



Project on Strengthening Technical Competency for Consumer Protection in ASEAN

# Environment

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The overall objective of the project is to enhance the capacities of AMS to adopt and implement consumer protection laws at the national level. The project aims to build/strengthen capacity of government agency personnel through the design, development and delivery of training programs focusing on technical requirements provisionally involving consumer concerns and demands in 6 core areas, namely: 1) Product safety and labelling; 2) Phone and internet services, and e-commerce; 3) Consumer credit and banking; 4) Environment; 5) Healthcare services; and 6) Professional services. For further information about the project, please contact the ASEAN Secretariat, Ms Yap Lai Peng (yap@asean.org) or Ms Sarah Firdaus (sarah.firdaus@asean.org), and Mr. Pierre Horna (pierre.horna@unctad.org), Manager of the Project on Strengthening Technical Competency for Consumer Protection in ASEAN.

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## List of Acronyms

3R	Reduce Reuse Recycle
ADB	Asian Development Bank
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
CP	Cleaner Production
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GESAMP	Joint Group of Experts on Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse gas
ISO	International Organization for Standardization
JMP	Joint Monitoring Programme of WHO and UNICEF for water supply and sanitation
LCA	Lifecycle Assessment
MDG	Millennium Development Goals
PDAM	Professional Management in the Water Authorities
PPP	Public-Private Partnerships
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goals
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization



## EXECUTIVE SUMMARY

Consumers are becoming more aware of the environmental impacts of consumption and production, and the role consumers have to play to contribute to environmental conservation and protection. And, this is reflected in the recent assessment of areas for consumer protection in the ASEAN, as well as at the workshops conducted in relation to this module:

- a. Laws on water and air pollution among other environmental issues in the region need to be comprehensive and fully enforced.
- b. Links need to be established in consumption patterns and solid (household) waste generation, highlighting the role of consumers, industry and the government in waste management.
- c. Understanding of climate change and its impacts in light of social and economic wellbeing, and adequate response for consumer protection are needed.

Additionally, emphasis has been made on the need for green/ renewable energy and eco-labelling in the region, and it was noted that priorities among the focus areas are varied in the different countries as gathered from the responses (i.e. water and air quality are top priority for Indonesia, waste management for Philippines and green energy for Myanmar).

With the exception of organic produce, environmental concerns and issues in the AMS are addressed by existing environmental laws from the basic environmental protection law and pollution regulations to the proactive policies promoting eco-labelling, with countries having varying policy responses and mechanisms. These existing laws also have clearly defined prohibited acts with corresponding fines and penalties. While some laws are in its infancy, countries are able to evolve and consider changing development needs in updating these laws. In Lao PDR, the Environmental Protection Law has recently been revised in 2013 to include dispute settlement means. Food Laws in Indonesia and Singapore have been updated to reflect the need to regulate hazards of food packaging. Environmental laws in the region cover basic environmental concerns of consumers through specialized laws covering from provision of basic utilities and water and air pollution to solid waste management laws promoting the 3R principle and green industry in some countries.

Many of the laws in the region provide mechanisms for complaints, investigation of pollution cases, fines and penalties for violations. Market mechanisms like tax on water utilities, reward for good environmental performance of organizations, and payment for waste collection service and use of plastic bags are also increasingly used. However, subsidies for polluting sectors like energy are still enjoying subsidies which may be counterintuitive to safeguarding environmental quality. For post market intervention, the case of the Pollution Adjudication Board in the Philippines was presented that illustrated how environmental/pollution cases are resolved outside of courts. This demonstrated that violations can be proven, and fines and penalties be imposed to polluters. This can be a benchmark case for AMS in establishing procedures for handling environmental cases and investigation protocols.

This module emphasized the links between sustainable consumption and production and consumer protection. Measures that promote resource efficient and cleaner production can support a healthy environment, which is a basic right of consumers. On the other hand, consumer education and choice for sustainability have an equally important role in supporting a healthy environment. It is important to be able to incorporate both elements in policies and programmes for consumer and environmental protection. By becoming more proactive, corresponding environmental issues will be reduced and subsequently the need for dispute settlement.



Sustainable consumption, on the other hand, need to gain more focus in the environment agenda. While product labels for efficiency of electrodomestic products and other consumer goods are also increasingly put to use, sustainable consumption need to go beyond a choice between products A or B. It need to encompass the lifestyle of consumers and hence, consumer education on pertinent topics need to be included in the information, education and communication mechanisms of laws.

The changing circumstances of development and growth of the country, as well as of the global environment need to be reflected in policies and regulations as well as backed by political will. More and more, the global community has acknowledged the importance of shaping laws and policies according to principles of sustainable development, being composed of sustainable consumption and production. In line with this, the exercises in this module has allowed for participants to examine specific environmental issues in their country and assess how existing legislations address these issues, and identify mechanisms that are available to address post market complaints. Through this activity, participants can gauge how well the existing legislations incorporate the target elements of sustainable consumption and production. While elements of sustainable consumption and production are present in many legislations in the region, the components present and the level of implementation vary by country. The likes of Singapore, Malaysia and Thailand have taken up diverse SCP tools and mechanisms such as eco-labelling and sustainable public procurement. Others have implemented resource efficiency and cleaner production, and several others would need more explicit statements of cleaner production and the like in policies. Countries having basic environmental laws need to put more effort to transition and adopt more proactive measures for sustainable consumption and production.

The module also raised the difficulty in defining consumer rights in environmental complaints. It was discussed that complaints can be easily established for paid/ purchased environmental services such as piped water and electricity, but not so much in the case of common pool resources like air and water. Consumers can easily be labeled if they purchased a good or service. However, for people or consumers to ascertain their right to clean air could be a problematic. This difficulty can be clarified by further being more explicit with the definition of environmental products and services to include byproducts or wastes arising from the provision of such products and services, and such definition can be strengthened in the consumer law of countries.

The right to a healthy and safe environment is supported by existing environmental laws in the ASEAN. The laws are evolving, and this is an advantage in incorporating more provisions for consumer protection. More explicit statements for sustainable consumption and production are needed for some countries, while others have successes in implementation of cleaner production and related measures, as well as implemented eco-labelling and sustainable public procurement. Wherever the countries in the region is in terms of sustainable consumption and production, it is important to have the political commitment and will to create a favorable environment for consumer and environmental protection. Current procedures addressing complaints have shown promise that the mechanisms of imposing fines and penalties are implemented. Future direction may need to see action that strengthens institutional capacity to be able to shift towards a more proactive stance in consumer protection and environmental health by focusing on consumer education and cleaner production including supporting strategies and future plans for ecolabelling and sustainable public procurement. Specific measures are needed to promote sustainable consumption especially with regard to consumer education and skill development. Consuming sustainably is not just a matter of decreasing consumption, but more importantly necessitates that lifestyle choices be made that reflect sustainable principles.



## PART I INTRODUCTION

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### **Key Learning Objectives:**

- Compare the three identified focus areas in environment for consumer protection to the situation and issues in your country
  - Define the link between consumer protection and sustainable consumption
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1. A healthy and safe environment is one of the eight fundamental rights of consumers<sup>1</sup> and is largely a function of well-balanced, defined and comprehensive set of environmental laws of a country. These laws are not limited to ensuring biodiversity protection, designation of nature reserves and protected areas, creation of national parks and the like. With the growing population, income inequality, urbanization, industrialization and the impacts of development and economic growth, environmental laws have evolved and included regulation of polluting activities, and protection from and management of pollution and hazardous substances as well as laws indicating minimum criteria for air and water to be safe for humans. All these regulatory functions are within the purview of different ministries and national agencies with authority over air, water and land.
2. Over the past years, management of air, water and land resources and related environmental products and services is increasingly intertwined with the rights of consumers to basic needs, which are met by a healthy and safe environment. Access to water and electricity, affordability, fair trade, quality and safety of agricultural produce and food products along with packaging material and protection from negative externalities brought about by production and consumption practices are among the needs of consumers that necessitate a clear, organized and holistic set of regulatory, market and informative tools and policies accepted and implemented by governing ministries and agencies. Basic utilities like water and electricity in ASEAN Member States (AMS) have been met with many concerns on pricing, quality, quantity and access. Similarly, reliability of waste collection service as well as safety of informal sector in waste segregation and recycling activities pose a concern among consumers.
3. In addition, consumer awareness of their role in ensuring a healthy environment through consumption activities and purchasing choices has also been increasing. More and more consumers choose organic produce in the supermarket, plastic containers that do not leach chemicals and energy efficient electrodomestic products. Food safety and product certifications are in the consciousness of consumers. This awareness need to be translated into sustainable choices and practices with the help of consumer education and product information, sustainable alternatives and infrastructure. Sustainable consumption is very much a part of the equation as sustainable production of goods and services for consumers in maintaining a healthy environment.
4. Conclusions of the recent assessment of capacity building needs in environment for consumer protection in ASEAN<sup>2</sup> identified the following focus areas in environment:

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<sup>1</sup> UNCTAD. (2004). *Manual on Consumer Protection*. United Nations.

<sup>2</sup> Roadmapping Capacity Building Needs in Consumer Protection in ASEAN. *ASEAN Consumer Protection: Essential actions towards a single market* (Policy Brief).

- i. Laws on water and air pollution among other environmental issues in the region need to be comprehensive and fully enforced.
  - ii. Links need to be established in consumption patterns and solid (household) waste generation, highlighting the role of consumers, industry and the government in waste management.
  - iii. Understanding of climate change and its impacts in light of social and economic wellbeing, and adequate response for consumer protection are needed.
5. These three focus areas consider the impacts of human activities to the environment in terms of pollution to air and water, resource extraction that lead to waste generation, and various changes from decades of continued increase in greenhouse gas emissions. How people eat, live, and move about have significant impacts to environment and society, as well as how food, shelter and mobility are produced/ provided. Hence, key to protecting consumer rights to a healthy and safe environment are the role of consumers in making choices in support of sustainable consumption, the role of producers in maintaining ecological integrity while profiting and providing products and services to the population, and the role of government as regulators of activities of the society.
6. The 1995 Oslo Round Table on Sustainable Production and Consumption provides a definition of sustainable consumption as *“an umbrella term that brings together a number of key issues, such as meeting needs, enhancing the quality of life, improving resource efficiency, increasing the use of renewal energy sources, minimising waste, taking a life cycle perspective and taking into account the equity dimension. Integrating these component parts is the central question of how to provide the same or better services to meet the basic requirements of life and the aspirations for improvement for both current and future generations, while continually reducing environmental damage and risks to human health. A key issue is therefore the extent to which necessary improvements in environmental quality can be achieved through the substitution of more efficient and less polluting goods and services (patterns of consumption), rather than through reductions in the volumes of goods and services consumed (levels of consumption). Political reality in democratic societies is such that it will be much easier to change consumption patterns than consumption volumes, although both issues need to be addressed.”*
7. This clear definition captures the triple bottom line of environment, economy and society; and reiterates the need for efficient use of resources, reducing waste with regard to the carrying capacity of the planet, choosing sustainable options, and fulfilling the needs of present as well as future generations. It also brings to light the difference in purchasing or choice capacities with differing financial wellbeing, and emphasizes equity in consumption. Indeed, there is a real gap in consumption patterns and impacts of the poor against the middle or upper class segments of society (Box 1a) – overconsumption generating too much greenhouse gas (GHG) emissions and waste versus under-consumption relying directly on forest, fisheries and agriculture for subsistence and possibly without access to sanitation, directly disposing of waste to the environment.
8. In addition to the three focus areas enumerated above, inputs from participants to the validation workshop for Strengthening Technical Competency for Consumer Protection in ASEAN held on 26-28 July 2015 in Indonesia also allowed for other consumer protection issues on environment to surface prioritization of environmental issues in the region, namely, (i) water and air quality, (ii) sustainable energy, (iii) solid waste management, and (iv) eco-labelling. A summary of the ranking of environmental issues raised in the workshop is provided in Table 3 in the Annex. These environmental issues likewise encompass both the sustainable consumption and sustainable production components of



sustainable development. While consumption choices of consumers need to be informed (Box 1b), production processes need to take a holistic approach to resource consumption and waste generation to lessen the negative impacts to the environment as well as provide sustainable choices of products and services to consumers. This holistic approach to production necessitates the use of resource efficient and cleaner production tools by producers coupled with eco-design or design for sustainability principles as guided by life cycle thinking, and other market and regulatory mechanisms that promote and encourage sustainable production and sustainable consumption such as eco-labeling, sustainable public procurement and product valuation.

**Box 1a. Consumption challenges: Comparing the poor and the middle class in Asia**

- Asia is still home to nearly half of the world's absolute poor with per capita incomes of less than US\$1.25 a day (ADB, 2011).
- By 2030, two-thirds of the global middle class is expected to live in the Asia Pacific (Kharas, 2010).
- 578 million or two-thirds of undernourished people in the world are in the Asia-Pacific region (FAO, 2010a).
- Obesity is rapidly becoming a problem in Asia. The number of obese people in China more than doubled over the last 15 years (UNEP, 2005).
- Of the 1.1 billion people who had no access to safe drinking water in 2002, 669 million (almost two-thirds) lived in Asia (UNDP, 2007).
- There were 2.6 billion people without access to basic sanitation and as many as 1.9 billion - more than two thirds - are living in Asia (UNDP, 2007).
- The ground water reserves in Asia is depleting fast. The water table in many large cities, including Bangkok, Beijing, Chennai, Manila and Shanghai, has dropped by up to 50 metres in recent decades (UNEP, 2005).
- Solid waste generation in Asia is expected to rise from 0.76 million tons per day in 2000 to 1.8 million in 2025 despite recycling efforts (UNEP, 2005).

Source: as cited in de Vera, A., Mitin, A. & Tunçer, B. 2011. Mainstreaming Sustainable Consumption in Asia, Part I: What is holding us back? SWITCH-Asia Network Facility, UNEP/ Wuppertal Institute Collaborating Centre of Sustainable Consumption and Production. Wuppertal

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**Exercise 1a. Priority environmental issues by country**

- Four environmental issues have been identified that are of concern in ASEAN region: water and air quality, sustainable energy, solid waste management and eco-labelling. Rank these four issues, with 1 being the highest and 4 the lowest, according to the priorities of your country. Refer to Table 3 in the Annex.
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9. It is against the backdrop of environmental quality, sustainable consumption and production<sup>3</sup> that consumer protection in environmental concerns is presented in this module.
10. Section 2 discusses environmental concerns in the AMS. Section 3 focuses on existing and available pro-market interventions in consumer protection in consideration of the environmental concerns presented in Section 2. Section 4 provides post market intervention, and redress mechanisms in Section 5. Lastly, Section 6 concludes with some recommendations to strengthen consumer protection in the region.

#### Box 1b. Symbiotic Relationship between Consumer Rights and Sustainable

- Consumption patterns are the result of choices of a wide variety of actors including business, government and individual households. Influencing and informing these choices means stimulating and facilitating new economic opportunities - better products and services - and altering the current infrastructure and regulatory framework that lock consumers into unsustainable behaviour.
- Consumer protection can be used to understand the driving forces behind consumption and inspire cost effective improvements, thereby raising the quality of life and reducing environmental damage.

Source: Consumers International & UNEP-DTIE. *Hands-on Sustainable Consumption: A Training Guide for Implementing the United Nations Guidelines for Consumer Protection.*

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### Exercise 1b. Sufficiency of Existing Environmental Laws in Protecting Consumer Rights

- In addition to the consumer protection law, enumerate the environmental laws in your country, from environmental protection to Sustainable Consumption and Production. Are there sufficient provisions in these laws that protect consumers from environmental concerns such as use of harmful chemicals in agriculture/ imported food supply, air quality monitoring and reporting, industrial water pollution discharge and air emissions?
  - Can these environmental laws potentially support consumer protection law in safeguarding consumer rights?
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11. It is against the backdrop of environmental quality, sustainable consumption and production that consumer protection in environmental concerns is presented in this module. Section 2 discusses environmental concerns in the AMS. Section 3 focuses on existing and available pro-market interventions in consumer protection in consideration

<sup>3</sup> Sustainable consumption and production has been specifically cited as a goal in the newly-adopted Sustainable Development Goals in September 2015 and defines 11 targets. More information on this goal is provided in Table 4 in the Annex. Reference: <http://www.un.org/sustainabledevelopment/sustainable-consumption-production/>



of the environmental concerns presented in Section 2. Section 4 provides post market intervention, and redress mechanisms in Section 5.

### Further Readings:

- UNCTAD (2004). *Manual on Consumer Protection*. United Nations. Available at: [www.un.org/esa/sustdev/publications/consumption\\_en.pdf](http://www.un.org/esa/sustdev/publications/consumption_en.pdf)
- F. ölander & J. Thøgersen (1995). Understanding of consumer behaviour as a prerequisite for environmental protection. *Journal of Consumer Policy* (18) 345-385.
- J. Paavola (2001). Towards Sustainable Consumption: Economics and Ethical Concerns for the Environment in Consumer Choices. *Review of Social Economy* (59)

## PART II CONSUMER PROTECTION ISSUES IN THE PROVISION OF ENVIRONMENTAL GOODS AND RELATED SERVICES

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### Key Learning Objectives:

- Identify consumer protection issues arising from the provision of environmental goods and services in your country
  - Define the root cause of the issues you enumerated and if existing regulatory, institutional and economic mechanisms are available to address these
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12. People rely on the environment for everyday subsistence and socioeconomic activities. The food, fuel and water consumed for everyday living and activities are directly provided by the environment. The natural circulation of air, seasonal climate, natural purification of water in the environment constitute the regulating function of ecosystems. The experiences derived from the environment such as recreation, spiritual and educational values represent the cultural importance of the environment. The supporting functions it provides enable water and nutrients to cycle in the environment as well as enable photosynthesis and respiration of organisms. These ecosystem services derived from the environment prove that it is crucial to maintain the integrity of the environment, protect natural resources from depletion and pollution, and preserve its cultural aspects, while at the same time being able to provide the basic needs and protect the rights of consumers.

