | TARGET | INDICATORS |
|---|---|---|
| **SDG 7. Affordable and clean energy** | Universal access to modern energy services from national/regional grids and local supplies, with doubling the share of global energy generated from clean, sustainable resources by 2030 | Proportion of renewable energy sources of total supply of primary energy (%)<br>Primary energy/electricity production by type including the share of renewable energy<br>Renewable energy share in electricity production (%)<br>Total quantity of renewable energy generated from renewable sources as a percentage of total energy used (kWh sourced from renewable sources)<br>No. of people with access to energy |
| | Energy consumption per capita to fall at sustainable level by 2030. | Energy consumption per capita<br>Electricity generation per capita<br>Total primary energy supply (TPES) (joule; joule/capita)<br>Overall energy consumption per unit of GDP<br>Average energy consumption per unit product |
| **SDG 8. Decent work and economic growth** | Decouple economic growth rates and progress in human well-being from escalating use of natural resources to achieve an average material intensity of consumption per capita of 10.5 tons in 2030 and 8 to 10 tons in 2050 | Material extraction in each national economy Material footprint of each national economy, i.e. attribution of global material extraction to final consumption in each country Average national metabolic rates (material footprint per capita) |
| **SDG 9. Industry, innovation and infrastructure** | Improve overall material efficiency by 30% over 2000 levels in 2030 and double material efficiency of production and consumption by 2050 | Material footprint per GDP for each national economy<br>Domestic extraction of biomass per GDP in agriculture, forestry and fisheries<br>Domestic extraction of ores and minerals per GDP in mining and quarrying<br>Domestic extraction of coal, crude oil, natural gas per GDP in energy sector<br>Sectoral material input per sectoral added value for main manufacturing sectors, construction and transport<br>Material footprint of service sector |
| **SDG 11. Sustainable cities and communities** | Promote resource efficient construction and building sector through 50% reduction in energy-related CO2 emissions, a considerable increase in water efficiency in building operations and a considerable decrease in the rate of raw material extraction for building and construction by 2030 through more efficient design and an increase in use of recycled materials | $CO_2$ eq emissions from buildings<br>Building operations' water footprint<br>Rate of construction related mineral extraction |
| | By 2030, halve the acceleration of sprawl (urban land cover) relative to population increase | Built-up area measured based on pixel analysis in remote sensing imagery. Any impervious surface -- including pavements, rooftops and compacted soils - counts as built-up area |

| GOAL | TARGET | INDICATORS |
|---|---|---|
| **SDG 13. Climate action** | Decarbonize the energy system and reduce the climate forcing of energy supply by 50% by 2050, and reduce Short-Lived Climate Pollutants (SLCPs) from energy supply and use by a considerable percentage by 2030. | Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO2e)<br>Greenhouse gas (GHG) emissions (tons; tons/capita)<br>Short-Lived Climate Pollutants (SLCP) emissions (tons)<br>Carbon footprint per person<br>Low emission [renewable] energy share in energy and electricity<br>GHG emissions from energy production and use (per capita and per unit of GDP) |
| **SDG 14. Live below water; conservation and sustainable use of marine resources, oceans and seas** | End overfishing, rebuild over-fished stocks by 2030 | Number of stocks overexploited, fully and not fully exploited fish stocks, fish catches<br>Proportion of fish stocks within safe biological limits |
| **SDG 15. Life on land; ecosystems and biodiversity** | Halt the expansion of global cropland into grasslands, savannahs and forests by 2020 below a global (net) cropland area of 1.640 Mha | Global (net) cropland area Conversion of land to agricultural and other uses, Rate of land-use change between land-use types Area of cropland per person |
| | Reduce global deforestation to zero by 2030, increase reforestation and afforestation rates by a considerable percentage per annum | Annual change in forest area Annual Deforestation of Land (ha) |
| **SDG 17. Global partnership for the goals** | By 2030, all public procurement follows sustainable development guidelines | Share of sustainable public procurement in all government procurement (percentage)<br>Level of adoption of policies and frameworks for SPP at national and sub-national level |

$CO_2$=carbon dioxide; $CO_2$eq=equivalent carbon dioxide; ha=hectares; kWh=kilowatt-hour; GHG=greenhouse gas; GDP=gross domestic product; K=potassium; m=meter; N=nitrogen; P=phosphorus; SLCPs=short-lived climate pollutants; SDG=Sustainable Development Goals; SPP=sustainable public procurement; tCO2e=tonnes of carbon dioxide equivalent; TPES=total primary energy supply

## B. The Enabling Institutions for the Adoption of Sustainable Consumption and Production in the Philippines

The Government of the Philippines is faced with the relatively new challenge to curb existing practices, and to shift towards new modes of production and consumption. The Government has acknowledged the need to promote green growth, and has equipped the country with a very comprehensive legal framework. There are several laws and policy instruments have been adopted to promote SCP (Table 2).

**Table 2: Selected Philippine Environmental Laws**

| Law | Purpose | Link to SDGs |
|---|---|---|
| Philippine Environmental Policy (Presidential decree no. 1151) | Recognizing the right of the people to a healthful environment and declaring it the duty and responsibility of each individual to contribute to the preservation and enhancement of the Philippine environment. | |
| Revised Forestry Code of 1975 (RA 7161) | An Act incorporating certain sections of the national internal revenue code of 1977, as amended, to presidential decree no. 705, as amended, otherwise known as the "revised forestry code of the Philippines, and providing amendments by increasing the forest charges on timber and other forest products | Linked to SDG 15, but also Target 12.2 |
| Philippine Environmental Impact Statement System (PEIS) of 1978 (Presidential Decree 1586) | A Decree establishing an environmental impact statement system and providing the legal and procedural framework for conducting Environmental Impact Assessments (EIA) for projects likely to have significant environmental impact. This has been updated by several DENR administrative orders | Linked to SDG 9 |
| Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (RA 6969) | An Act to control toxic substances and hazardous and nuclear wastes, covering the importation, manufacture, processing, handling, storage, transportation, sale, distribution, use and disposal of all unregulated chemical substances and mixtures in the Philippines, including the entry even in transit, as well as the keeping or storage and disposal of hazardous and nuclear wastes into the country for whatever purposes | Direct link to Target 12.4 |
| Philippine Mining Act of 1995 (RA 7942) | An Act instituting a new system of mineral resources exploration, development, utilization and conservation | Linked to Target 12.2 |
| Clean Air Act of 1999 (RA 8749) | An Act providing for a comprehensive air pollution control policy and a national program to prevent, control, and reverse air pollution through both regulatory and market-based instruments. | Linked to SDG 11, but also Targets 12.5, 12.6, 12.8 |
| Ecological Solid Waste Management Act of 2000 (RA 9003) | An act providing for an ecological solid waste management program for managing the transfer, transport, processing, and disposal of solid waste; which includes phasing out of open dump sites and converting them into sanitary landfills. (*It must be noted that this law needs as there have many changes in the country that were not taken into consideration when it was created, e.g., expanding food waste and plastic generation of consumers. Such update would also allow for compliance with the requirements of Targets 12.3 and 12.5)* | Linked to Target 12.5 and Target 12.3 |
| Wildlife Resources Conservation and Protection Act of 2001 (RA 9147) | an act providing for the conservation and protection of wildlife resources and their habitats, regulating the collection and trade of wildlife, and initiating or supporting scientific studies on the conservation of biological diversity | Linked to SDG 15, but also to Target 12.2 |
| Clean Water Act of 2004 (RA 9275) | An Act providing for a comprehensive water quality management, with the aim of protecting the country's water bodies from pollution from land-based sources. | Linked to SDG 6 Clean Water, but also to Targets 12.4 and 12.5 |
| Biofuels Act of 2006 (RA 9367) | An Act to direct the use of biofuels and establishing for this purpose the biofuel program for the promotion of the use of biofuels in road transport (biodiesel and gasoline blended with bioethanol). | Linked to SDG 7 but also Target 12.c |
| Renewable Energy Act | An Act promoting the accelerated development, | Linked to SDG 7 but |

| | | |
|---|---|---|
| of 2008 (RA 9513) | utilization and commercialization of renewable energy resources | also Target 12.c |
| Climate Change Act of 2009 (RA 9729) | An Act to mainstream climate change into government policy formulations**,** establishing the framework strategy and program on climate change, and creating for this purpose the climate change commission to coordinate, , monitor and evaluate climate change programs, and action plans. | Linked to SDG 13 Climate Action, but also to Target 12.8 |
| Government Procurement Act (Republic Act 9184) of 2002. | An Act providing for the modernization, standardization and regulation of the procurement activities of the Government and for other purposes. | Linked to Target 12.7 |
| Executive Order 301 of 2004 | On Order for establishing a Green Procurement Program for all Departments, Bureaus, Offices and Agencies of the Executive branch of the Government | Linked to Target 12.7 |

DENR=Department of Environment and Natural Resources; EIA=environmental impact assessment; RA=Republic Act; SDG=Sustainable Development Goals;
Source: DENR Environmental Management Bureau websites (http://www.denr.gov.ph/laws-and-policies.html and www.emb.gov.ph)

These laws define the general policies of the Philippine government for the protection of the country's environment and natural resources, which are very often used as production inputs. They aim to help strike a balance between their use, protection and conservation, and to hold parties accountable for actions that destroy or degrade the environment and the Filipino communities in general.

## C. Public Sector Initiatives to Promote Sustainable Consumption Production-Related Practices

The Philippine Development Plan (PDP) 2017 -2022 describes a vision for a *matatag (*sturdy*), maginhawa (*convenient*), at panatagnabuhay (*peaceful life*)* for all Filipinos by 2040, "built on a solid bedrock of safety, peace and security, infrastructure and a healthy environment." Under the latter are three strategies, namely: i) to sustain biodiversity and functioning of ecosystem services; ii) to improve environmental quality (under which SCP is mentioned); and, iii) to increase adaptive capacities and resilience of ecosystems.[29] Ownership of the Plan (and its underlying vision as embodied in the *Ambisyon 2040* document), however, has not been widespread yet in government and even less with the general public. The difficulty may be with the translation of the document into concrete actions and strategies that Filipinos can rally around. When talking about a sustainable future for the Filipino, for instance, many are still not clear about what this will look like and what needs to be done, not only at the institutional level, but also at the community and individual levels, although of course, the policy framework advanced by the PDP is an important starting point. More importantly, many do not yet realize—or perhaps, refusing to admit and realize—that achieving *Ambisyon*2040 would entail sacrifices down to the personal level, and may involve drastic lifestyle changes.

[29] http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf

There have been indicative SCP – related public policy directives that have, however, already begun to emerge. One important example that must be mentioned is the implementation of the Philippine Green Public Procurement Roadmap that was launched on June 7, 2017 by the Government Procurement Policy Board-Technical Support Office (GPPB-TSO). [30] In Green Public Procurement (GPP), "public authorities procure goods, services and works with a reduced environmental impact throughout their life cycle over other goods, services and works with the same primary function. It is a voluntary instrument that aims to harness the immense purchasing power of the government to convert the market to a greener market with substantial benefits for the environment, and also to improve the socio-economy status of the nation." GPP provides green criteria (for products, equipment, supplies and services secured by government agencies) through technical specifications that reduce environmental impact over conventionally produced goods or services. It supports the PDP 2017-2022's Strategic Framework to ensure ecological integrity, and a clean and healthy environment; and directly bears on the country's commitments to the Sustainable Development Goals.[31]

The roots of the GPP policy are traceable to Executive Order (EO) no. 301 issued in 2004 directing all departments, bureaus, offices and agencies of the executive branch of government to submit their respective green procurement programs to the ELPB, which is chaired by the Department of Trade and Industry (DTI), co – chaired by the Department of Environment and Natural Resources (DENR) and composed of representatives from the government, business and civil society groups.[32] However, the responsibility for ensuring agency compliance with the directive was not clear, and no agencies actually submitted their Green Procurement Program Plans. The task of revitalizing EO 301 fell at that time to the Philippine Center for Environment and Sustainable Development (PCEPSDI), a non – profit organization operating under the auspices of the DENR and DTI. In 2012, The DTI was able to obtain funding from the EU (through its SWITCH Asia Program), to support the development of its own GPP Program from 2013-2016 and to pilot a replicable and workable innovation within the government procurement system, that supports and provides incentives for government contractors to produce/ supply ecologically-certified products. For this project, DTI collaborated with the DBM-PS, the GPPB-TSO, and the NEDA.[33]

The DENR is the agency tasked with crafting and implementing the country's environmental policy, while enforcement of environmental laws has been devolved to local government units (LGUs).

[30] This was in coordination with the Department of Budget and Management (DBM), the DBM Procurement Service, the Department of Trade and Industry and the European Union SWITCH Policy Support Component (EU-SWITCH PSC) Philippines. There have also been semi mandatory approaches for GPP have been adopted by other Asian countries, such as Japan (through its Law on Promoting Green Purchasing in 2000); Korea's Green Purchasing Law (in 2004) and Republic of China (1999 ROC - Article 96 of Government Procurement Act and its 2002 Resource Recycle and Reuse Act. Source: Dr. Ning Yu, President, Taiwan Education and Development Foundation. In Public Sector-Led Green Purchasing: A Growing Trend in Asia, Ch 2 Eco – Products Directory 2012. Asian Productivity Organization. Japan. pp 10 -13.

[1]0 -13.: BSMED SCP Related projects. Nov 2018. (internal document)

This regulatory approach at both the national and local level is combined with the use of market-based instruments or MBIs (also known as market-based approaches), providing economic incentives to businesses to operate efficiently and reduce their negative environmental impacts.

It must be mentioned that the application of MBIs includes environmental users' fees (EUFs) and payment for ecosystem services (PES), such as in the case of the Laguna Lake Development Authority which pioneered the use of a water pollution charge system for businesses discharging their wastewater into the lake. The EUF system levied a fee on companies for the "use" of the lake as a receiving body for their wastewater, which was computed from a formula with a fixed fee (to cover administrative costs) and a variable fee component based on the biochemical oxygen demand (BOD) concentration (regardless of the volume) of water effluents discharged into the Laguna de Bay. The fee—or the desire to avoid paying the fee, to be precise—has been serving as an "incentive" for companies to reduce their pollution. Since the implementation of the EUFs in 1997, the Laguna Lake Development Authority observed decreasing annual BOD loadings from 5,402 MT in 1997 to 193 MT in 2004 generated by 222 firms. The EUF is now an integral part of the Laguna Lake Development Authority's Environmental Management Program. [34]

Payments for environmental services, another form of MBI, on the other hand, is a system wherein an agent who engages in activities that results in the generation of an environmental service or benefits from the environment, is compensated for the efforts from individuals or sectors who benefit from the environmental service. Although there have been kinks in the successful and complete implementation of PES in the country, there have been successes in using PES to sustainably manage and protect the country's natural resources, especially in the forestry sector where members of rural communities have been engaged to protect, monitor, and manage forested areas in exchange for payments in kind or in cash.

From the implementation of PES, it must be pointed-out, what became apparent was that that political willingness and support from the local government are important success factors, and that information exchange and communication between different stakeholders were also critical for creating a support base for PES, and that area – based intermediary organizations can be instrumental for community mobilization and program sustainability.[35] This highlights the importance of institutions and the cooperation of stakeholders in implementing strategies for environmental sustainability and enforcement of environmental policies.

[34] http://llda.gov.ph/environmental-users-fee-system-eufs/

[35] Adhikari, Bhim. 2009. Market-Based Approaches to Environmental Management: A Review of Lessons from Payment for Environmental Services in Asia. ADBI Working Paper 134. Tokyo: Asian Development Bank Institute. Available: http://www.adbi.org/workingpaper/2009/03/26/2906.market.based.approaches.environmental.mngt/, pp 6-7.

Within the region, many countries are similarly adopting economic instruments in combination with legal enforcement. Some of these are identified below in Table 3.

**Table 3: Examples of Market Based Instruments for Environmental Protection in Some Asian Countries**[36]

| TYPE OF MBI | EXPLANATION |
|---|---|
| Air (Intraboundary) Fees | Air pollution prevention fees (PRC and Taipei,China) and emissions charges above a threshold (Republic of Korea) |
| Air (Transboundary) Fees | Greenhouse taxes on carbon, sulfur, and volatile organic compounds (Sweden and United States) |
| Water Charges | Charges for discharge above specified levels (Malaysia and PRC) |
| Solid Waste Charges | Charges on disposal of household wastes (OECD countries and United States) |
| User Charges | Water effluent treatment charges (OECD countries and Thailand) and solid waste disposal (Hong Kong, China; PRC; and parts of Thailand) |
| Product Charges | Charges for products such as lubricants, mineral oil and mineral oil-containing products, batteries, and agricultural chemicals |
| Input Taxes | Taxes on the sulfur content of coal (PRC) |
| Emissions Trading Permits | Permits for particulates (Chile), auctionable permits for the import and use of ozone-depleting substances (Singapore), and acid rain trading program for electric utilities (United States) |
| Performance (Guarantee) Bonds and Noncompliance Fees | Fees for cleanup of mining wastes (Australia and Malaysia) and littering along tourist trails (Nepal) |
| Tax Differentiation | Taxes for leaded versus unleaded petrol use (Thailand) and gasoline versus diesel fuel use (OECD countries) |
| Resource Pricing | Marginal cost pricing of water supply and sewage collection (Chile), energy pricing (PRC), and auctioning of certificates of vehicle entitlement (Singapore) |

OECD=Organisation for Economic Co-operation and Development; PRC=People's Republic of China;
Source: Panayotou, Theodore. 1996. As cited in the Asian Environmental Outlook, 2001. ADB. Manila, Philippines.

In April 2016 the Philippines Green Jobs Act was passed into law, to assist in the transition to a green economy and scale up promotion of sustainable growth and decent job creation, while building resilience against impacts of climate change, by providing incentives to enterprises generating green jobs. These incentives include a special deduction from the taxable income equivalent to fifty per cent (50%) of the total expenses for skills training and research development expenses; and tax- and duty-free importation of capital equipment that are used in the promotion of green jobs of the business enterprise.

The Climate Change Commission is tasked to develop and administer appropriate standards for the assessment and certification of green goods and services, and green technologies and practices for the purpose of regulating the claiming of incentives and ensuring green jobs content. As an integrative strategy it targets the development of a National Green Jobs Human Resource Development Plan (led by the Department of Labor and Employment); mainstreaming of green job concerns in national development plans (with National Economic Development Authority (NEDA) as lead); promotion of a job–rich sustainable tourism industry (c/o the Department of Tourism (DOT)); optimizing the potential of public transport to foster green growth and job creation, including shifting to more environmentally

[36] Panayotou, Theodore. 1996. As cited in the Asian Environmental Outlook, 2001. ADB. Manila, Philippines

modes of transport (c/o the Department of Transportation); green building practices; and faculty and curriculum development to support the knowledge and skills requirement of a green economy (with Department of Education (DepEd) as lead).[37]

Another set of strategies the help create mindsets for achieving sustainable development is through the use of positive reinforcement in the form of public recognition of environmentally responsible businesses, LGUs and public/ academic institutions. Some of the awards given by the Department of Environment and Natural Resources (DENR) in this regard, include the following: i) World Water Day Awards,[38] ii) Philippine Environment Partnership Program (PEPP) Awards.[39] iii) DENR Seal of Approval, *Likas Yaman* Awards,[40] iv) GAWAD EMB awards (for LGUs), v) Environmental Partners and Schools in Western Visayas),[41] vi) Most sustainable and Eco–Friendly Schools,[42] vii) Recognition awards for Eco–Friendly Government Offices.[43] Examples of industry peer recognition in the business sector are: i) the Excellence in Ecology and Economy (3Es) award of the Philippine Chamber of Commerce and Industry[44]; ii) the Outstanding Corporate Environmental Program given by the Personnel Management Association of the Philippines; iii) the Mother Nature Award from the Pollution Control Association of the Philippines; and iv) the Sustainable Business Awards Philippines.[45]

There are also sector–specific awards such as the Presidential Mineral Industry Environmental Awards established through EO 399 in 1997 in which commendations signed by the President of the Philippines are given out in six categories following a selection process by a Search Committee which is co–chaired by the Secretary of the Environment and Natural Resources and the President of the Philippine Chamber of Mines.[46] Clean and Green awards are also organized by local government units (such as La Union, and Koronadal in South Cotabato,) in partnership with the DENR and/ or Department of the Interior and Local Government, for municipalities and barangays that are good models of environmental governance.

