



The Challenge of Promoting Greater Use of Economic Instruments in Thailand: Lessons Learned from the Draft Act on Economic Instruments for Environmental Management

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Abstract:

Current policies and plans geared toward green growth/green economy emphasize the greater use of economic instruments. This paper reviews the past and current application of economic instruments (EIs) in environmental management in Thailand. Insights gained from documentary research indicate that EIs such as product taxes through collection of excise taxes have been relatively effective, whilst user charges for solid waste and waste water treatment have been found to be unsuccessful in Thailand. Lessons learned from the draft Act on Economic Instruments for Environmental Management indicate several institutional constraints towards the extensive application of EIs. This paper provides some suggestions to overcome these challenges including institutional reforms, an appropriate mix of policy instruments, and proactive roles of academia in raising environmental awareness and knowledge of the relevant authorities and the general public which could increase political support for environmental policies and the use of EIs in particular.

Keywords: Economic instruments; environmental management; Thailand

Introduction

A number of policy instruments exist for environmental management, including command-and-control instruments (CACs); market-based or economic instruments (EIs); voluntary agreements and information-based strategies [1, 2]. Traditionally, the CAC approach has been used to address environmental problems by prescribing specific legislation and standards which must be achieved, and enforcing compliance through the use of

penalties and fines. By contrast, the EI approach seeks to change behaviour indirectly; by adjusting relative prices (and hence incentives) that individuals and business face. EIs are underpinned by several basic principles: the polluter pays principle (PPP), the user/beneficiary pays principle (BPP), and the principle of full-cost recovery. Although there has not yet been any conclusive definition and categorization of EIs, broadly speaking, any instrument that aims to induce

a change in behaviour by internalizing environmental costs (rather than mandating a standard or a technology) qualifies as an economic instrument [3]. With this broad definition, EIs can encompass a range of instrument, from pollution taxes and marketable permits to performance bonds. Table 1 shows some examples of EIs found in developed countries in the field of waste management (see Table 1).

Although EIs have been used largely in developed countries, they are by no means new to developing countries, several of which have experimented with EIs that support regulatory standards. In the context of pollution control, we have seen a road pricing scheme implemented in Singapore, deposit-refund schemes in Taiwan, and an effluent charge system in China and Malaysia during the 1980s [5]. In Thailand, a set of product taxes through the existing Excise Tax Act has been used to address environmental problems since the late 1980s. However, with growing interest in the green economy/green growth, international organizations such as the Organization for Economic Co-operation and Development (OECD) and the United Nations Environment Programme (UNEP) are increasingly calling on developing countries to employ taxes and economic instruments to promote green investment and innovation [6]. OECD advocated the green growth strategy and support for a policy mix with EIs as a central element, most notably to provide clear market signals [7].

According to the experiences of UNEP and the Nordic countries [7], placing a price on pollution has been found to stimulate innovation and adoption of new technologies, as firms have economic incentives to seek out cleaner alternatives. In response to international calls for action, especially in the wake of the United Nations Conference on Sustainable Development (Rio+20) in June 2012, the Thai government, through the Ministry of Natural Resources and Environment (MONRE) together

with other relevant agencies, recently drafted a national Green Growth Strategy, B.E. 2556–2561 (2013–2018). Under this strategy, EIs are regarded as strategic tools to promote green growth. Several programmes were launched, including enhancing the effectiveness of financial and fiscal measures for environment- and other market-based instruments. Interestingly, a fiscal tax reform for the environment and the implementation of EIs are among the indicators of success of the strategy.

Although EIs are seen as promising tools for environmental improvement in developing countries, they require a legal basis in order to implement them. In Thailand, there are several initiatives by government agencies to draft innovative EI legislation, but the law enactment process is hampered by many institutional constraints and challenges. This paper reviews such experience based on documentary research and analysis of data gathered from individual interviews of key informants, including observations based on direct engagement in the EI formulating process during 2011–2013. Several policy recommendations are offered to overcome the constraints identified.