13. The Rio+20 outcome document *The Future We Want*<sup>4</sup> highlights a number of the environmental concerns and challenges including the five consumer protection issues in environment presented in the following subchapters. More details and paragraph excerpts from the document are provided in Table 4 in the Annex. The following five subchapters encapsulate challenges in consumer protection in the environmental field in the AMS: access to water and energy (2.1), affordability of these basic utilities (2.2), quality and safety of food and related products (2.3), negative externalities of delivering goods and services to the population (2.4), and consumer education (2.5). These were

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<sup>4</sup> Available at: <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/476/10/PDF/N1147610.pdf?OpenElement>

gathered and based on the country reports prepared by Consumers International to the Roadmapping Capacity Building Needs in Consumer Protection in ASEAN Project in 2011, questionnaires, participant inputs (Tables 5 in the Annex) to the validation workshop for Strengthening Technical Competency for Consumer Protection in ASEAN held on 26-28 July 2015 in Indonesia and published materials.

## II.1 Access

14. Water is a basic need. Access to drinking water and sanitation was part of the Millennium Development Goals (MDGs),<sup>5</sup> and successively now a part of the post-2015 development agenda laid out in the Sustainable Development Goals (SDGs).<sup>6</sup> Goal 6 of the SDGs is to ensure access to water and sanitation for all, with the following targets within a 15-year timeframe:
- a. achieve universal and equitable access to safe and affordable drinking water for all
  - b. achieve access to adequate and equitable sanitation and hygiene for all
  - c. improve water quality
  - d. substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater
  - e. implement integrated water resources management at all levels
  - f. protect and restore water-related ecosystems
  - g. expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes
  - h. support and strengthen the participation of local communities in improving water and sanitation management.
15. In addition, the United Nations General Assembly has recognized “the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights” in 2010 through Resolution 64/292.<sup>7</sup> Because water is essential for development and social wellbeing, access to water as well as securing water supply are equally important. According to the Joint Monitoring Programme of World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) for water supply and sanitation (JMP), “access to drinking water means that the source is less than 1 kilometer away from its place of use and that it is possible to reliably obtain at least 20 litres per member of a household per day”.<sup>8</sup> It further defines drinking water as “water used for domestic purposes, drinking, cooking and personal hygiene” which can be sourced from: household connection, public standpipe, borehole, protected dug well, protected spring and rainwater.<sup>9</sup> Accessible, sustainable and drinkable supply of water are equally important.

<sup>5</sup> The MDGs were formulated in 2000 and included targets for 2015. Goal 7 of the MDGs is to ensure environmental sustainability. Target 10 under Goal 7 states: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. Available online: <http://www.unmillenniumproject.org/goals/gti.htm#goal7>

<sup>6</sup> Continuing the progress made through the MDGs, the SDGs present a new development agenda from 2015 on to 2030 with 17 goals and 169 targets. Available online: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<sup>7</sup> United Nations General Assembly Resolution 64/292. The human right to water and sanitation. Available at: <http://www.un.org/es/comun/docs/?symbol=A/RES/64/292&lang=E>

<sup>8</sup> WHO. Health through safe drinking water and basic sanitation. Available at: [http://www.who.int/water\\_sanitation\\_health/mdg1/en/](http://www.who.int/water_sanitation_health/mdg1/en/)

<sup>9</sup> Ibid.

16. Water has many uses which can be broadly classified into domestic, agriculture, industrial and electricity generation, and there are also two main sources of water, groundwater and surface water (e.g. ocean and river). Dams and similar impoundments are utilized to augment water supply especially in times of drought. The supply of water is mainly affected by the rate of depletion or extraction, the rate at which water sources are replenished and the quality of water bodies. How well the competing demand from the different uses of water, pollution sources and the impacts of climate change are managed also affect the supply of water. In addition, population is also putting pressure on water resources as demand increases.
17. While the MDG for drinking water has been achieved, there are communities that still lack access to potable water and proper sanitation mainly due to the remoteness of the area or the cost of installing pipelines. Water is delivered to households through a network of pipelines and usually, this distribution network is controlled by a single private entity or government or consumer cooperative. Such agreement between the government and private or consumer group has been the option by many governments for many years as businesses have the capital and resources to develop public utility and provide access to as many consumers. However, having private and/or government utility service providers do not guarantee supply of water to the entire population especially in cases where an area is affected by drought or lack of water sources, among other factors as noted in a study by the Asian Development Bank (ADB) (Box 2a). In Asia, increasing stress on water resources by the growing demand and ground water extraction as well as surface water pollution has been felt in many countries.<sup>10</sup> Of the AMS, Singapore faces the challenge of water self-sufficiency owing to their limited natural freshwater resource.
18. Energy, in its many forms from fuelwood to petroleum for mobility, is an essential component of social and economic activities. Like water, access to energy provides opportunities for development of the individual, community and country. Having water and energy allows for the provision of basic services like education and healthcare, and at the same time opens up livelihood and income opportunities. Goal 7 of the SDGs is to “ensure access to affordable, reliable, sustainable and modern energy for all”, with the following targets by 2030<sup>11</sup>:
- ensure universal access to affordable, reliable and modern energy services,
  - increase substantially the share of renewable energy in the global energy mix,
  - double the global rate of improvement in energy efficiency,
  - enhance international cooperation to facilitate access to clean energy research and technology, and promote investment in energy infrastructure and clean energy technology, and
  - expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries in accordance with their respective programmes of support.
19. Fossil fuels remain to be the main source of energy globally, and especially in the countries in the region where fuelwood is still used for cooking and heating. According to the initiative Sustainable Energy for All (SE4All), out of the 4.2 billion people living in the Asia-Pacific region, 615 million have no access to electricity while 1.8 billion have no access to clean cooking.<sup>12</sup> The continued dependence on fossil fuels poses a challenge

<sup>10</sup> Message from Dr Poonam Khetrpal Singh, Regional Director, WHO South-East Asia Region on the occasion of World Water Day, 22 March 2015. Available at: <http://www.searo.who.int/mediacentre/features/2015/rds-message-on-wwd-2015/en/>

<sup>11</sup> Goal 7 of the SDGs. More information available at: <http://www.un.org/sustainabledevelopment/energy/>

<sup>12</sup> Asia Pacific Hub, Sustainable Energy for All. Available at: <http://www.se4all.org/hubs/asia-pacific-hub/>

to many communities as rising GHG emissions and concentrations in the atmosphere are now accepted to cause climate change<sup>13</sup>, air pollution and related health problems<sup>14</sup>. Especially for those countries dependent on imported petroleum, energy imports and in some cases, energy subsidies, continue to affect countries economically, socially and politically. As industrialization, urbanization and population growth are increasing in the region, its share of primary global energy consumption is expected to rise to as high as 56%.<sup>15</sup>

20. Energy, in terms of petroleum products, are widely available through refilling stations. While some countries in the region like Indonesia, Malaysia and Brunei have indigenous sources of fossil fuel, most of the petroleum products supplied in the AMS are imported. There are only a limited number of companies that supply petroleum products, but they have a vast network of refilling stations accessible to consumers.
21. In terms of electricity, access is similar to water in that consumers have to apply to an electricity company or cooperative to be connected to the grid. The trend in electricity generation and distribution over the past decades has been on to management by private and consumer entities as well. Power plants that supply electricity, transmission lines (electricity grid) and distribution networks to households are mostly owned and operated by private entities, and are regarded as a monopoly. The supply of electricity is mostly affected by the power generation capacity of the country and its access to fossil fuel and other energy sources. Access to the electricity grid and price are two consumer concerns common to many countries in the region such as Cambodia and Viet Nam. In addition, sufficiency of *supply* of petrol was also raised in the latter.

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<sup>13</sup> IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. Geneva: Intergovernmental Panel on Climate Change.

<sup>14</sup> WHO (March 2014), Household air pollution and health. Available at: <http://www.who.int/mediacentre/factsheets/fs292/en/>

<sup>15</sup> Asia Pacific Hub, Sustainable Energy for All. Available at: <http://www.se4all.org/hubs/asia-pacific-hub/>

### Box 2a. Performance of Some Water Utilities in AMS, 2011

- The ADB report Urban Water Supply and Sanitation in Southeast Asia defined the goal of water utility: to provide 24-hour piped water to every household and business in the community, and to operate and develop efficiently. Service coverage is low in many utilities, perhaps because (i) there is not enough water, (ii) the low tariff affects cost recovery, (iii) not enough investment is being made to extend the pipe works, (iv) NRW is high, (v) there is a tendency to maintain the status quo, (vi) the connection fee is a constraint, or (vii) a combination of these factors.

City	City Population in Service Area	Production m <sup>3</sup> /d	Total Connections	Population with 24/7 supply %	NRW %	Average Tariff (US\$/m <sup>3</sup> )	Operating Ratio	Persons Per Connection	Collect 98%	Daily Consumption (m <sup>3</sup> /connection)
Phnom Penh	2,000,000	305,000	219,498	100	6	0.24	0.37	9.1	Yes	1.32
Jakarta East	4,595,099	744,195	388,166	63	47	0.75		11.8	No	1.02
Jakarta West	4,500,000	712,523	414,470		40	0.88	0.67	10.9	No	1.03
Medan	4,223,000	469,522	418,975	69	30	0.25	0.97	10.1	No	0.78
Palembang	1,384,918	251,784	178,006	48	31	0.40	0.78	7.8	No	0.98
Vientiane	798,000	184,150	80,663	no	36	0.23	1.16	9.9	No	1.46
Manila East	6,000,000	1,276,000	857,981	99	11	0.62	0.45	7.0	No	1.32
Manila West	9,379,449	2,089,000	1,005,350	84	42	0.77	0.42	9.3	No	1.20
Cebu	2,315,000	179,984	139,949	80	28	0.60	0.78	16.5	No	0.93
Davao	1,506,892	247,193	179,933	87	27	0.36	0.83	8.4	No	1.00
Bangkok	8,000,000	4,700,000	2,017,531	100	25	0.39	0.67	4.0	No	1.75
Binh Duong	1,619,900	151,658	63,134	100	10	0.32	0.92	25.6	Yes	2.16
Hai Phong	1,884,685	154,358	242,801	100	15	0.29	0.72	7.7	Yes	0.54
Ho Chi Minh	7,541,000	1,476,500	856,655	100	42	0.35	0.71	8.8	Yes	1.00

Note: NRW – nonrevenue water; Operating ratio is operating expenses divided by operating income; Collect 98% means the utility collects 98% (or more) of its billing within one month of the bill being issued.

- Governance is key to achieving the goal of water utility:
  - Reducing political interference. Private sector management at arm's length from the politicians.
  - Trimming the bureaucracy. We need to monitor results, not the process.
  - Paying better salaries. Water is a business and must be run like one.
  - Raising tariffs. To raise tariffs, the utility must go to the customers and noncustomers and get them to agree to higher tariffs, but the utility must also provide better services.
  - Reducing nonrevenue water. Manila Water (Philippines) and PPWSA (Viet Nam) have proven that managing the distribution system at the lowest practicable level can greatly reduce NRW.
  - Instituting timely reporting. Every utility must be required to produce an annual report.
  - Improving metering, billing, and collection.
  - Serving the unconnected urban poor. Viet Nam has set a good example of providing free connections to all and recovering costs with higher tariffs for all, spread over several years.

Source: Asian Development Bank. Urban water supply and sanitation in Southeast Asia: A guide to good practice. Mandaluyong City, Philippines: Asian Development Bank, 2014.

## II.2 Affordability

22. In addition to physical access, economic access is also an aspect of the human right to water, that is, “Water, and water facilities and services, must be affordable for all. The direct and indirect costs and charges associated with securing water must be affordable, and must not compromise or threaten the realization of other Covenant rights”.<sup>16</sup> As water and energy are basic rights and necessities, the pricing of public utilities need to consider affordability while at the same time keeping price at a certain level so as not to encourage unsustainable consumption. In light of sustainable development, supply of resources need to be equitable and use of natural resources sustainable.
23. The cost of piped water has become an issue for countries like Philippines and Indonesia where utilities are among the most expensive in the region even though it is common practice for the price of water to only reflect the treatment and distribution cost, and not the real cost of water as a resource and externalities involved in the provision of this basic need.
24. Energy price in the region is a concern for consumers, especially in Philippines and Cambodia. The dependence of most countries in the region on imported fossil fuels make them vulnerable to the increasing and fluctuating price in the world market. Energy subsidies are practiced in some countries in the region, and in particular, Indonesia has a 50% subsidy for energy, which aims to support the industry. While well-meaning energy subsidies may have its advantages, these can have corresponding implications such as unsustainable consumption and budget deficits as can be observed in the case of Malaysia and Indonesia (Box 2b).
25. The problem with public utilities, in the economic sense, is the absence of market competition for practical reasons. Intensive capital requirements are inherent in public utilities – laying pipelines and installing electricity cables are costly that once a network has already been established, it needs to be fully utilized to bring the cost down such that consumers can afford it, capital can be recovered and profit be made. Also owing to the same nature, the price of utilities reflect the same, discounting the cost of the natural resource itself and impacts of resource extraction, processing and distribution. Naturally, this would result for one power or water utility provider to monopolize distribution in an area. With this natural monopoly that a private entity, government body or consumer group (cooperative) has over such service, respective authorities are likely to charge a price that would effectively achieve corporate goals.

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<sup>16</sup> General Comment No. 15. The right to water. UN Committee on Economic, Social and Cultural Rights, November 2002. Available at: [http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/\\$FILE/G0340229.pdf](http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/$FILE/G0340229.pdf)



### Box 2b. Energy Subsidies in Indonesia and Malaysia

- In Indonesia, energy subsidies for both petroleum and electricity needs equal to about one-fourth (US\$ 36 billion) of the government expenditures or 2.5 percent of the gross domestic product of the country. This value is of concern to the country as it is no longer a net exporter of petroleum products and as the budget deficits has been increasing dramatically in the past years (IDR 4.1 trillion in 2008 to 224.2 trillion in 2013). Another concern is the rightful distribution of energy subsidy, that is, to the poor, which is not currently the case. Energy subsidy in Indonesia provides consumption-oriented support. Middle- and high-income households benefit more, and energy subsidy has become less efficient at helping the poor. As fuel prices has increased in the past years in the country, the government tries to compensate the poor segments of the population through other social assistance programs such as rice assistance program and conditional cash transfer. However, for Indonesia to address the growing problem of budget deficits and energy issues, restructured reforms in fuel subsidy to productive economic sectors and renewable energy are needed.
- In Malaysia, transport fuel has been subsidized for more than 20 years already, and as of 2011, subsidies has amounted to about 11 percent of the government expenditure. Malaysia has the second lowest price of petrol in the region, second to Brunei. However, as with Indonesia, the poor are not the principal beneficiaries of this scheme as the energy subsidy covers all consumers regardless of wealth. Since subsidies has long been implemented, removing them might be economically and socially unattractive option, and even a political challenge. Oil production of Malaysia has been on decline whereas consumption is increasing and net exports decreasing. Other negative impacts of the energy subsidy in the country include: (i) no market for renewable energy development and investment, (ii) opportunity cost of energy subsidy versus other development projects, (iii) smuggling of fuel due to its low cost, and (iv) overconsumption of fuel and release of associated greenhouse gas emissions. Subsidy reforms are included in the New Economic Model of Malaysia that aim to achieve market pricing by 2015.

Source: Global Subsidies Initiative and The Institute for Essential Services Reform. (March 2014). A Citizen's Guide to Energy Subsidies in Indonesia A biannual survey of energy subsidy policies. International Institute for Sustainable Development: Manitoba/Geneva.  
Global Subsidies Initiative and The Institute for Essential Services Reform. (2013). A Citizen's Guide to Energy Subsidies in Malaysia. International Institute for Sustainable Development: Manitoba/Geneva.

## II.3 Quality and safety

26. Besides access and affordability, the quality of water is essential. “[W]ater should be of an acceptable colour, odour and taste for each personal or domestic use.”<sup>17</sup> As a public good, water quality is defined by objective evaluations and controls usually undertaken by the water utility and also by food safety authorities (e.g. nutritional value, mineral components, chemical and bacteriological assessments). The JMP also defines safe drinking water as “water with microbial, chemical and physical characteristics that meet

<sup>17</sup> General Comment No. 15. The right to water. UN Committee on Economic, Social and Cultural Rights, November 2002. Available at: [http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/\\$FILE/G0340229.pdf](http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/$FILE/G0340229.pdf)

WHO guidelines on national standards on drinking water quality”.<sup>18</sup> Poor water quality affects health of the population and can impact productivity. Low quality of water may present important social costs for the State as more people will be subject to different diseases and less able to go to work or to the school. Water, unless comes from certified springs must be treated by the public utility or the water company (cleaning, filtration and deputation). These institutions are responsible and potentially liable for any human or health problem that may be carried by the water or its delivery.

27. Water quality can be determined by various factors including the state of water source (natural springs, ground water, rivers, and lakes etc.); the potential pollutants (organic and non-organic) that affect the sources; existence of treatment, control and verification of the water at different stages; and the state of the distribution system (pipes), among others. Regulation and control over effluents and pollutants that may affect water sources is also needed (regulation of industrial wastes or agricultural activities close to drinking water sources).
28. The existence of effective regulatory and infrastructure mechanisms is essential for the access, affordability of water as we are in front of a natural monopoly. Access is determined by economies of scope and scale. Prices are linked to the setting and maintenance of the harvesting, distribution and quality control of the water, more than to the cost of the water itself. Cases in Myanmar and Indonesia found in Box 2c below show lack of effective institutional capacity to regulate and monitor water quality, even at the private bottling level. In Indonesia, governmental efforts to improve water quality include groundwork on the development of the policy framework, professional management in the water authorities (PDAMs), creation of public-private partnerships (PPPs). While the first two actions have improved the policy environment, results on the use of PPPs have been unsatisfactory as prices have gone up and quality remains the same. This shows that improvements in management are not enough if more effective controls at the source and distribution are not set in place.