Serving as counterpoint is the use of cultural factors such as "*hiya"* (shame) as a strategy to stimulate cooperation. This tactic is occasionally used by both government and environmental watchdog groups especially on erring companies, such as in: the "Dirty Dozen" awards of the DENR (in the 1990s);

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[37] The Philippines is one of the three pilot countries for the pilot application of the ILO policy guidelines for a Just Transition, with particular focus on implementing the Philippine Green Jobs Act. Green Jobs refer to employment that contributes to preserving or restoring the quality of the environment, be it in the agriculture, industry or service sector. It includes jobs that help ecosystems and preserve biodiversity, reduce energy, materials and water consumption, and minimize or avoid all forms of waste and pollution (Source: Philippine Green Jobs Act of 2016 (RA 10771).

[38] http://denr.gov.ph/news-and-features/latest-news/4045-18-water-champions-honored-at-world-water-day-awards-2018.html

[39] http://emb.gov.ph/wp-content/uploads/2016/10/12Oct2016-PressRelease_PCEEP-and-PEEP-awarding.pdf

[40] http://r1.denr.gov.ph/index.php/86-region-news-items/169-the-annual-search-for-likas-yaman-awardees-for-environmental-excellence-is-one-of-the-highlights-of-the-month-long-observance-of-philippine-environment-month-june-in-region-1 and http://119.92.161.2/portal/Portals/43/secusec/ecofriendlyschools.pdf

[41] http://r6.emb.gov.ph/2017-gawad-emb-awards-environmental-advocates/

[42] https://www.denr.gov.ph/news-and-features/latest-news/3394-emb-denr-bares-most-sustainable-and-eco-friendly-schools-of-2017.html

[43] http://emb.gov.ph/wp-content/uploads/2016/03/AWARDING-eco-gov-offices.pdf

[44] http://philippinechamber.com/News.aspx?newsID=1109

[45] http://sustainablebusinessawards.com/winners/sba-philippines/

[46] http://www.chanrobles.com/executiveorders/1997/executiveorderno399-1997.html#.XAmSWjFS_IU

the mock *Lason sa Ilog* (i.e., National River Poisoning) awards of the environmental nongovernment organization Sagip Pasig Movement;[47] and the publicly disclosed Industry Compliance Rating system of business establishments that discharge their wastewater into the Laguna Bay- known as the Industrial Ecowatch System.[48]

Following the launch of the UN Global Agenda 21 at the 1992 Rio Summit Earth Summit, and the subsequent formulation of the national Philippine Agenda 21 in 1996 to serve as a blueprint for sustainable development, various segments of the Philippine business sector came together to consolidate various medium and long-term initiatives of the different industry associations into an integrated plan called the Philippine Business Agenda 21. This was orchestrated by the PBE under the UN Development Programme-assisted project of the Philippine government called Private Sector Participation in Managing the Environment.[49]

In 2003, the DENR also began introducing and /or enhancing the capability of establishments and their associations to self–regulate, by developing guidelines for internal environmental management systems which companies could adopt to minimize the negative impacts of their operations on the environment and to comply with all environmental laws.[50]

At the same time, many Philippine companies and micro, small and medium enterprises exporting to other countries started to feel pressure from market forces to seek certification to ISO 14000 standards. In 2012, the Bureau of Product Standards of the Department of Trade and Industry adopted Philippine National Standards on Environment Management intended for use by organizations in the Philippines that have implemented environment management systems according to ISO 14001.[51] In 2016, the DENR central office became the first Philippine government agency to receive ISO 14001:2015,[52] opening the possibility of other government agencies following suit.

To advance SCP in particular, the Philippines is also using an enhanced national Agenda 21 plan as part of the national development strategy, which includes six key actions, some of which are already being implemented in varying degrees.“[53]

1. Need to increase economic ecological activities and opportunities for green markets.
2. Need to increase awareness of consumer options for sustainable consumption.
3. Businesses must be able to receive assistance to change to better production practices.
4. Life cycle assessment must be brought down to a level the consumer understands.
5. Accelerate the establishment of a government green public procurement system.

[47] https://www.philstar.com/headlines/2005/04/26/275345/eight-firms-get-145lason146-awards
[48]This was implemented then by the Laguna Lake Development Authority during the early stages of introduction of the Laguna Lake Users' Fee (in the 1980s) and has since gone nationwidehttp://pepp.emb.gov.ph/wp-content/uploads/2016/06/ECOWATCH-DAO-2003-26.pdf
[49]Philippine Business Agenda 21 (2002). Philippine Business for the Environment. Manila.
[50] https://www.iso.org/standard/60857.html
[51] PNS on Environment Management (2012). Bureau of Product Standards. Accessed Dec 3, 2018. http://www.bps.dti.gov.ph/index.php?option=com_content&view=article&id=172:-pns-on-environmental-management
[52] https://www.denr.gov.ph/news-and-features/latest-news/2470-denr-central-office-becomes-first-ph-agency-to-receive-iso-140012015.html
[53] https://www.iges.or.jp/en/archive/wmr/activity20100611.html

6. Need to assess policy options for promoting SCP, especially an incentive structure for green production

## D. Private Sector Sustainable Consumption and Production-Related Initiatives

Business environmental groups are also actively promoting SCP in the Philippines, among them the PBE, the Philippine Alliance for Recycling and Materials Sustainability,[54] and the Philippine Green Building Council.[55] Large industry associations such as the Philippine Chamber of Commerce and Industry, the Management Association of the Philippines,[56] the League of Corporate Foundations,[57] and the Philippine Business for Social Progress[58] also mobilize their corporate membership (usually through their environment committees) to pursue environment/SD programs, including some on sustainable consumption.

Other industry umbrella organizations initiate environment and sustainable development programs for their specific sector/profession such as the Pollution Control Association of the Philippines, the Philippine Exporters Confederation (PhilExport), the Semiconductors Industry of the Philippines, the Philippine Chamber of Mines, the Philippine Hotel and Restaurant Association of the Philippines, and many others. Some of these were also key players in the promotion and adoption of the Philippine Business Agenda 21 mentioned earlier.

Most consumer groups in the Philippines are focused on consumer rights protection and only a few operate from a platform of sustainable consumption--though groups like the Earth Day Network and the EcoWaste coalition have strong advocacy programs against waste, and conduct many public information campaigns especially on Earth Day and Environment Month. Other nongovernment organizations or people's organizations focus on specific environmental issues such as air pollution, endangered wildlife, water pollution etc. and engage in activities ranging from policy advocacy, to program implementation and constituency building and public awareness raising and education around these issues. Among these are the Concerned Citizens against Pollution, and the Philippine Partnership for Clean Air.

Despite these efforts, many challenges still abound. For example, domestic sources are now the largest contributors to solid waste, suggesting a need for a great deal more of household education and for better options for domestic waste management. Many micro, small and medium enterprises and commercial establishments (like eateries and small resorts), as well as informal sectors (such as small–scale miners) operate below the radar of both the DENR and the environmental watchdog groups making monitoring and enforcement difficult. In the face of local government inaction, neglect and/or

[54] https://www.parms.com.ph/
[55] http://philgbc.org/about/
[56] https://map.org.ph/
[57] https://web.facebook.com/lcfph/?_rdc=1&_rdr
[58] www.pbsp.org.ph

incompetence, tourist destination areas with severely deteriorated environmental conditions have been/ are being targeted by the national government for closure and rehabilitation, among them the two highest mountain peaks in the country (Mt Apo and Mt. Pulag), Boracay island and some coastal resort areas in El Nido and Coron towns in Palawan. Unless the country is able to overcome the overall lack of community support, logistical and financial resources as well as flawed leadership and vested political interest that bring about these unsustainable situations, these will continue to serve as hindrances to the attainment of a sustainable Philippine society.

## E. Sustainable Consumption and Production Initiatives in Asia and Pacific: Trends and Learnings

The Asia-Pacific region is home to more than two-thirds of the world's population and dominates the global use of resources. Asian cities and towns will soon see a doubling of their populations, from 1.3 billion in 2000 to 2.6 billion by 2030. There is an urgent need for transitioning to SCP in Asia and the Pacific due to the rapidly growing consumption and production trends in the region.

Unsustainable consumption and production patterns have led to increased deforestation, water scarcity, food waste, and high carbon emissions in the region. These challenges are intensified with the region continually experiencing massive losses from natural disasters and climate change leading to more environmental destruction, economic loss, and loss of lives.

The challenge remains today as the region continues its prioritization of economic growth that is driven by infrastructure investments and resource-intensive industries, and higher consumption. Despite the challenge, however, there is are opportunities to push the SCP agenda forward, as can be seen through the emergence of a strong regional approach for cooperation on SCP implementation.Moreover, there has been progress in promoting and implementing SCP in the region through stakeholder involvement and through a continuous effort among countries in the region for knowledge sharing, private-public partnerships, and the use of SCP tools and instruments.[59]

Countries in Asia and Pacific have responded positively, moving from adoption of the 2030 Agenda and the SDGs towards transition to sustainable and resilient societies dependent on responsible management of finite resources. Like the Philippines, these countries are faced with the challenge of translating these commitments into meaningful action, particularly on integrating environmental dimensions of the SDGs in development processes. It is important to ensure that these efforts are in line with the global frameworks for cooperation, particularly its contribution to the achievement of the SDG 12 and related SDGs.

[59] Zhao, W., Schroeder, P. (2010) Sustainable consumption and production: Trends, challenges and options for the Asia-Pacific region. Natural Resources Forum. Volume 34, Issue 1, pages 4-15. https://doi.org/10.1111/j.1477-8947.2010.01275.

There is support from international agencies for SCP adoption and mainstreaming for countries such as the Philippines. In 2017, the ADB initiated a technical assistance (TA) project entitled "Supporting Implementation of Environment-Related SDGs in Asia and the Pacific (TA 9245)," to help strengthen the capacities of developing member countries (DMCs) integrate the environmental dimensions of the SDGs into their national policies, plans, and programs. The objective was to assist these member countries address implementation issues, such as strengthening environmental data, developing partnerships, mobilizing finance and harnessing science, technology, and innovation. The featured environmental dimensions include all of the targets under SDGs 12, 14 and 15, and other environment-related targets with a direct relationship with responsible consumption and production and marine and terrestrial ecosystems. The project included undertaking activities—applying the technical guidance materials—to develop recommendations for integrating environment-related SDGs in national plans and policies in three selected countries. It must be noted that the Philippines was included in this initiative.

Decoupling economic growth from resource use and environmental degradation is one of the most critical and complex challenges facing humanity today. Doing so effectively will require policies that create a conducive environment for such change, social and physical infrastructure and markets, and a profound transformation of business practices along global value chains. Countries today continue to address challenges linked to air, soil and water pollution and exposure to toxic chemicals under the auspices of multilateral environmental agreements. Almost all Member States of the United Nations are party to at least one of those conventions.

The SDG Report 2018 reviewed progress made on SDG 12 implementation stating the status of the Indicators to date. Two measures, material footprint and domestic material consumption, provide an accounting of global material extraction and use, as well as flows or consumption of materials in countries. The material footprint reflects the amount of primary materials required to meet a country's needs. It is an indicator of the material standard of living or level of capitalization of an economy. Domestic material consumption measures the amount of natural resources used in economic processes.[60] The per capita "material footprint" of developing countries grew from 5 metric tons in 2000 to 9 metric tons in 2017, representing a significant improvement in the material standard of living. Most of the increase is attributed to a rise in the use of non-metallic minerals, pointing to growth in the areas of infrastructure and construction. For all types of materials, developed countries have at least double the per capita footprint of developing countries. In particular, the material footprint for fossil fuels is more than four times higher for developed than developing countries.[61]

[60] UN, 2017. Report of the Secretary-General, *Progress towards the Sustainable Development Goals*, E/2017/66.
[61] Ibid.

Achieving Goal 12 requires a strong national framework for SCP that is integrated into national and sectoral plans, sustainable business practices and consumer behavior, together with adherence to international norms and standards on the management of hazardous chemicals and wastes. Three years into the implementation of the 2030 Agenda for Sustainable Development Agenda, countries are translating this shared vision into national development plans and strategies. More than 100 countries have sustainable consumption and production policies and initiatives.

Several trends are reshaping the Asia Pacific Region, including demographic change, rural–urban transitions, increasing demand for natural resources, globalization and economic liberalization, climate change and technological progress. These trends could create important opportunities for countries to make progress towards the SDGs but, unfortunately, also increase and complicate some of the risks facing the region. One example is the Asia-Pacific region which has been a pioneer in the implementation of initiatives and projects to promote SCP. But the changing nature of risk due to climate change and environmental pollution in the region created new challenges in creating resilient, sustainable societies. Others have been more opportunities such as the creation of Regional Roadmap for implementing SDGs spearheaded by the UN Economic and Social Commission in Asia and the Pacific (UNESCAP). The said roadmap has made particular emphasis in promoting the balanced integration of the three dimensions of sustainable development through regional cooperation in a set of priority areas that support effective pursuit of sustainable development by member States.[62]

In Asia and the Pacific, unsustainable consumption and production patterns have led to increased deforestation, water scarcity, food waste, and high carbon emissions. These challenges have been intensified, with the region continually experiencing massive losses from natural disasters and climate change leading to more environmental destruction, economic loss, and loss of lives. These challenges are likely to even intensify further, if the region continues its prioritization of economic growth and infrastructure investments, and the related increase in consumption and resource use.

Despite these challenges, however, changes can be seen through the emergence of a strong regional approach for cooperation on SCP implementation. There has been significant progress in promoting and implementing SCP in the region through stakeholder involvement and through a continuous effort for knowledge sharing, private-public partnerships and the use of SCP tools and instruments. It is important to ensure that these efforts are in line with the global frameworks for cooperation, particularly its contribution to the achievement of the SDG 12 and related SDGs.

Mainstreaming SCP through policy, technical and social innovation has been done through the Region's cooperation mechanisms, strategic thinking, regional and national policy designs, and

[62] UN ESCAP, 2017. The Regional Roadmap for implementing the 2030 Agenda for Sustainable Development, 2017.

implementation efforts with key partners. A number of countries in the region have already formed their national action plans on SCP[63] that identified needs and priorities of stakeholders and formulated recommendations towards a shared agenda in terms of delivering on SDG 12 and the SCP related targets under other SDGs, as well as the 10YFP on SCP and other SCP mandates. For implementation and monitoring of these national action plans, much support is needed coming from regional and global platforms to provide support through initiatives in advancing data availability, science, technology and innovation, financing, and capacity development.

Much has been done on implementing SCP through regional and sub-regional level platforms such as the Asia Pacific Roundtable for Sustainable Consumption and Production (APRSCP), the sub-regional forums in the Association of Southeast Asian Nations and South Asia, and through the SWITCH-Asia Programme supported by the European Union, involving the UN Environment, GIZ, and Institute for Global Environmental Strategies among others. It is important to build on what has been done through these initiatives and to further enhance collaboration through partnerships with governments, business sector, communities, and other stakeholders on the ground to build up this momentum.

The SWITCH-Asia Programme is the largest program in Asia since 2007 supporting interested governments, consumers, businesses and supporting associations in the switch to more SCP patterns through its regional and national policy support and a combination of grant-funded projects, and networking components, and advocacy initiatives, with overall funding of more than EUR300 million for the period of 2007-2020. The programme has contributed to helping restructure production and consumption processes by promoting greater use of environmentally-friendly technologies and practices by business; a switch by consumers to less resource intensive and polluting behaviours and consumption patterns; the implementation and reinforcement of key environmental and safety regulations and standards; the development and application of effective economic instruments that enhance SCP; broader and more action-oriented policy dialogue on SCP in Asia; and, greater dialogue on Asian SCP priorities and needs at an international level. The second phase of the SWITCH-Asia SCP Programme (2017-2022) consists of the SCP Facility - Advancing the Delivery of Sustainable Consumption and Production (SCP) in Asia, (SWITCH-Asia SCP Facility), which aims to strengthen the implementation of national policies SCP, while providing an internal dialogue platform for its grant projects, showcasing their achievements, and connecting them with various external stakeholders.[64]

Moreover, the ADB produced a regional stocktake report of selected country experiences with the implementation of environment-related goals and targets. An inventory of SDG tools and methods was

[63] Countries with National SCP Framework and Action plans in the region are as follows: Malaysia, Pakistan, Sri Lanka, Thailand, and Vietnam.
[64] See EU Switch Asia Programme for more information. https://www.switch-asia.eu/

also developed for policy makers to better (i) understand the critical interlinkages within and between environment-related goals and targets; (ii) promote policy coherence and integration of the environment dimensions of the SDGs; and (iii) develop and select appropriate indicators, policies, and institutional arrangements to support the effective implementation of SDGs 12, 14, and 15 and several other environment-related targets. The Report determined barriers to implementation due to difficulties with interagency coordination, human resources, financing data and assessment, and monitoring indicators. The review also found other promising decision-making tools that can help strengthen national responses to the environmental dimensions of the SDGs.[65]

These top down initiatives, however, can only prosper if there is sufficiently strong political will to implement actions on the ground. Assuming that political will is present, it must be complemented with global and regional efforts that will create a platform to mobilize and share knowledge, expertise, technology and financial resources, to support SCP initiatives in the national and local level.

## F. The Circular Economy and Insights from Other Countries' Sustainable Consumption and Production Experience

The 2018 goal profile report by UNESCAP[66] highlights the fact that despite the Asia-Pacific region regressing on the progress on SCP, there are still promising innovations and best practices that are present to help push SCP forward. One is the circular economy or 3Rs perspective approach, such as Japan's Food Recycling Law that sets recycling targets for food product manufacturers, wholesalers, retailers, and restaurants, and promotes the use of food waste as livestock feeds and fertilizers. Malaysia has identified SCP as the core of its national planning process, with the development of its National Sustainable Consumption and Production Blueprint 2016-2030. In terms of green public procurement, there are several initiatives in South Korea in terms of green public procurement guidelines, the introduction of the Korea Eco-label, the establishment of a Green Products Information Platforms for purchasers, and a nation-wide online monitoring system. Programs on improving information and communication on product sustainability are being tested in India and China, as launched through the India Sustainability Standards Conference 2017.

There are also improvements on the chemicals and waste management area, where several countries, such as Vietnam and Thailand, have started to improve chemical regulation by creating national inventories that allow for better monitoring and regulation of chemicals. Also, many stock exchanges in countries like India, Malaysia, Hong Kong, Taiwan, Thailand, China and Singapore have made sustainability reporting mandatory for listed companies.