Experience in using EIs for environmental management in Thailand

EIs implemented in Thailand are mostly confined to fees and taxes. Fines are seldom used to penalize violations. The most important law using tax measures to influence consumer behaviour is the Excise Tax Act B.E. 2527 (1984). This paper reviews four existing laws related to waste management, which contain provisions for environmental fees, taxes and subsidies.

Table 1 Types of EIS for waste management

Instrument	Example	Purpose
Input or virgin material tax	Aggregates levy	Discourage use of inputs (e.g. virgin materials) so as to reduce consumption/use, thereby reducing waste generation and encourage reuse.
Product charges/fees/tax	Tyres, motor vehicles, batteries, non-recyclable containers, non-bio degradable plastic bags, lubricant oils, electric and electronic equipment	Increase prices of environmentally unfriendly products to disincentivize consumption/use, thereby reducing waste generation and encourage reuse.
User charges	Household waste charge, wastewater treatment charge	Quantity-based waste collection charges can provide an incentive for households to reduce the amount of waste generated and to seek alternatives.
Deposit-refund scheme	Glass and plastic beverage containers, beverage cans, batteries, tyres	A deposit is paid upon purchase (thereby providing similar incentive effects as product tax) and is refunded upon return of the used product or packaging for recycling or reuse, thereby providing an incentive to return recyclable or reusable items.

Source: Adapted from [4]

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1) The Excise Tax Act B.E. 2527 (1984) and the Excise Tariff Act B.E. 2527 (1984)

Excise taxes are imposed on products and services considered extravagant or detrimental to the health and morale of society. Since Thailand has no specific laws or regulations relating to environmental taxes, excise tax has been used in several cases in an attempt to address environmental problems. Two pieces of excise tax law have been widely applied to create differential tax measures to discourage use of environmentally harmful products. For example, high-sulphur diesel is taxed at a higher rate than low-sulphur diesel. The same applies to lead-acid batteries using non-recycled lead versus those using recycled lead. Vehicle taxation structure is also based on engine size and capacity, with concessions for energy-saving vehicles. Recently the Cabinet approved a new excise tax structure on vehicles based on vehicle type, engine size and carbon dioxide emissions. The new excise tax structure is due to take effect in January 2016 (Cabinet Resolution, 18 December 2012).

Tax differentiation has proved to be successful in several areas, including the phase-out of leaded gasoline and two-stroke engine motorcycles, and the introduction of ethanol-blended gasoline (gasohol). However, excise taxes cannot be applied directly to pollution discharges since such discharges are not products. In addition, the current Excise Tax Act is limited in its application, as it allows for imposition of excise taxes on 15 different product categories. Such excise taxes can be specific (e.g. 5 baht per unit of the product) or *ad valorem* (e.g. 10% of the value of the product). For any products not explicitly listed in the Act, the Excise Tax Department may introduce an excise tax but only in its *ad valorem* form. This creates a significant difficulty for implementation of some product surcharges under the Excise Tax Act when the rationale linking environmental cost with product value is weak, such as in the case of waste electrical and electronic equipment. Last but not least, earmarking revenues

from excise taxes would require enactment of a new law such as in the case of the Health Promotion Act B.E. 1994 (2001) that allows the Thai Health Promotion Foundation to be funded by a 2% surcharge tax of tobacco and alcohol excise taxes.

2) The Public Health Act B.E. 2535 (1992)

The Public Health Act B.E. 2535 (1992) was enacted to repeal the Public Health Act B.E. 2484 (1941) and the Control of Use of Fecal Matter as Fertilizer Act B.E. 2480 (1937). The main EIs prescribed by the Public Health Act are administrative fees, user fees, and fines. Administrative fees are paid to local governments for various activities requiring a permit or license under the Act. These include licenses to conduct businesses of collection, transport, and disposal of solid waste and a license to conduct activities deemed harmful to health.