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<sup>18</sup> WHO. Health through safe drinking water and basic sanitation. Available at: [http://www.who.int/water\\_sanitation\\_health/mdg1/en/](http://www.who.int/water_sanitation_health/mdg1/en/)

#### Box 2c. Water Quality in Myanmar and Indonesia

- In Myanmar, little is known of the water quality. A study by Sakai, Kataoka & Fukushi (2013) conducted water quality assessments in urban areas Nay Pyi Taw and Yangon for public pots, piped, non-piped and bottled water. Their assessment revealed that (i) heterotrophic plate counts were highest for public pots, (ii) piped water supply contained either residual chlorine or free chlorine, possibly from upkeep of water quality, and (iii) water quality from one bottled water company tested had worse quality than two piped water taps.
- In Indonesia, water quality is not potable. A report by The Water Dialogues summarizes the status and lessons in water quality and supply in the country: (i) most people still rely on groundwater (hence, there needs to be more developments in piped water), (ii) water in many serviced areas are not supplied 24 hours a day (people either rely on unhealthy sources when there is no water supply or they pay more for water sourced from water vendors), (iii) the government has initiated three approaches, namely, groundwork on policy framework, public-private partnerships (PPP), and professional management in the water authorities (PDAMs), and (iv) there needs to be a recognition of water as a right, more than a need. The same problems are reiterated in the Indonesia Water Case study by the UNDP Special Unit for South-South Cooperation, stating that while two PPP have been established to develop water supply in Jakarta East and Jakarta West, little improvements were felt – people are paying more for water at the same quality, and many rely on high-priced vendors.

Source: Sakai, Hiroshi; Kataoka, Yatsuka; Fukushi, Kensuke. 2013. Quality of Source Water and Drinking Water in Urban Areas of Myanmar. *The Scientific World Journal*. Available online: <http://www.hindawi.com/journals/tswj/2013/854261/>  
The Water Dialogues (n.d). Indonesia Contextual Analysis in Water Supply and Sanitation Sector. Available at: <http://www.waterdialogues.org/documents/8.6ContextualAnalysis.pdf>  
UNDP (2012). Jakarta, Indonesia: Case Study (Water). Available at: [http://www.esc-pau.fr/ppp/documents/featured\\_projects/indonesia.pdf](http://www.esc-pau.fr/ppp/documents/featured_projects/indonesia.pdf)

29. Food and packaging. As a basic necessity, consumers need to be protected from food, food products, and the container and packaging it comes with. From agricultural practices and food processing to consumption and disposal, the quality and safety of food, its ingredients, processed products and containers or packaging need to be of certain quality and conform to some safety standard to ensure health and wellbeing of consumers.
30. In the AMS, where street food is part of the culture, food safety is a priority concern among regulators. Proper hygiene and food preparation are critical especially when food is prepared and sold in streets where there is a lack of water source for hygiene and where environmental factors such as temperature (tropical weather being conducive to growth of unwanted bacteria) affect food safety. In Myanmar, for example, improvements in water quality and hygiene in food preparation were found to be needed to improve the quality of food sold in streets (Box 2d).
31. Food and nutrition are becoming increasingly important as communities are now aware of the importance of eating healthy, eating local and buying organic produce. Ethical considerations (e.g. eating of sharks fin, sustainability of food supply and related components) and qualification of claims (for instance of organically grown vegetables)

are increasingly factored in consumption choices. Quality and safety of agricultural products are increasingly affected by the agricultural processes and inputs. For instance, the extensive use of some pesticides and fertilizers have been reported to be a health hazard to consumers of the produce, as well as the farmers who use it, while the lack of hygienic practices may cause contamination of food supply by bacteria such as *Salmonella* and *E. coli*.

32. Recent years saw the rise in demand for organic produce and products, in cases of product recalls due to harmful chemicals found in processed food or in its container. Organic food, cultivated without using artificial fertilizers and chemical insecticides or pesticides, is now gaining demand from consumers, and presence in markets. However, aside from producer claims of such products to be organic, there is no measure or qualification system yet that would authenticate or validate such claim. Product standards are in place in many countries and focus on those common items for safety inspection by Food and Drug authority.
33. A more pressing concern in some countries in the region is the quality of processed food and imported goods sold in the market. There have been reports of fake goods and tainted food products that can harm the consumers. Just in July 2015, some foreign nationals have been caught in Vientiane, Laos for illegally producing and selling fake bottled water under the Tigerhead brand – they would collect discarded bottles, refill it with water, and sell to shops<sup>19</sup>. In Viet Nam, it was reported that over 80 percent of the Phu Quoc fish sauce<sup>20</sup> domestically consumed are fake.<sup>21</sup> Also, where food products failed safety and quality inspection, these are imported to countries which lack regulation on such products or have loose enforcement of regulations. While processed food undergo a series of quality check before leaving a manufacturing or processing plant, fraudulent acts of a few individuals and lack of implementation of safety inspection of local and imported goods can be a threat to human health.
34. Packaging of raw and processed food is also an issue of concern. Goods need to be packaged minimally and with less use of plastics and chemicals. Minimal packaging can vastly reduce the use of materials, which would also see improvements in less waste to be managed. Chemicals used in food and beverage containers have become a critical concern in the past years as certain plastic bottles and tin cans were proven to contain bisphenol A that can disrupt the functioning of the endocrine system. Other chemicals can also be leached from plastic bottles, depending on its classification.<sup>22</sup> Heavy metal content and chemical contamination of processed food and packaged goods are also a concern and have been included in food safety regulations of many AMS.

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<sup>19</sup> J&C Expat Services, 2015. Producers of Fake Drinking Water Caught. Available at: <http://jclao.com/producers-of-fake-drinking-water-caught/>; Vientiane Times, 28 July 2015. Producers of Fake Drinking Water Caught. Available at: [http://www.vientianetimes.org.la/sub-new/Previous\\_173/sub-new/Current/Curr\\_Producers%20of.html](http://www.vientianetimes.org.la/sub-new/Previous_173/sub-new/Current/Curr_Producers%20of.html)

<sup>20</sup> The Phu Quoc Island fish sauce is a Vietnamese product which qualified for the European Union's Protected Designation of Origin status in 2012.

<sup>21</sup> Thanh Nien News, 21 July 2014. Over 80 pct of Phu Quoc fish sauce bottles are fake: Vietnam official. Available at: <http://www.thanhniennews.com/business/over-80-pct-of-phu-quoc-fish-sauce-bottles-are-fake-vietnam-official-28829.html>

<sup>22</sup> Plastic classification was established by the Society of the Plastics Industry. This classification provides details which plastic may be harmful when used as food containers and also information on recyclability. Classification is available at: [http://www.ryedale.gov.uk/attachments/article/690/Different\\_plastic\\_polymer\\_types.pdf](http://www.ryedale.gov.uk/attachments/article/690/Different_plastic_polymer_types.pdf)

#### Box 2d. Food safety

- Food safety in Myanmar is a critical concern for locals and tourists. There are reports that indicate “food hygiene in Yangon is rather low, something that even the government admits, while attempting to improve existing standards” (Seth, 2014). There is much to improve in the country in terms of the provision of adequate and clean water to the practice of hygiene in food preparation and handling. At the 42<sup>nd</sup> Myanmar Health Research Congress in 2014, National Poison Control Center Deputy Director Dr. Thaung Hla and colleagues presented their research on the safety of roadside/ street foods in five downtown townships and revealed that 35% of the 150 samples they collected contain either *Staphylococcus aureus* or *Bacillus cereus*, and 37 of the 52 positive samples contain dangerous levels of the bacteria. These bacteria are found in the nose or skin of people, hence, lack of proper hygiene is the culprit (Myint, 2014). The problem with food safety was echoed by the Consumer Protection Association of Burma, a volunteer group founded only in 2012 comprising of doctors, chemists, traditional practitioners and authors. The group has done some work in uncovering fake products like fake local fish paste made from fertilizer, and fake fish sauce imported to the country from Thailand through the Myawaddy trade route (Mon, 2014). In addition, local products such as dried fruits, pickles and dairy products exported to Bongjang Village in India have been found to be of sub-standard quality and has been banned by the State Government under Food and Safety Standards Act, 2006 (Gurusamy, 2015). The Food and Drug Administration of Myanmar was established in 1995, and the National Food Law in 1997. A Consumer Protection Law is currently being drafted by the Parliament.
- In Cambodia, food safety law will be introduced late in 2015 as a response to the need for hygienic practices in consideration of attracting tourists according to Aing Hoksum, Food Bureau Chief at the Department of Drugs and Food (Baliga, 2015). While many establishments have adopted third party standards such as the Hazard Analysis and Critical Control Points, Celine Serriere, managing director at Blue Pumpkin Restaurant in Siem Reap, points out that education and training are critical with both suppliers and staff to ensure food safety.
- Indonesia and Singapore has, food safety and packaging is covered under revised or updated laws: Law 18/2012 (the new Food Law which replaces the Food Act of 1996) and Sale of Food Act revised in 2002 (old version 1983). Thailand, Malaysia, Viet Nam and Philippines have legislations and/or government orders specifying characteristics of food packaging.

Source: Seth, Anu. Is Food in Yangon Safe and Hygienic? (November 2014). Available at Myanmar Insider:

<http://www.myanmarinsider.com/is-food-in-yangon-safe-and-hygenic/>

Myint, Shwe Yee Saw. One-third of street food has dangerous bacteria: study (20 January 2014). Available at Myanmar

Times: <http://www.mmtimes.com/index.php/national-news/9309-one-third-of-street-food-has-dangerous-bacteria-study.html>

Mon Kyaw Hsu. Burma Lacks Food Safety (13 February 2014). Available at The Irrawaddy:

<http://www.irrawaddy.org/interview/burma-lacks-food-safety.html>

Gurusamy F.S.O. Drive against import of sub standard foods conducted (27 July 2015). Available at Food Safety Update:

<https://foodsafetyupdate.wordpress.com/2015/07/27/drive-against-import-of-sub-standard-foods-conducted/>

Clark, Mitzi Ng, and Nielsen, Catherine R. (September 2013). The Regulation of Food Packaging in the Pacific Rim.

Available at: [http://packaginglaw.com/3591\\_.shtml](http://packaginglaw.com/3591_.shtml)

Baliga, Ananth. Food Safety Needs Tightening (17 March 2015). Available at The Phnom Penh Post:

## II.4 Negative externalities

35. Negative externalities in this manual pertain to pollution arising from anthropogenic and industrial activities which have an impact on the quality of life and rights of consumers. First to be discussed is pollution of air and water sources, followed by waste as a byproduct of consumption and production, and lastly, climate change as cumulative emissions from use of fossil-based energy sources continue to increase as a consequence of lifestyles and economic structures.

### II.4.1 Pollution

36. In addition to the basic human right to water and energy, air quality has been considered an important environmental resource with a direct impact to the quality of life. Poor air quality is linked to respiratory problems, mortality and morbidity, decrease in productivity and accidents from poor visibility. Air quality is linked to power generation, use of vehicles that consume petroleum products, industrial activities, and agricultural practices such as slash and burn farming which is prevalent in many AMS.
37. Despite the importance of energy as a basic human right and necessity, the continuous use of fossil fuels for energy is contributing to air pollution. In the AMS, fossil fuels are the major source of electricity in households and industrial or service sectors and fuel for mobility or transportation. Burning of these carbon-based energy sources, coal, oil and natural gas, releases carbon monoxide and other harmful air pollutants that can be hazardous to the population when exposed at above permissible air quality standards, and may also be affecting not just the area where pollution is released, but also in other geographic locations as carried by prevailing winds. Air quality is also affected by agricultural practices such as slash and burn that contribute to forest fires and subsequently, haze, affecting not only where such phenomena occurs, but result to transboundary air pollution, as in the case of Indonesian forest fires in the 90s (Box 2e) and on occasion in recent years.
38. Another important negative impact of living in a civilized world is the increasing wastewater discharges that contaminate the water sources and the increasing water extraction to support households and livelihoods. Modern living allows for some conveniences like instant food and frozen processed meals, clothing and bottled beverages. All of these are possible through water-intensive manufacturing industries that deliver these goods to supermarkets at the convenience of consumers. The extractive industry of mining that supports everyday life also results to huge amounts of toxic heavy-metal laden wastewater. More important of the conveniences of living in modern times is sanitation at home – having flush toilets and bathrooms under the same roof. The number of installed bathrooms and comfort rooms in an urban area results to a concentrated wastewater from multiple households.
39. Air and water pollution are a consequence of industrial and individual consumption patterns that threaten the basic right of each consumer and individual while supporting each and everyone's right to water and energy. The delivery of utility services to homes in itself requires vast networks of pipes and electricity cables that used up energy, metals and labor. The built environment and supporting infrastructures require energy to operate. Resources are extracted, processed and used up to support the health and wellbeing and development, but not without by-products.

Box 2e. Transboundary air pollution

- The Indonesian forest fires in the 1990s, which resulted to damages equivalent to about USD 8-10 billion, saw the transformation of a national environmental problem into one of regional significance due to the transboundary nature of the air pollution reaching its neighboring countries. While it was documented that land-use policies and lax enforcement of existing laws contributed to the problem, little action was made to control the forest fires and compensate affected communities outside of the country.
- By looking into international agreements to guide local action (internationalization) and assistance of various entities (ASEAN, United States and United Nations Environment Programme), the local problem became an international issue. And this saw substantial gap in the action response of the states to the fires with respect to Principle 12 of the Stockholm Declaration on the Human Environment (1972), which states:

*States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*

- Some lessons have been offered for future, which includes:
  - a. The fires, in one sense an international issue from the moment significant levels of smoke crossed international borders, helped internationalize the Indonesian land-use policies that made them possible.
  - b. The growing impact of the widely heralded “global civil society” seemed evident in this process.
  - c. The crisis suggested the increasing significance of private business, not just as the source of environmentally destructive behavior but also as a possible ally for environmentalists.
  - d. Preventing a recurrence of the Indonesian fires will require tough national measures, which internationalizing or “legalizing” the issue cannot guarantee.

Source: Springer, Allen L. *The Indonesian Forest Fires: Internationalizing a National Environmental Problem*, in *International Environmental Cooperation: Politics and Diplomacy in Pacific Asia* (Paul G. Harris, Ed.), 2002. University Press of Colorado.

#### II.4.2 Waste management

40. Another by-product of consumption and production of goods and services is waste. Solid wastes, chemicals and hazardous wastes generated are increasing as AMS continue to industrialize and grow in population and wealth. It is a well-known fact that as more and more of the population are able to move out of poverty, people are increasingly able to consume. Middle class consumers in the region are on the rise, as well as demand for products. In turn, waste is increasing, putting pressure on existing landfills and subsequently to water resources as unsanitary and poorly built dumpsites can leach out

chemicals to water bodies. Uncollected waste is not only unsightly, but can harbor bacteria and disease.

41. Kitchen waste, paper, plastic, battery, electronic goods, appliances are among the wastes produced in households. Plastic, in particular, proves to be a problematic item to manage because of the bulk of plastic waste produced and the nature of the material itself, and policy responses so far have yet to prove to be effective in dealing with it (Box 2f). Waste containing toxic components such as batteries, electronic goods and electrical items are often discarded as domestic solid waste. Whereas informal waste segregation and collection in developing countries may prove to contribute to decreasing the recyclable materials in landfills, oftentimes, these countries do not have the appropriate technology and capacity to recycle or dispose of such items. Even with basic kitchen waste like oil and grease, a common practice is to dispose of it in the sink or in waterways, increasing the pollution load of the receiving water.

#### Box 2f. Plastic waste: impacts and policy response

- Plastic waste has been a subject of many policy responses in recent years because of the increasingly apparent impacts of plastic waste to the physical and natural environment to the endocrine disruptions it can cause to human and animal health. Improperly disposed of plastic can (1) clog storm drains and cause flooding, (2) reach the shoreline or float to the open waters causing entanglement of wildlife species or be washed away to other places bringing with it invasive species as it leaches chemicals all the while, and (3) attract contaminants such as persistent organic pollutants (POPs) and transport it to different environments polluting the food chain as it gets ingested by wildlife and bioaccumulate up to humans.
- Policy responses to plastic waste vary, employing voluntary action through beach and coastal clean-ups, relying on regulatory means to ban plastic waste disposal at sea, ban the use of plastic or set targets for waste management and recycling, and introducing market-based instruments such as deposit schemes and taxation. However, more studies and applications are needed to develop effective means of managing plastic use and plastic waste.
- In addition to the prevalent use of plastic in everyday life, the problem of managing plastic waste becomes apparent when the implications of improper waste disposal to marine life, coastal environment, groundwater table and the use of chemicals or commercialization of new products. While there is no single measure prescribed in managing plastic waste, a range of responses is necessary that specifically addresses plastic waste management, as well as others that cover the different policy areas where plastic waste has an impact such as coastal and chemical management and groundwater management.

Source: Plastic Waste: Ecological and Human Health Impacts by the European Commission (November 2011). Science for Environment Policy, In-depth Report.

42. Disposal practices in many countries are not able to cope with the magnitude of waste generated, and landfill facilities are lacking. Knowledge of recyclables are able to divert some plastic, paper, glass and metal to junk shops and possibly recyclers, but improper handling of waste or the lack of protective equipment thereof, especially in handling toxic and heavy metals, pose a risk to health and the environment. Waste management remains a challenge to many developing countries due to consumption and production





patterns, lack of management capabilities and infrastructure to support effective waste management.

43. Aside from managing waste streams generated within the country by production and consumption activities, countries in Asia, particularly South and Southeast Asia are becoming recipients of illegal waste trade (Box 2f).<sup>23</sup> Where countries do not have the capacity for waste management and treatment or disposal of toxic and hazardous waste, becoming recipients of illegal waste increases the social, economic and environmental costs of these countries without hope for defining accountability and prosecution of responsible entities (Box 2g).