[65] ADB Technical Assistance on Strengthening the Environmental Dimensions of the SDGs
[66] See the full report for more details: https://www.unescap.org/sites/default/files/SDG%2012%20Goal%20Profile%20Final%20260218.pdf

It is also worth mentioning that in terms of sustainability education, the UNEP and Chulalongkorn University in Bangkok, Thailand (represented by the Center of Excellence on Hazardous Substance Management) run the Asian Circular Economy Leadership Academy, which aims to "*…improve the knowledge of young professionals from public sector, private sector and civil society organizations who can contribute to the design and implementation of innovative solutions for policies, business models, technologies, financing mechanisms and practices that promote Circular Economy*."[67] The Program is conducted over a period of five days, covering six modules–an Introduction to the Circular Economy; Innovation and technology; Policy instruments, strategy options and institutional arrangements; business models; and behavioral change and communication. The Program, which is implemented under the EU–funded SWITCH-Asia Regional Policy Advocacy Component, is open to young professionals from public sector, private sector and civil society organizations from eligible countries, including the Philippines, who meet the eligibility criteria which includes an advanced understanding of sustainable consumption and production and its relevance for own research or work; and demonstrated ability to work in a team environment and contribute to community service activities.[68]

[67] SWITCH-Asia. (2018). Asian Circular Economy Leadership Academy. Retrieved October 13, 2019, from https://www.switch-asia.eu/events/asian-circular-economy-leadership-academy-2/.
[68] https://www.switch-asia.eu/events/asian-circular-economy-leadership-academy-2/

# Part 3: Issues Regarding the Philippines' Natural Assets

This section lays-out the issues that policy makers face regarding the state of the natural resources and environmental quality in the Philippines, as pictured from the available data from government. Implicitly included in the discussion in this section are the challenges in the country regarding the lack of data and the need for information to be collected in order to monitor the state of the country's environmental health and to help policy makers map out strategies to arrest degradation and to determine if these strategies work or not. It is important to invest in knowledge, data generation and indicators as SCP requires data and indicators that incorporate economic, environmental and social accounts. Proper analysis using such datasets can assist national governments in making better policy decisions across sectors related to the SDGs.

## A. The Current Condition of the Most Critical Natural Resources of the Philippines

The actual status of the quality and volume of the resources cannot be fully determined as data generation and reporting have not been consistent for critical parameters and generally delayed, with some of the data being decades old. Based on the existing information, however, the general picture is that the country of the state of natural resources is rather alarming as most of the critical natural resources such as land, air, water and aquatic resources, are at the brink of permanent damage. From the information pieced together, the state of the country's natural assets is discussed in the succeeding sub-sections, with additional information on other resources as well as the trends and status of these resources (based on assessments made by government and independent studies) included.

### 1. Air Quality

There is little information on air quality in the Philippines especially for areas outside of the mega cities, due to the lack of initiative and funding to regularly collect air quality data unless it is externally funded. What has ascertained regarding air quality is that air pollution usually peaks during the dry summer months, and drastically drops to within national ambient standards during the rainy season. The air quality situation in Metro Manila and the other major metropolitan areas in the Visayas and Mindanao have not improved despite this seasonal fluctuation over time, in view of the increasing number of gasoline-fueled cars and fossil-fueled buses which are still increasing in numbers, in absolute terms. While indicative of the growing capacity (and possibly growing affluence) of segments of the country's populace, the increasing fleet of fossil fuel powered vehicles is indicative of unsustainable consumption patterns on the one hand, and the inefficiency and short sightedness of the country's transport governance on the other. The Philippines' annual PM2.5 concentrations are 80% higher than the WHO standards at

18.4 ug/m3,[69] although this trend normally reflects the air quality condition in the mega-cities such as those in Metro Manila.

## 2. Water (Freshwater and Marine Water)

The Philippines is generally considered to be endowed with adequate freshwater resources, with total available volume estimated at 145,990 MCM (million cubic meters) per year.[70] Freshwater resources comprise diverse inland waters like rivers and lakes, with the former numbering 421 and the latter, 58 plus 100,000 hectares of freshwater swamps.

Government estimates that groundwater resources places total volume of groundwater at 260,000 MCM and net ground water inflow of 33,000 MCM/year, based on1980 data.[71] During the same year, the National Water Resources Council (NWRC)[72] estimated available water supply of natural run off at various percentage dependability and groundwater throughout the country's regions at the time. During the 1990s (almost a decade later), the National Statistical Coordination Board (NSCB) reported the country's freshwater resources and the rate of use and recharge using environmental accounting. From the data, the annual recharge rate of 3.7% for groundwater was observed to have declined from 1.9 billion cubic meters (bcm) in 1988 to 1.5 bcm in 1994 in absolute terms.

Due to increasing water demand (estimated to have grown from 4.3 bcm in 1988 to 5.8 bcm in 1994, or an average annual increase of 5.3%), the stock of the country's groundwater resources has been declining relative to demand. In relative terms, the volume of groundwater resources decreased at an average annual rate of 1.4%, from 265.5 bcm in 1988 to 244.6 bcm in 1994. This was interpreted to be a trend towards groundwater stock depletion, spawning corollary problems like salt water intrusion in areas where over extraction was deemed to have occurred.

The quality of the country's coastal waters was documented in the 1980s to have rapidly deteriorated primarily from sewage, industrial effluents, mine tailings, oil from shipping operations, and agricultural run-off. Increasing population and intensifying economic activities were taking their toll on the Philippine coastal waters which also support activities with direct impacts on dependent population's health like fisheries, domestic water use and tourism. Indicator bodies like Manila Bay exhibited increasing levels of pollution from all sources—domestic, agriculture and industry, with the combined pollution at its highest at the close of the 1980s and 1990s. A major monitoring parameter, coliform, count, indicated that the bay was unfit for bathing in many areas, and posed risks to fisheries production. Red tides occurred with alarming regularity peaking in 1992. The Bay's deteriorating state prompted the

[69] As registered by the 2016 WHO Report
[70] "The Philippine Environment in the Eighties", Environmental Management Bureau, November, 1990.
[71] The Philippine Environment in the Eighties", ibid.
[72] Now the National Water Resources Board under the DENR.

Supreme Court to issue a ruling in December 18, 2008, compelling concerned government agencies like the DENR, Department of the Interior and Local Government, DA, and MWSS to immediately implement and submit progress report(s) on the Operational Plan for the Manila Bay Coastal Strategy (OPMBCS) under the principle of "Continuing Mandamus".

Elsewhere in the country, the impact of extractive industries like mining also took their toll on the other coastal water bodies. Calancan Bay was a major showcase in the seventies and eighties, being the recipient of the tailing discharges of Marcopper Mining Corporation. An intensive rehabilitation effort funded from the fines imposed by the Pollution Adjudication Board under the DENR, paid off in terms of lower concentrations of copper, mercury, cadmium and lead in the Bay. The story for new operating mines is not much different from MMC. Wherever mining activities take place, complaints also crop up.

This problem continues to the present times, with no major investments in wastewater and sewage treatment and solid wastes continuing to be dumped in major water bodies, finding their way into the coastal waters. The most recent showcase was Boracay which prompted the Government to take drastic measures including the closing the island to tourism, incurring income loses and fomenting social unrest among the affected population.

Unlike air, water is physically delimited by its volume and hence, general availability to users is also dependent on the amounts available periodically. But the ability of both resources (air and water) to sustain vital life functions is perceived in the same way, *i.e.,* in terms of their quality.

For water, therefore, the general trend and story are the same: chronic pollution is normally the problem in most water bodies. Pasig River and some other examples like the Iloilo River and Boracay are exceptions in terms of reversal of their pollutive state. As shown by the Boracay experience, the carrying capacity can be expanded or returned to the optimum state in its past, depending on the political will of the regulator(s) such as DENR and the local government units.

## 3. Land and Terrestrial Resources

Being an archipelagic country with an increasing population, land (and the services and other resources extracted from it) are increasingly becoming scarce and hence, more precious, for the Philippines. Not only is land becoming more invaluable because of shelter needs but because it contains important resources like oil, minerals, water and vegetation providing oxygen, wood, food, medicine, fuel and other raw materials for the survival and socioeconomic development of the country's population. It is also the ultimate recycler of reusable resources from the environment.

The Philippines' per capita usage of land can be gleaned from its population density (people per sq. km) which was reported by the World Bank to be 347 square kilometers (sq. km) in 2016, and the country's total land area estimated at 300,000 sq. km. The Philippines ranked no. 174th of 200 countries in terms of land per 1000 population in 2008. In terms of land per capita, the Philippines registered 3.92 sq. km in 2000 and 2.97 sq. km in 2015, an indication of a shrinking availability of a resource vis the country's increasing population.

## 3.1 Agricultural Lands

In the early eighties, croplands comprised 13.1 million hectares or approximately 43% of the country's total land area.[73] By 1991 onwards, the Bureau of Soils and Water Management (BSWM) reported that agricultural land conversion to other uses was taking place very rapidly[74], with irrigated lands being converted to urban settlements and industrial operations. It was estimated that a hectare of land removed is equivalent to an estimated 3 hectares of rain fed lands and 5 hectares of ecologically fragile uplands. By 2010, the Philippine Statistics Authority documented croplands to be 12.4 M hectares or 42.1 % of the country's total area and in 2015, areas dedicated to crops (*i.e.,* temporary crops, permanent crops, temporary fallow) was estimated at 7.19 million sq.km, a negligible percentage of the Philippines' total land area.[75] It is worthwhile to note that the WB recorded a 15.8% increase in the country's overall agricultural lands from 25.9% of total land area in 1961 to 41.7% in 2015. World Atlas data registered Philippine agricultural land area increase from 81,300 sq. km in 1966 to 124,400 sq. km in 2015, growing at an average annual rate of 0.88 %.

While the agriculture sector no longer contributes significantly to the country's GDP, it is still very important in terms of providing livelihood, employing 27.7% of the Filipino workforce as of 2017, according to the World Bank. The shrinking of agricultural opportunity expansion for growing staples like rice and corn may not compromise food security over-all because these can be imported[76] but it may force a change in consumption patterns which will not be generally socially acceptable. Diminution available land for shelter is starting to affect the way housing is being planned and designed, with high rises starting to become the norm in rapidly urbanizing areas. Families now have to adapt their lifestyles to available shelter rather than having the freedom to fashion their abodes to conform to their needs.

[73] "The Philippine Environment in the Eighties," EMB-DENR.
[74] Philippine Environmental Quality Report, 1990-1995.
[75] Data from CountrySTAT Philippines 2015
[76] As showcased by the recent rice crisis, however, availability of the commodity to be imported is still an uncertain risk even if the country has the capacity to defray the cost of importation.

### 4. Forests & Biodiversity

The importance of forests to any country, including the Philippines, cannot be overemphasized. Forests are critical ecosystems because they stabilize climate, regulate the water cycle and provide habitat to numerous life forms. Ironically, forests are also among the most vulnerable and open to rampant degradation and indiscriminate destruction.

The remaining stock of old growth forests represents unquantified wealth creation potential, not primarily from timber, but biodiversity resources. The Philippines is considered one of the most mega diverse countries in the world by different metrics. At the species level, the country is rich in wild flora and fauna. In the 1990s, the Philippines was documented to host around 13,500 plant species, representing 5% of the world's flora; 32% of which are endemic and found only in old growth forests.[77] This endemicity is one of the highest in the world, with 8,000 flowering plants species, 3,200 are unique to the Philippines. It was also assessed at the time that the country was home to numerous types of ferns, mosses, fungi and lichens. Animal species, on the other hand, totalled 170,000, half of which were endemic, with 43% of its terrestrial vertebrate species (numbering almost a thousand) are endemic and comprise mammals, amphibians, reptiles, mollusks and insects, among others.

Between 1969 and 1988, the country's forests were depleted at a disturbing rate of 210,000 hectares per year. Philippine forests host among the most diverse life forms in the world, but ironically, among the most endangered as well. The country's forests continue to be depleted at an average rate of 2% per year (based on 1990s data). By 1994, of the approximately 27.5 million hectares of old growth forests in 1575, only 800,000 remained in 1994.

Up to the early 1980s, forests provided significant income for the Philippines, ranking among the country's top ten exports. In 1982, forest products were the 2$^{nd}$ largest foreign exchange earners among the country's exports. With the significant diminution of the country's forests, revenues from the forestry sector also drastically dropped. For 2017, the Forest Management Bureau reported total log production at 733,474 cu.m (2,912 cubic meters. or 0.39 % from naturally grown trees and 730,563 or 99.61% from planted ones). Forest charges declined significantly from 2010 (PhP153,664.18) to 2017 (PhP1,801,57) for round wood. This trend can also be seen in the share of the forestry sector in the country's GDP: 0.1 % in 1998 to 0.01% in 2017.

## B. Issues on Information and Natural Resources Accounting in Philippines

Perhaps it is not obvious to many Filipinos in the Philippines—including policy makers—why the country needs quality information that is regularly collected, in order to craft policies based and to be able to monitor and evaluate if these policies make an impact or not. Evidence-based policy-making in the

[77]Philippine Environmental Quality Report, 1990-1995.

country, after all, is relatively new, even if there is a growing recognition that a systematic approach to policy-making is what the country needs to adopt to improve the rate of return on public investments, especially in managing the country's natural resources. Following this trend, the need for the Philippines to build its capacity to generate and collect data—such as the National System of Integrated Environmental and Economic Accounting (SEEA)—and to facilitate the creation of models and other modern techniques to establish causal relationships between policies and environmental quality emerges and, to a limited extent, acted upon.

At this juncture, the Philippines has begun initiatives to have better information, especially a natural accounting system. Much of these initiatives have been built on the many resources supporting countries on this initiative that takes into account such as UNESCAP's work through statistical yearbook 2017; there are support provided to countries to get reliable data and statistics on sustainable cities and infrastructure (HABITAT III); support and capacity building provided by international organizations such as the Wealth Accounting and the Valuation of Ecosystem Services ensuring that natural resources are mainstreamed in development planning and national economic accounts; or The Economics of Ecosystems and Biodiversity led by the UNEP with the objective to mainstream the values of biodiversity and ecosystem services into decision-making at all levels.

The Philippines has addressed the fragmented statistical system (consisting of a policy-making and coordinating body, a general-purpose statistics-producing agency, a statistical research and training center, and various government agencies engaged in the generation of statistical information) through the establishment of the Philippine Statistics Authority (PSA). It is mandated to compile the System of National Accounts by integrating information from various data producing agencies in the country. The Philippines has had a long history in the implementation of the SEEA under the leadership of the National Statistical Coordination Board, which is now the PSA. The Philippines started implementation of the SEEA in 1998 as a pilot project with the funding of UN Development Programme and the technical assistance of the UN Statistics Division. The pilot compilation included the following accounts: forests, fish, water, mineral and energy, and land and soil. Since the 1998 pilot project, the Philippines has formally institutionalized the SEEA, and has adopted the SEEA as the supporting framework for integrated policies on the economy and the environment. In the new 2012-2017 Philippines Statistical Development Programme, a separate chapter on the environment has been devoted to the adoption of the revised SEEA as one of the activities under this program.[78] In addition, the 2014 Compendium includes statistics on Environmental Conditions and Quality that covers the condition and quality of the country's environment and natural resources. It includes statistics on the meteorological, hydrographical,

[78]UN statistics. See: https://unstats.un.org/unsd/envaccounting/Brochure.pdf

geological, geographical, biological, and physical and chemical characteristics of the environment, and their changes over time.

## C. Major Factors Contributing to the Degradation of the Environment in the Philippines

The deterioration of the quality of the natural environment and the depletion of natural resources is most often explained using the analogy used by American ecologist and philosopher Garrett Hardin in his 1968 *Science* journal article called the "Tragedy of the Commons."[79] In the article, Hardin described how a pasture—a common property resource—was destroyed due to overgrazing of cows. It was the classic demonstration of how in a situation where there is a common-owned or common-shared-resource system, and how individual users that were independently being rational acting in their self-interest (thereby, contrary to the common good of all users) ended up depleting the grass and consequently destroying the pasture because too many cows were brought to feed. It was a case of overconsumption due mainly to the fact that the resource—in this case, the pasture—could be accessed by every cow owner in the community. The situation was referred to as the "tragedy of the commons" because of the rather "tragic" end of the common-property resource that was the pasture. This situation plays out in the real-world scenario where all common-property resources are subjected to over-use because of the unlimited access of users to them.

Solving the problem of the modern-day "tragedy of the commons" has been mostly placed on the shoulders of government, which has the mandate and sole authority to manage common-property resources, by defining the use and limits to use of these shared natural resources. The threats against the common-pool resources loom as long as the natural resources are useful and shared by all, and it is government that has been regarded as the only entity that stands in the way of its complete destruction. Ellinor Ostrom, the 2009 Nobel Prize co-winner in Economics, however, argued that strategies that could elicit collective behavior could prevent the destruction of the common-property resource, even as she cited the issues regarding commitment and monitoring of this behavior.

Presently, the issue of overuse and overexploitation of natural resources is discussed in the connection with and in the context of sustainable development—essentially the marriage of economic growth (with expansion of human welfare) and environmental protection. As population rises and preferences expand to new types of goods, the "tragedy of the commons" instances have started to grow. The objective of sustainable consumption and production is essentially an objective to prevent the "tragedy of the commons" from happening as nations pursue economic growth and development, and the improvement of human welfare.

[79] *Garrett Hardin*. Science, Vol. 162, No. 3859. (13 December 1968), pp. 1243-1248.

In the most basic logic, it is human disturbance through economic activities that has caused the deterioration of the natural environment. A review of the literature regarding the causes of the degradation of the natural environment point to many sources and reasons for the severity of which varies from country to country. These range from intensifying demand for common-property resources that have resulted in "tragedy of the commons" to apathy and lack of information from the sectors that should be managing these resources. In the case of the Philippines, the literature points to several categories of these factors that have led to the current state of the country's natural resources and environment, namely: population growth, unregulated negative externalities in the form of pollution, policy failure to arrest overexploitation and abusive use of resources, and low compliance and cooperation and alternative technology for waste management.

## 1. Population Growth

While the discussion regarding the complex relationship between the environment and population continues, there is a consensus that increasing population contributes to environmental degradation. As more people are born, more land and natural resources are used to provide food, space for homes, and to provide the other goods that people need to live comfortably. The increase in needs and wants brought about by the rise in population, forests are cleared, harvest and extraction rates of renewable and non-renewable resources rise, and there is added pressure for the waste assimilation ability of the natural environment.

The Philippines is no exception to this phenomenon. With a steady rise in population, there is a greater demand for the country's natural resources to provide environmental services and supply inputs for production. The rising average income of the middle class and the wealthy in the country has magnified the effects of the rising population in terms of the demand and impact on the natural environment. The flipside of the situation is that the country also grapples with a high level of poverty level, which creates a new threat to the natural vegetation as the poor harvests the natural capital for survival. The rise in population and average income in the country also translates into higher generation of solid waste which, because of the lack of alternative technology, translates into added pressure on the natural environment to assimilate the tons of garbage especially in the urban areas.