One of the provisions allows user fees to be levied for collection, transport, and disposal of solid waste by local governments. The Minister of Public Health retains the power to issue ministerial regulations to set the maximum fees that can be levied from households and other entities. Local governments can then issue local ordinances to set the actual fees within the limit set by the Minister. The maximum fee for normal households (generating no more than 20 liters/day) is set at 40 baht/month. Although the maximum fee is already insufficient for cost recovery, in practice local governments tend to charge an even lower rate within the range of 20-30 baht/month due to local political pressures [8].

3) The National Enhancement of Environmental Quality Act (NEQA) B.E. 2535 (1992)

NEQA was drafted to formulate an overarching framework for environmental protection and management in Thailand. The Act established a policy requiring a five-year national environmental quality management plan together with provincial-level environmental management

plans. It also designated pollution control areas and established the National Environmental Board (NEB) and Environmental Fund [8].

The most important EIs used under the NEQA's provisions are wastewater and waste treatment fees, assignment of strict liability, and subsidies in the form of income tax exemptions for foreign experts and for the installation and operation of treatment facilities for wastewater, air pollution, and other wastes. Wastewater or waste treatment fees are imposed on owners or occupiers of pollution sources who discharge wastewater or other waste into publicly-owned wastewater or waste disposal facilities. Local governments and government agencies concerned have the duty to collect service fees and fines, as well as to claim for damages caused by polluters discharging pollutants into wastewater treatment facilities. The fees and fines collected are exempted from being remitted to the Treasury as government revenues, but are to be used for maintenance of the facilities, with some amount deducted for the Environmental Fund.

Although the provision on wastewater charges is broadly worded in the NEQA, in practice, it is only applied to publicly-owned wastewater treatment plants operated by local governments, and in practice fees are rarely collected. Similar to or worse than the low levels of collection of fees for waste collection, transport and disposal under the Public Health Act, the majority of local governments with wastewater treatment facilities are reluctant to levy any service fees. Only 7 out of 1,547 municipalities have so far implemented or are in the process of implementation of charges [9]. As a result, many facilities are not operated due to lack of funds for effective operation and maintenance. Regarding subsidies, the Environmental Fund may disburse grants and soft loans for environmental purposes such as construction of wastewater treatment or waste disposal facilities by local governments.

4) The Decentralization Act B.E. 2542 (1999)

Section 16 of the Decentralization Act provides that municipalities, the city of Pattaya and Tambon administrative organizations (TAOs) have a duty to provide public services for the population within their respective areas of responsibility. The provision lays down 31 functions for provision of such services, including maintenance of cleanliness and orderliness, solid waste disposal and wastewater treatment, and public health services. Section 17 mandates provincial administrative organizations (PAOs) to provide 29 public service functions for inhabitants within their areas of responsibility, including solid waste disposal and wastewater treatment facilities. In the performance of their functions under the above provisions, local governments may receive income from fees, license fees, and fines levied upon users or beneficiaries of the public services delivered (Sections 23-28). Despite the provisions that local governments may generate income from fees and fines, these sources of income remain limited, especially as most local governments fall far short of effective implementation of the various service fee schemes, especially for wastewater treatment and solid waste management fees, as discussed above [8].

In summary, although the main purpose of using EIs is to internalize negative externalities such as pollution and health impacts into the purchase price of a good or service, the use of EIs in Thailand has so far been limited, and is usually confined to user charges (wastewater charges and solid waste collection fees) where the charge/fee rates are only set to cover the costs of operation and maintenance (O&M). Tax measures have been used through differential tax schemes implemented under the excise tax law. Therefore, there is room for implementation of the polluter pays principle through more extensive and diverse use of EIs. The following section presents current efforts by the Thai government to promote greater use of EIs

such as emission charges for environmental management.