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<sup>23</sup> Rucevska I., Nellemann C., Isarin N., Yang W., Liu N., Yu K., Sandnæs S., Olley K., McCann H., Devia L., Bisschop L., Soesilo D., Schoolmeester T., Henriksen, R., Nilsen, R. 2015. Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge. A UNEP Rapid Response Assessment. United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal, [www.grida.no](http://www.grida.no)

### Box 2g. Illegal waste trade

- The global waste market sector from collection to recycling is estimated to be USD 410 billion a year (UNEP 2011), excluding a very large informal sector. In common with any large economic sector, there are opportunities for illegal activities at various stages of legal operations.
- The Basel, Rotterdam and Stockholm Conventions provide the forefront of our global efforts in tracking and managing hazardous waste and chemicals, along with other initiatives such as the UN Solving the E-waste Problem (StEP) Initiative on electronic waste. The Basel Convention is the main global umbrella institution that regulates the transboundary movement and disposal of hazardous and other wastes. One of its provisions includes an obligation for Parties to cooperate in cases where illegally shipped waste has to be repatriated. Regional conventions such as the Bamako Convention, a regional agreement for the African region, and the Waigani Convention for the South Pacific region, are additional legal mechanisms aimed at preventing illegal trade. Lack of legal clarity may lead to both unintentional and intentional breaches of the regulations dealing with waste management and transboundary movement. Furthermore, the Basel Convention allows the Parties to define the wastes in addition to the waste lists under the Convention, and recognizes the right of the Parties to adopt their own national legislation to prevent and control of hazardous wastes and other wastes (Article 3.1 and Article 4.1). These grey zones and different national legislations are clear challenges for the law enforcement community. Enforcement is undoubtedly also a challenge.
- The key driver for illegal waste shipments to destination countries is the profit generated from payments for safe disposal of waste that in reality is either dumped or unsafely recycled. It may, however, also include an additional profit from recycling certain components. While the latter appears to be positive, in practice it develops environments that are hazardous to health, and typically leads to subsequent dumping of majority of the waste.
- Both small- and large-scale smuggling techniques can be observed all over the world, from organized truck transport across Europe and North America to the use of major smuggling hubs in South Asia, including widespread container transport by sea. Large numbers of abandoned waste containers with unknown contents are stored in different ports in Asia and in other parts of the world.
- Stringent enforcement in one country commonly leads to changes in illegal shipment routes through neighbouring countries. Strong enforcement practices, such as China's Green Fence campaign, have been changing the traditional routes for illegal waste shipments.
- The shipment of toxic material and electronic waste poses a particular acute threat for involvement and growth of organized crime. ... There is likely no other area of organized crime that provides such a significant opportunity for money laundering and tax fraud as waste disposal, with its near complete lack of monitoring, statistics or reporting.
- Without any significant enforcement efforts dedicated to the mapping, investigation and possible prosecution of criminals involved in illegal waste collection, illegal dumping and transport activities are likely to grow, as will the associated threats to human health and environmental security.

Source: Excerpt from the Executive Summary of the UNEP report Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge. A UNEP Rapid Response Assessment.

### II.4.3 Climate change

44. Since the start of the industrialization massive amounts of fossil fuels have been burnt and used to build the modern society and economies today. Burning of fossil fuels releases air pollutants of which is carbon dioxide, a known GHG with a lifetime in the scale of centuries. Although the contribution of the region to global GHG emissions is far less compared to top emitting countries, impacts of climate change are distributed throughout the globe, with some low-lying and archipelagic countries more vulnerable than others. Apart from the expected increase in global average temperature, water supply is also vulnerable to climatic changes such due to drought and resultant flooding from excessive rainwater.
45. Recent typhoons and calamities that hit the region damaged properties, infrastructure and agriculture that resulted to loss in gross domestic product (GDP). Predicted impacts of climate change in the region include drought, sea level rise and stronger typhoons which would impact tourism, agriculture, properties and productivity (Table 1). Resiliency strategy of the AMS to weather these impacts are needed to protect human welfare and address socioeconomic challenges.

**Table 1.** Summary of the observed impacts of climate change on agriculture sector in Southeast Asia

Climate change	Observed impacts
Increasing temperature	<ul style="list-style-type: none"> <li>- Decreased crop yields due to heat stress</li> <li>- Increased livestock deaths due to heat stress</li> <li>- Increased outbreak of insect pests and diseases</li> </ul>
Variability in precipitation (including El Nino Southern Oscillation)	<ul style="list-style-type: none"> <li>- Increased frequency of drought, floods, and tropical cyclones (associated with strong winds), causing damage to crops</li> <li>- Change in precipitation pattern affected current cropping pattern; crop growing season and sowing period changed</li> <li>- Increased runoff and soil erosion caused decline in soil fertility and consequently crop yields</li> </ul>
Sea level rise	<ul style="list-style-type: none"> <li>- Loss of arable lands due to advancing sea level</li> <li>- Salinization of irrigation water affected crop growth and yield</li> </ul>

Sources: Boer and Dewi (2008), Cuong (2008), Ho (2008), Jesdapipat (2008), Perez (2008), as cited in ADB. (2009). *The Economics of Climate Change in Southeast Asia: A Regional Review*. Asian Development Bank.

46. In an archipelagic tropical region, climate change impacts on livelihood, health, property, agriculture and infrastructure, among others require deeper understanding in the context of sustainable development. Similar to the other negative externalities discussion in this chapter, GHG emissions that result to climate change are a product of development. However, while air and water pollution technology has improved and waste minimization and recycling are improving, there is no commercialized technology to mitigate climate change in a way that would make a significant impact to the level of ambient emissions at present. Wastewater treatment facilities in Singapore can produce drinkable water. Air pollution technologies installed in vehicles and incinerators have reduced air emissions over the past decades. For climate change, reducing consumption of energy and efficiency of electrical goods are the available option in addition to the shift to clean alternative energy, which is happening slowly. Hence, an understanding of the interaction between providing basic human necessities and rights and the negative impacts of these services and equity is extremely important given the climate scenario expected in the region.

## II.5 Consumer education and consumer information

47. While there have been increasing dialogue, concern and presence of environmental issues on television and print media, consumers still lack the knowledge, skills and information to be able to make a choice that would support sustainability. Consumer education aims to empower consumers, equip them with the knowledge and skills to become discerning consumers with particular regard for consumer and human rights and societal welfare in general, that when faced with a choice, they can make use of these faculties and available information to make an informed and conscientious choice. Consumers need to be aware of societal responsibilities that just as governments have the role of providing services, individuals also have the responsibility to act critically especially in terms of consumption choices. The consumption and production of goods and services, as discussed in the previous chapter, has negative externalities. Especially important to consumer education and choice is the consumption of goods. What does sustainable consumption entail and how can consumers practice it? What tools are available to assess options? What information are needed to make an assessment?
48. Consumer information is as important as consumer education in forming responsible consumers. Without the product information, consumers will not be making informed choices under uncertainty. Skills would not be put to good use if there is no available product information to process. There is a need for transparency in product information and for regulatory measures to support it.
49. The definition of sustainable consumption stresses action in two dimensions, namely, shift to resource efficient consumption and less consumption. It should be noted that although resource efficient consumption is chosen, consumers need to be cautioned about rebound effect. For instance, even though there may be an increasing awareness and encouragement of consumption of recycled materials, people may end up consuming more of a recycled material than the regular item. A recycled product will still have an impact to the environment, so this does not provide the license to overconsume such goods and services. This is just an example of the many facets of sustainable consumption that need to be taught to consumers.
50. The question of the access to consumer education is also crucial. In developing countries where not every individual is afforded an education, how can consumer education reach those without access?

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### Exercise 2. Environmental concerns for consumer protection and how these are addressed

- What are the Consumer protection issues in the provision of environmental goods and related services in your country?
  - Access to public utilities (water and energy)
  - Affordability of public utilities
  - Quality and safety of food and related products
  - Negative externalities
  - Consumer education and consumer information
- Is there law, policy, implementing rules and regulations or industry norm (such as product standards, certification and other voluntary mechanisms) that protect the consumers from possible environmental hazards? Are the specified laws, policies

and related regulations strictly implemented? Answer this item for each of the issues you identified in the previous question.

- Does the objectives, principles, strategies and other provisions of the law match/adequately target consumer concerns?
- What is the main approach of these laws in protecting the environment and consumer welfare (e.g. polluter pays principle; pollution prevention; reduce, reuse, recycle)?
- What approach has been most effective in addressing these environmental concerns and consumer welfare?

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### Further Readings:

UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.). Available at: [http://www.switch-asia.eu/fileadmin/user\\_upload/RPSC/capacity-building/SCP-Manual\\_low-resolution\\_.pdf](http://www.switch-asia.eu/fileadmin/user_upload/RPSC/capacity-building/SCP-Manual_low-resolution_.pdf)

UNEP/SETAC Life Cycle Initiative (2011). Towards a Life Cycle Sustainability Assessment: Making informed choices on products. Available at: [www.unep.org/pdf/UNEP\\_LifecycleInit\\_Dec\\_FINAL.pdf](http://www.unep.org/pdf/UNEP_LifecycleInit_Dec_FINAL.pdf)

Guzman Ruth; Hezri Adnan; Anunthavorasakul Athapol; Didham Robert James; Lee So Young And Ofei-Manu Paul. The Role of Governments in Education For Sustainable Consumption II: Strengthening Capacity For Effective Implementation In Malaysia, Philippines, And Thailand (IGES Policy Report 2014-02). Available at: [http://pub.iges.or.jp/modules/envirolib/upload/5889/attach/IGES\\_ESC\\_Policy\\_Report\\_2014-02.pdf](http://pub.iges.or.jp/modules/envirolib/upload/5889/attach/IGES_ESC_Policy_Report_2014-02.pdf)

## PART III PRE-MARKET INTERVENTION/ PROTECTION

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### Key Learning Objectives:

- Know the different proactive measures to protect consumer rights in environmental issues
- Learn how these proactive measures are implemented and some success factors in the given examples and also in your country

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51. The consumer protection issues presented in the previous chapter highlighted the challenge of sustainability involved in providing the basic human rights and safeguarding consumer rights in environmental goods and services. Consumption on materials to create goods and services, as well as consumption of goods all have negative externalities that threaten the basic right of consumers to a safe and healthy environment. Consumer education and consumer information are also challenges that need to be addressed to better respond to enable sustainable development. In steering development and growth towards sustainability, environmental laws have been passed

that focus on managing pollution and preventing pollution, and development plans have been prepared to address long-term sustainability of natural resource use. Policies and regulations are the main pre-market interventions used to safeguard consumer rights to utilities and environmental goods and services, with some voluntary initiatives to support when regulations are lacking. Scope of the law and level of implementation vary by country, and challenges exist for enforcement of these laws. The following subsections discuss the point of regulations and how these support or promote consumer protection on environmental concerns.

### III.1 Regulation of public utility and securing supply of utilities

52. For the past years, public utilities are increasingly being opened to participation by private entities and cooperatives, mainly as corporations have better access to large capital needed to invest in building infrastructure needed for better services and farther access. Target of access to water supply of the Millennium Development Goals in the region is likely to be achieved only for urban areas, and not in rural areas by most countries, especially in Indonesia and Philippines where both access to water supply in urban and rural areas have regressed while the number of people supplied in urban areas may have increased<sup>24</sup>. Hence, management of water as a resource and of public utilities are critical to ensure access to water and sustainable and sufficient supply.
53. Public utilities are regulated by the government through price controls and service adequacy. Public utilities are granted or can apply for service areas, and enter into an agreement with the government regarding the needed services and requirements. For instance, regulation of water service utility has also focused on water quality in addition to access. In many instances, water utility will also have the capability to treat wastewater or water source before being delivered into the pipeline for household consumption.
54. While progress has been made in opening public utility management to private and consumer groups, there have been discussions on the potential for public utilities to be publicly owned and managed again. In the policy paper by Cumbers<sup>25</sup>, he argues in the case of the United Kingdom that it may be time to rethink strategies to renew public ownership of public utility because objectives of private and foreign companies reflect corporate interests which may not be strategic for the common good, social needs and environmental concerns (Box 3a).

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<sup>24</sup> ADB, UNDP, UNESCAP & WHO. (2006). *Asia Water Watch 20115: Are Countries in Asia on Track to Meet Target 10 of the MDGs?* Manila: ADB.

<sup>25</sup> Cumbers, A. *Renewing Public Ownership: Constructing a Democratic Economy in the Twenty-First Century*, Policy Paper (2014).

Box 3a. Renewing public ownership of public utility for common good

- Since 1979 the privatisation and marketization policies of successive governments have delivered the economy into the hands of a narrow set of vested corporate and financial interests. The consequences are that decision-making is geared towards short-term profit and rent-seeking, at the expense of more longer-term thinking and in particular strategic concerns for the common good.
- Privatisation has also been accompanied by a growing foreign ownership of the UK's most strategically important resources and assets, raising important questions about government's ability to control and administer important public policy objectives such as tackling climate change and providing essential services to the public at the lowest cost.
- In particular we need to create new forms of public and collective ownership that are better able to develop an economy to serve social needs and environmental concerns over private gain. Such forms of ownership should combine higher level of strategic coordination with more localised forms of public ownership. In all cases, though, ownership should seek to enhance democratic accountability and public engagement in the economy.
- The failures of privatisation in other countries are producing a growing trend to take back utility sectors into public ownership.

55. Planning, innovation, political will and public education and awareness have been the pillars of success for securing water supply of Singapore. Water security has been a challenge for Singapore, and the strategic planning and research and investment done by the national water agency of the country PUB has earned itself international recognition as model city for water management (Box 3b).

### Box 3b. Singapore: Model city for water management

- The strategic planning and investments in the last 50 years by the national water agency of Singapore, PUB, has led to a diversification of water resources of the country: “**The Four National Taps**” that enables the country to be resilient to weather variability:
  - a. Local catchment water – Two collection systems are in place for rainwater and used water, respectively.
  - b. Imported water – Bilateral agreement with Johor, Malaysia for water imports will expire in 2061.
  - c. NEWater – NEWater is Singapore’s high-grade purified reclaimed water safe for drinking. The four NEWater plants in operation in 2010 is able to serve 30% of the nation’s water needs.
  - d. Desalinated water – The two seawater reverse osmosis plants of Singapore is able to meet up to 25% of the demand.
- Recognizing that **water conservation** is as important as ensuring water supply, water conservation has also been prioritized through programs that aim to promote water saving habits and Water Efficient Building Certification. Per capita domestic water consumption per day is 163 L in 2003, currently at 151 L, and is aimed to be further reduced to 140 L by 2030.
- **Community engagement** programs have also been initiated by the PUB to encourage the 3P (People, Public, Private) involvement in water management and for them to value water resource, such as:
  - a. Water Network Panel is a high-level panel composed of representatives from stakeholders in the water industry which serves to provide feedback about the programs and projects of PUB.
  - b. Water Conservation Programs like 10% Challenge and 10-Liter Challenge to encourage reducing daily water consumption by the said amounts.
  - c. Watermark Award is annually awarded to recognize individuals and organizations for contribution to water cause.
- Singapore as a **Global Hydrohub** – Singapore has over 130 water companies and 26 research centers, and PUB is taking a lead role through the Environment and Water Programme Office (EWI) in coordinating industry efforts for innovative ideas and technologies for the water sector. The National Research Foundation (NRF) has also pledged US\$ 470 M for research and development in the water sector.

Source: Excerpt from PUB. The Singapore Water Story (09 July 2015). Available at: <http://www.pub.gov.sg/water/Pages/singaporewaterstory.aspx>

56. Regulation of utility also concerns price or cost of utility. In view of consumer and human rights, utilities need to be priced in consideration of equity. Price of utility is regulated so as to avoid companies from exercising monopoly and to ensure fair pricing. The determination of utility rate is not a very transparent one, but mainly reflects the need to recover the investments made and the revenue that are allowed to them by the regulator.
57. Water price need to reflect the real cost of the product, treatment, distribution, wastewater treatment, and other involved processes to better inform consumers of the value of environmental resources. In a water scarce country like Singapore, tax is imposed on water utilities to encourage conservation efforts by consumers. In addition to addressing access to utilities, securing the supply of water and energy is a challenge to



countries in the region to remain economically competitive. Singapore is especially unique case among AMS as its environmental concerns may be varied. While the country has managed to development very well, it is still vulnerable to water supply considering its geographic nature. Importing water, desalination plants and water treatment and conservation are measures the country has planned and executed well. However, it is also important to balance consumer right to access to water with pricing mechanisms and supply constraints.

58. Energy in general receives subsidies from government, but more so in the case of oil-rich Brunei which also subsidizes utilities. Energy cost in the region is highest in Singapore followed by Cambodia, which is a stark contrast considering the income disparity in these two countries. Indonesia, on the other hand, has enjoyed energy subsidies with government spending on such subsidies being higher than spending on defense, health, education and social security combined,<sup>26</sup> but there has been recent proposals that aim to scrap the subsidies for middle class households.<sup>27</sup> As with the suggestion of factoring in the externalities of water supply in its pricing, energy (petrol and electricity) pricing also need to reflect its true value considering it is the sector contributing most to climate change and air pollution.

### III.2 Self-regulation and third-party certification

59. Product or service certification adds credibility to its claims, and to being able to manage environmental impacts of such products or service in the case of getting certified by environmental management system such as ISO 14001 developed by the International Organization for Standardization. Food and products that lack regulation adopt industry-wide labels or apply to voluntary certification schemes.
60. There are currently no legislation in AMS that define or provide criteria for organic produce. Aside from the claims of producers about their products, no regulatory body can attest to the truthfulness of such claims. As this is a growing sector, efforts can start with self-regulation among organic producers. They can form associations of local organic growers whose seal will appear in organic local produce or products that are use organically grown produce. Industry association on organic agriculture in Cambodia, Cambodian Organic Agriculture Association, certifies organic and chemical-free products and issues certification for products that comply with their standards.
61. Among the pre-market interventions that can be used in the private sector is for them to initiate certification in internationally recognized labels if operations are in that scale. Labels such as Forest Stewardship Council (FSC) and involvement in fair trade can support environmental/ sustainability claims of products. However, there are cases when certification and other environmental information can lead to false claims and greenwashing (Box 3c).

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<sup>26</sup> Global Subsidies Initiative and The Institute for Essential Services Reform. 2012. A Citizen's Guide to Energy Subsidies in Indonesia 2012 Update. International Institute for Sustainable Development: Manitoba/Geneva.

<sup>27</sup> Purnomo, Herdadu and Rahadiana, Rieka. Widodo to Switch Off Middle Class Power Subsidy in Budget Reform (17 June 2015). Available at: <http://www.bloomberg.com/news/articles/2015-06-16/widodo-to-switch-off-middle-class-power-subsidy-in-budget-reform>

Box 3c. Greenwashing: The case of Greenpalm certificates

- In 2009, Cadbury has landed itself in a *PR mess* when it claimed that they purchased certified sustainable palm oil when their purchase only comprises a small percentage of the palm oil used to make the chocolates (2,800 tons in eleven months as of date when the issue surfaced in 2011 against the 40,000 tons annual consumption) and that the same claim is not allowed by the rules of the Roundtable on Sustainable Palm Oil (RSPO), which created the Greenpalm certificates.
- Greenpalm certificates is a scheme operated by Book & Claim, UK that supports the sustainable production of palm oil. Greenpalm certificates are given to a plantation once RSPO auditors verify its sustainable operation. The certificates issued are equivalent to the tonnage of palm oil sustainably produced there, but this sustainably produced palm oil is not kept nor sold separately and the Greenpalm certificates are sold to anyone. Therefore, claiming that a chocolate bar is produced using sustainable palm oil cannot be made because “green” palm oil is not distinguished at the point of sale. Rather, RSPO and Greenpalm state that the claim that clients can make should be that it “supports the production of RSPO certified sustainable palm oil.”
- The Greenpalm scheme has been considered by many to be used as a marketing tool and a greenwash. LeAnn Fox from Palm Oil Consumers Action (POCA) clarifies the issue by saying “If we look at other certification bodies like the organic label or fair trade label, when you buy something that is organic or fairly traded, that’s what it is. No one else has offsets like the RSPO where brands could say we couldn’t find organic product so here’s a conventional one and the offset we bought to make it organic.”
- The Indonesian Palm Oil Association (GAPKI) has cancelled its membership with the RSPO in 2011, and the co-founder World Wildlife Fund for Nature and the Malaysian Palm Oil Board (MPOA) has been critical of such scheme.