The quality of the country's water resources reflects the rapid urbanization of its metropolitan areas like Metro Manila. As population grew in the country's urban centers, so did the pollution of major water bodies, like the Pasig river and the connected Laguna de Bay. By 2000, the Environmental Management Bureau reported a growing concern for the rapid deterioration in the quality of the country's inland waters. This quality was assessed in terms of the Philippine ambient standards, the major indicator of which is biological oxygen demand (BOD). Additionally, corollary indicators of growing toxicity in the form of heavy metals were also sporadically measured and reported. A snapshot of the state of water

quality of indicator water bodies like the Pasig River and Laguna de Bay in the nineties is provided by the table below on indicator parameters, biological oxygen demand (BOD) and dissolved oxygen (DO). By 2018, however, interventions undertaken by the Government with civil society and the private sector seem to have paid off, with the Pasig River awarded the 2018 Asia River Prize issued by the International River Foundation.

Indications of expanded carrying capacity of water bodies like the Pasig River can be gleaned from their additional socioeconomic uses which did not previously manifest such as functioning as a regular commuting corridor and tourist spot. The biggest gain, probably, is improved health opportunities for residents along the Pasig River system.

## 2. Unregulated and Ineffective Residuals Disposal

The rise in demand for various types of economic goods and services, has spurred the growth rate of industries, consumption, and various type of production processes. It must be noted that there is no economic activity that does not lead the generation of residuals, and depending on the volume and composition, could become pollutants. In economics, pollutants are regarded as negative externalities—or unintended costs—which, if not regulated and internalized by those that caused them results in a situation of private gain but social costs. The basic rule is that those that generate negative externalities must be responsible for them, and must pay for the cost that these materials create. This is essentially the gist of the "polluter pays" principle that has been generally adopted by governments all over the world.

Among the major concerns on air pollution is its impacts on the over-all health and well-being of Filipinos. According to the 2016 World Health Organization (WHO) Report, air pollution is causing about 120,000 deaths in the country every year. This is a cause for serious concern as it directly affects a significant portion of the country's population, more than half of whom already reside or work in urban areas like Metro Manila and at risk from the negative health impacts of air pollution.

The World Bank estimated the cost of outdoor air pollution (OAP) related morbidity in 2003 at PhP950 million. The components of this cost comprise productivity loss (i.e., income and time loss due to absence from work and household activities, biggest at PhP502 million or $11.0 million, disease treatment at PhP360 million, or $8.0 million and a government subsidy of PhP88 million, or $2.0 million.

The Philippines does not regulate carbon dioxide and other greenhouse gases like methane, except nitrous oxide. In view of its accession to the Paris Agreement, however, it might have to consider including in its regulatory framework, measures to limit greenhouse gas emissions at the appointed time. Over-all, the Philippines is contributing less than one (1) percent to the global GHG emissions.[80] This is indicative of the Philippines' insignificant contribution to the total global emissions despite its dependence on fossil fuels. In absolute terms, however, the country's GHG emissions increased from its

[80] Based on the Philippines' Second National Communication (SNC) submitted to the UNFCCC in December, 2014.

first national inventory in 1994, from a total amount of 100, 738 kilotons CO2 to 21,767 Gg of CO2e in 2000, net of sequestered carbon by LUCF. However, the co-benefits of shifting to a cleaner, renewable energy fueled economy (health, economic savings, increased income from new green industries) should be a major driver for an earlier decoupling of economic development from energy intensity and negative impacts of fossil fuel use.

What is emerging is that despite the availability of policy and regulatory instruments such as the National Air Quality Act and standards for national air emissions and ambient quality, the air quality situation in the country's densely populated areas have not really improved, in a permanent sense. The seasonal variations in quality is incidental, at best, providential. It is not the absence of policies, regulatory frameworks and institutional arrangements that places the air quality situation in a chronically erratic mode.

It is the incompleteness, as well as, the non-application of a science-based, systematic paradigm to managing (preventing, mitigating and addressing remaining residuals) the risks from air pollution from all potential sources, that is emerging to be the main problem. Without a systematic, objective and reproducible approach to problem analysis, the crafting of the solutions will be random and ad hoc, not fit for purpose and likely to have erratic outcomes.

In most cases, it is the government that is responsible in dealing with pollution issues, the Philippines being no exception. In order to do so, however, requires that laws be in place to serve as the legal basis for action, and an assessment of the monetary value of the cost that pollution has created. Equally important is the mechanism that must be in place—either in terms of direct regulation or market-based instruments—in order to implement the laws and penalties for the generation of pollution, something that the Philippines is still grappling with.

In addition, the country is also faced with waste management challenges that, so far, do not seem to have a viable and sustainable solution as of yet. The government still relies on a system of command and control policies that are meant to arrest the growing problems with waste in the country, but failed to solicit cooperation among communities. Ironically, there is a high level of awareness and strong environmental activism in the country, but this has not translated into meaningful and lasting action especially in waste disposal and management. There have been efforts to address the problem, however, most notable of which is the passing of the Ecological Solid Waste Management Act of 2000 which is considered to be a broad-based and comprehensive approach to solid waste management.

The solid waste management issue in the country, in general, is still approached from the successful implementation of the 3Rs that the Ecological Solid Waste Act is promoting, namely: reduce, reuse and recycle. The evidence, however, points to very little headway attained through this strategy, as the government is beset with cases of non-compliance to the Act by LGUs, and weak response from the

general population in general. The issue of solid waste management is getting to a point of urgency as the growing population and the waste it generates compete for precious land and resources.

The last point regarding the competition for land indicates that even as the country promotes the 3 Rs, there is a need to look for an alternative to land fill as the technology for the residual management. Currently, the Philippines only considers two technology options when it comes to managing disposed waste, and those are landfill and incineration. The latter, however, is considered a poor option as burning of waste would contribute to greenhouse gases, thereby contributing to the climate change woes of the planet. As of now, the country needs to consider alternatives to the land fill option, as the country's development and population growth are bound to push the waste management problem forward. There are indications that there are other ways to dispose of residual waste, such as the use of bio-engineering to create microbes that could break specific types of waste down into energy, which are being researched on by other nations. The Philippines needs to explore the use and adoption of these technologies to solve its waste problems, as the current technologies it has at its disposal are proving to be inadequate.

### 3. Policy Gaps and Enforcement Issues

A review of the laws and regulations regarding natural resource management and pollution control reveals that policy makers have been aware of the need for government action to properly manage the country's resources and natural environment. As a matter of fact, the Philippines has crafted the Sustainable Development Strategy, has integrated three strategies for sustainable development in the Philippine Development Plan (PDP) 2017-2040, otherwise known as the *Ambisyon* 2040. The PDP stresses a vision of development for the country that will be built on a healthy environment.

What is lacking, however, is a clear guidance as to how to translate the plans into strategic action nationally, even if the government has begun to green its operations through procurement and more environmentally friendly system of activities. Further, there is still the need to solicit the cooperation of Filipinos when it comes to the implementation of laws and regulations regarding the environment, as the current policies and schemes to implement the policies remains unsuccessful in creating social action, cooperation, and adherence to the laws of the land.

### 4. Ineffective Monitoring and Evaluation System

Perhaps very closely related to the policy gaps as one reason for the degradation of natural resources, is the lack of an effective monitoring and evaluation system in the Philippines. Without an efficient M&E system, the country cannot keep track of how its natural capital is being utilized, and whether there are indications of overuse. In addition, policy makers, do not have fundamental information and research about the agents that policies are trying to influence—about who they are, and what

behavioral factors could influence how they regard the environment, and how their cooperation could be solicited.

It must be pointed out that appropriate and helpful monitoring and evaluation systems are not possible without data that are accurate and regularly collected. This is a serious gap in managing natural assets, and undoubtedly compromises any effort at implementing programs and projects for the environment, and in enforcing rules of use and regulations concerning natural resources, many of which are common-pool.

## 5. Apathy and the Lack of Cooperation of "Juan dela Cruz"

It is not hard to see that no government can ever successfully implement programs and regulations without the cooperation of the people, and this extends to protecting natural resource problems. Recall that most natural resources in the country are common-pool in orientation, which means that they are susceptible to overuse and exploitation, and eventually, destruction. The literature indicates that one crucial component of a successful management of common-pool resources is collective action, referring to an action taken together by a group of people—community members—toward the attainment of a common good. Collective action, however, is not possible if apathy is a strong presence.

While there is a strong sense of family among Filipinos, it does not translate into general collective action to favor other members of society, which is what is needed in environmental protection. Many instances of natural resource destruction and environmental degradation have been due to lack of thought of Filipino residents about the negative impacts of these actions on society as a whole. In other cases, it is the apathy of many Filipinos toward the worsening condition of the environment—or even of society in general—that has encouraged over-users to continue their action, most especially because the cost to enforce laws and impose penalties have high. Without Filipino collective action and decision regarding the protection and sustainable use of natural resources, free-riders and over-users will push the country's natural resources toward a "tragic" level of use.

## Income as a Driver in Environment and Natural Resources Use: Relevant Economic Trends in the Philippines (BOX)

The Philippines remains one of fastest-growing economies in Southeast Asia, with consistent economic growth in the past years.[81] The government has defined its objectives for development as driving rapid but inclusive economic growth, accelerating employment on a massive scale, and reducing poverty. Based on the GDP report for 3rd quarter 2018, the major industries attributing to growth are construction, financial intermediation, and public administration and defense & compulsory social

[81] Further details are found in the annex section on the 'Macro Socio-economic Profile of the Philippines'.

security. However, negative growth is reported in agriculture and forestry, fishing, and mining and quarrying.

Growth has somehow slowed down in 2018, with GDP growth at 6.2 percent compared to a 6.7 percent growth in 2017. According to NEDA Secretary Ernesto Pernia, there is a need to focus on the building capacity in physical infrastructure, human capital, and financial capital to maintain the growth trajectory of the country. He also mentioned the need to boost household consumption, particularly on household spending on food and other basic products, which was at low level in 2018.

Note that the government needs to induce spending and investment to maintain high economic growth, and this typically has no consideration whether the goods and services circulating in the economy are sustainable in production and consumption. In fact, there is a notion that higher growth leads to more residential and industrial waste, a higher extraction rate of natural resources, and a bigger demand for energy. If a country's economic system remains 'linear' (e.g., no reuse or recycling of waste) then higher economic growth definitely spells unsustainability.

Nonetheless, economic growth remains a target of the government as it is essential for developing countries like the Philippines, considering how it implies productivity and employment of individuals. An increase in GDP from higher consumption also may also mean that households can afford more food, especially families with low income that allot more than half of their budgets on food spending. Based on results from the Family Income and Expenditures Survey (FIES) of PSA in 2015, 8.23 million Filipinos have an income level that is not enough to buy even their basic food needs. Moreover, based on the estimated poverty threshold, 16.53 percent or about 17 out of 100 families were estimated to be poor in 2015. In terms of magnitude, this is equivalent to 3.75 million Filipino families with incomes that are not enough to meet their basic food and nonfood needs. Note that mitigating hunger and reducing poverty are also SDG's that the government needs to fulfill.

Perhaps a more sustainable approach is targeting growth in sectors where poverty is more prevalent. The report of FIES 2015 states that farmers, fishermen and children belonging to families with income below the official poverty threshold or poor families posted the highest poverty incidences in 2015 at 34.3%, 34.0% and 31.4%, respectively. These sectors consistently registered as the three sectors with the highest poverty incidence in 2006, 2009 and 2012. Recall that even with overall economic growth, agriculture and fishing still remain at negative growth. This highlights the opportunity to improve the performance of these sectors with consideration of sustainable practices, in order to hit both growth and poverty reduction targets.

# Part 4: Thematic Policy Areas of the Sustainable Consumption and Production Strategic Action Plan for the Philippines

This section discusses three basic themes or categories of trends and issues that relevant in designing a national policy and action plan for the mainstreaming of SCP in the Philippines, which are enumerated as follows:

- Environmental and Natural Resources
- Waste Management
- Sustainable Business Behavior and Lifestyle

Each of these themes will be discussed in the succeeding sub-sections to clarify how it fits in the action plan.

## A. Environmental and Natural Resources

An essential element in determining policy opportunities is to be aware of the trends in consumption and management of the environmental resources in the country. Assessment is done according to the following types of resources: land and terrestrial resources, water resources, air, and energy resources.

For land and terrestrial resources, there is an analysis on the forests and biodiversity, agricultural lands, and mineral resources. According to the Forest Management Bureau of DENR, the Philippines is losing approximately 47,000 hectares of forest every year. DENR also states that the top causes of forest cover loss are fire (arson, throwing of cigarette butts, and forest/grass fire), kaingin/illegal entry, and illegal cutting/logging. The recorded relatively minimal damage in terms of area was from 2000 to 2010, with recorded total area damaged of less than 3,000 hectares. In 2012, area damaged increased to more than 5,000 hectares. Estimated value of damages was, likewise, provided with 2012 being the costliest at P75.6 million.

There is also a steady decline of forests for wood, agriculture, settlement and industry use. Croplands severely reduced by half as of 2015, which reduced productivity, and resulted in the degradation of soil quality in many areas. This results in chemical pollution, decreased land availability for crop staples and other crops with significant potential economic value.

The amount of mineral resources is still significant, though new discoveries are unquantified. However, mining activities face issues on pollution and degradation of other resources such as forests/biodiversity. The net effect on local communities is inconclusive; it is observed that there are

negative health impacts due to mining activities, the deterioration of land areas, though the establishment of mining organizations result in opportunities for economic activities that leads to the establishment of infrastructure and employment for local workers.

In terms of water resources, DENR estimates the country's water supply is 146 billion cubic meters, more than the total demand but is needing expansion due to the increase in population. Due to over extraction, urban surface waters are highly degraded. There is reduced water availability in many areas for domestic and other sectoral uses. Potential sources are far and may result in the deterioration of surrounding resources and communities. Also, pollution and climate change have contributed greatly to the decline of water sources. It is also observed that urban coastal waters are highly degraded.

The price of aquatic resources has been rising, demonstrating that the demand for fisheries productions has been steadily rising. The rate of harvest is nearing the point where the ability of the aquatic resource to regenerate is breached. Supply of fish and other aquatic resources is augmented with fish farms, but the demand for fish is still rising with growth in population. Coral reefs are also endangered with coastal developments, coastal fisheries, tourism activities, and climate change.

For air, the greenhouse gases (GHG) contribution of the country is mostly from energy generation (almost half) because of the demand for the cheaper fossil-based source of energy. Agriculture is the second contributor to GHG with 33% of total from this sector.PM 2.5 concentration in the country is 14.6 $ug/m^3$ or 80% higher than WHO annual mean standard of 10 $ug/m^3$. GHG emissions of the country increased by 52% from 1990 to 2012. With the effect of air pollution, there have been about one million citizens who got sick with about 120,000 deaths per year due to respiratory diseases.

Energy consumption has been increasing at 1.3% per year. Electricity's share in total energy consumption has grown from 14% in 2000 to close to 20% in 2013.The use of biodiesel and ethanol has been increasing by 126% and 88% respectively from 2004-2013. In terms of renewable energy, the current business as usual scenario will result in the shrinking of the share of renewable energy to 17% by 2040 from 36% in 2017, according to the Department of Energy (DOE).

With the awareness of the trends in environmental resources, the next step to identify policy opportunities is by mapping the gaps in the current handling. A resounding issue is the inconsistency of monitoring and enforcement of existing laws and policies, and the question of whether the existing terms are still relevant. For example, there is a comprehensive air quality mandated law, but programs are weak and they are primarily focused on end of pipe approaches. The same goes for laws on water quality and mining, with having weak management strategies or outdated policy terms.

Another major issue is that there is an incomplete or lack of data on natural assets that makes it hard to monitor. This constraint also leads to the lack of evidence-based research on the specific impacts of human activities on the natural environment.

Funds to implement environmental regulations and management of protected areas have also been lacking. There is also a need to have better financial planning for environmental protection. Conflicts about the jurisdiction over natural resources–between national agencies and LGUs, and between the LGUs themselves. According to USAID, local stakeholders have limited economic incentives, financial support, and capacity to manage high biodiversity areas in their area, even if they have the greatest stake in protecting the environment and natural resources in their vicinity.

Given these issues, even if there are more regulations being installed to protect the country's natural resources, the effectiveness of such regulations is hampered by the lack of enforcement and funds. Also, apart from SCP-related policies, the government should also be aware of the environmental impact of most economic activities, as the former is often a crucial input for production. There is a need to install environmental-safeguards for other policies in sectors like agriculture, manufacturing, and national issues like poverty and inequality. One good step is the enacted policy on GPP in 2016, which gives internal guidelines in ensuring a green procurement process of the government. Nonetheless, this approach should be extended to external projects by private firms and organizations. And this involves the thorough review and proper implementation of current laws, and the identification of areas where policy reforms are necessary.

## B. Waste Management

Current production and consumption patterns include waste generation part of the value chain. The Basel Convention defines waste as "substances or objects, which are disposed of or are required to be disposed of by the provisions of national law." In simpler terms, wastes are the by-products of the production processes in both from the industrial commercial sectors, and from residential areas emanating from household consumption and other activities. As residuals, wastes are materials have no value to the producers or consumer and are therefore, disposed of.

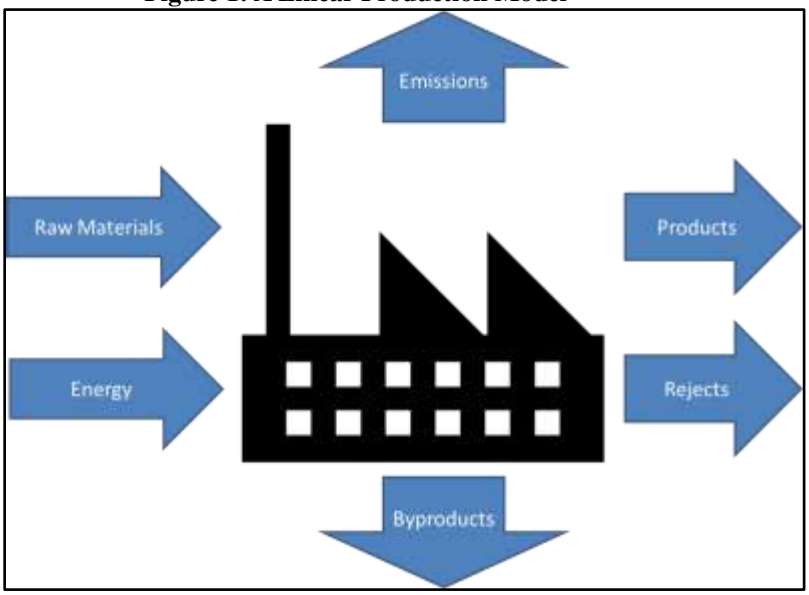
### 1. Industry

In every emerging economy, waste management plays a key role in the sustainability of development, but unfortunately, is normally placed in the lower parts of the priority list of issues that economic managers address. It is usual that an economy—especially those that are just emerging—relies heavily on the manufacturing sector to lay a strong foundation for its growth. It is the transformation of

inputs to products or goods adds value to the raw materials, and it is the final product that economic activities center on.

As manufacturing industry increases in production, waste generation grows proportionally. In the usual linear production line or the take-make-dispose model, raw materials are processed at pre-determined proportions per unit, utilize energy in order to transform the raw materials to finished goods. It is inevitable that the production will generate by-products, a fraction (if not most) of which is "rejected,'' and disposed at a certain level. Although industry standards and regulations are in place to control discharge and disposal of harmful wastes, there is a high-degree of non-compliance in the manufacturing sector which is the cause of many environmental problems especially for air and water resources. The simple diagram (Figure 1) illustrates this situation.