The government effort in expanding the use of EIs for pollution control

Several international organizations have suggested the Thai government study the feasibility of using EIs for pollution control, which has worsened considerably as a result of uncontrolled industrialization. Since 1997, the German government through GIZ (formerly GTZ) supported the Department of Industrial Works (DIW) to conduct several studies on the use of EIs for managing industrial pollution [10, 11]. The studies, conducted by the Thailand Environment Institute (TEI), initially recommended two types of EIs: namely effluent charges and a pollution management fee (PMF). Subsequent studies commissioned by DIW from 2003 – 2005 recommended imposition of an effluent charge on BOD in wastewater discharge in 38 types of highly polluting industries. A rate of 35 baht per kilogram of BOD load of effluent has been recommended, based on the operation and maintenance (O & M) cost of Bangkok central wastewater treatment plant and a further 20 factories. DIW, supported by GIZ (GTZ) also commissioned TEI to propose appropriate EIs for industrial air pollution. Four measures were recommended, including a fuel user charge, a raw material charge, a pollution management fee and an air emission charge. The raw material charge of 1-10 percent of the prices was proposed only for arsenic which is used in paints, dyes, tanning and explosive factories. Revenues generated by the above charges would be deposited in the Industrial Pollution Management Fund to be set up within the Ministry of Industry. However, given the Fiscal Policy Office (FPO)'s initiative on environmental tax law in 2007 with support from the Asian Development Bank (ADB), DIW decided not to proceed independently with its own draft law.

Besides DIW, the Pollution Control Department (PCD) under the Ministry of Natural Resources and Environment (MONRE) also commissioned a study on the use of EIs in the management of hazardous wastes from consumer products in 2003 [12]. The study recommended that a system of product surcharge or fee on consumer products causing hazardous waste and a buy-back scheme for used or discarded products should be implemented. A draft Act then was proposed to PCD as an output from the project. The target waste included waste from electrical and electronic equipment (WEEE), used tires and car batteries, and other non-value wastes such as used pesticide containers, fluorescent lamps and dry-cell batteries. The revenue from the product fee would be deposited in an earmarked fund to be set up within MONRE and used to finance a buy-back scheme. As for DIW, PCD did not proceed with its own draft Act but planned to convert its draft Act to a subordinate law under the draft Act on Economic Instruments for Environmental Management proposed by the FPO.

In 2008, a report containing the draft Act on Economic Instruments for Environmental Management (abbreviated as the EI Act) and a draft Royal Decree on water pollution tax was proposed to the Ministry of Finance (MOF) with ADB support. The draft Act was introduced as a framework law containing a set of EIs to address various pollution problems in Thailand. Such a framework law allowed agencies responsible for environmental protection (such as DIW, PCD) to issue a Royal Decree to determine the rules and procedures for using any selected EI for environmental management.

The draft Act can be considered as a legal innovation for the following 3 reasons: (1) it is an integrative law that requires a number of ministries to cooperate; (2) it is the first law that empowers local governments to tax and retain the larger proportion of the revenue, while remitting a minor proportion to the

Fund; and (3) it allows direct private stakeholder participation in the administration of tax revenue earmarked for a common fund [8]. The research team also listed some challenges associated with the innovation. First, it would require salesmanship on the part of the MOF/FPO to act as the promoter of the Act. Secondly, a strong inter-ministry core team would be needed to drive the Law to be fully effective. Thirdly, a database would be needed to monitor the system's efficiency and ensure good governance [8] (*later in this paper, we show that these challenges could not be overcome*).

This kind of framework law, whose implementation is specified by subordinate laws is a new form of law drafting in Thailand. The rationale for such a framework law arose from the observation that issuing each Act under the normal law enactment process would be too time-consuming to enable the responsible agencies to address the pressing environmental problems in a timely manner. Instead of issuing an Act that needs to undergo parliament review, each concerned agency issued subordinate laws (Royal Decrees and Ministerial Notifications) under this draft Act which can enter into force after receiving Cabinet approval.