Source: Pearce, Fred. ‘Green palm oil’ claims land Cadbury’s in sticky chocolate mess (20 August 2009). Available at: <http://www.theguardian.com/environment/cif-green/2009/aug/20/cadburys-palm-oil>  
Voices for Biodiversity. Consumer groups slam greenwashing in sustainable palm oil marketing (08 August 2013). Available at: <http://voices.nationalgeographic.com/2013/08/08/consumer-groups-slam-greenwashing-in-sustainable-palm-oil-marketing/>

### III.3 Regulation on product safety, chemical use and imposition of bans

62. An established guideline prior to the introduction of a product to the market is registration with the relevant government agency in the country. Although registration may be formally done, product quality standards do not yet exist for many product categories or safety inspections may not be strict, allowing sale of substandard or contaminated or illegal chemicals in products.
63. The use and amount of regulated chemicals allowed in a product is also regulated to safeguard the health of consumers. This is typically done through the publication of a list of regulated chemicals by the concerned government agency which is updated as necessary. The United Nations also publishes a Consolidated List of Products – Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments – to guide governments, producers and consumers on products that are harmful to the health and environment.

64. For hazardous products, adequate labelling can be utilized to caution consumers of the dangers or probably risks in the use of a certain product. In certain products, personal protective equipment may be prescribed in its application and should be clearly visible in product packaging.
65. The use of permits remain the prevailing mechanism in export and import of chemicals and hazardous substances. For instance in Brunei, an Application Permit (AP) is utilized to secure import or export of ozone depleting substances. In Singapore, the Hazardous substances Act (Environmental Protection and Management Act) requires permit for importation, transport and use of hazardous substances.

### III.4 Pollution regulation and permissible emissions

66. To manage environment and natural resources, the state of environment is defined and the quality aspects defined. For instance, air quality is defined by particulate matter, ozone and carbon monoxide among other pollutants present in ambient air. Water quality parameters that determine its state include biological oxygen demand, nitrates, phosphates, turbidity and pH. To maintain the quality of air and water, industrial and polluting activities are regulated through prescribed permissible emissions from source, and through regular monitoring of the quality of water bodies and air in specific areas. The World Health Organization prescribes a set of values and parameters (standards) to quantify air and water quality.
67. Monitoring and reporting of air quality in many AMS are already in place, with air quality standards for ambient air and air pollution sources. Most countries in the region have an ambient air quality standard and monitoring to inform the public of the quality of air at certain times of the day. Brunei does this regularly and releases updates on air quality as measured by a pollution standard index (PSI) through the Department of Environment, Parks and Recreation website. Corresponding interpretation of the PSI is also provided in the press release of the Department and hotlines are provided for open burning to be reported and for air quality queries to be entertained. Regular air quality monitoring is done to also allow the government to monitor where open burning is likely to be practiced since open burning has been banned in August 2009 as it contributes to hazy conditions. Open burning in the country carries a fine of not more than US\$ 100,000 which can be exceeded and/or add imprisonment term of not more than 5 years if the open burning is proven to endanger human life and property (Chapter 22, Penal Code Section 277A).
68. Vehicle emission standards are also in practice in the AMS where tailpipe emissions are measured and compared against allowable values as a basis for renewing vehicle license. Importing used or secondhand vehicles are also restricted in some countries with particular consideration for fuel efficiency, emissions and disposal. In Jakarta, for instance, a pilot project has been initiated where from 6:00 AM to 10:00 AM every Sunday is designated as a car-free day.<sup>28</sup> Also related to controlling mobile and local pollution is addressing transboundary air pollution which usually is a problem in geographically linked countries. Forest fires and open burning are in times uncontrolled and therefore, require stricter enforcement of ban on open burning and monitoring of forests.

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<sup>28</sup> Dewi, Sita W. (2014, September 15). Jakarta Car Free Day more popular, commercial. Retrieved from The Jakarta Post: <http://www.thejakartapost.com/news/2014/09/15/jakarta-car-free-day-more-popular-commercial.html>

69. Better enforcement of laws governing air quality and the prevention of pollution is needed. In homes, energy efficiency and savings are now a priority consideration in choosing home appliances such as air-conditioning, refrigeration and audiovisual equipment to reduce energy intensity and related air emissions from power consumption. Consumers are now also increasingly taking into consideration fuel efficiency of vehicles as a criteria for purchase, and fuel type for use.
70. The use of solar cells with adequate electricity pricing incentives (such as buying surplus electricity back to the grid) can be an important mechanism in the region where sunlight is abundant. Incentivizing use of renewable energy can lessen the demand for fossil fuels and reduce greenhouse gas emissions.

### III.5 Waste management at home, in the community and by business

71. Plastics have been a part of the conveniences afforded in this modern life. However, the problem with plastics is that it is designed to last long and yet it is used in a disposable manner. In addition, indiscriminate disposal of plastic packaging and containers further worsen the problem considering again the life span of plastics which is not easily degradable.
72. Waste management in AMS has been mostly delegated to the local governments, with some contracting with private waste collection and recycling companies while others opting to establish a system on their own. A common feature of the waste management law in the region is the prioritization of the 3Rs (Reduce, Reuse and Recycle) in the hierarchy of waste management options (Fig. 1).



Figure 1. Waste management hierarchy based on LCA perspective<sup>29</sup>

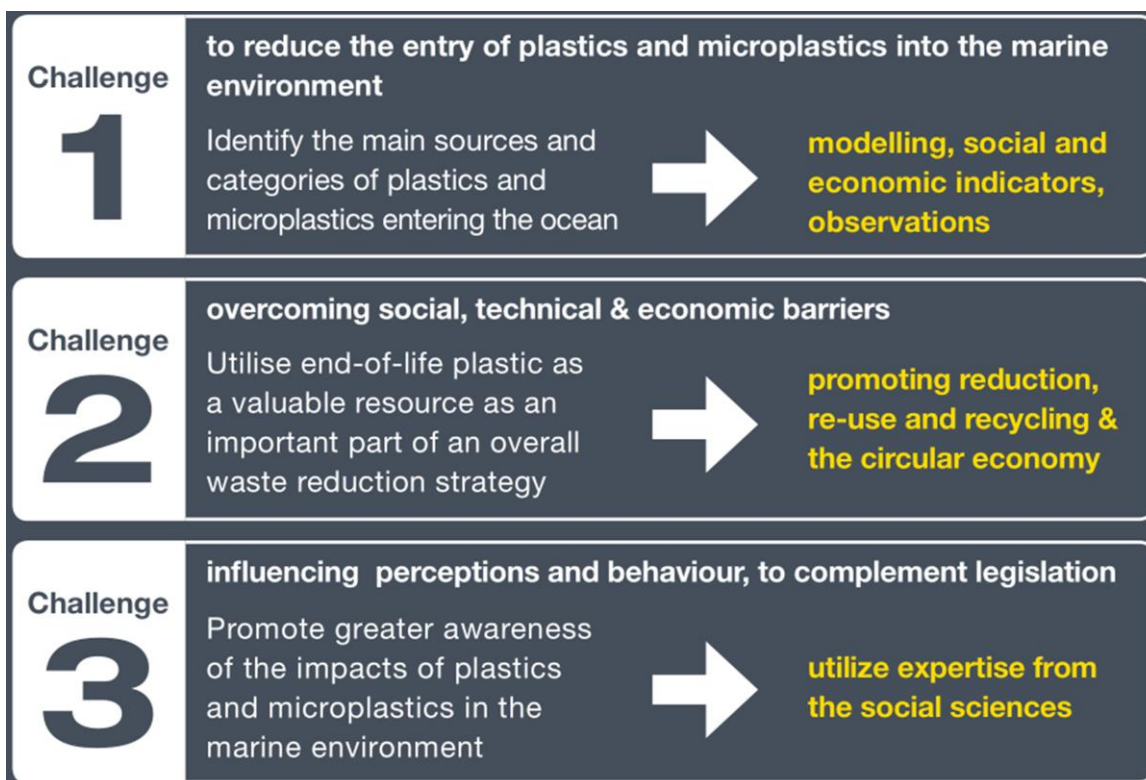
73. Waste minimization by imposing fees on the use of plastic bags is a common measure initiated in AMS. Only a few like the Philippines have started ban on plastic bags in certain cities. There is no mandatory recycling (unlike countries in the European Union)

<sup>29</sup> Waste Aware Business. (2009). Waste Hierarchy – What Level Have You Reached? Available at: <https://wasteawarebusiness.wordpress.com/2009/03/04/waste-hierarchy-what-level-are-you-at/>

but steps to reduce waste (10 cents for plastic bags; voluntary but initiated by government-linked organizations) push to encourage residents to separate their waste. Because measures in waste management will necessarily involve commitments or actions from people, regulation and tools that are going to be implemented need to take into consideration the social dimension. This challenge is highlighted in the recent work by the Joint Group of Experts on Scientific Aspects of Marine Environmental Protection (GESAMP) focusing on microplastics in the ocean (Box 3d).

**Box 3d. Recommendations for action on microplastics in the ocean**

- The Joint Group of Experts on Scientific Aspects of Marine Environmental Protection (GESAMP) conducted a global assessment of the source, fate and effects of microplastics based on available information, and provided some recommendations for action that necessitates technical and regulatory approach with a need for social dimension:



Source: GESAMP Working Group 40 (2015). Sources, fate & effects of microplastics in the marine environment – a global assessment.

74. Market mechanisms for waste management have been quite effective in Singapore. Singapore has done well in managing solid waste generated in the small island country through a privatized waste management system and with associated fees that are highest in the region (most countries do not collect/ collect menial waste management fees). Recycling rates have improved to 60% in 2014 from 40% in 2000 although it is not mandatory. Remaining waste are either incinerated or disposed of at an offshore landfill



site.<sup>30</sup> Singapore has embarked on Semakau Landfill Phase 2 which is a win-win solution for land reclamation and allocating landfill area for treated solid waste.

### III.6 Product labelling and Eco-product

75. To support consumer information, product labels should provide applicable basic information about a product such as ingredients of processed food, manufacturing date, expiration date, company information, energy efficiency, recyclability, etc. In electrical products, energy labels such as Energy Star have been successful in promoting energy efficiency by providing information as well as certification of the efficiency of a product. In common household items like refrigerator, air-conditioning unit and laundry machines energy efficiency labelling is widely used nowadays to inform consumers when making purchases. Information campaigns have been widely successful in shifting consumer demand from energy consuming and heat emitting incandescent bulbs to compact fluorescent lamps which consume less energy even as low as 1-watt bulbs
76. In consideration of sustainability and of consumer awareness, more and more companies are looking into greening production practices and reflect this in the environmental performance of a product or service. To aid in the greening of production practices, life cycle assessments (LCA) are employed. LCA, as defined in the ISO 14040:2006, is the compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle. Life cycle assessment can assist in:
- identifying opportunities to improve the environmental performance of products at various points in their life cycle,
  - informing decision-makers in industry, government or non-government organizations (e.g. for the purpose of strategic planning, priority setting, product or process design or redesign),
  - the selection of relevant indicators of environmental performance, including measurement techniques, and
  - marketing (e.g. implementing an ecolabelling scheme, making an environmental claim, or producing an environmental product declaration).
77. There are four phases in an LCA study (Fig. 2):
- Goal and Scope Definition, the product(s) or service(s) to be assessed are defined, a functional basis for comparison is chosen and the required level of detail is defined;
  - Inventory Analysis of extractions and emissions, the energy and raw materials used, and emissions to the atmosphere, water and land, are quantified for each process, then combined in the process flow chart and related to the functional basis;
  - Impact Assessment, the effects of the resource use and emissions generated are grouped and quantified into a limited number of impact categories which may then be weighted for importance;
  - Interpretation, the results are reported in the most informative way possible and the need and opportunities to reduce the impact of the product(s) or service(s) on the environment are systematically evaluated.

<sup>30</sup> NEA. (2015, March 12). *Waste Statistics and Overall Recycling*. Retrieved from National Environment Agency: <http://www.nea.gov.sg/energy-waste/waste-management/waste-statistics-and-overall-recycling>



**Figure 2.** Four phases in an LCA study, beginning with goal and scope definition, followed by inventory analysis, impact assessment and interpretation.<sup>31</sup>

78. Life cycle assessment offer an evaluation of the environmental impacts of a product or service from cradle to grave and can be a measurable and valuable tool in improving production processes, taking into consideration end-of-life of products, choosing alternatives and promoting eco-products. Life cycle assessments are conducted and increasingly applied by regulatory agencies and corporations to evaluate the inputs and outputs of processes, and determine the associated environmental aspects and environmental impacts at every stage of the life cycle of a product. Life cycle assessment has found numerous application from redesigning products to eco-labelling and sustainable public procurement. However, conducting LCAs in developing countries is a challenge because of the difficulty associated in data collection especially when Small and Medium Enterprises are the dominant players in the industry.<sup>32</sup> Studies will be based mostly on guesses and estimates, increasing the uncertainties and assumptions involved. In addition, globalization and trade allows for raw materials come from various countries with different production practices, transported to another country, packaged in a third country, transported to a fourth country and disposed of in another. Having a global supply chain introduces uncertainties and challenges in applying LCA (Box 3e).

<sup>31</sup> Source: ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework; UNEP Life Cycle Assessment, Available at: <http://www.unep.org/resourceefficiency/Consumption/StandardsandLabels/MeasuringSustainability/LifeCycleAssessment/tabid/101348/Default.aspx>

<sup>32</sup> UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

### Box 3e. Challenges for LCA: complex networks and multiple impacts

In many cases, the processes that are part of a product life-cycle are spread out geographically – as a result of globalisation such processes are often located even on different continents. Due to the complexity of these networks – the many stages typically involved, the large number of materials and components that are often used in a single product, and the geographic dispersion of the production and end-of-life treatment processes – it is extremely difficult for consumers to understand the full environmental impact of products and of available options. Electronic products and cars are examples of complex products with highly globalised supply chains, but also many other consumer products, such as food, clothing and apparel and furniture are increasingly traded across borders. Consumers who seek to understand the social conditions and environmental impacts in such global supply networks will usually have a hard time finding the information they would like to see. Governments are facing similar challenges when developing guidelines for green public procurement and when designing regulations and other policy instruments intended to shift patterns of consumption and production.

In addition, environmental impacts are not one-dimensional. The examples provided so far in this chapter have mostly discussed cases where only one kind of environmental impact, such as water or energy consumption or greenhouse gas emissions, has been of concern. However, in reality, products can impact the environment in many different ways such as through toxic releases, greenhouse gas emissions and nutrient discharges to water. A comprehensive view of products' environmental impacts requires that all significant kinds of such impacts be considered.

Source: UNEP & SWITCH Asia (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

79. Eco-labelling in AMS is being pursued by many countries in the region, and labelling requirements vary by country. Eco-labelling is tasked to a government agency which establishes product categories and minimum criteria for the eco-label to be awarded. A study by the Asia Pacific Roundtable on Sustainable Consumption and Production (APRSCP) on eco-labelling in the AMS revealed that many countries have established eco-labelling programs within the country already, and challenges to harmonize eco-labelling scheme in the region faces certain challenges (Box 3f).



Box 3f. Eco-labelling in ASEAN

- Eco-label policies and practices in the region vary widely. While some countries have started early on, others like Laos, Cambodia and Viet Nam have just begun or are in the process of examining eco-labelling schemes for implementation. There is no evidence of work done on eco-labelling by Myanmar.