**Figure 1: A Linear Production Model**




## 2. Household

On an individual household level, it is fair to say that waste generation patterns and volume of waste are dictated by level of individual awareness, behavioral and cultural tendencies, as well as access to infrastructure for waste disposal. The level of awareness of households on waste classifications, segregation practices, and waste disposal and treatment opportunities vary greatly in the country, a situation that needs to be addressed if waste is to be evenly managed in the Philippines. There are not a lot of households that are familiar with different kinds and types of composting methods that can be implemented even in small areas like apartments, condominiums, etc.

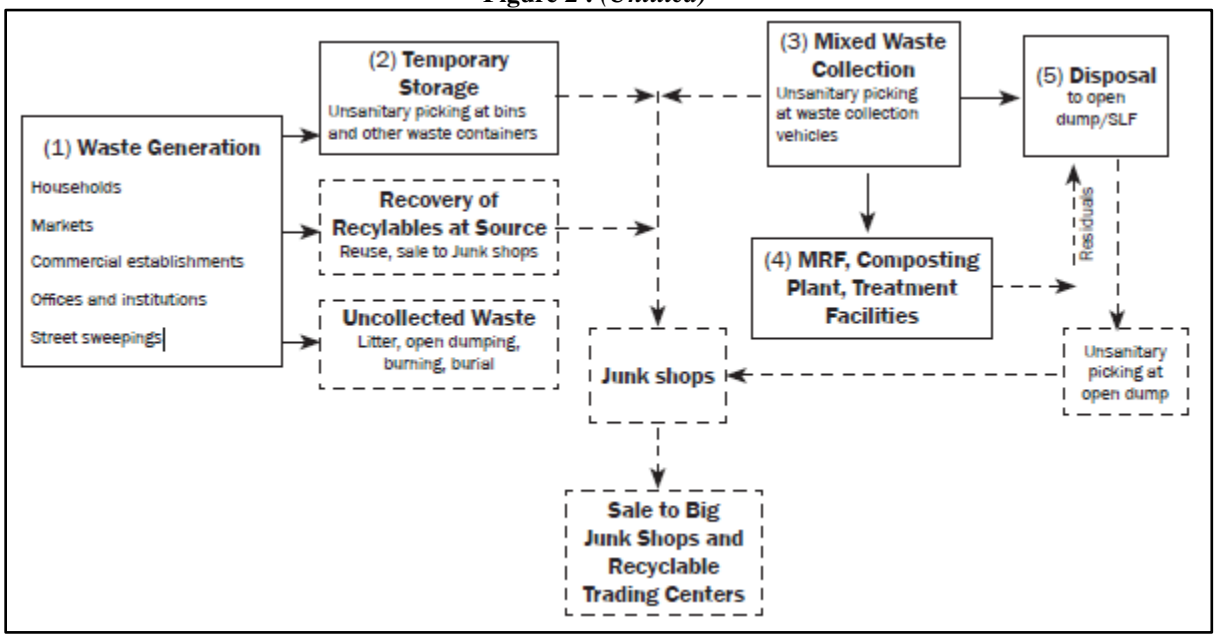
There have been some strides gained in educating the public about waste, especially among the youth. Waste management and environmental awareness has found its way in the new K to 12 curriculum

starting Grades 4 and 5 (K to 12 Science Curriculum Guide August 2016) wherein waste segregation and waste disposal are introduced. In addition, there are some schools and universities who are advanced in implementation of the solid waste management program that starts with awareness to faculty, students, and school administration, then provides for facilities and infrastructure that promote proper management, and consistent monitoring of the program. The older generation, however, would have to be focused on, as there has been no apparent clear and concrete plan to reach and educate them.

The households' waste management practices are determined mostly by convenience, with most households oriented toward non-segregation because it requires less effort to do. This is common practice especially among heavily populated communities and residential areas, even in high rise condominiums. Ironically, there is information that indicates that show that there is a high level of awareness and willingness to segregate and dispose waste properly among households, but the lack of convenient and reliable waste disposal system and infrastructure could have prevented translating the willingness to actual action. This is exacerbated by the lack of efficient and credible waste management and collection system on the part of the LGUs. As a matter of fact, waste collection vehicles or garbage trucks have been unreliable in some instances and areas, and that segregated trash (segregated by households) are later mixed anyway when it reaches the dump site.

Ideally, the collection and management of household waste should follow the processes illustrated in the Figure 2 below:

**Figure 2 :** ***(Untitled)***




Source: Materials Recovery Facility Tool Kit of ADB, 2013

A typical waste value chain shows the movement of wastes from households, markets, commercial establishments, offices and institutions and street sweepings. From generation, these are either collected and placed in temporary storages or transfer stations for non-recyclables, collected and recovered for recyclables or remains uncollected and ends up as litter, buried, or burned in the open. Some streams end up in Materials Recovery Facilities (MRFs) where mixed waste is sorted as biodegradables for composting, recyclables, and residuals for disposal. As for the recyclable part, it is unclear where the junk shops send out these recyclables. Some junkshops claim that these are bought from them by bigger junk shops or recycling centers. These may go to small recycling shops or even exported.

## 3. Food Production – Farming and Agricultural Activities

Food production and consumption, are two of the most crucial economic activities in any country. The basic food production unit is the farm, wherein the farming industry yields 16 million tons of biomass from rice, corn, coconut, sugar, and oil production.[82] The wastes generated by this sector include rice husk, corn cobs, coco coir, coconut shell, coconut husk, bagasse, and palm kernels. These biomasses, when left on their own to decompose, emit methane, one of the more potent greenhouse gases (methane has a global warming potential score of 28 to 36 compared to carbon dioxide). Carbon dioxide, in turn, is likewise a major contributor to greenhouse gases, registering 51.3 million tons of CO2 (32% of total CO2 in the country) equivalent has been generated by the agricultural sector in the Philippines in 2012.This figure includes farming and meat production or livestock farming with waste mostly coming from animal feces, which decompose and produce methane. Moreover, open burning of the agricultural production by-products is still the common practice in handling residuals in the farming sector; this impacts land quality due to ash after burning, water quality due to seepage to water tables, and air quality from the smoke and fumes from the burning.

There has been some progress in managing residual biomass by converting them to energy. Although, use of biomass in power plants and other small-scale electricity generation plants are gaining traction, its value as an alternative energy source is slowly being recognized by government and the private sector. In fact, as of December 2017, 55 and 24 projects have been awarded by DOE for biomass power plants for commercial and own use, respectively. These projects would generate potentially 363.45 MW of electricity. Rice mills in some areas generate their electricity for their own uses in their mills are starting to emerge, such as the Isabela Biomass Energy Corporation which is owned by two rice millers. The Isabela Biomass Energy Corporation has been generating and now supplying and selling approximately 35.6 million kilowatt hours of electricity to the grid. In addition, there is also the Bataan

[82]Shead, B. (2017, May 19). Biomass Industry in the Philippines. *ASEAN Briefing*. Retrieved from https://www.aseanbriefing.com/news/2017/05/19/biomass-industry-philippines.html

2020, a manufacturer of paper, board and tissue paper which is currently owns one of the bigger biomass power plants in the country.

## 4. Impacts of Waste on Human Health and the Environment

This sub-section describes the health and environmental impacts of waste discharge specifically through water and air pollution, and on land degradation. The primary effects of air pollution on health include breathing disorders, cardiovascular diseases, impairment of the neurological development and immune system, which the World Health Organization (WHO) as well as other international agencies has documented through the years. For water pollution, it is regarded as one main source of diarrhea and intestinal illnesses in the world, while land pollution has verified contribution to kidney diseases, cancers, and sterility and other reproductive disorders.

The environment on the other hand is affected by acidification and eutrophication of soil, crop damage, climate change on warming and cooling, impaired photosynthesis in plants, reduced plant growth and build-up of toxic substances in the food chain. Furthermore, harmful algal blooms, reduction in population in some species, disappearance of corals and other invertebrates, thyroid disorders in mammals, and disruption of local food chains.

## 5. Current State of Waste Generation and Management and the Environment

In the Philippines, waste management is now regarded as one of the most pressing issues especially because of high profile cases of accidents and landfill-related conflicts in recent times. It is the waste issue that has been the center of President Rodrigo Duterte's ire that caused the abrupt cessation of tourism operations in the world-renowned Boracay island, and led to the island's closure for half a year. Based on the statistics released by the Senate Economic Planning Office in November 2017, the Philippines generated 40,087.45 tons of waste in 2016. This is approximately 0.40 kg per capita of waste generated per day (Figure 3).

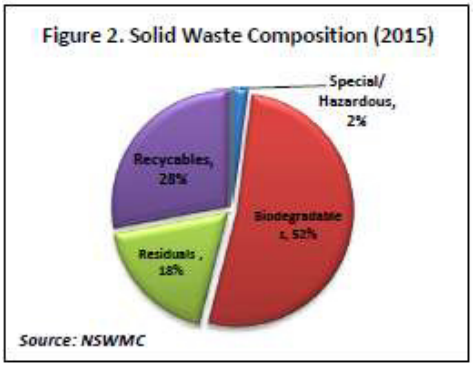
**Figure 3: Generated Wastes in the Philippines (2016)**

| Region | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| 1 | 1,709.17 | 1,739.54 | 1,769.90 | 1,800.27 | 1,830.64 |
| 2 | 1,100.64 | 1,120.19 | 1,139.75 | 1,159.31 | 1,178.86 |
| 3 | 3,631.99 | 3,696.52 | 3,761.05 | 3,825.58 | 3,890.12 |
| 4a | 4,145.52 | 4,219.18 | 4,292.83 | 4,366.49 | 4,440.15 |
| 4b | 909.43 | 925.59 | 941.74 | 957.90 | 974.06 |
| 5 | 1,878.74 | 1,912.12 | 1,945.50 | 1,978.88 | 2,012.26 |
| 6 | 2,700.14 | 2,748.11 | 2,796.09 | 2,844.06 | 2,892.04 |
| 7 | 2,605.68 | 2,651.97 | 2,698.27 | 2,744.57 | 2,790.86 |
| 8 | 1,479.47 | 1,505.75 | 1,532.04 | 1,558.33 | 1,584.61 |
| 9 | 1,391.95 | 1,416.68 | 1,441.41 | 1,466.15 | 1,490.88 |
| 10 | 1,693.94 | 1,724.03 | 1,754.13 | 1,784.23 | 1,814.32 |
| 11 | 1,818.05 | 1,850.35 | 1,882.65 | 1,914.95 | 1,947.26 |
| 12 | 1,348.20 | 1,372.15 | 1,396.10 | 1,420.06 | 1,444.01 |
| 13 | 884.69 | 900.41 | 916.13 | 931.85 | 947.57 |
| CAR | 620.64 | 631.67 | 642.70 | 653.72 | 664.75 |
| NCR | 8,601.60 | 8,754.43 | 8,907.26 | 9,060.09 | 9,212.92 |
| ARMM | 907.64 | 923.76 | 939.89 | 956.02 | 972.14 |
| **TOTAL** | **37,427.46** | **38,092.46** | **38,757.46** | **39,422.46** | **40,087.45** |

*Source: NSWMC*

Of this waste generated, 52% are biodegradable, 28% are recyclable, 18% are residual, and 2% are special/hazardous waste based on 2015 waste characterization (Figure 4). A lot of focus and direction can be aligned with these numbers.

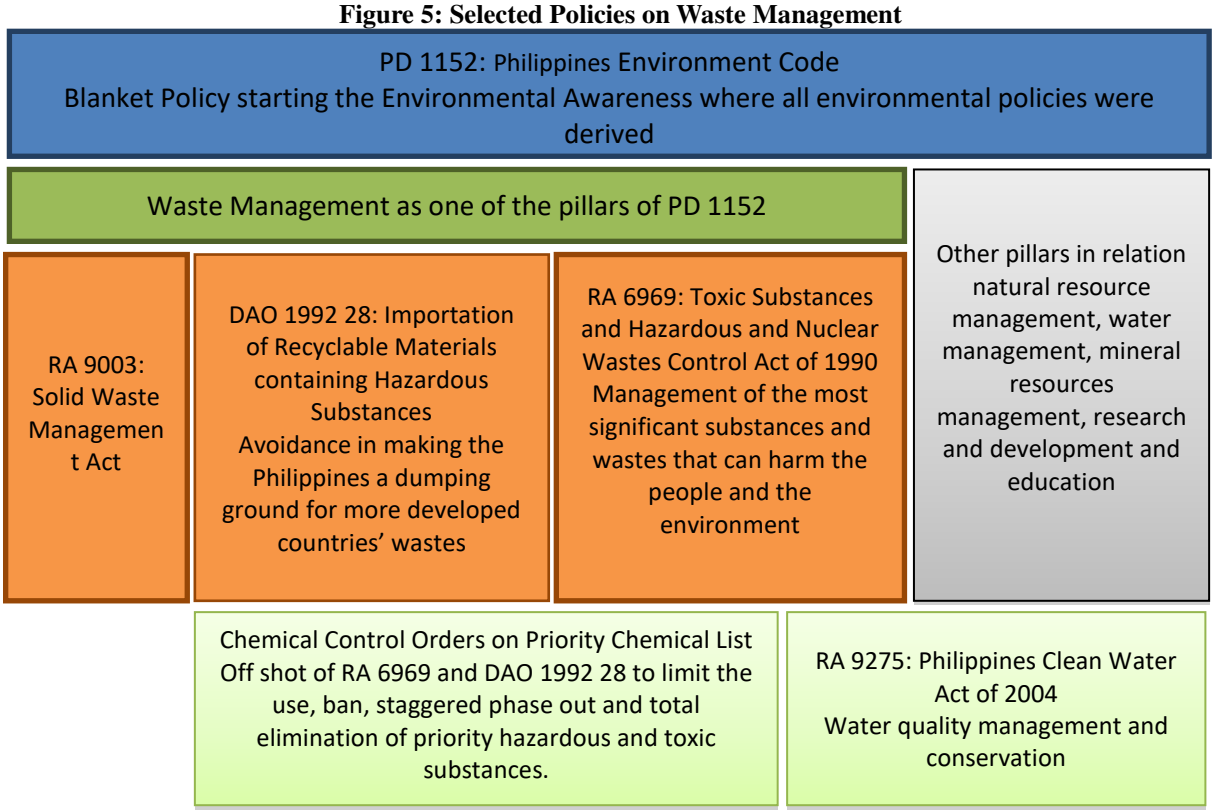
**Figure 4 : Solid Waste Composition**




## 6. Regulatory Framework for Waste Management

Creating laws and enforcing them are key drivers in ensuring sustainability in implementing changes in existing patterns and practices. As a whole, the Philippines has enacted a substantial number of policies, and programs in addressing waste management in general and some in very specific types of waste. Figure 5 below is a compilation of some key legislative efforts.

**Figure 5: Selected Policies on Waste Management**




The Ecological Solid Waste Management Act provides for guidelines and targets for municipal solid waste management with requirements on segregation, waste diversion and solid waste management plans for 10 years. The Toxic Substances and Hazardous Wastes Control Act sets ground rules for the private sector in consumption of harmful chemicals, monitoring of generated hazardous wastes, and the treatment and disposal of the hazardous wastes.

Other laws and regulations implemented in the country follow the international environmental conventions like the Basel Convention on the ban of importation of hazardous wastes, Minamata Convention on use and disposal of mercury and mercury compounds, Montreal Protocol for the ban in using ozone depleting substances, and others. Most of these, if not all, are not closely monitored and have delays in implementation.

It must be mentioned that equally important to the creation of these laws and regulations regarding waste disposal and management in the Philippines, are the strict implementation of these laws, and the monitoring or the progress (or non-progress) of the implanting these laws. Tied-in to this is the need for data and information on waste management and waste generation trends and behavior, which would be immensely useful in tracking the country's performance in waste management. Currently there are data that would be useful, although much more is needed. As of September 2018, the National Solid Waste Management Commission reports that out of 1,491 municipalities and 143 cities, 375 are still

operating illegal dumpsites. On top of this, 276 are still undergoing closure and rehabilitation, and 15 have been abandoned. Twenty percent (334) of all municipalities and cities have proper disposal with only 141 functional sanitary landfills. In addition to this, only 32% of the 42,036 barangays have access to materials recovery facilities (MRF). Currently, however, there are no data from NSWMC on the waste diversion rates, which is a very important piece of information. The only available data is from the Philippines Statistics Authority wherein Metro Manila has 46% waste diversion rate while other areas out of Metro Manila have 48% waste diversion rate.

## C. Sustainable Business and Lifestyle

This sub-section discusses the characteristics of the typical firm and the average consumer, and how these relate to the ideal situation where consumers and firms behave in a way that is consistent with sustainable consumption and production. We examine the gaps that exist and highlight possible policy strategies that target consumers and firms directly to achieve green consumerism and green production. This section also discusses the policy opportunities in the Philippines guided by the thematic areas specified by UNESCAP[83], and are consistent with the goal for sustainable lifestyle and sustainable business conduct. These areas are on: 1) sustainability reporting; 2) sustaining procurement and ecolabelling; 3) greening of MSMEs; 4) greening of retail/services sector; 5) sustainable tourism; 6) consumer awareness and information, and; 7) sustainability information.

### 1. The Filipino Consumers' Expenditure Pattern

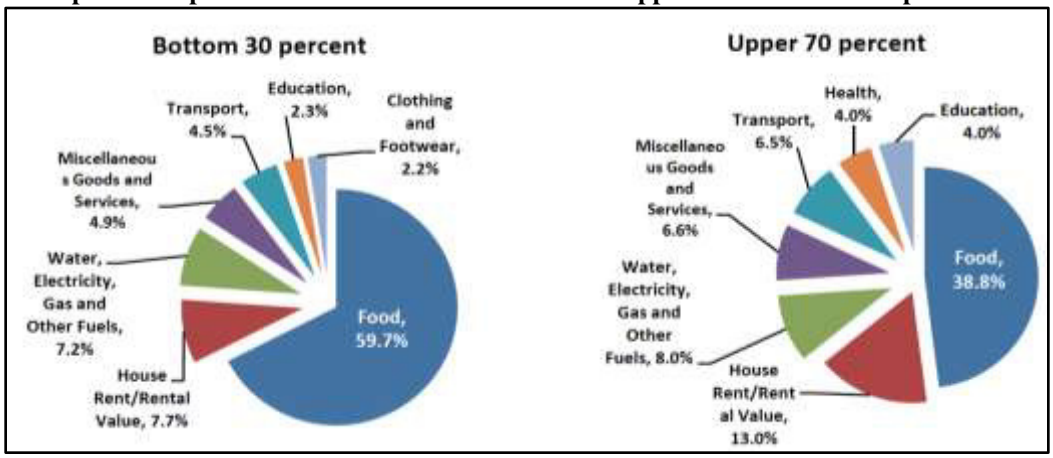
The report of PSA on the results of 2015 Family Income and Expenditure Survey (FIES) states that after controlling for inflation for years 2015 and 2012 using 2006 prices, the average annual family income in 2015 would be valued at PhP189,000, while the average annual family expenditure is at PhP152,000. In comparison, the average annual family income in 2012 was at PhP180,000 and the average annual family expenditure was valued at PhP148,000 thousand pesos at 2006 prices.