Under the draft Act (the first draft), several EIs can be utilized by different government agencies for environmental purposes. These include an environmental tax, user fees or charges for pollution management, performance bonds, tradable permits, subsidies and other support mechanisms, as well as other EIs as determined by the Committee for EI Policy. It prescribes a governing institutional framework, provides a policy for revenue management, and the conditions for use of such revenues.

As for the management of revenue from taxes and fees, by seeing the limitations and remote likelihood of reforming the existing National Environmental Fund (NEF) of NEQA, a new Fund, the Environmental Tax and Charge

Fund, was proposed under the draft EI Act. Revenues under the Fund are to be earmarked in separate accounts according to their sources and objectives. To facilitate efficient Fund management, the Act provides that the Fund has its own legal entity, and its operation not be directed to the government budget. The draft Act specified several objectives of using the revenues under this Fund [8, 13] as follows.

- To support and provide loans or grants for projects proposed by government agencies or the private sector for the purpose of pollution control or reduction and environmental clean-up;
- To support research and development (R&D) projects concerned with pollution and natural resources management as proposed by government agencies and environmental non-governmental organizations;
- To support management of waste from consumer products, including setting up a collection or buy-back system for waste from consumer products.
- To provide subsidies or loans for industries or activities relating to the waste reuse, recycling and recovery;
- To provide financial assistance to activities or projects related to natural resources conservation proposed by responsible government agencies.
- To provide assistance to people whose health and livelihood are affected by environmental changes caused by industrial pollution and to support environmental clean-up; and
- To support other activities relating to natural resources and environmental management as determined by the EI Committee.

During 2007 – 2011, four Royal Decrees were drafted under this draft Act, including drafts on water pollution taxation (industrial point sources), air pollution taxation (industrial point sources), product fees from used products (e.g. electronic waste and other hazardous

waste), and on industrial waste. Other EIs proposed to be issued under this draft Act included a carbon tax for the transport sector, and a tourist tax (to account for waste generated by tourism activities). However, no detailed Royal Decrees have yet been drafted for these EIs. This paper summarizes the contents of these four Royal Decrees.

- *The draft Royal Decree on Water Pollution Tax from BOD (Biochemical Oxygen Demand) and TSS (Total Suspended Solids) (in short – the draft Royal Decree on Water Pollution Taxation).* This was a secondary law prescribing procedures for tax collection and revenue management in relation to water pollution. The tax would be calculated based on BOD and TSS from targeted sources of pollution, grouped into 2 categories. Category 1 covered Type 3 factories¹ and would be under the jurisdiction of DIW and the Excise Department to implement the tax. All other point sources were under Category 2 which would be under the responsibility of local governments with the support of PCD. Of the total taxes collected in the case of Type 3 factories, 3% would be shared with the Excise Tax Department, 25% with the Industry Ministry as the budget for its plant audits, with the remainder deposited in the earmarked fund. For other point sources, at least 70% of tax revenues raised would be shared with the local government, 5% with PCD, with the remainder directed to the Fund. The research team on the draft Royal Decree

¹ Under the Factory Act B.E. 2535 (A.D.1992), industrial factories in Thailand are classified into 3 types of factories according to their production capacity (horsepower or number of employees) or impact on the environment. Type 1 factories are those which can start operation without notification or license. Type 2 factories are those which can begin operating after notifying DIW. Type 3 factories are those the operation of which would require a license from DIW or the provincial industry office concerned.

also proposed industry sectors to be prioritized in a first phase for introduction of the water pollution tax for BOD, as follows: pulp and paper, sugar, fish product industries; and for TSS: iron and steel, pulp and paper, and rubber products. In terms of the tax rates, it was proposed that for wastewater, small plants with a daily release of 1-50 cubic meters of water would pay a fixed rate of 1,000-3,000 baht per year, while those discharging 50-500 cubic meters per day would pay 3,000-10,000 baht per year. The rate for disposing more than 500 cubic meters per day would be 2,500-10,000 baht per tonne of BOD or TSS. Production facilities located in industrial estates would be exempt from the wastewater tax since they already pay the estate operator for wastewater treatment services.