Country	Eco-label	No. of Product Categories	Year Started	Administered By
Indonesia	Ramah Lingkungan	12	2004	Ministry of Environment
Laos	N. A.	N.A.	N.A.	In future, by Ministries of Environment & Natural Resources, Industry & Commerce, Science & Technology
Malaysia	SIRIM E-L Scheme	37	2004	SIRIM Bhd
Philippines	Green Choice	38	2002	National Ecolabelling Board
Singapore	Green Label	16	1992	Singapore Environment Council
Thailand	Green Label	23	1994	Thailand Green Label Board
Viet Nam	Vietnam Green Label	14	2009	<ul style="list-style-type: none"> <li>Viet Nam Environment Administration (VEA)</li> <li>Ministry of Natural Resources and Environment (MONRE)</li> </ul>

- The study conducted by the APRSCP on the feasibility of a regional eco-labelling scheme in the ASEAN found several challenges in the implementation of such programs, including:
  - Inadequate promotional efforts
  - Absence of fiscal or other incentives for producing eco-labelled products
  - Multiplicity of sustainability labels
  - Technical skills to develop national eco-labelling schemes need to be reinforced
  - Overall legislative framework is still being developed
  - National testing facilities are still at formative stages
  - Many economies are still highly dependent on imports of non-food items

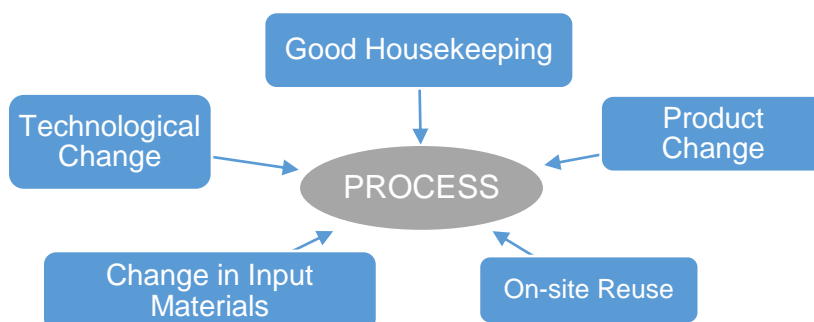
Source: Asia Pacific Roundtable on Sustainable Consumption and Production (2014). Report on Ecolabelling and Sustainable Public Procurement in the ASEAN+3 Region: Development of a Feasibility Study for Regional Ecolabelling Cooperation

80. Product labelling can be a means of marketing and promoting products that are produced using recycled materials, using less water, energy and chemicals, and in an

ethical manner. Various definitions of eco-product are provided by organizations and corporations<sup>33</sup>:

- a. Eco-products are designed according to the eco-design concepts and principles to have environmentally friendly features. Life-cycle concepts and engineering play a very important role during the development phase of eco-products. Eco-products are made from improved raw materials including recycled or biomass materials. In addition, during the production process, minimal energy and water resources are used with less waste and fewer pollutants. In the consumption phase, the use of eco-products can lead to energy and water savings, minimal emissions, and reducing waste and subsequent need for waste treatment. Eco-products are also designed to ensure the ability to recycle and recover materials and components. Eco-products are made from improved raw materials, use less energy and water resources, and produce less waste and emissions. When reused, recycled, or disposed of, eco-products reduce the amount of waste, including hazardous pollutants released to the environment. – *Asian Productivity Organization*
- b. Eco-products are designed according to eco-design concepts and principles to have environmentally friendly features. Eco-products are made from improved raw materials, including recycled or biomass materials. Eco-products are also designed to ensure the ability to recycle and recover materials and components. – *Eco-Products Fair 2005, Singapore*
- c. Environment-friendly Products means goods or services that contribute to saving more resources and reducing environmental pollution in comparison with other products with the same usage. – *Korean Eco Products Institute*

81. Essentially, eco-products apply the concept of LCA in designing the product to ensure minimal resource consumption and waste in all phases of product life cycle from production, consumption to disposal or end-of-life. Cleaner production (CP) tools play an important role in creating eco-products. CP has been defined by the UNEP in 1990 as ‘the continuous application of an integrated environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment’. Successful implementation of cleaner production has been observed for over 25 years. Basic techniques and reengineering tools are applied by cleaner production (Fig. 3).



**Figure 3.** Cleaner production process re-engineering<sup>34</sup>

<sup>33</sup> Srinivas, Hari. (June 2015). Sustainable and Eco Products and Services: A Database of Databases. Available at: <http://www.gdrc.org/sustbiz/eco-products-database.html>

82. Examples of product innovation across Asia applying the five simple cleaner production measures are as follows<sup>35</sup>:

- a. *Good Housekeeping* – Training of employees on good housekeeping practices such as solid waste segregation to 16 categories, using dishwasher and laundry machine at full capacity, and using filter/ traps in kitchen sinks resulted to a reduction in solid waste and wastewater at the Heritance Kandalama Hotel. - National Cleaner Production Centre, Sri Lanka n.d., Success Stories (Enterprise Benefits from Resource Efficient and Cleaner Production). Available from: <[http://www.ncpcsrilanka.org/success\\_stories.htm](http://www.ncpcsrilanka.org/success_stories.htm)>.
- b. *Product Modification* – Substituting carbon tetrachloride (CTC) with toluene in a pesticide plant in India minimised the health hazard at the workplace, reduced the volume of input, avoided use of ozone-depleting CTC and introduced cost savings. - Unnikrishnan, S & Hedge, DS 2006, 'An analysis of cleaner production and its impact on health hazards in the workplace', Environment International, vol.32, pp. 87-94. Available from: ScienceDirect.
- c. *On-site Reuse* – Trung Do Granite Company (Viet Nam) introduced a concrete pond with three-tank filtration/settling system as a means of collecting wastewater stream from burr cutting and sharpening processes. This measure enhanced the recovery of raw material (powder) for reuse, and the recirculation of clean (filtered) water. - Viet Nam Cleaner Product Center 2010, PRE-SME Project – Case study of Trung Do Granite Factory. Available from: <[http://vncpc.vn/pre-sme/uploads/case\\_studies/eng/PRE\\_SME\\_Case\\_study\\_Granite\\_Trung\\_Do.pdf](http://vncpc.vn/pre-sme/uploads/case_studies/eng/PRE_SME_Case_study_Granite_Trung_Do.pdf)>.
- d. *Change in Inputs* – By switching fuel from fossil fuel to coconut shells, Rathkerewwa Desiccated Coconut Industry utilised waste coconut shells from the process and reduced CO<sub>2</sub> emissions by 900 tons CO<sub>2</sub>e (NCPC Sri Lanka n.d.).
- e. *Technological Change* – The adoption of existing technology in snack food production phases (extruders, crisping ovens and packaging) enabled Ly Ly Food Industry Co., Ltd (Cambodia) to reduce energy losses and material consumption. Cambodian Cleaner Production Center n.d., IEEE Case Study of Ly Ly Food Industry Co., Ltd. Available from: <<http://www.cambodian-cpc.org/en/Publication/Case%20study%20of%20Ly%20Ly%20Food%20Industry%20Co.,%20Ltd.pdf>>.

83. National Cleaner Production Centers have been instrumental in the implementation of cleaner production activities in the region, which have immensely benefited from assistance from development partners UNIDO and UNEP (Box 3g). An example of application of LCA is provided in Box 3h.

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<sup>34</sup> UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

<sup>35</sup> UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

### Box 3g. National Cleaner Production Centres

- While there have been significant strides in the promotion and establishment of SCP policies in the region from multi-stakeholders, actually implementing them to achieve cleaner production is the challenge. Launching eight National Cleaner Production Centres between 1994 and 1995, UNIDO and UNEP have expanded this programme to 47 countries. In Asia, several national CP centres have been established which have evolving roles from solely focusing on CP issues to transcending to the wider scope of SCP. Operating locally, and collaborating regionally and internationally, NCPCs are able to gain and extend knowledge among themselves and to other countries. China and India were among the first countries to establish NCPCs, while among the youngest are Lao People's Democratic Republic, Cambodia and Indonesia.
- The study of Chiu (2009) on NCPCs in Asia shows that all countries that have established NCPCs have extensively enhanced CP law or policies in place. Conversely, the presence of NPCPs can also have a more substantial role to play in the country supporting these two entities.
- The long history of extended CP networks across Asia-Pacific within the UNIDO-UNEP NCPC community has served as a platform for collaboration and knowledge transfer. Establishing a regional platform can serve as a marketing tool – collective marketing – to profile what NCPCs can offer; enhance the resource pool for further implementation and support NCPC eligibility for international projects. The regional platform could serve as a regional think tank for the CP/ RECP strategies, and take advantage of the collective data gathering and higher level participation in global directional meetings, and craft the Asia-Pacific regional midterm, as well as long-term strategies for individual countries' NCPC members. Support for the development of project proposals to funding agencies such as GEF and EU may be offered by a regional entity to NCPCs. In addition, a regional platform could also assist with research regarding national, regional and international trends to identify mechanisms by which NCPCs can be scaled up to be at par with counterparts.

Source: UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

### Box 3h. Applying LCA in laundry detergents

Producers of laundry detergents were quite early out in conducting LCAs in order to see how their products could be reformulated for lower environmental impacts. It was soon found that a very significant environmental aspect of clothes washing is the energy consumption for water heating. Based on this insight, the manufacturers developed new series of detergents that would be effective at lower temperatures. This is a good example of a case where the producers saw their product as part of a larger system and explored both how the environmental impact of that larger system could be reduced and what role their particular product could play in such improvements. By using life-cycle thinking to redesign their product they reduced the life-cycle environmental impact and at the same time managed to save money for their customers.

Source: UNEP & Switch ASIA (2012). Sustainable Consumption and Production: A Handbook for Policy Makers With cases from Asia and the Pacific (1<sup>st</sup> Ed.)

## III.7 Development planning

84. Climate change risks have been already mapped in many countries in the region and costs estimated. From climate change laws to strategic resiliency plans, AMS is slowly developing tools to help prepare the country in the expected disasters and climate risks. This knowledge can be utilized in partnership with insurance firms to weather the loss from natural disasters such as climate change which is a vulnerability of the region (Box 3i).
85. Sustainable consumption and production tools are also increasing in prominence in recent environmental laws and plans, utilizing sustainable production tools, green economy and green investment in development planning.
86. Climate change impacts has also prompted the requirements for buildings to be of certain height above sea level in consideration of rising sea levels. Also in light of water shortage in Singapore, development of another desalination plant in Jurong to make use of seawater as water resource of the island is underway.

### Box 3i. Climate Risk Adaptation in Agriculture in Asia

- In Viet Nam in 2010, Swiss Re collaborated with Agribank and its insurer ABIC to structure an index cover to protect against loan defaults by rice farmers following poor harvests, covering up to 500,000 farming households. Viet Nam is among the five most severely impacted countries by future climate change and the agriculture sector produces 22% of GDP employing over 50% of Viet Nam's 86 million population.
- In China in 2009, Swiss Re structured a reinsurance solution for the Beijing Municipal Government with China Re (a domestic reinsurer) to provide additional capacity for stop loss protection, to cap the Beijing Municipal Government's liability to local insurers for losses to crops, and to livestock. The Beijing province is at the southern boundary of China's grain belt of the north-east that is prone to frequent droughts with an expected increase in drought risk with climate change scenarios.
- In India, Swiss Re pioneered a deal with Basix (MFI) in Andhra Pradesh for deficit rainfall in 2004 with now 350,000 farmers insured, and has been collaborating with Indian insurers to systematically develop a weather insurance market for agriculture risks in 2005 with now two million farmers insured. Shifts in monsoon rains have a large impact on agriculture production and can lead to a drop of 3% in the country's GDP and leading experts predict more extreme distribution of rainfalls under climate change scenarios.

Source: SwissRe. (2011). *Spreading the climate risk adaptation message in Asia*. Retrieved from SwissRe: [http://www.swissre.com/china/Spreading\\_the\\_climate\\_risk\\_adaptation\\_message\\_in\\_Asia.html](http://www.swissre.com/china/Spreading_the_climate_risk_adaptation_message_in_Asia.html)

## III.8 Consumer education and skills development

87. For consumer education, inclusion of environmental concerns in educational curriculum, campaigns by nongovernment organizations and celebration of environmental events such as Earth Hour, World Environment Day and other national initiatives by government agencies are the common measures practiced in AMS. Consumer education and skills need to be developed not only to be aware of environmental concerns, but also to allow them to make informed choices and value sustainable lifestyles (Box 3j). As SWITCH-Asia framed it, the challenges that Asian consumers face revolve around 'product choices' (Box 3k).<sup>36</sup>

<sup>36</sup> SWITCH-Asia Network Facility and Consumers International. SWITCH-Asia Booklet Series No. 3: Part 1 – The Challenges – Mainstreaming Sustainable Consumption in Asia: What is Holding Us Back?

Box 3j. Attitudes, knowledge and skills for sustainable lifestyles

- Ability to define what one considers to be a good quality of life and to be able to identify the values upon which this is based.
- Realisation of the complexity and often controversial nature of sustainable consumption issues.
- Insight into how individual lifestyle choices influence social, economic and environmental development.
- Ability to acquire, assess and use information on the consequences of consumption, particularly on the environment.
- Knowledge of consumer rights and central consumer protection laws.
- Basic knowledge of the market system and the role of business.
- Knowledge of how the production processes are linked to the consumption system.
- Basic knowledge of the interaction of pricing mechanisms with the consumer's attitudes and behavior.
- Insight into the practicalities of both the supply and demand sides of production and consumption and their outside-of-the- market relationships to community development.
- Awareness of a commodity's intangible and symbolic characteristics.
- Ability to recognise, decode and reflect critically upon messages from the media and the market.
- Knowledge of social networks responsible for shaping consumption patterns (peer pressure, status, etc.).
- Consciousness of civil society's power to initiate alternative ways of thinking and acting.
- Individual and collective understanding of consumer social responsibility in relation to corporate social responsibility.
- Ability to manage personal finances (budgeting, saving, investing, taxes and fees).
- Ability to manage physical resources (effective control, maintenance, reuse and replacement).
- Knowledge of conflict resolution in general and in particular in relation to consumer related situations such as product safety, liability, compensation, redress and restitution.
- Ability not only to envision alternative futures but also to create reasonable paths of action leading to these.

Source: UNEP. (2010). *Here and Now! Education for Sustainable Consumption Recommendations*. United Nations Environment Programme.

Box 3k. Consumer challenges in Asia

**CONSUMER CHALLENGES IN ASIA: DECISION-MAKING ISSUES**



Consumer challenges in Asia revolve around the need to empower consumers in making product decisions, the need for producers to take pro-active measures in incorporating sustainability in providing goods and services, and the need for regulatory support for cleaner production and for the development of innovative means to achieve sustainable consumption and production.

Source: SWITCH-Asia Network Facility and Consumers International. SWITCH-Asia Booklet Series No. 3: Part 1 – The Challenges – Mainstreaming Sustainable Consumption in Asia: What is Holding Us Back?

### Exercise 3. Innovative pre-market intervention

Divide the participants into eight groups. Each group will discuss other pre-market interventions that can be implemented for the environmental concern assigned to them. They can also cite example practices in AMS that are proven effective and report key success factors. Market interventions need not be limited to those discussed in this section:

- Product standard/ mandating components/ mandating production process
- Eco-labelling/ advertising or marketing
- Taxation/ removing subsidies/ disincentive
- Insurance
- Mix and match/ customize the approaches to the environmental area of concern for consumer protection.





### **Further Readings:**

OECD (2008). Promoting Sustainable Consumption: Good Practices in OECD Countries. Available at: [www.oecd.org/greengrowth/40317373.pdf](http://www.oecd.org/greengrowth/40317373.pdf)

Environmental Law and Consumer Protection (Christophe Verdure, Ed.), European Journal of Consumer Law (2011). Larcier.

Consumers International & UNEP-DTIE (2003). Hands-on sustainable consumption: implementing sustainable consumption policies: a training guide for the implementation of the United Nations Guidelines for Consumer Protection. Available at: <http://www.consumersinternational.org/media/316122/hands-on%20sustainable%20consumption-%20implementing%20sustainable%20consumption%20policies.pdf>

## **PART IV POST MARKET INTERVENTION/ PROTECTION IN GENERAL**

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### **Key Learning Objectives:**

- Define how post market intervention (investigation, sanction, public warning) is conducted in your country
  - Learn how these proactive measures are implemented and some success factors in the given examples and also in your country
- 

88. Post market intervention/ protection in environmental concerns generally refer to reactive measures provided for in environmental laws that address pollution sources. This takes the form of prescribing permissible air and noise emission levels, allowable level or concentration of water pollutants and water temperature prior to discharge, air and water pollution treatment technologies, and waste management measures. Reactive measures rely heavily on the ability of government agencies to control and regulate polluting activities, monitor and enforce the allowable criteria for pollution, and review and revise criteria for implementation, and impose clean up measures in the event of accidental release of pollutants to air land and water bodies. In addition to investigating specific point sources of pollution, regular monitoring of air and water quality are needed in this scenario. The task is not only to monitor industrial emitters, but also to monitor the quality of common pool resources and be able to regulate area sources such as open burning and residential wastewater and mobile sources of pollution such as vehicles. Investigation, sanction and public warnings are three mechanisms that could safeguard environmental quality from pollution sources.

### **IV.1 Investigation**

89. Scheduled and unscheduled inspection is routinely conducted to industries. Investigations are prompted when there is a failure to comply with environmental laws.



The newly revised Environmental Protection Law of Lao PDR<sup>37</sup> in 2012 provides for investigation of environmental pollution and creation of an agency responsible for such. Usually investigation rests on the Ministry of Environment and related agencies.

## IV.2 Sanction (violations, fines and penalties)

90. Violations and prohibitions, fines and penalties are indicated in the environmental and related pollution laws of AMS countries.
91. Article 20 of the Law on Environmental Protection and Natural Resource Management (1996) of Cambodia states that “For any person who commits a violation of the Ministry of Environment's requirements as specified in article 14 of this law, the Ministry of Environment shall issue a written order requiring: correction of the violating activities immediately or within a specified time period; or cessation of his/her/its activities until the violation has been corrected; or clean-up of the pollution immediately.” Fines and penalties may be determined depending on the violation.
92. The revised Law on Water Resource (2012) of Vietnam now allows for complainants to initiate lawsuits to administrative authorities in People's Courts (Article 76). It has been noted that the dispute settlement provision of the Law on Water Resource (1998) has not been used and few environmental complaints have been settled at the local or administrative level<sup>38</sup>, therefore the revised Law has acknowledged that in cases where complainants are in disagreement with the resolution provided by the administrative authority (Ministry of Natural Resources and Environment or People's Committee), the complainant can file a lawsuit against the authority for disputes involving wastewater discharge of wastewater and exploitation or use of water. However, the law still encourages grassroots resolution through mediation of disputes by the People's Committee.
93. In dealing with environment complaints especially pollution, the Philippines has extensive years of experience in handling cases files through the Pollution Adjudication Board which has routinely imposed standardized fines and penalties to entities proven to violate environmental laws. Refer to Section 5.2 for procedural guidelines.

## PART V – REDRESS MECHANISM AND COMPLAINT MANAGEMENT

### **Key Learning Objectives:**

- Familiarize how environmental complaints are handled in your country and in comparison with the example case of the Pollution Adjudication Board of the Philippines
- Develop ideas and insights on how to strengthen consumer rights through a grievance or complaint management channel

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<sup>37</sup> <http://www.laolandissues.org/wp-content/uploads/2012/03/Environmental-Protection-Law-2013English.pdf>

<sup>38</sup> Thi Phuong Loan Nguyen (2013). The Legal Framework of Vietnam's Water Sector: Update 2013. ZEF Working Paper 116, University of Bonn. Available at: [https://mpr.a.uni-muenchen.de/52996/1/MPRA\\_paper\\_52996.pdf](https://mpr.a.uni-muenchen.de/52996/1/MPRA_paper_52996.pdf)

## V.1 Grievance/ complaints channels

94. Grievance or complaints channels are not usually established for ecosystem services. Where public utility is privatized, consumers call the company hotlines directly for complaints such as power interruption, no water supply and uncollected waste. In cases where people pay for the service such as water, electricity and waste collection, they can readily be identified as consumers having rights and with channels of complaint for product or service concerns. For other cases that involve pollution and other related concerns on common pool resources such as air and water (i.e. surface or groundwater), how can consumer rights be established and where can consumers channel complaints on the said issues?
95. Electricity Law of Cambodia included a provision on consumer protection and complaint handling allowing customers with complaints to lodge it to the Charge Officer of the utility company; and a second time to a higher ranking officer if complainant was not satisfied with how issue was resolved. Seven types of complaints are specified in the law including voltage, power failure, incorrect billing, disconnection and meter readings.
96. In Lao PDR, newly revised Environmental Protection Law (2013) provides for dispute settlement (Article 71) through six forms: (1) Conciliation of conflicting parties, (2) Mediation, (3) Administrative settlement, (4) Settlement by the Economic Dispute Resolution Office, (5) Lawsuits via people's courts, and (6) Settlement of Internationally Characterized Disputes.
97. Also, the revised The Law on Water Resource of Vietnam (2012) designates the People's Committee (District), Provincial People's Committee and the Ministry of Natural Resources and Environment as channels through which complaints related to water use and exploitation, and wastewater discharge can be brought up, depending on the licensing jurisdiction or authority (Article 76). In addition, compensation from dispute settlement is now included in the law and is to be implemented in accordance with civil laws and compensation liability law.