In terms of budget allocation, the figure below shows the expenditure pattern of the bottom 30 percent and upper 70 percent per capita income in 2015, and about 41.9% of the total annual family expenditures was spent on food. For families in the bottom 30 percent income group, the percentage was much higher at 59.7%, while for families in the upper 70 percent income group, it was 38.8%. Furthermore, other expenditure-heavy items are house rent/rental value and water, electricity, gas and other fuels. The PSA National Account report for Q1 2019 also shows that these same line items greatly contribute to the 6.3% growth of Household Final Consumption Expenditure (HFCE).

[83] Source: https://www.unenvironment.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency

The numbers in Figure 6 indicate that consumption spending is mostly on food and housing, with the poorest household spending more than half of their income to buy food. Unfortunately, the existing surveys such as FIES do not indicate if consumers are conscious with how they make use of resources, or if spending patterns results in sustainability. Nonetheless, a sustainable lifestyle of consumers can be greatly achieved if practices on the major spending groups are addressed.

**Figure 6: Expenditure pattern of the Bottom 30 Percent and Upper 70 Percent Per Capita Income Groups**




Source: PSA Family Income and Expenditure Survey 2015 Report.

## 2. The Trends in Consumerism in the Philippines

As pointed out previously, consumers are among the key elements of a vision for SCP, because businesses respond to the demand of the consumers as far as what they wish the characteristics of the good to be. There are instances when engendering consumer support **r**equires coercive tactics, as in the case of some Philippine cities that have introduced local ordinances that ban the use of plastic bags in groceries and in fast food establishments. Many large retailers now charge extra for plastic bags or have switched to the use of paper bags for customer purchases. Some food establishments also charge extra for plastic containers for takeout food. These are all designed to change consumer behavior.

Nudge tactics have been used as well. Government, business and civil society groups often use environment – related events – such as Earth Day (in April) and Environment Month (June)—to call attention to sustainable development issues, particularly environmental ones. Recyclable Collection Events (RCE), for example, are organized by LGUs, schools, communities, church groups and companies on or around Earth Day. The concept behind the RCE is to match waste producers (e.g. institutions and households) with legitimate recyclers so that waste materials (or what is traditionally viewed as household / office junk) that can still be recycled for their economic value are collected. These include paper, cartons, plastic PET bottles, ink cartridges, car batteries, old appliances and electronic equipment. Often, RCEs become integrated in the continuing internal waste management programs of companies and

schools. They also become sources of additional revenue (e.g. the concept of "Trash to Cash" or "Trash to Treasure").

The first large scale RCEs were jointly organized by the Ayala Foundation and the PBE in 2002, and continued over several years. These were complemented by "Trash Talk" seminars held at malls and RCE events. By 2006, almost P3million worth of recyclable wastes had been recovered through the RCEs, based on records of the PBE. [84] It is likely that recyclables collected independently by other RCE organizers were not captured by these records, especially those occurring in the regions. Today, the RCEs (which goes by different names such as "Waste Markets,' and 'Trash Fairs' ) have become mall – based events not just at Ayala Malls but also at SM malls, running the whole year round. Through these, licensed recyclers have gained access to important institutional sources of waste products that are used as inputs to their production processes.

Telecommunications companies like PLDT-SMART and Globe have also initiated mobile phone take – back programs to reduce the amount of hazardous electronic waste from indiscriminate disposal of old mobile phones and phone batteries. These programs also provide opportunities for educating mobile phone users on the harmful effects on the environment of junk electronic devices and batteries which, once collected by the telecommunications companies, are shipped to proper recycling facilities abroad.

Initiatives such as the "Sustainable Diner" program of the World Wide Fund for Nature-Philippines (WWF-PH) try to create awareness on the environmental impacts of the food industry and the need to cut down on food waste. It also campaigns for healthy and environment–friendly dining options. The program is funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety through its Climate Initiative. Realizing the enormity of the challenge of changing not just consumer behavior but also mindsets, WWF–PH adopts a multisectoral approach and works with many partners, among them, the Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI) which is helping to draft an Action Plan with policy guidelines and recommendations to achieve SCP in the food sector, and to review and reinforce the Green Choice Philippines' Food Service Criteria.[85]

Obesity as a lifestyle disease continues to afflict more people today because of food and lifestyle choices. Food nutrition is one important aspect of sustainable eating. The Department of Health (DOH) has its nutrition programs and DepEd directs public schools, for example, not to serve soda or "junk" food in their canteens, hoping to be able to break the habit of unhealthy eating that is frequently developed at school age. The private sector supports this effort by partnering with schools to conduct feeding

[84] Business and Environment Quarterly Magazine (second quarter 2006). The Philippine Business for the Environment.
[85] Establishing Low Carbon Consumption and Production in Thailand, Indonesia and the Philippines (SCP TIP). Project Briefing sheet.

programs, introduce micronutrient fortification programs and to include nutrition in the curricula of schools in the vicinity of poorer communities.[86]

To address the challenge of mobility, the Philippine government has developed a national transport policy with several strategies and goals that include, among others, stipulations to avoid unnecessary travel and reduce trip distance, to shift to more sustainable modes and to improve transport practices and technologies.[87] In addition, electric vehicles have also been introduced in some municipalities, such as e-Trikes and e-jeepneys, and pedestrian walkways have been constructed in two central business districts in Metro Manila.

Improving walkability and pedestrian facilities is also one measure to improve mobility with little carbon footprint, as it encourages more people to walk rather than to take a ride, especially if the distance to be covered is not that far. The Clean Air Asia, a Manila–based international nongovernment organization, worked with the ADB and the Fredkorpset to conduct walkability surveys in various Asian cities, including Metro Manila, Cebu and Davao. The survey used a methodology based on the Global Walkability Index developed by the World Bank, which includes a field walkability survey, pedestrian preference survey and a government policy and institutional survey. The survey provides an overview of the current pedestrian infrastructure and policies in selected cities and is useful for developing and proposing pedestrian focused solutions for Asian cities. The "walkability index" can help raise awareness and generate interest among policy makers and city officials and help them improve walking in their cities.[88]

## 3. Filipino Consumer Awareness and Education

Environmental Education (EE) has been defined as "the process of helping people, through formal and non-formal/informal education, to acquire understanding, skills and values that will enable them to participate as active and informed citizens in the development of an ecologically sustainable and socially just society. Through EE, the dangers of poor environmental management and the disadvantages that arise from environmental neglect and degradation are explained and good environmental practice is inculcated at the individual, organizational and community levels. It aims to make use of these knowledge and skills to preserve, conserve and utilize the environment in a sustainable manner for the benefit of present and future generations. EE, as a key integrating component of Education for Sustainable Development (ESD), also involves learning how to employ new technologies, increase productivity,

[86] Transformational Business (2017), pp 16 – 18.
[87] Environmentally Sustainable Transport (EST) in the Philippines. Reggie Ramos and Andrea Bernarte (2015) Department of Transportation and Communication. Presentation slides at the Nnth Regional EST Forum in Asia (Nov 17 – 20, 2015), kathmandu Nepal. Accessed December 12, 2018.
[88] Walkability studies in Asian cities. (2010). Clean Air Asia, Accessed December 12, 2018. http://cleanairasia.org/walkability-study-in-asian-cities-4/

avoid environmental disasters, alleviate poverty, utilize new opportunities and make wise decisions for a sustainable future. Furthermore, it involves the acquisition of skills, motivation and commitment to work individually and collectively towards the solution of existing environmental problems and preventing new ones." [89]

As a member of the ASEAN Working Group on Environmental Education (AWGEE) that oversees and coordinates the implementation of the ASEAN Environmental Education Action Plan (AEEAP) 2014-2018,the Philippines commits to work towards goals in four target areas, namely: integrating environmental education (EE) at all levels of the formal education sector (relative to national capacity and directives); integrating socio-cultural, economic and ecological knowledge in the non-formal sector through EE to address local, regional and international environmental issues and challenges; strengthening institutional capacities in EE; and networking, collaboration and communication through improved exchange of environmental information, skills and resources to support commitment for EE and ESD in the region and within the country.

Towards this end, the Philippines supports various national and international environmental events, around which government, the private sector, the academe and civil society organize activities and events to raise public awareness on environmental issues. Among these are National Zero Waste Month (January), World Wetlands Day (February 2), World Forest Day (March 31), Earth Hour (4$^{th}$ Saturday of March), Philippine Earth Month and International Earth Day (in April), etc. Messages during these events, can easily be tied up to SCP since, ultimately, they are all just different sides to the same issue, which is to live sustainably and improve quality of life.

The National Environmental Awareness and Education Act of 2008 (RA 9512) mandates DepEd, the Commission on Higher Education (CHED), the Technical Education and Skills Development Authority (TESDA), and the Department of Social Welfare and Development (DSWD) to coordinate with the DENR, the Department of Science and Technology (DOST) and other relevant agencies, to integrate environmental education in its school curricula at all levels, whether public or private, including in barangay daycare, preschool, non-formal, technical vocational, professional level, indigenous learning and out-of-school youth courses or programs.[90]

According to RA 9512, EE encompasses environmental concepts and principles, environmental laws, the state of international and local environment, local environmental best practices, the threats of environmental degradation and its impact on human well-being, the responsibility of the citizenry to the environment and the value of conservation, protection and rehabilitation of natural resources and the

[89] AEEAP 2008-2012, p7. :

[90] National Environmental Awareness and Education Act of 2008 (Republic Act 9512). Accessed Dec 3, 2018. https://www.senate.gov.ph/republic_acts/ra%209512.pdf

environment. The DENR is responsible for informing all agencies concerned on current environmental updates, including identifying priority environmental education issues for national action and providing strategic advice on the environmental education activities. Together with the DepEd, CHED, TESDA, DENR, DOST, DSWD and barangay units, it shall ensure that the information is disseminated to the subject students."[91]

As part of the National Environmental Education Action Plan for Sustainable Development (NEEARSD), which is the main national action plan for environmental education in the Philippines, the DOST creates programs that ensure that students receive science-based quality information on environmental issues to encourage the development of environment-friendly solutions, devices, equipment and facilities. Theoretical and practical EE modules are also currently being implemented (such as tree planting, waste minimization, segregation, recycling, composting, fresh water and marine conservation, forest management and conservation)

In 2002, the Environmental Management Bureau (EMB) commissioned the University of the Philippines to conduct a survey on the implementation of EE in selected schools nationwide. The aim of the survey was to gauge the extensiveness of the DENR's EE campaign, and the effectiveness of its in-service training program for educators and school administrators in elementary and high school levels. Using both qualitative and quantitative methods, the survey evaluated the level of integration of (EE) in the core statements of six schools and assessed the competencies of the teachers to become effective environmental educators. It also assessed the environmental literacy of the students of the EE-trained teachers in these respective schools. Among the survey findings were the following: lack of training (for educators) and financial support for EE programs. Suggested solutions included solicitation for financial aid and the conduct of intensive EE information campaigns/training regarding EE.EE, basing on the data gathered, is evidently incorporated in each of the school's' s policy, as well as being integrated by teachers into the subjects being taught. However, the schools differ in implementation and operation of the said policy and it was recommended EMB should make EE trainings available to more school administrators, and should intensify their efforts to spread EE through linkages and provisions for a more widespread information and educational campaign.[92]

Technical assistance for sustainability education was recently provided by the EU-funded SWITCH-Asia Policy Support Component (PSC) for the Philippines Project, to the DENR and the Department of Education (DepEd). The latest activity aims at strengthening the existing environmental education programme for schools at the primary, secondary and tertiary levels, with reference to SCP and

[91] Ibid. p3

[92] Industry Environews, (2002). Environment Management Bureau–DENR. Accessed Dec 3, 2018. http://emb.gov.ph/wp-content/uploads/2015/12/environews4thQ.pdf pp 2 and 7.

its links to the socio-cultural aspects of education.The project will also provide policy level recommendations to the NEEAPSD, as well as guidelines, checklist and evaluation criteria to the National and Regional Search for Sustainable and Eco-Friendly Schools programme (NRSSEFS), an existing bi-annual national level school campaign covering primary, secondary and tertiary level education. Targeting the NEEAPSD and NRSSEFS as the main policy instruments for school campaigns will ensure scaling up and mainstreaming of efforts beyond a few ad-hoc school-level campaigns.

This new component will support the Environmental Education and Information Division (EEID) of the Environmental Management Bureau-Department of Environment and Natural Resources (EMB-DENR) in the following specific areas:

1. SCP, covering existing government policy initiatives supported by SWITCH-Asia in themes such as green procurement, clean energy (energy efficiency and biofuels) and clean air and linking these themes to day-day life of students and behavioral change.

*2.* Socio-cultural sustainability, including cultural inclusivity, social values and drivers for environmental sustainability and gender considerations (e.g., gender sensitive approach, messaging, gender impact, gender equality and gender differentiated monitoring). Proposed outcomes of the PSC work on education include a mini desk study on national status and international practices of integrating SCP and socio-cultural sustainability in education, two Policy Briefs to strengthen SCP and socio-cultural sustainability in the NEEAPSD and a set of dedicated capacity building and communication initiatives.[93]

## 4. Sustainable Consumption Through Education and Lifestyle Change

This sub-section looks at the status of under-consumption but on the other hand, the rising consumer classes and their very high consumption levels in the Philippines. This looks at the challenges and opportunities in the Philippines to preserve traditional and sustainable Filipino practices and norms and to guide the transition on consumption attitudes and behaviors, considering the increase of the new consumer class, towards sustainable consumption and lifestyle change through policy settings and frameworks that supports environmentally-friendly and socially just products and services. This can happen through eco-labelling, sustainable public procurement, education, subsidies and information campaigns, support for innovations of sustainable products and services, which are all areas in which government intervention will be of great importance.

[93] https://www.switch-asia.eu/news/strengthening-environmental-and-scp-education-in-the-philippines/

## 5. Sustainable Business Conduct and the Filipino Firm

Due to the wide variety of activities, it is quite difficult to summarize the characteristics of Filipino firms. The data, however, say that most business activities are concentrated in manufacturing, with services next and agricultural production last. It is fair to say that the business conduct in general—much less sustainable business conduct—would be difficult to define and describe, although there are specific developments in the different business sector and segments that could provide the reader an idea of what the trends are in terms of firm behavior. In this section, these trends are discussed, alongside general observations regarding initiatives that encourage sustainability and sustainable business behavior.

Sustainable business conduct should go alongside the 2014 Investment Priorities Plan (IPP) of the Philippines, which pushes for the resurgence of the manufacturing sector for the creation of more jobs. This includes the promotion of higher value adding activities and deeper MSMEs integration of MSMEs in the supply chains. Note that MSMEs take about 99.56% of the count of total establishments[94], and 66.8% of total employment, with wholesale and retail trade as the top industry.

On the side of large corporations, conglomerates such as SM Investments, JG Summit Holdings Inc. and Ayala Corporation hold top places in Forbes 2017 Global 2000: World's Largest Public Companies. These groups are known to venture in wholesale and retail trade, as well as real estate.

Aside from the industrial sector, sustainable practices should also be monitored on the agriculture and service sectors to maintain high value-adding practices. Each sector faces challenges given the changes in the global market, such as the need to catch up with digital literacy for the service industry, and the reassessment of the local agriculture industry based on the country's comparative advantage (*i.e.*, possibility of switching to agro-processing industry[95]).

At this point, it is uncertain how sustainable business conduct plays in the national plans and challenges faced by the different sectors. Two issues come to mind—one is that goals are growth-driven and are not constrained by sustainable practices. Another is the lack of monitoring on the level of sustainability of corporations in the Philippines. What comes nearest is the mandatory sustainability reporting of SEC which is only required from publicly-listed companies (PLC) and has only started in 2019. It is not yet clear how the set of reports can be used in monitoring sustainable practices, and how reports can be extracted from non-PLC's such as the MSMEs. This implies a wide opportunity in policy to address the side of production in SCP.

[94] As of the 2017 List of Establishments report by PSA
[95] Citing the policy recommendation in Bayudan-Dacuycuy, C. and Serafica, R. (2018)

## 6. Green Business/Sustainable Business Performance Reporting

According to a 2017 KPMG survey on Corporate Reporting (CS) and sustainability reporting, "the SDGs have resonated strongly with businesses worldwide in less than two years since their launch. Around four in ten CR reports from both N100and G250 companies make a connection between the company's CR activities and the SDGs, an indication that the SDGs will have a growing profile in CR reporting over the next two to three years."[96]

There has also been an increase in sustainability reporting, (also known as environment, social and governance reporting) that describes business activities along the triple bottom line--financial, social and ecological. Not too long ago, only a few organizations and companies felt that it was important to gather and disclose information about their operations and its impacts, but today more and more of them are realizing that sustainability reporting will not only provide them with knowledge necessary to reduce their use of natural resources, increase efficiency and improve their operational performance, but also increase shareholder value and improve their social capital. It also results in greater transparency about business performance. The GRI Sustainability Reporting Standards are the most widely adopted global standards for sustainability reporting. Reporting with the GRI Standards enables companies to "…*protect the environment and … thrive economically by improving governance and stakeholder relations, enhancing reputations and building trust*."[97] The GRI recorded that in 2017, some 7% of publicly-listed companies or 23 of the 263 listed companies in the Philippines, which comprise at least 35% of the market capitalization in the Philippine Stock Exchange, have issued Sustainability Reports.[98]

Sustainability Reporting in the Philippines is generally voluntary. In July 2018, however, the Securities and Exchange Commission (SEC) prepared draft guidelines for mandatory SR for publicly listed companies in fulfilment of Principle 10 of the Code of Corporate Governance which requires the disclosure of materials pertaining to reportable non-financial and sustainability issues. Recommendation 10.1 of the code asserts that "…*the Board should have a clear and focused policy on the disclosure of non- financial information, with emphasis on the management of economic, environmental, social and governance issues of its business, which underpin sustainability. Companies should adopt a globally recognized standard/framework in reporting sustainability and non-financial issues*."[99] The Guidelines build upon four globally accepted reporting frameworks, namely the GRI, the International Integrated Reported Council (IIRC)'s Integrated Reporting Framework, the Sustainability Accounting Standards of the Sustainability Accounting Board (SASB), and the recommendations of the Task Force on Climate–

[96] The Road Ahead, The KPMG Survey of Corporate Responsibility Reporting 2017. Accessed Dec 3, 2018. www.kpmg.com/crreporting
[97] Global Reporting Initiative. Accessed Dec 3, 2018. https://www.globalreporting.org/Information/about-gri/Pages/default.aspx
[98] GRI Sustainability Summit - Together towards a Sustainable Philippines, 8 October 2018, Conrad Manila, Pasay City, Philippines. Accessed Dec 3,2018. https://www.globalreporting.org/information/events/philippines/Pages/default.aspx
[99] Code of Corporate Governance (2016). Principle 1. Recommendation 10.

related Financial Disclosure (TFCFD). Consultations are still being conducted at the time of this writing, prior to the finalization of the guidelines. For the reader's reference, the Sustainability Reporting framework has the following structure:

**Table 4: Sustainability Reporting Framework for mandatory Sustainability Reporting of publicly listed companies in the Philippines[100]**


Source: 2016 Code of Governance

## 7. Sustainable Procurement and Ecolabelling

Sustainable procurement, also known as green procurement or green purchasing is "…the process of making purchasing decisions that meet an organization's needs for goods and services in a way that benefits not only the organization but society as a whole, while minimizing its impact on the environment. This is achieved by ensuring that the working conditions of its suppliers' employees are decent, the products or services purchased are sustainable, where possible, and that socioeconomic issues, such as inequality and poverty, are addressed."[101]As mentioned earlier, the government's GPP program was recently launched in 2017, noting that since it is the single largest purchaser in the country, it could very well lead the country toward the adoption of sustainable procurement by creating a large demand (albeit, single) for environmentally friendly and sustainable goods.