- *The draft Royal Decree on Air Pollution Tax on Sulphur Dioxide, Nitrogen Oxides and Total Suspended Particulates.* Under this draft decree, factories would have to pay for emitting sulphur dioxide, nitrogen oxides and dust. Small-scale plants would pay fixed rates at 10,000-30,000 baht per year, while medium-sized plants would pay from 30,000-50,000 baht per year. The rate for large plants would vary between 1,000-2,000 baht per tonne for sulphur dioxide and nitrogen oxides and 1,500-2,500 baht per tonne for dust.

- *The draft Royal Decree on Rules and Procedures of Product Fee Management* [14]. This secondary law concerned the use of product fees to be earmarked for the promotion of environmentally sound treatment of waste products through recycling subsidies. Targeted products included the ten priority WEEE items. There would also be a Ministerial Notification (to be issued by the MoNRE) to determine a list of regulated products under the Decree and a Ministerial Regulation (to be issued by the MOF) that determines the fee rates and the amount of subsidy for each regulated item within the maximum *ad valorem* rate set in the draft

Act. This legal package was planned to be issued after the draft Act on Fiscal Measures for Environmental Management is promulgated.

- *The draft Royal Decree on Industrial Waste Generation Tax* [13]. This draft decree aimed to create incentives for waste generators to change their behaviours to follow the 3Rs concept (reduce, reuse, recycle). The drafting team proposed low initial tax rates in order to secure political acceptance: zero baht/ton waste (tax exemption) for non-hazardous waste in List A being reused or recycled (or recovery), 50 baht/ton waste for non-hazardous waste in List B² being reused or recycled (or recovery), 100 baht/ton waste for non-hazardous waste sent to incinerators, landfills or exported, and 150 baht/ton waste for hazardous waste sent to incinerators, landfills or exported. The draft law would also encourage waste processors to improve their waste management practices by offering 50% tax rebate when they send their waste to waste processors who meet the following specified conditions: (a) having a good management standard certified by DIW and/or (b) having most preferred waste recycling technology listed by DIW.

During the law drafting process of both the draft Act and the draft royal decrees, several stakeholder consultations and public hearings were organized. During the implementation of the law-drafting study in 2007, over 800 representatives of local and central government, private sector and development partners were consulted during the course of 27 meetings and interviews. This included a meeting with 30 mayors or their representatives of large provinces and a meeting with authorities likely to co-sponsor the decrees under the Act [8]. The law

drafting teams incorporated comments and concerns of various stakeholders in their deliberations. For example, the study team on the draft Royal Decree on Industrial Waste Tax decided to change the type of EI proposed from landfill taxes as originally proposed, to waste generation taxes as a result of information received from the waste processors' group that a large number of industrial wastes remained missing from the official reporting system. Under such a situation, imposing a landfill tax risked penalizing compliance with the rules, and might even lead to more illegal dumping of waste outside the official management system. The study team also proposed to DIW that more effective law enforcement is a prerequisite before introducing waste generation taxes, or any other EIs [13].

In 2010, the draft Act on Economic Instruments for Environmental Management was submitted to the Cabinet for approval. During that period, the FPO changed the name of the Act to the draft Act on Fiscal Measures for the Environment in order to better communicate with the public. The draft Act was approved "in principle" on October 12, 2010 and forwarded to the Council of State for a legal opinion. However, during the Cabinet meeting, the Minister of MONRE at that time opposed this draft Act, arguing that the proposed fund would duplicate the existing Environmental Fund under NEQA. Because of this unresolved issue and the view of the State of Council that this framework law was too broad and should be revised, the State of Council sent the draft Act back to the FPO for further revision to resolve the inter-ministerial conflict.