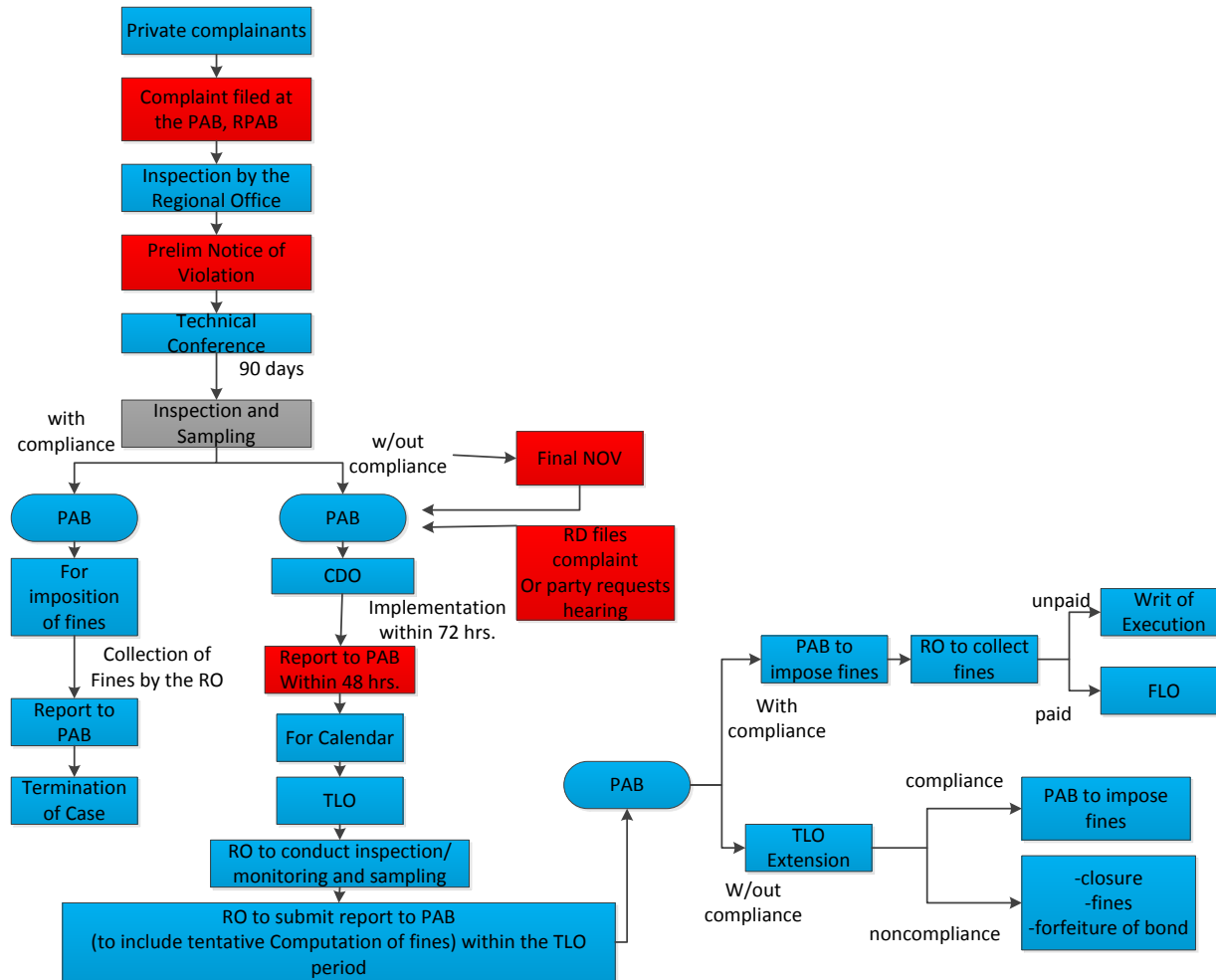
## V.2 Protocol/ procedural guidance

98. The procedural guidance presented is based on the Executive Order 192 (1987) of the Philippines which created the Pollution Adjudication Board to resolve cases involving pollution. The PAB hears and settles pollution cases. The Environmental Management Bureau (EMB) under the Department of Environment and Natural Resources (DENR) acts as its Secretariat. It is composed of the secretary of the DENR, two Undersecretaries of the DENR, the Director of the EMB, and three other appointees by the Secretary. The procedural flow for adjudicating cases is provided in Fig 4.
99. In the Revised Rules of the PAB on Pleading, Practice and Procedure in Pollution Cases, a complainant files a complaint to the PAB or the Regional PAB (RPAB). Complaints can include any violation of Philippine Environmental Laws or any observation of pollution such as water discharge, foul smell, visible air pollution from factories. Complaints may be lodged by a citizen or the Environmental Management Bureau (EMB). Inspection is done by the Regional Office and a Notice of Violation (NOV) is issued to the respondent. The respondent is invited to a Technical Conference to hear the merits of the case and for the Hearing Officer to tentatively compute fines and decide on the measures that need to be taken by the respondent. In this technical conference,

the Pollution Control Officer of the entity or businesses organization under complaint shall also report to the EMB. In the analysis with the technical staff of the EMB, problems are identified as source of pollution generated and the specific violated act involved. The respondent is given 90 days to act on agreed remedial measures and address the issue at hand, after which inspection is performed again.

100. After 90 days, random sampling at the site will be conducted. If it passed the inspection, the case will be brought to the PAB for the imposition of fines. Upon payment, it is reported to the PAB for the termination of the case/ for the case to be settled. Otherwise, a Final NOV is issued for the noncompliance found in the recent inspection. The case will be elevated to the PAB and docketed with a case number. The PAB will either take consideration to issue a Show Cause Order to summon the entity to explain why they should not be issued a Cease and Deceased Order (CDO), or at more serious stage, a CDO is issued without show cause since all the data and technical conference have been carried out. If an entity is under CDO, they have to stop operating the polluting generating facilities (may not be the entire plant) and they need to prepare a comprehensive program to address the root cause of the pollution. In this regard, they may still have a temporary program so that their operation may not be terminated, hence, the temporary lifting order (TLO). When the comprehensive program is implemented and all pollution activities ceased, the final lifting order is issued. (FLO). Fine is computed, and paid, case dismissed.
101. Some salient features of the PAB and definitions based on the Executive Order 192 (1987) of the Philippines:
- a. Pollution - Any alteration of the physical, chemical or biological properties of any water, air and/or land resources of the Philippines, or any discharge thereto of any liquid, gaseous or solid wastes as will be likely to create or to render such water, air and land resources harmful, detrimental or injurious to public health, safety or welfare or which will adversely affect their utilization for domestic, commercial, industrial, agricultural, recreational or other legitimate purpose
  - b. Nature of PAB proceedings - The technical rules on evidence obtaining in courts of law shall not bind the Board and the Regional Offices. The Rules of Court shall not apply in proceedings before the Board except in a suppletory character and only whenever applicable
  - c. Authority of the Regional PAB - Investigate and hear pollution cases, provided that final decisions may be promulgated only by the Board, giving due consideration to the recommendation of the Regional Office; Issue, renew, or deny issuance or renewal of permits to operate pollution control facilities, under such conditions as it may determine to be reasonable, for the prevention and abatement of pollution and for the discharge of sewage and industrial waste, or for the installation or operation of sewage works and industrial disposal systems or parts thereof.
  - d. Purpose of the Technical Conference - simplification of issues and stipulation of facts, tentative computation of fines, execution of commitment from respondent to abate or mitigate the pollution complained of, including the implementation of remedial measures relative thereto
  - e. Pollution Control Officer - The respondent's pollution control officer accredited under DENR Department Administrative Order (DAO) No. 26 Series of 1992, shall be required to enter his appearance and attend the technical conference. The failure to

- do so shall be an admission that respondent has no accredited pollution control officer.
- f. Non-appearance in the Technical Conference - Should the respondent fail to appear in the technical conference or file his position paper despite due notice, he shall be considered in default and the case shall be resolved on the basis of the evidence on record.
- g. Cease and Desist Order - directs the discontinuance of the emission or discharge of pollutants or the temporary cessation of operation of the establishment or person generating such pollutants; immediately executory, to be implemented not later than 72 hours from receipt thereof by the Regional Office, and to remain in full force and effect until the same is modified or lifted by the Board
- h. Grounds for a Cease and Desist Order - when the Board finds *prima facie* evidence that the emission or discharge of pollutants:
- constitutes an immediate threat to life, public health, safety or welfare or to animal or plant life; or
  - exceeds the allowable DENR standards
- i. Interim Cease and Desist Order - to be issued by the Regional Executive Director when there is *prima facie* evidence that the emissions or discharge of pollutants:
- constitutes an immediate threat to life, public health, safety or welfare, or to animal or plant life, or
  - greatly exceeds the allowable DENR standards
- j. Grounds for Cease and Desist Order Reimposition - Lapse of period specified in the Temporary Lifting Order; Violation of any of the conditions specified in the TLO; no motion



**Figure 4.** Procedural flowchart of the Pollution Adjudication Board of the Philippines was recently revised to allow for the establishment of Regional Pollution Adjudication Boards to resolve minor pollution cases

### V.3 Sample cases of complaints

102. Table 2 indicates sample complaints filed at the PAB and summary of actions taken. Enumerated cases involved failure to meet hydrogen sulfide emission standard by a geothermal power company; failure to meet effluent standard by a food company; and discharging waste. Penalties/ fines are imposed with reference to standard penalties for each type of case.

**Table 2.** Sample complaint summaries pending for hearing by the PAB.

No.	Name of Company/Address	Remarks/Recommendation of the COF on 01 August 2013
1	AAA Power Corporation Tiwi, Albay	The COF recommends for the <b>imposition of P29,400.00</b> for violation committed under P.D. 984 when they failed to meet the DENR standards for H <sub>2</sub> S (hydrogen sulfide) on 07 Dec. 1992 to 14 March 1992.
2	BBB Food Products Piit, Cabangcalan, Mandaue City	Failed to meet the effluent standard on 06 April 1993. CDO was issued on 24 Sept. 1994.  On 27 Sept 2000 (after 7 years) the RO reported that the firm <u>no longer exists since 1998</u> (this was confirmed by SEC on 18 Feb 2003) and RO recommended for the dismissal.  The Board on 07 November 2002, however, formally endorsed the case to COF for determination of appropriate penalty.  On 01 August 2013, the <b>COF recommends</b> for the <b>dismissal of the case</b> and removal from the dockets of the PAB.
3	CCC Processing Inc. Tindalo St. Sta. Clara, Sta Maria, Bulacan	The COF recommends for the <b>imposition of P556,000.00</b> for violation committed under P.D. 984 from 10 Feb 1994 to 19 July 1994.  <i>Respondent on 10 Feb 1994 failed to meet DENR effluent standards for BOD 3420 mg/l for 139 days @ P4,000/day pursuant to PAB Res. 10-A.</i>
4	DDD Legacy Marketing Corporation Pilit, Cabancalan, Mandaue City	The COF recommends for the <b>imposition of P1,200,000.00</b> for violation committed under R.A. 9275 from 12 May 2005 to 08 Sep. 2005.  <i>Respondent on 12 May 2005 failed to meet DENR effluent standards for BOD 3000 mg/l for 120 days @ P10,000/day pursuant to Sec 28 of RA9275.</i>
5	EEE Enterprises Pangascasan, Sual, Pangasinan	The <b>COF recommends for the imposition of P400,000.00</b> for the act of discharging waste, a violation committed under Sec. 27 (a) of R.A. 9275 on 07 Dec. 2012 at two (2) sites @ P200,000/act.  <i>Respondent on 07 Dec. 2012 was apprehended by the PNP for discharging waste at Brgy. Naguituban and Brgy Ili Norte, San Juan, La Union.</i>



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Aid** 



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### **Exercise 5. Other procedures and protocol for handling environmental pollution cases**

- Is there an existing 'court' that resolves pollution related concerns in your country? What are the institutions and channels where complaints can be lodged by a consumer if product or service does not meet the environmental quality of life? Are these channels different for privatized utilities/ services (waste collection) and those that are directly provided by the government?
  - How does it compare to the PAB of the Philippines?
  - How are the stipulated fines and penalties for violations of environmental laws in your country enforced (e.g. criminal court)?
  - Provide a good example of redress mechanism and complaint management in your country, from when the complaint was filed up to resolution. Also, identify the law that provides the procedural flow for addressing complaints. You may include the procedural flow here, highlighting the role of agencies/ ministries in the process.
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## RELATED ANNEXES

**Table 3.** Prioritization of environmental issues in ASEAN - inputs from four countries as of 28 July 2015

Country	Quality of water and air	Municipal Solid Waste Management	Energy (clean and green/ sustainable/ renewable)	Environmental information in product label (e.g. eco-label)
Brunei				
Cambodia				
Indonesia	1 (1)*	3 (2)	2 (3)	4 (4)
Lao	1	4	3	2
Malaysia				
Myanmar	2	3	1	4
Philippines	4	1	2	3
Singapore				
Thailand				
Vietnam				

\* Response of second participant from Indonesia in parentheses.



### **Eleven targets of Goal 12 of the SDG: ensure sustainable consumption and production patterns**

1. Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
2. achieve the sustainable management and efficient use of natural resources
3. halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
4. achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
5. substantially reduce waste generation through prevention, reduction, recycling and reuse
6. Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
7. Promote public procurement practices that are sustainable, in accordance with national policies and priorities
8. ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
9. Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
10. Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
11. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities



**Table 4.** Eight environmental issues for consumer protection in the AMS, with corresponding and related Rio+20 statement

Environmental issue	Rio+20 paragraph/ statement
(Consumer Protection/ Right to a healthy and safe environment)	99 - We encourage action at the regional, national, subnational and local levels to promote access to information, public participation and access to justice in environmental matters, as appropriate.
	154 - We are encouraged by government initiatives to create jobs for poor people in restoring and managing natural resources and ecosystems, and we encourage the private sector to contribute to decent work for all and job creation for both women and men, and particularly for young people, including through partnerships with small and medium-sized enterprises and cooperatives.
	193 - We note the importance of such ongoing initiatives as reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.
	227 - We further acknowledge that mining activities should maximize social and economic benefits, as well as effectively address negative environmental and social impacts. In this regard, we recognize that governments need strong capacities to develop, manage and regulate their mining industries, in the interest of sustainable development.
Access to and sufficiency of public utility; Quality of goods and service; Pricing of energy and water	<p>120 - We commit to the progressive realization of access to safe and affordable drinking water and basic sanitation for all, as necessary for poverty eradication, women's empowerment and to protect human health, and to significantly improve the implementation of integrated water resource management at all levels as appropriate.</p> <p>121 - We reaffirm our commitments regarding the human right to safe drinking water and sanitation, to be progressively realized for our populations, with full respect for national sovereignty. We also highlight our commitment to the International Decade for Action, "Water for Life", 2005–2015.</p> <p>125 - We recognize the critical role that energy plays in the development process, as access to sustainable modern energy services contributes to poverty eradication, saves lives, improves health and helps to provide for basic human needs. We stress that these services are essential to social inclusion and gender equality, and that energy is also a key input to production. We commit to facilitate support for access to these services by 1.4 billion people worldwide who are currently without them. We recognize that access to these services is critical for achieving sustainable development.</p>
Securing quality of air	127 - We reaffirm support for the implementation of national and subnational policies and strategies, based on individual national circumstances and development aspirations, using an appropriate energy mix to meet developmental needs, including through increased use of renewable energy sources and other low emission technologies, the more efficient use of energy, greater reliance on advanced energy technologies, including



	cleaner fossil fuel technologies, and the sustainable use of traditional energy resources.
	132. We note that transportation and mobility are central to sustainable development. Sustainable transportation can enhance economic growth and improve accessibility. Sustainable transport achieves better integration of the economy while respecting the environment.
	138. We are convinced that action on the social and environmental determinants of health, both for the poor and the vulnerable and for the entire population, is important to create inclusive, equitable, economically productive and healthy societies. We call for the full realization of the right to the enjoyment of the highest attainable standard of physical and mental health.
	141 - We recognize that reducing, inter alia, air, water and chemical pollution leads to positive effects on health
	225 - Countries reaffirm the commitments they have made to phase out harmful and inefficient fossil fuel subsidies that encourage wasteful consumption and undermine sustainable development.
Waste management and disposal	60 - We acknowledge that green economy in the context of sustainable development and poverty eradication will enhance our ability to manage natural resources sustainably and with lower negative environmental impacts, increase resource efficiency and reduce waste.
	110- We also recognize the need to significantly reduce post-harvest and other food losses and waste throughout the food supply chain.
	135 - We further support the sustainable management of waste through the application of the 3Rs (reduce, reuse and recycle).
	163. We note with concern that the health of oceans and marine biodiversity are negatively affected by marine pollution, including marine debris, especially plastic, persistent organic pollutants, heavy metals and nitrogen-based compounds, from a number of marine and land-based sources, including shipping and land run-off.
	213 - We recognize that the sound management of chemicals is crucial for the protection of human health and the environment.
	214 - We call for the effective implementation and strengthening of the Strategic Approach to International Chemicals Management 57 as part of a robust, coherent, effective and efficient system for the sound management of chemicals throughout their life cycle, including to respond to emerging challenges.
	216 - We commend the increased coordination and cooperation among chemical and waste conventions, namely the Basel Convention, the Rotterdam Convention and the Stockholm Convention, and encourage continued enhanced coordination and cooperation among them and with the Strategic Approach to International Chemicals Management.
	219 - We urge countries and other stakeholders to take all possible measures to prevent the unsound



	management of hazardous wastes and their illegal dumping, particularly in countries where the capacity to deal with these wastes is limited, in a manner consistent with the obligations of countries under relevant international instruments.
Product safety and environmental aspects	128 - We also recognize the need for energy efficiency measures in urban planning, buildings and transportation and in the production of goods and services and the design of products.
Impacts from climate change	25 - We acknowledge that climate change is a cross-cutting and persistent crisis, and express our concern that the scale and gravity of the negative impacts of climate change affect all countries and undermine the ability of all countries, in particular, developing countries, to achieve sustainable development and the Millennium Development Goals, and threaten the viability and survival of nations. Therefore, we underscore that combating climate change requires urgent and ambitious action, in accordance with the principles and provisions of the United Nations Framework Convention on Climate Change.
	128 - We recognize that improving energy efficiency, increasing the share of renewable energy and cleaner and energy-efficient technologies are important for sustainable development, including in addressing climate change.
	190 - We reaffirm that climate change is one of the greatest challenges of our time, and we express profound alarm that emissions of greenhouse gases continue to rise globally. We are deeply concerned that all countries, particularly developing countries, are vulnerable to the adverse impacts of climate change and are already experiencing increased impacts, including persistent drought and extreme weather events, sea-level rise, coastal erosion and ocean acidification, further threatening food security and efforts to eradicate poverty and achieve sustainable development. In this regard, we emphasize that adaptation to climate change represents an immediate and urgent global priority.
	191 - We underscore that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions.
Consumer education	42 - We further acknowledge efforts and progress made at the local and subnational levels, and recognize the important role that such authorities and communities can play in implementing sustainable development, including by engaging citizens and stakeholders and providing them with relevant information, as appropriate, on the three dimensions of sustainable development. We further acknowledge the importance of involving all relevant decision makers in the planning and implementation of sustainable development policies.
	43 - We underscore that broad public participation and access to information and judicial and administrative proceedings are essential to the promotion of sustainable development.