The ISO 20400 guidelines have defined the standard and principles of sustainable procurement, including accountability, transparency, respect for human rights and ethical behavior, and highlights key considerations such as risk management and priority setting. It also covers various stages of the procurement process, outlining the steps required to integrate social responsibility into the purchasing function. Since ISO 20400 provides guidelines, not requirements, it cannot be used for certification

[100] Source: Securities and Exchange Commission. SEC Notice on draft Sustainability Reporting Guidelines and Reporting template for publicly listed companies. July 12, 2018

[101] Sustainable Procurement. ISO. Accessed Dec 3, 2018. https://www.iso.org/files/live/sites/isoorg/files/store/en/ISO%2020400_Sustainable_procur.pdf

purposes.[102] It is not clear, though, how many companies in the Philippines use ISO20400 guidelines for their procurement practices. But many (especially the multinationals), by their own account, are integrating sustainable procurement in their operations, as part of greening their supply chains (GSC). GSC is also known as Supply Chain Environmental Management (SCEM) and refers to the integration of a company's environmental policies and goals into its supply chain and by involving its suppliers and business partners in efforts to modify products and processes that create waste and cause pollution.[103] It refers to "a variety of approaches through which companies work with their suppliers to improve the environmental performance of the products or manufacturing processes of the supplier, customer or both".

Through GSC programs, companies ensure that their suppliers meet their own environmental standards, can operate more efficiently, are in compliance with environmental laws and, in some cases, are even able to pass on their cost savings to their employees. Many MSME suppliers in the Philippines are benefitting from such initiatives of large company clients, who regard them as genuine business partners with shared stakes in the satisfaction of customers and the public image of their final products and services. Some of these companies provide their business partners with guidance and technical assistance for the adoption of environmental management systems as a strategy for strengthening their own operations through improved efficiency, cost savings (e.g. from energy efficiency, water efficiency and waste reduction; and environmental compliance). At the same time, this generates more secure employment for the employees of suppliers and retailers.

In partnership with the Japan–based International Green Purchasing Network (IGPN), PBE implemented GBGPP in 2010. The program aimed to accelerate the adoption of Green Procurement and to develop the capacity of green procurement professionals of companies in the Philippines. With support from the Japan Fund for the Global Environment (JFGE) of the Environmental Restoration and Conservation Agency, the PBE and IGPN designed a program that would respond to the needs of Philippine companies to become more aware of the value of natural resources for the manufacture of goods and products, in particular of water/energy efficient products, encourage the integration of environmental criteria in purchasing decisions, and assist companies to develop their own green procurement policies and/or programs to cut carbon and cut costs. Eighteen (18) companies participated in the Program which consisted of Green Procurement Seminar/Integrated Seminar on Water and Energy Resources and Water/ Energy Efficient Goods and Services, Exposure Visits to companies or organizations with well–established green procurement programs and/or greening the supply chain programs, Integration Exercise for the practical demonstration by participants of their learnings from the

[102] Sustainable Procurement. ISO. Accessed Dec 3, 2018.
https://www.iso.org/files/live/sites/isoorg/files/store/en/ISO%2020400_Sustainable_procur.pdf
[103] Supply Chain Environmental Management (SCEM) Manual (2010). Philippine Business for Social Progress, p 11.

seminar and exposure visits and a Green Products and Services Directory listing in the Business and Environment Magazine.[104]

Product ecolabelling programs also complement GSC and GPP programs. The impetus for ecolabelling in the country is found in EO 301, which itself derives its legal basis from the Philippine Solid Waste Management Act (RA 9003), which also declares under Article 4, section 27, "a requirement on ecolabelling" and which states that "the Department of Trade and Industry shall formulate and implement a coding system for packaging materials and products to facilitate waste recycling and reuse." Towards this end, a National Ecolabelling Program Board (ELPB) was convened to develop criteria for green products, and to process applications for and awarding of green product ecolabels in compliance with international guidelines. The PCEPSDI serves as the secretariat to the ELPB, and also acts as the Administrator of the National Ecolabelling Programme–Green Choice Philippines (NELP – GCP).

The National Ecolabelling Program (*i.e*. Green Choice Philippines) mentioned earlier is critical to the successful adoption of a green procurement program since it provides purchasers with a ready basis for identifying green products that have been independently verified, rather than having to screen products themselves or to rely only on manufacturers' claims. The NELP is one among about 40 similar country–specific programs in the world. Ecolabelling refers to the practice of labelling products and services based on a wide range of environmental considerations (*e.g.* hazard warnings, certified marketing claims, and information disclosure labels). It aims to "…encourage the demand for and supply of those products and services, through communication of verifiable and accurate information that is not misleading on environmental aspect of the products and services, that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement."[105] It is based on life cycle considerations, meaning how the product was extracted, produced, will be used and how it is disposed.[106]

Thus far, the NELP-GCP has already awarded the Seal of Approval to 49 products, and has developed environmental standards for 40 product categories. In 2009 it launched the Green Purchasing Alliance Movement (GPAM) with around 124 organization members (from government and private sector) to help promote green purchasing and patronize environment-friendly products and services. One of its most important allies in this regard is the Philippine Institute for Supply Management (PISM) which initiated a Search for Best Practices on Green Procurement among its members. The PCEPSDI has also

[104] (1) Business and Environment Magazine (Fourth Quarter, 2010; and First and Second Quarters 2011). The Philippine Business for the Environment. (2) Illustrative stories of GSC and green procurement can be found in *Transformational Business*, published by the PBE and the UNDP. (3) Transformational Business – Philippine Business Contributions to the UN SDGs (2017). Philippine Business for the Environment and the United Nations Development Program, pp 53, 74, 76.

[105] Alvarez, J. (n.d.). NATIONAL ECOLABELLING PROGRAMME GREEN CHOICE PHILIPPINES A Sustainable Consumption and Production Initiative. Retrieved October 12, 2019, from https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-manila/documents/presentation/wcms_162773.pdf.

[106] ISO 14020 (1998). Accessed Dec 3, 2018. https://www.iso.org/standard/24313.html

published a local directory of locally available eco-friendly products and services targeting institutional buyers, and ventured into developing criteria for the value chain of the food service industry and for the tourism industry focusing on criteria such as food and health safety, waste management, water and energy efficiency, occupational health and safety. [107]

## 8. Greening of Micro, Small and Medium Enterprises

MSMEs, as defined by the DTI as follows: (1) micro-enterprises are establishments with less than 10 employees and less than P 3 million in assets; (2) small enterprises have less than 100 employees and less than 15 million in assets, and; (3) medium enterprises have 100–199 employees and less than 100 million in assets. The top five MSME categories were: (1) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; (2) Accommodation and Food Service Activities; (3) Manufacturing; (4) Other Service Activities; and (5) Financial and Insurance Activities. Combined, they accounted for about 82.5% (i.e. 39, 925) of the total number of MSME establishments.[108]

Many MSMEs are operate not necessarily to make profits, but to provide sources of income to the poor and those who are not able to get enough wage employment.[109] They can survive by becoming suppliers of large enterprises, which in turn create opportunities for them to develop sustainable production practices as part of the value chain—especially if they are able to access assistance to credit and technology as conditions for improving resources management in their operations. Many opportunities for cost savings and increased productivity have become available with increased energy efficiency, waste minimization and cleaner production practices, which also help them avoid being penalized for violations of environmental laws.

The DENR, through its PEPP, has been assisting small to medium size establishments to comply with the existing environmental regulations within a specific time-frame, to improve their environmental performance, and to prepare their Environmental Management Plans (EMPs), which is a documentary requirement for inclusion in the program.[110] Regulatory privileges and assistance such as relaxation of reportorial requirements, simplified requirements for securing an Environmental Compliance Certificate, longer validity of permits and flexible payment schemes are also offered under the PEPP. (See sidebar). Among those targeted by the PEPP are Quick Service Restaurants (QSRs) and small resorts.[111]

[107] www.pcepsdi.org.ph
[108] https://www.dti.gov.ph/dti/index.php/2014-04-02-03-40-26/news-room/179-workshop-on-market-access-for-MSMe-set .
[109] International Labour Organization (ILO) (2015). Small and medium-sized enterprises and decent and productive employment creation. Report (IV) submitted to the International Labour Conference, April. Retrieved on Nov 30, 2018. http://www.ilo.org/ilc/ILCSessions/104/reports/reports-to-the-conference/WCMS_358294/lang--en/index.htm
[110] http://pepp.emb.gov.ph and http://pepp.emb.gov.ph/wp-content/uploads/2017/04/PHILIPPINE-ENVIRONMENT-PARTNERSHIP-PROGRAM-PEPP-Catalyst-for-Holistic-Environment-Partnership.pdf
[111] http://pepp.emb.gov.ph/wp-content/uploads/2017/07/Article-for-the-La-Union-Travel.pdf

The DTI, for its part, has partnered with the *Deutsche Gesellschaft fürInternationale Zusammenarbeit* (GIZ) GmbH to integrate Green Economic Development (GED) in the industry sector policies of the Philippines, and has developed a Greening the Industry Roadmap and adopted "Green Framework" conditions for its programs. It seeks to propel climate-smart, environment-friendly, and globally-competitive industries, particularly in six manufacturing sectors of the Philippines: Automotive Manufacturers, Auto Parts Industry, Pulp and Paper Industry, Plastic Industry, Housing Industry, and Furniture Industry.

For its MSME Development Plan 2017-2022, the DTI envisions more globally competitive, regionally integrated, resilient, sustainable, and innovative MSMEs. It considers impacts of climate change as a challenge and at the same time an opportunity to promote and strengthen MSME competitiveness. Under this strategy MSMEs are made aware of new developments related to a green economy, including the opportunities for green markets and linkage to green technology suppliers; and are assisted to implement environment-friendly and climate-smart processes and practices to reduce production costs, produce green products and services, and prepare for the impacts of climate change.

The DTI specifically targets MSMEs for climate related activities through projects such as the (1) Promotion of Green Economic Development (ProGED) Project, and the (2) Acceleration of Green Economic Development (AccGED) Project. Both projects are jointly undertaken with GIZ. Using the value chain approach, ProGED seeks to prepare MSMEs for the effects of climate change through the adoption of environment-friendly methods, strategies to avert the detrimental effects of climate change and sustainable natural resource use. Implemented from Jan 2013 to December 2016, ProGED successfully engaged 23,157 MSMEs from more than 8 regions in its Green Growth sensitization / learning events; conducted 97 business matching events between green service providers and / or green technology suppliers and MSMEs, resulting in 434 MSMEs availing of green business development services and / or adopting green technologies and 645 MSMEs greening their operations. AccGED, which was implemented from 2015 to 2017, supported DTI regional and provincial offices to sustain the momentum of ProGED, and assisted the DTI to integrate the green economic development approach in its Staff Performance Management System and strategic planning process.[112]

Additional examples of efforts to assist Philippine MSMEs to adopt sustainable business practices are theGreen Philippines Project and the Green Philippines Islands of Sustainability (GPIoS) Project implemented as part of the European Union – funded SWITCH-Asia Programme. SWITCH–Asia[113]

[112] Source: BSMED SCP Related projects. Nov 2018. (internal document)
[113] The Philippines has been selected as one of the pilot recipients of technical assistance under SWITCH Asia II – Policy Component to further strengthen the development and implementation of national SCP policies. Specifically, SWITCH Philippines focuses on three core areas: Clean Energy, Green Procurement and Eco-Labelling, Cross Cutting SCP matters with focus on Clean Air legislation.

covered 19 countries with the aim of strengthening SCP policies and raising awareness in the region through policy support and advocacy, capacity building of government officials and other key stakeholders, and enabling adoption of cleaner technologies and practices – particularly in MSMEs. SCP practices supported by SWITCH – Asia are summarized below in Figure 7.

**Figure 7: SCP Practices Supported by SWITCH-Asia**


Source: https://www.switch-asia.eu/programme/

## 9. Greening of Retail/Service Sector

The Green Philippines project, which ran from 2006–2009, assisted about 30 companies from the Pampanga, Subic, and Clark regions, in switching to greener technologies and lower their carbon footprints. The GPIoS extended project coverage to an additional 30 companies in Metro Manila and the CALABARZON region, transferring know-how through training workshops and coaching from European experts from the Center for Appropriate Technology (GrAT) in Austria, combined with a system of quality assurance and monitoring. It used the "Eco–Profit" approach, which borrows from the concepts and tools of cleaner production, but focused primarily on generating no- cost/ low – cost options to reduce pollution levels and increase resource efficiency, and measuring/reporting not only environmental but also financial returns. Part of the program strategy was also to building capacity of companies to cascade the tools and know how to their suppliers and business partners; as well as to capacitate local consultants to sustain technical assistance to interested companies during and after the program.[114]

In the Philippines, retail sales continue to be a major driver of the country's economy. In 2016, retail establishments were estimated at 417,514, comprising 46.34 % of micro, small and medium

[114] Green Philippine islands of Sustainability- Project Brochure

enterprises.[115] They are usually home- based and unregistered operations with less than 10 employees, and the bulk are in the food retail business. The growing popularity of on – line shopping has also resulted in more retailers, many of whom are unregistered businesses, offering a wide–range of products and services through the internet. Large foreign retail outlets such as S&R, Landers, (Dutch) Makro, and (British) Tesco have also entered the Philippine market. However, the major players in the retail market continue to be the SM Supermalls, the Rustan's Group of companies and the Robinsons malls.

In 2009, the SM malls launched their Green Retail Agenda Program as a component of its Environment Program, to raise awareness among its business partners and mall tenants about environmental impacts of business, climate change, and environment laws and to share best practices. As part of the GRA, SM also launched its SM Supermalls Green Bag Project with the reuse and recycling principle in mind. Its customers were (and continue to be) encouraged to use SM's eco-friendly "Green Bag" when shopping at the SM Malls. At present, almost all the major malls have their own ecobag versions and provide incentives to shoppers who use them, or otherwise charge the cost of plastic bags to shoppers who do not bring their own.

## A Case of Sustainable Business Practices: Sustainable Tourism (BOX)

Executive Order (EO) No. 111 dated June 17, 1999 laid the foundation for an integrated national plan for ecotourism in line with the government's effort to promote sustainable development and in recognition of the important role of tourism in national economic development. It defined *Ecotourism* as a low-impact, environmentally-sound and community-participatory tourism activity in a given natural environment that enhances the conservation of biophysical and cultural diversity, promotes environmental understanding and education, and yields socioeconomic benefit to the concerned community. *Sustainable tourism* is a model form of economic development that is designed to improve, the quality of life of the host community, provide a high quality of experience for the visitors, and maintain the quality of the environment on which both the community and the visitors depend.[116] In both these definitions the importance of benefits and/or livelihoods to communities is emphasized, but the latter definition goes a little further by emphasizing also the need to ensure a "high quality experience" for the tourist/visitor.

As an offshoot of EO 111, the Philippine National Ecotourism Strategy[117] was launched in 2002 to strengthen the partnership between the DENR and the DOT noting the emergence of several ecotourism initiatives and success stories that could benefit from better coordination and support from

[115] List of establishments in 2016. Philippine Statistical Authority. Accessed Dec 3, 2018https://psa.gov.ph/content/psa-gives-green-light-conduct-2016-updating-list-establishments.
[116] Executive Order No. 111. June 17, 1999. https://www.officialgazette.gov.ph/1999/06/17/executive-order-no-111-s-1999/
[117] National ecotourism strategy and action plan2013 – 2022. Biodiversity Management Bureau. www.bmb.gov.ph/downloads/Presentations/NES%20and%20DAO%202009-09.pdf

government. In Year 2022, the target tourist arrivals under the National Tourism Development Plan 2016–2022 are 12 million international visitors and 89 million domestic travelers; such process is expected to create employment for 6.5 million Filipinos. While economically beneficial to the country, this ecotourism boom does not come without serious costs. The recent closure of and/or restricted access to popular tourism destinations now under severe environmental pressure--such as Mt. Banahaw in Quezon, Mt. Makiling in Laguna, Mt. Pulag in Benguet, Mt. Apo in Mindanao and the high-profile closure of Boracay island and pending closure of coastal destinations in Palawan – are all cases in point. Strong enforcement and concerted efforts are needed to ensure that a sustainable balance is achieved in pursuing the tourism goals of the country. Some examples are described below:

The Zero Carbon Resorts project is a four year project began in 2010 to help MSME companies in the tourism industry such as hotels, resorts and restaurants located in the area of Palawan, to switch from a reliance on fossil fuel to the use of renewable energy sources and green technologies, while at the same time enhancing profitability. The cumulative impact will be to reduce the carbon footprint of the tourism industry. The project is funded by the European Union´s SWITCH Asia program to promote SCP with support from the German Federal Ministry of Environment, the International Climate Initiative Programme, Nature Conservation and Building and Nuclear Safety (BMUB), The local implementing partners include *Gruppe zur Förderung der Angepassten Technologie* (Center for Appropriate Technology, or GrAT), the Philippine Green Building Council (PhilGBC), Palawan Council for Sustainable Development (PCSD), *Centro de Investigaciones Energéticas, Medio ambientales y Tecnológicas* (CIEMAT) and Asia Society for Social Improvement and Sustainable Transformation (ASSIST).[118]

Aside from assisting close to a thousand mostly small & medium establishments, Zero Carbon Resorts project also published a Green Technologies Catalog[119] of locally available environmentally sound technologies and conceived of the *Anahaw* Philippine Sustainable Tourism Certification launched in 2016 to recognize accommodation establishments in the Philippines that successfully reduce both their environmental impacts and operational costs while targeting a growing new market of green tourists and travelers.

Early this year, the PCSD and GrAT convened a National Policy Forum on Sustainable Consumption and Production in the Tourism Sector in Manila. Participants from the national government, including the DOT, LGUs from different provinces of the country, and private hotel and resort sector entrepreneurs, assessed existing tourism policies in the Philippines, the policies in the LGUs, and gaps

[118] Zero Carbon Resorts . ZCR-New-Brochure_combined_21Septeber2017.pdf
[119] ZCR2-Green Technologo Catalog-Philippines_05052017_updated_jp.pdf

and barriers and other relevant issues from data gathered from Palawan project experiences. The event also discussed how to institutionalize SCP policies at the local level.

Another initiative is the UN–assisted project on Transforming Tourism Value Chains [120]to promote resource efficient low–carbon tourism in developing countries. In the Philippines, the implementing partners are the DOT, PCEPSDI, Philippine Hotel Owners Association, EMB–Climate Change Office, the Climate Change Commission and the Philippine Association of Convention/ Exhibition Organizers and Suppliers, Inc. The project recognizes that for a genuine shift of the tourism sector to SCP, a shift must also happen across the entire value chain. It targets to reduce GHG emissions and increase resource efficiency in at least 50 businesses in Metro Manila and Iloilo City. Project activities are centered on developing action frameworks with specific indicators, implemented to mitigate GHG emissions and improve resource efficiency in the targeted value chains; and capacity building for local institutions to help implement the action frameworks.