Since that time, this draft Act had been pending without any clear policy from the FPO how and when to resume this draft Act. Delays may also have resulted from personnel changes within the FPO, where persons in charge were transferred to other responsibilities, while in some cases incoming officials had no commit-

² Under this proposed royal decree, List A contains a list of non-hazardous waste which is clear in its characteristic or form (e.g. waste clothes, used paper), while non-hazardous waste in List B might need some evidence to show that it is really non-hazardous.

ment to pursuing this Act. The draft act remained pending for two years, until in 2013, the FPO decided to drop the framework law altogether, and transformed the two Royal Decrees under this draft Act into two free-standing Acts: a draft Act on Water Pollution Taxation and a draft Act on Air Pollution Taxation. However, there is no indication as to when these new draft Acts will be submitted to the Cabinet. Another two draft Royal Decrees: the Royal Decree on Product Fee Management and a draft Royal Decree on Industrial Waste were abandoned, which in turn, affected the PCD's implementation plan to develop an integrated system for WEEE and used product management. PCD has to restart the law drafting process again after several attempts since 2004 (a total of almost 10 years).

Analysis and discussion

1) Lessons learned

The case of the abandoned draft Act on Fiscal Measures for the Environment (Draft EI Act) highlights the institutional weakness that hamper wider adoption of EIs for environmental management. Several specific issues identified during the law enactment process include the following:

- *Lack of political will among high-ranking policy makers.* It is often the case that top executives of government agencies are not involved in law-drafting and law enactment process. This lack of personal executive involvement is likely to be a factor in the low priority attached by the FPO or the MOF to this draft Act. Moreover, the decision to reassign personnel and replace them with new personnel who were reluctant to push the draft Act forward also indicated the lack of motivation among officials at MOF to act on environmental issues.

- *No strong inter-ministry core team.* Although this draft EI Act is MOF/FPO's initiative, concerned agencies such as DIW

and PCD which would have benefited from the promulgation of this draft Act did not play an active role in driving the draft EI Act. The Minister of MONRE even objected to this draft Act during a Cabinet meeting, effectively blocking its progress despite several public hearings and consultations among concerned agencies prior to submission of the draft Act to Cabinet. This highlights a lack of communication with key political figures/actors to ensure their clear understanding of the rationale of the draft Act. The Minister's objection was one reason why the State of Council returned this draft Act to the MOF or FPO for review.

- *Lack of competent government officials.* There were only a few officers within the FPO and MOF with expertise in environmental economics and EIs in particular. This lack of capacity, combined with a lack of political will, remains a major obstacle to MOF in taking a leadership role in environmental tax reform. PCD also suffered from a shortage of competent officials- a conclusion which is unsurprising considering its small annual budget, which represents approximately 3% of the total budget of MONRE [8].

- *Insufficient public education and engagement.* It can be concluded that the lead agencies had insufficient or ineffective communication with NGOs and the general public in relation to the draft Act. Engagement with academia was also relatively limited during the legal drafting and enactment process. It was perhaps inevitable that the lack of public involvement and support, together with the lack of political will within the responsible agencies themselves, would inevitably lead to paralysis and eventually, abandonment of the draft Act.

- *Perceptions of adverse impacts on competitiveness.* After submitting the draft Act to the Council of State, the FPO received several comments and questions on the draft Act. One of the questions was on the potential adverse

impact of the draft Act on national competitiveness, reflecting political concern over the implications of environmental taxes on competitiveness. However, this concern overlooked the fact that existing regulations (the CAC approach) already increased some costs to domestic producers. It is therefore important to explain to society the significance of environmental externalities and the potential benefits of using EIs to internalize the costs of these external impacts.

- *The lengthy law enactment process.* The lengthy duration of the Thai legislative process is well known. It can take as long as a decade to transform a bill into law, creating the risk that the principle underlying any draft bill may itself become obsolete by the time of enactment. Thus, a strong and highly motivated lead agency is essential to champion any draft law, and to explain and defend its content and intention to the changing members of the Cabinet, the Council of State and Members of Parliament.