	<p>234 - We strongly encourage educational institutions to consider adopting good practices in sustainability management on their campuses and in their communities, with the active participation of, inter alia, students, teachers and local partners, and teaching sustainable development as an integrated component across disciplines.</p>
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**Table 5.** Laws and policies covering environmental concerns in AMS including fines and sanctions for environmental violations

Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
Brunei	Water Supply	<p>4. The Water Authority shall have the custody and administration of the waterworks and of the water therein and the management of the supply and distribution of such water, subject to the general authority of His Highness in Council</p> <p>25. Any person who willfully or negligently misuses or wastes or allows to be misused or wasted any water supplied from the waterworks either through any inside service or public standpipe, shall be guilty of an offence and shall, on conviction, be liable to a fine of \$600 and in the case of a second or subsequent conviction, to a fine \$3,000 and imprisonment for 3 months</p> <p>27. (1) No person shall take any water</p> <p><a href="http://faolex.fao.org/docs/pdf/bru82950.pdf">http://faolex.fao.org/docs/pdf/bru82950.pdf</a></p>
	Laws on Solid waste management	<p>Regulations for Hazardous Wastes Management</p> <ul style="list-style-type: none"> <li>- Currently No Law in Brunei Darussalam</li> <li>- Pollution Control Guidelines on Industrial Development</li> <li>-Draft Environmental Order in final stages with Attorney General Based only on Poison Act Regulation (Ministry of Health)</li> </ul> <p><a href="http://www.env.go.jp/en/recycle/asian_net/Annual_Workshops/2009_PDF/Session_1/02Brunei.pdf">http://www.env.go.jp/en/recycle/asian_net/Annual_Workshops/2009_PDF/Session_1/02Brunei.pdf</a></p>
Cambodia	Law on Environmental Protection and Natural Resource Management (1996)	<p>Article 20 For any person who commits a violation of the Ministry of Environment's requirements as specified in article 14 of this law, the Ministry of Environment shall issue a written order requiring: correction of the violating activities immediately or within a specified time period; or cessation of his/her/its activities until the violation has been corrected; or clean-up of the pollution immediately.</p> <p>Article 8 The natural resources of the Kingdom of Cambodia, which include land, water, airspace, air, geology, ecological systems, mines, energy, petroleum and gas, rocks and sand, precious stones, forests and forest products, wildlife, fish, and aquatic resources, shall be conserved, developed, and managed and used in a rational and sustainable manner.</p> <p><a href="https://www.globalwitness.org/sites/default/files/pdfs/1996_environmental_protection_and_natural_resource_management_law_on_1996.pdf">https://www.globalwitness.org/sites/default/files/pdfs/1996_environmental_protection_and_natural_resource_management_law_on_1996.pdf</a></p>
	Sub-Decree on Solid Waste Management	<p>Article 7 prohibited act</p> <p>Article 27, 28, 29 penalty</p> <p><a href="http://www.cambodiainvestment.gov.kh/content/uploads/2011/09/Sub-Degree-36-on-Solid-Waste-Management_990427.pdf">http://www.cambodiainvestment.gov.kh/content/uploads/2011/09/Sub-Degree-36-on-Solid-Waste-Management_990427.pdf</a></p>
	Sub-Decree on Water Pollution Control	<p>Article 6 prohibited act</p> <p>Article 8 prohibited act</p> <p>Article 34, 35, 36 penalty</p>

Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
		<a href="http://www.cambodiainvestment.gov.kh/content/uploads/2011/09/Sub-Degree-27-on-Water-Pollution-Control_990406.pdf">http://www.cambodiainvestment.gov.kh/content/uploads/2011/09/Sub-Degree-27-on-Water-Pollution-Control_990406.pdf</a>
	Sub-Decree on Air Pollution Control and Noise Disturbance	Article 8, 11, 12 – prohibited acts Chapter 7: Penalty Article 33
	LAW ON WATER RESOURCES MANAGEMENT OF THE KINGDOM OF CAMBODIA	Article 36 – penalties <a href="http://www.cambodiainvestment.gov.kh/law-on-water-resource-management-full-text_070629.html">http://www.cambodiainvestment.gov.kh/law-on-water-resource-management-full-text_070629.html</a>
Indonesia	Environmental Management Act Number 23, 1997	Article 14 & 20 – prohibited acts Article 41 – 46 Penalty/ CRIMINAL PROVISIONS <a href="http://faolex.fao.org/docs/html/ins13056.htm">http://faolex.fao.org/docs/html/ins13056.htm</a>
	Government Regulation Number 82, 2001 (Water Quality Management and Waste water Controlling	Article 38 (2g & 2h) & Article 42 – prohibited acts Article 51 - penalty
	Green Industry Development is mandated by Law Number 3/2014	Article 5 (1) The President is authorized held government affairs in the field of Industry Article 120 (1) Any person who knowingly manufacture, import, and / or distribute goods and / or services that do not meet the SNI industry, technical specifications, and / or guidelines applicable ordinances are required in the field of industry as referred to in Article 53 paragraph ( 1) b, shall be punished with imprisonment of five (5) years and a fine of up Rp3.000.000.000,00 (three billion rupiah). <a href="http://www.indolaw.org/UU/Law%20No.%203%20of%202014%20on%20Industry.pdf">http://www.indolaw.org/UU/Law%20No.%203%20of%202014%20on%20Industry.pdf</a>
	the Law 32/2009 Number 32 of 2009	Art 60 & 69 – prohibited acts Article 100, 112 - penalty <a href="http://faolex.fao.org/docs/pdf/ins97643.pdf">http://faolex.fao.org/docs/pdf/ins97643.pdf</a>  As stated in the republic Indonesia Act No.32/2009 and Government Regulation No.18/1999 jo. No.85/1999, it is prohibited to import waste into the country. <a href="http://www.uncrd.or.jp/content/documents/Country%20Analysis%20Paper_Indonesia.pdf">http://www.uncrd.or.jp/content/documents/Country%20Analysis%20Paper_Indonesia.pdf</a>





Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
		Government Regulation No.18/1999 jo. No.85/1999 - Government Regulation No. 18 / 1999 Jo. PP No. 85 / 1999 concerning The Hazardous Waste Management
Laos	Environment Protection Law 2012	Article 32 National Pollution Control Standards Article 68 General Prohibitions Article 92 Sanctions against Offenders Article 95 Fine(s) <a href="http://www.laolandissues.org/wp-content/uploads/2012/03/Environmental-Protection-Law-2013English.pdf">http://www.laolandissues.org/wp-content/uploads/2012/03/Environmental-Protection-Law-2013English.pdf</a>
	Mineral Law 2011	Article 5. (Revised) State Policy on Minerals Article 7. Protection of the Rights and Benefits regarding Minerals Article 42. (Revised) Acceptance of a Pre and Detailed Feasibility Study Reports Article 75 . Prohibitions for People Article 82.Mineral Activity Management Organization <i>Article 97.(Revised) Fines</i> <a href="http://www.laotradeportal.gov.la/index.php?r=site/display&amp;id=602#a97">http://www.laotradeportal.gov.la/index.php?r=site/display&amp;id=602#a97</a>
	Water and Water Resource Law 1996	Article 4 Water and Water Resources Ownership Article 7 Obligations to Protect Water and Water Resources Article 14 Right to Use Water and Water Resources Article 31 Prohibitions Article 32. Water Quality Standards Article 42 Preventing Polluted and Waste Water Article 47 Measures Against Offenders <a href="http://www.ilp.gov.la/Lao_Law/WATER.pdf">http://www.ilp.gov.la/Lao_Law/WATER.pdf</a>
	Forestry Law 2007	Article 4. Ownership of forest and forestland Article 102. Prohibitions for people Article 121. Rewards for persons with outstanding performance <a href="http://faolex.fao.org/docs/pdf/lao89474.pdf">http://faolex.fao.org/docs/pdf/lao89474.pdf</a>
	Environmental Protection Law (1999)	Article 46 – fines <a href="http://tnmckc.org/upload/document/bdp/2/2.7/Legal/Lao/L-environment.pdf">http://tnmckc.org/upload/document/bdp/2/2.7/Legal/Lao/L-environment.pdf</a>
Malaysia	National Waste Policy (Circular Economy Law	<ul style="list-style-type: none"> <li>• increased recycling rates of packaging waste</li> <li>• return of E-waste and hazardous waste (ultimately 100%)</li> <li>• chemical stabilisation of organic and reactive wastes.</li> </ul> 6-2014-09-30 SCP Malaysia – Overview



Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
	Act 127 ENVIRONMENTAL QUALITY ACT 1974	Article 41, 46e – penalty PART IV PROHIBITION AND CONTROL OF POLLUTION Article 21, 27, 29, 30, 31, 51 (d,f,h,k,u) – prohibited acts <a href="http://www.agc.gov.my/Akta/Vol.%203/Act%20127.pdf">http://www.agc.gov.my/Akta/Vol.%203/Act%20127.pdf</a>
	WATERS ACT 1920	Article 5, 7 – prohibited acts Article 15 – penalties
Myanmar	The Conservation of Water Resources and Rivers Law (The State Peace and Development Council Law No. 8/2006)	Chapter V. Prohibitions Chapter VI. Penalties <a href="http://faolex.fao.org/docs/pdf/mya139027.pdf">http://faolex.fao.org/docs/pdf/mya139027.pdf</a>
	The Environmental Conservation Law (The Pyidaungsu Hluttaw Law No. 9 / 2012)	Chapter XII. Prohibitions Chapter XIII. Penalties <a href="http://faolex.fao.org/docs/pdf/mya139025.pdf">http://faolex.fao.org/docs/pdf/mya139025.pdf</a>
Philippines	Republic Act No. 9275, Philippine Clean Water Act of 2004	Section 27. Prohibited acts Section 28. Penalty for prohibited acts: 10,000 to 200,000 per day of violation; Section 28. Failure to undertake cleanup operations: 2-4 years imprisonment and fine <a href="http://www.lawphil.net/statutes/repacts/ra2004/ra_9275_2004.html">http://www.lawphil.net/statutes/repacts/ra2004/ra_9275_2004.html</a>
	Presidential Decree No. 1067 of 1976, The Water Code of the Philippines	Article 3. a. All waters belong to the State. Article 17 & 18. Water permit and the right to the use of water Article 90. Prohibited acts Article 91 & 94. Violation of the Water Code: Fine and/or imprisonment <a href="http://www.lawphil.net/statutes/presdecs/pd1976/pd_1067_1976.html">http://www.lawphil.net/statutes/presdecs/pd1976/pd_1067_1976.html</a>
	Republic Act No. 8749, The Philippine Clean Air Act (1999)	Chapter 6. Fines And Penalties <a href="http://www.emb.gov.ph/portal/Portals/0/Cache/RA%208749.pdf">http://www.emb.gov.ph/portal/Portals/0/Cache/RA%208749.pdf</a>
	Republic Act No. 9003, <a href="#">Solid Waste</a>	CHAPTER VI, Section 49. Fines and Penalties <a href="http://www.emb.gov.ph/laws/solid%20waste%20management/ra9003.pdf">http://www.emb.gov.ph/laws/solid%20waste%20management/ra9003.pdf</a>



Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
	<a href="#">Management Act</a> (2000)	
Singapore	Environmental public health act (chapter 95) Revised edition 2002	Part III (penalties can be found at 21-21C). PUBLIC CLEANSING <a href="#">Part XI. COMPENSATION, DAMAGES, FEES, COSTS AND EXPENSES</a> <a href="http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=b03fa9ac-f7e8-460a-aad1-74fd3fed6695;page=0;query=DocId%3A%228615ccd4-a019-485d-aa9e-d858e4e246c5%22%20Status%3Ainforce%20Depth%3A0;rec=0#pr17-he-">http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=b03fa9ac-f7e8-460a-aad1-74fd3fed6695;page=0;query=DocId%3A%228615ccd4-a019-485d-aa9e-d858e4e246c5%22%20Status%3Ainforce%20Depth%3A0;rec=0#pr17-he-</a> .
	Sewerage and drainage act (chapter 294) Revised edition 2001	Part IV. Drainage (#30 is fines) Part V. Prohibition <a href="#">on extraction of water</a> (with fines) <a href="http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=80f940d6-e754-4c82-a847-14044e2b5506;page=0;query=DocId%3A7f34600c-4511-45bd-8699-12d371c105f8%20%20Status%3Ainforce%20Depth%3A0;rec=0#pr31-he-">http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=80f940d6-e754-4c82-a847-14044e2b5506;page=0;query=DocId%3A7f34600c-4511-45bd-8699-12d371c105f8%20%20Status%3Ainforce%20Depth%3A0;rec=0#pr31-he-</a> .
	Environmental pollution control act 1999 (no. 9 of 1999)	Part V (#17). <a href="#">Penalties for discharging toxic substances into inland waters</a> Part VII (#27). <a href="#">Penalty for offences involving hazardous substances</a> Part X (#39). Penalty for <a href="#">ENVIRONMENTAL POLLUTION CONTROL MEASURES</a> <a href="http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=e38aeccc-4569-4df3-a278-81e733fb4a76;page=0;query=DocId%3A%227cc1971c-6237-4f5a-a75c-dd378fc80179%22%20Status%3Apublished%20Depth%3A0;rec=0#legis">http://statutes.agc.gov.sg/aol/search/display/view.w3p;ident=e38aeccc-4569-4df3-a278-81e733fb4a76;page=0;query=DocId%3A%227cc1971c-6237-4f5a-a75c-dd378fc80179%22%20Status%3Apublished%20Depth%3A0;rec=0#legis</a>
Thailand	The enhancement and conservation of national environment quality act, b.e.2535 (neqa 1992)	Chapter 4, Part 8 - Service Fee and Penalty. Penalty: (common for all) "shall be liable to pay as a daily penalty four time as much the amount of daily expenses for the normal operation of his on-site facility" Chapter 7 Penal Provisions. (imprisonment or fines) <a href="http://www.pcd.go.th/info_serv/en_reg_envi.html">http://www.pcd.go.th/info_serv/en_reg_envi.html</a>
	The law on environmental protection (no. 55/2014/qh13 of june 23, 2014)	
	The law On economical and	<a href="http://www.moj.gov.vn/vbqp/en/Lists/Vn%20bn%20php%20lut/View_Detail.aspx?ItemID=10481">http://www.moj.gov.vn/vbqp/en/Lists/Vn%20bn%20php%20lut/View_Detail.aspx?ItemID=10481</a>



Countries	Law/ Policy	Specific sections/ articles in the law that impose fines and penalties for violating the law/ fees for acquiring the service
	efficient use of energy (no. 50/2010/qh12 of June 17, 2010)	
	The law on water resources (no.17/2012/qh13 of june 21, 2012)	<a href="http://faolex.fao.org/docs/pdf/vie117928.pdf">http://faolex.fao.org/docs/pdf/vie117928.pdf</a>



### **About the consultant:**



### **Prof Dr (Anthony) Shun Fung CHIU**

Professor Chiu has advised doctoral research works as JM Reyes Chair Professor at De La Salle University, Manila; and published more than 160 papers, book chapters, and keynote documents in the field of Sustainable Consumption and Production (SCP), Resource Efficient and Cleaner Production (RECP), and Industrial Ecology / Eco-industrial Development (EID). He serves as member of the international expert committee to the United Nations Green Industry Platform, wherein his UN publications cover training manuals, policy action plans and industrial policies in Asia Pacific. He is a Philippine delegate to the United Nations at Rio+20 Head of States Summit as well as in the CSD19, and Regional Executive of the RECPNet, with secretariat based in UNIDO and UNEP. He also serves as member of the Philippine National Pollution Adjudication Board.

Dr. Chiu also serves several international research entities as President (APRSCP, ISBITM, APIEMS), Board Director (ISIE, IFPR), and editorial board member (JCLP, JPIIE, JCIIE, PIE) of international high-impact journals. He co-chairs the Philippine Industrial Engineering Certification Board. Professor Chiu is the first Philippine awardee of the American Society of Mechanical Engineers as outstanding international correspondent, and the first batch Philippine recipient of the ASEAN Engineer in the field of Industrial Engineering.