This year, the DENR-Ecosystems Research and Development Bureau (DENR-ERDB) launched its ecotourism tracking tool, to help monitor and evaluate how 'green' an ecotourism site really is. The intent is to use the tool to audit 32 ecotourism sites around the country y, based on parameters such as operations and management, socio-cultural value, ecotourism products and services, economic benefits, financing or enterprise building, and biological facilities.[121]

[120] Transforming Tourism Value Chains. Philippine Center for Environmental Protection and Sustainable Development, INC (PCEPSDI). http://pcepsdi.org.ph/projects/transforming-tourism-value-chains/

[121]http://erdb.denr.gov.ph/2018/05/28/ecotourism-tracking-tool-in-monitoring-and-evaluation-of-ecotourism-sites-or-projects-in-the-philippines/

# Part 5: Moving Forward Toward Crafting a Sustainable Consumption and Production Action Plan

As discussed in the beginning of this report, one of the major expectations in writing this study is that it would feed into the creation of a draft strategic action plan that, after it has been vetted with the different experts in the three themes and stakeholders, could be feasibly rolled-out as part of the country's development plan. All the topics discussed in the different sections of this report were picked in order to aid in the formulation of the strategic action plan. The crafting of the strategic action plan itself is beyond the scope of this report, but the aspects that should be included—either as a consideration or part of the action plan itself—are highlighted here, and will be discussed, albeit, in broad strokes only.

Based on the information collected and discussed in the previous sections, thefirst step in designing the national policy for SCP would be to understand the objectives of each economic agent and to marry those private objectives with social welfare. Sustainable consumption and production are basically the economic activities of two agents, consumers and firms respectively, and as such, the first logical step in crafting the SCP action plan is to understand and characterize how each of these agents decide on what to consume (for the consumers), and what and how to produce (for the firms) what the consumers desire. The SCP objective for consumers is for them to have sustainable lifestyles leading to green consumerism, and for producers to practice sustainable business conducts. These goals will eventually lead to mapping out the effective incentives for each agent, where policy enforcement is possible.

To mainstream SCP, however, requires that not only the consumers and firms to participate and cooperate, but also to engage other sectors and institutions in society that interact and influence the behavior of the two. These would include civil society, local government and national agencies, as well as the academe and other non-government agencies. Perhaps, among all of these stakeholders, however, it is government—both local and national—that have the largest role and influence in shaping society toward sustainable activities and behavior. But while government would be the natural "leader" and "enabler" for the mainstreaming of SCP in the country, the other sectors of society play key roles as well. The next section discusses the role of these stakeholders in rolling-out SCP in the country.

## A. Sharing the Responsibilities: Mapping of the Stakeholders that Contribute to Sustainable Consumption and Production in the Philippines

The section is focused on the identification of government stakeholders both in the national and local levels, and the mapping of interlinkages and thus sectors/agencies involved, as well as the other sectors in society that would play important roles creating a "green" country traverses a sustainable development pathway. To attain this end, a stakeholder analysis was done with the results summarized

below (Figure 8). From this analysis, the priority sectors/agencies/spatial i.e., urban and rural areas for taking forward SCP/SDG12 in Philippines were identified, as well as the non-governmental stakeholder groups involved in SCP policy implementation including the financial sector, business and consumer organizations, universities/technical institutes and international based in the Philippines.

**Figure 8: Stakeholders in SCP Policy Implementation**


With the stakeholders identified, the findings and information contained in this study (and discussed in the previous sections), an SCP Action Plan could be conceptualized.

## B. Formulating an Initial Strategic Action Plan Framework

At this juncture, it is apparent that the three main actors in mainstreaming SCP in the Philippines are the consumers, the firm and government. The other stakeholders have important roles to play, but without the cooperation and participation of the three, the pursuit of SCP in the country would face significant obstacles. Hence, the creation of an SCP Action Plan must incorporate learnings from understand the players in the SCP "game" to determine if programs and policies could work; if not, how to adjust the SCP Action plan in order to be on track. It is also necessary to understand and lay-out the context that the action plan would be rolled-out into, in order to map-out possible scenarios of cause and effect, and of outputs and outcomes.

From initial discussions and consultations (and interviews) with stakeholders and key informants, a preliminary strategic action plan framework was drafted, which is shown below in Figure 9:

**Figure 9: Policy Matrix**


Source: Project Notes

The overall impact desired, as stated in this action plan is that the fulfillment of the welfare-raising objective of Philippine Development Plan or the *Ambisyon* 2040, which the attainment of the SCP goal would lead into. There are three fundamental outcomes that were identified that could accomplish the SCP goal and those are: 1) ecosystem resilience that will assure inter-generational welfare; 2) efficient and "clean" transformation of inputs for economic growth; and, 3) proactive Filipinos that seek to conserve and protect the country's natural resources, and preserve the quality of its natural environment.

Based on this framework, and a policy matrix and a diagram of policy tools developed by the GIZ, are shown below (Figure 10 and Figure 11) for reference.

**Figure 10: Policy Matrix**

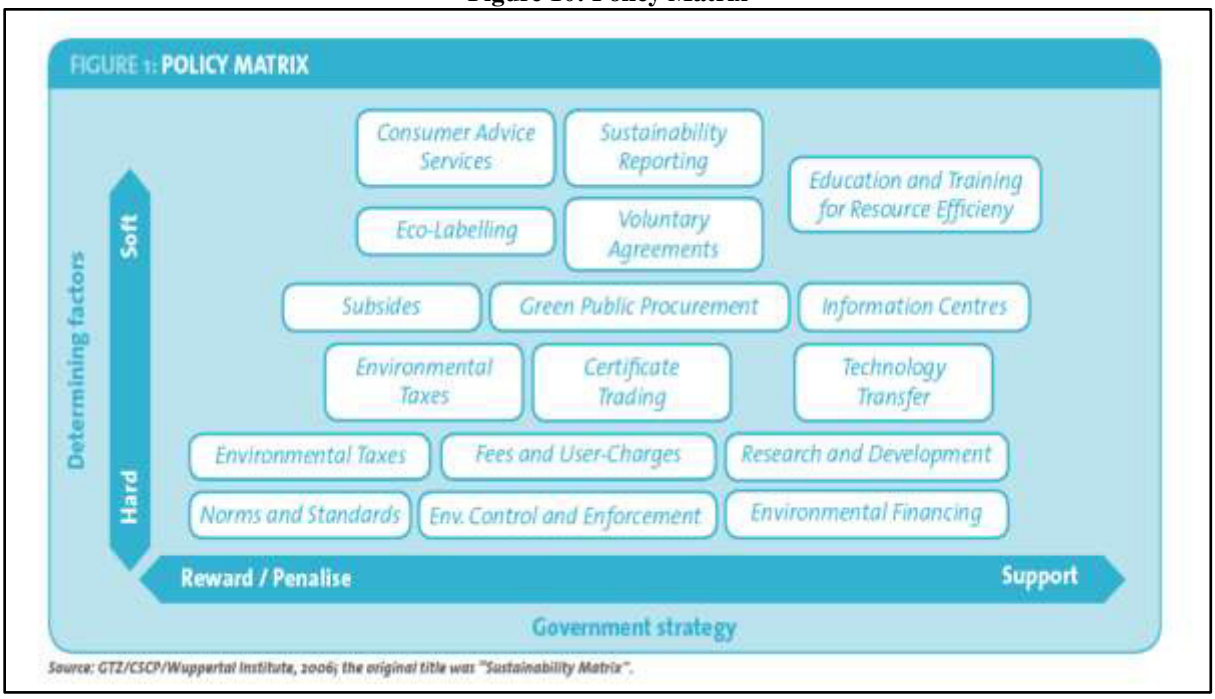
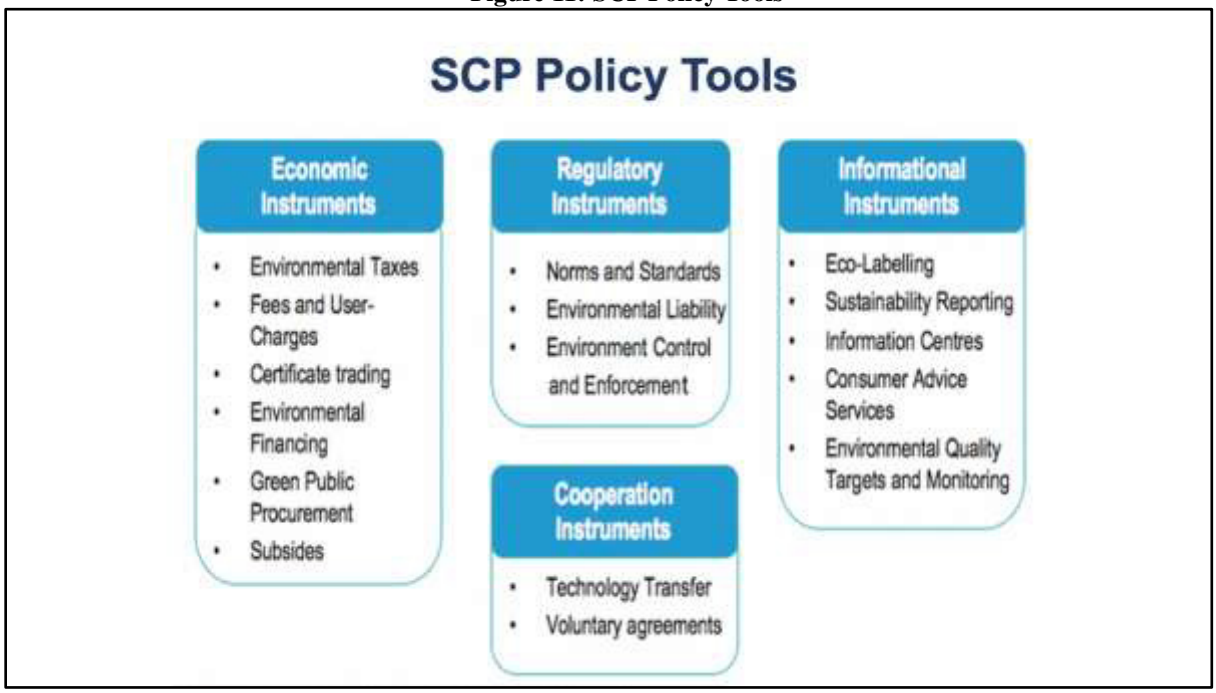



**Figure 11: SCP Policy Tools**




These could all be used and referred to in drafting a complete strategic action plan, and in listing down and creating specific activities that would lead to the desired outcome of sustainable consumption and production.

## Conclusion

Sustainable consumption and production or SCP, as embodied in SDG 12, is not merely about the security of natural resources to support and push human welfare forward, nor is it just about the efficient of the natural environment to make sure human society obtains the most from nature at least cost. SCP is about achieving all of those and the other economic growth goals, but with careful and thoughtful management of shared natural resources and the way our residuals from the use of these resources are disposed of so as to leave the least ecological footprint. Consumption and production are the most basic economic activities, which actions and effort are targeted at.

The Philippines has had steady economic progress through the decades, a situation that is likely to persist in the coming time. The average income of Filipinos has risen, and the size of the middle class has expanded along with it, and while poverty has not been eradicated, it has been reduced. The country's economy has proven to be resilient despite internal as well as external challenges that it continues to face. It is reasonable to expect, therefore, that with a stable and growing macroeconomy, a rise in average per capita income, along with a growing population, economic activities shall rise—higher demand for goods and services, and in response, increase in production activities.

But it has been established in the report that while prosperity has been translating into increase in demand, the supply of natural inputs is being reduced at a pace that, if not checked, would result in the breakdown of the ecological systems and inevitably the destruction of natural resources. As such, the ecological limits that face countries like the Philippines, must be recognized, and that societies must adjust its practices so as not to cross those limits. This is not just about protecting the environment, but also about preserving the efficiency gains in the supply chain, that would be weakened with strained supply of inputs and environmental services.

To this end, consumption patterns and lifestyle must be reoriented to make them sustainable, leaving less ecological footprint and allow natural resources to re-generate and preserve the capacity of the natural environment to perform environmental services. This would also allow for the next generations of consumers to enjoy the same, preserving their welfare as well. In a similar vein, firms must also adjust how it operates, to transform their processes and operations green and sustainable. Like the consumers, the firms must find new solutions—new trend in business behavior—to their profit-maximization problems, that embrace production processes and operations that are sustainable both in the terms of profitability and environmental protection. Firms must also innovate in order to enable and support sustainable consumption and lifestyle. To this, firms must gain a better understanding and

appreciation of the environmental and social impacts of the goods and products they produce. They must embrace innovations in how they produce and how they conduct their businesses, seeking alternative (but still profitable) ways within the value chain that would improve their impacts on society and the environment.

In the conduct of this study, it was ascertained that the Philippines faces many constraints in achieving sustainability in terms of consumption and production. From the information gathered, it is known that the economic prosperity that the country has been experiencing, along with the rising population, has placed a huge amount of pressure on its natural resources. This is the fundamental trend in consumer demand in the Philippines, rising and changing in response to relative prosperity and morphing socio-demographic situation.

An inventory and assessment of the state of the country's natural assets reveal that much has been overstretched—nearing the limit, if not completely above the limit—and both the government and the private sector must act to prevent permanent damage from occurring. There are several reasons that have been identified (and mentioned in the discussion) that led to this less than ideal state of the country's natural assets, one of which is due to the fact that many of the Philippines's natural resources are common-pool, making them prone to overuse and exploitation. The literature found that common-pool resources are susceptible to a "tragedy of the commons" fate, where the unlimited access of users cause the destruction of the resource, but that enforcement of rules of use could prevent that. This brings us to policy (pertaining to environment and natural resource use and management) gaps as the second factor that has caused the country's natural resources to be under threat. Common-pool resources rely on enforcement of "correct rules of use" in order to escape overuse and eventual destruction, something that the Philippines struggle with today. To prevent the "tragedy of the commons", the Philippine government must step-up in designing strategies and in strengthening its capacity to enforce laws and regulations regarding not only of harvest of resources, but also to minimize (if not eliminate completely) pollution and waste disposal management. The unregulated residual disposal—due to policy gaps and the lack of a feasible and effective waste disposal plan for the country—has compromised the integrity and quality of the natural environment. The volume of waste, from organic to plastic, has been rising with more consumption, eating much of the land, and causing air, water and soil quality, to deteriorate.

One analysis regarding governance in the Philippines, is that the government's weak enforcement of rules of use is partly due to the political process, which promotes patronage, that has weakened the political will of some of the country's leaders and agencies tasked with this responsibility. Others blame a culture of corruption, while others believe it is the "awa" (pity or compassion) that is to blame. Deciphering this phenomenon is beyond the scope of this report, but whatever it may be, o this day, there has been no clear solution to this challenge. To be fair, however, there have been some headway made

toward this objective through transparency of actions of government officials and, at one point, a dedicated effort by the executive branch to hold government officers legally accountable for their decisions. But these need to be sustained and strengthened, and perhaps accompanied by stronger vigilance by the public to hold civil servants accountable.

Another factor that the empirical literature has pointed to as one major reason for the degradation of natural resources, is the lack of an effective and monitoring system in place that would be used to track the state and condition of these resources. This is a systemic problem, one that is caused, in turn, partly by institutional challenges, and other funding. Natural resources and environmental quality and quantity need to be tracked, along with the behavior of their users.No successful management of natural resources is possible without a reliable monitoring system; but to this we add that no monitoring is possible without accurate and consistently collected data. A frank assessment of the government's information and data collection systems is needed along with action to make the necessary adjustments to improve the government's capacity to provide the needed inputs for effective and efficient monitoring of the country's natural assets.

To the need for information and data, it also becomes apparent that the country needs more baseline information not only about the state of natural assets, but also on behavior—such as consumer preferences, waste generation, firm behavior, *etc*.— and trends that could affect the environment. An informal check with the data and information collection agencies and institutions in the country reveals that there simply has not been any effort to baseline behavior of the sectors that might affect the natural environments, a situation that needs to be corrected at some point.

The findings of this desk review also show that the country's production technology base generally has no green or sustainable-production orientation per se. This is not surprising, given that majority of the producers in Philippines are small to medium scale who simply do not undertake much technological innovation because of the expense of undertaking research. Investment in technological innovation and research is expensive which many, if not most, in the country are not willing and cannot afford to expend. This is an opportunity—if not a responsibility—for government to take, to spearhead and invest in green technology for agriculture, manufacturing, and waste management, or at the very least, to encourage private entities to do these for it.

For waste management, the information about this sector shows while the waste issue has generally been on the low priority among the pressing issues in the country, the waste disposal problem has attracted much media attention that it is now a problem that can no longer be ignored.The rising consumption fueled by higher average income and expanding population base will surely exacerbate the waste disposal problem in the country, which means that every day the urgency of waste disposal problem

grows. One major setback, however, is the fact that the Philippines has no concrete, feasible and practical waste management plan that would have the support of both government and the public at large. This is a gaping gap that must be filled if SCP were to be pursued in the county successfully.

In terms of behavior and lifestyle, there is much work to be done to help mainstream SCP in the Philippines. The Filipinos' sense of green consumerism is generally weak, with perhaps as an offshoot of the situation that environmentalism not being a strong sentiment among Filipinos. While civil society and some consumer groups are quite vigilant when it comes to environmental protection, the common Filipino—the Juan dela Cruzes—do not share the same strong sentiment. This is an area to be explored for government intervention and action perhaps by increasing the supply of information about the state of the environment through the media and information dissemination institutions, and the strengthening the component in the curriculum for primary and secondary levels in school, that teaches about caring for the environment.

Businesses have a better performance and track record when it comes to sustainable and green behavior, perhaps because of their sensitivity to government regulations. Nevertheless, green business behavior is not organic in the sense that in many cases (if not most), businesses engage in sustainable practices to comply with government regulations. That is not to say that there are no voluntary efforts by members of the business community that do not demonstrate environmentalism, because there are instances of these. In general, however, the adoption of green procurement and other shapes of green behavior among firms is not that generally characterize the Filipino firm. This an opportunity for policy or set of policies and action, one that would strategically create opportunities for Filipino MSMEs to adopt sustainable business behavior and green technologies beyond just CSR compliance. This would boost the sustainable production of the SCP initiative and move the Philippines toward that objective.

On the government and policy side, there is no question that the country has sufficient laws that could potentially solve the gamut of environmental management issues of the country. The main problem—as mentioned earlier—is the enforcement of these laws. This highlights public governance issues that are beyond the scope of this study—and perhaps, even of a simple action plan—but, nevertheless, must be underlined. This does not mean, however, that there are no effective government-led actions and regulations. The green procurement initiative of government, for example, has boosted the demand for "green" goods, and may very well be the new beginning for green consumerism in the Philippines.

Finally, this desk reviews suggests that the crafting of a strategic action plan begins by recognizing that the attainment of the SCP in the Philippines requires the cooperation of the different sectors of society from government, to the individual consumers and households, to the private sector

composed of businesses, civil society groups, and individuals and households. The creators of the strategic action plan could also refer to what empirical and policy studies that have already been done, as reference (or even basis) for specific types of action that target the different sectors in Philippine society. It is unlikely that SCP could be mainstreamed without re-orienting behavior and preferences of consumers, government and members of the business community; as well as retrofitting production operations to transform them into greener and cleaner processes without sacrificing efficiency and gains in welfare such as poverty reduction and equity. The overall conclusion of the discussion seems to be clear, that there is much to be done to attain the greening of the Philippine economy, and to make SCP the way of life in the country.

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