2) Policy recommendations

The lessons learned above highlight the need for strong and capable institutions as prerequisite for implementation of EIs both prior to, and after enactment of legal provisions. As Ponzi [15] concluded, overcoming challenges of governance and management will require strong legal and institutional frameworks, backed by political will, leadership, and a governance environment that fosters transparency, accountability and stakeholder consultations. Without all of these, it would be difficult to realize the introduction of any new and innovative EIs in Thailand and other developing countries facing similar institutional constraints. The question then arises of what we can do to address such challenges? Clearly, the ideal but most challenging solution would be to instigate institutional reform. With the forthcoming integration of the ASEAN Economic Community (AEC) and increasingly evident

impacts of climate change which have seriously affected many countries in the region, it is undoubtedly an appropriate moment to call for institutional reforms for both domestic and regional affairs. However, since such institutional reform will themselves take time, under the existing institutional frameworks, several policy recommendations are proposed as follows:

- **Obtain political commitment from concerning agencies.** Lessons from the draft EI Act showed that to ensure new legislation on EIs is passed requires strong commitment and collaboration among all concerned agencies, not only the lead agency working alone. In particular, institutional champions are needed who are ready to communicate with stakeholders and pursue progress throughout the long process and many hurdles. Seeking technical assistance from academia and gaining support through meaningful dialogue with environmental groups and the industry would also help EI promoters in effective communication with decision-makers.

- **Raise environmental awareness and knowledge on the potential of economic instruments.** Results from a study on wastewater charge in Thailand [9] showed that acceptance of wastewater charges are likely to improve with the flow of information or access to information on city management and on waste water charges (prior to levying) in particular. Knowledge and awareness among the general public people are thus important for effective implementation of, and support for, EIs. It is therefore essential that academics, especially environmental economists, should play an active role in providing knowledge and raising awareness among the general public as well as among central and local authorities.

- **Localised experiments.** During the stakeholder consultation on proposed product fees for used products, it was suggested that the

proposed product fees and buy-back rates as well as the proposed management system for WEEE should be piloted in some areas to gauge public reaction and to fine-tune the policy instruments before applying nationwide.

- **Mix of instruments is needed.** As pointed out by O'Connor [5], one reason that EIs have not been more widely endorsed, despite their many potential benefits, is that they make the costs of pollution control more apparent than is currently the case under CAC measures. The public may object more vigorously to the tax than the regulation, even if the welfare loss is smaller with the tax. To have an appropriate policy instrument, five criteria are needed to be considered: environmental effectiveness, economic efficiency, equity, administrative feasibility and political acceptability. Based on these criteria, several policy instruments are available including regulation, specific types of EIs, voluntary compliance measures, green procurement policies and information-based tools. The challenge is how to find the appropriate mix of instruments. In the case of WEEE management, the Thai government is currently considering policy options such as a product fee with governmental fund scheme or an Extended Producer Responsibility (EPR) scheme, or a combination of both, depending on product types. Policy makers and academia should continue and expand research on the optimal combination of EIs that would best fit the specific prevailing conditions in the country.

Conclusion

This paper has reviewed past experience in Thailand in using EIs for environmental management. The most frequently used EIs are user charges and product taxes which did not require new legislation. The Thai government made efforts to introduce and promote greater

use of EIs through development of a draft EI Act and subordinate laws; however, the draft legislation was ultimately abandoned due to lack of political will and committed promoters among concerning agencies. This paper identified several constraints and challenges hampering the law enactment process. To overcome these challenges, institutional reform will ultimately be needed. Although the lessons from the past offered little hope for the enactment of innovative policies and laws in the short to medium term, the challenges should nevertheless be viewed as dynamic. The key issues of political will and insufficient institutional capacity could be addressed or may change over time. It is however critical to build capacity of government personnel and academics to prepare for a policy and law package which can deliver when enabling conditions emerge. A communication and awareness campaign is also essential to gain political and public support for proposed EI instruments or a mix of policy instruments.

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