

ENVIRO-ECONOMIC INSTRUMENTS AND WASTE MANAGEMENT: THE PROSPECTS OF APPLYING THE INDIFFERENT CONSUMERS –PAY PRINCIPLE IN MALAYSIA

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Abstract

The continuing struggle of local authorities in addressing waste management issues would call for a close examination of the economics of waste management and the need to search for the most appropriate enviro-economic policy instrument that can be introduced in the context of a fast developing economy such as in Malaysia. A number of instruments had been put into practice by various authorities in Malaysia and in other countries, however, the effectiveness of each one of them is being questioned. Moreover, in Malaysia, there has not yet been any widely published research that has described the prospects of Indifferent Consumers Pay Principle. It is hereby proposed that a new instrument be introduced in Malaysia, which is a variation of the “Polluters-Pay” Principle, as outlined in the 9th Malaysia Plan (2006-2010), its first target ought to be the consumers, not necessarily the producers: those who participate in a recycling scheme are not required to pay a certain levy, when purchasing new goods. In return, when they deposit the unwanted items into recycling bins designated for different types of material, they will be rewarded with equivalent credit points which can be redeemed at points of sale. The anticipated positive impact of the application of the proposed instrument would be as follows: (i) waste-materials will be sorted at source into: “dry”, “wet”, and “toxic”; (ii) any litter in the streets or drains will be somehow picked up by “poor” souls, because of its value on redemption; (iii) those indifferent consumers would in effect pay for the “collection” services; (iv) the costs of collection and sorting will be greatly reduced; (v) thus, the costs of production of packaging materials containing recyclables will be lower, (vi) the recycled goods will be more competitively priced; and (vii) any Waste-to-Energy scheme will become more viable now than ever. Only under such a management that it would attract private investment to develop and finance the full-chain of waste sorting-to-materials, logistics, recyclables-exchange, and waste-to-energy streams, and waste-residue repository. In short, instead of carrying on only with the current 3R programme: Reduce, Reuse, and Recycle; the programme ought to be extended to 5R Scheme: Reduce, Reuse, Recycle, Recovery of Energy and Materials, and Repository, and not landfilling. Thus, the waste recycling industry, as envisaged since the 8th Malaysia Plan (2001-2005), would soon be realized.

Keywords: Waste, Indifferent Consumers-Pay Principle, Polluters-Pay Principle, Waste to materials and energy, cleaner production, Non-profit, Non-private Organization (NP2O), Recyclables-Commodity Exchange (RCE), Malaysia.

JEL classification: Q5,Q2

1. Introduction

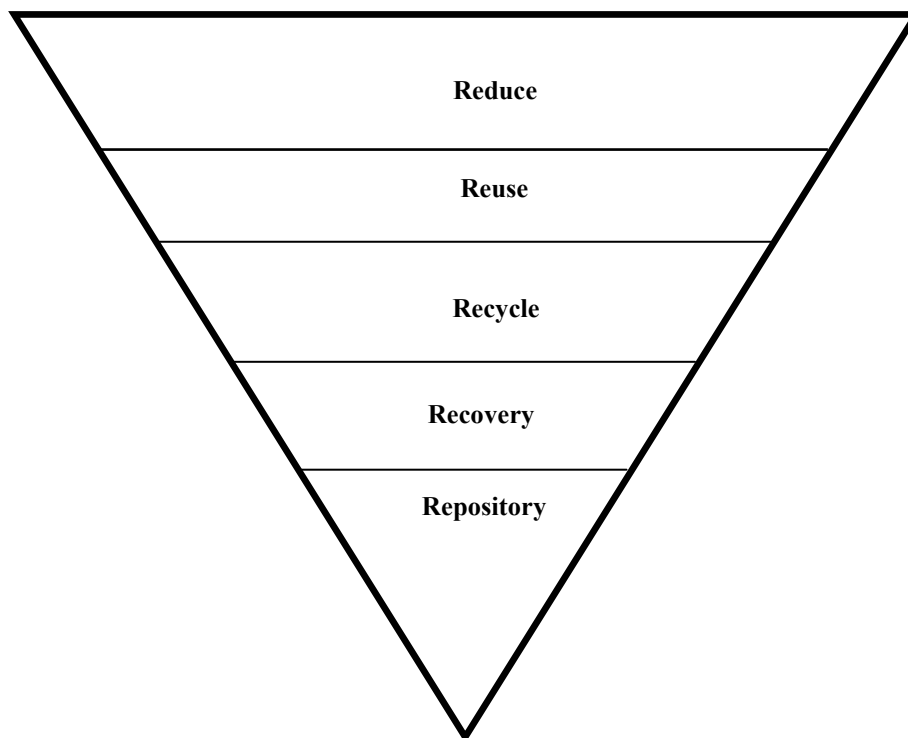
The unprecedented scale of waste generation is attracting increasing attention due to its environmental, social and economic impacts. The national perspective on solid “waste collection and disposal” is changed at least since 1972 Statement of Malaysia at the UN Conference on Human Environment in Stockholm from a simplified version to increasingly ever a challenging one: In urban areas “solid waste collection was satisfactory but the disposal system was largely by controlled tipping and burning. The disposal of waste was like those in many countries, and an organized programme in this direction was needed. The local authorities in many cases were hampered by lack of trained and experienced personnel, financial resources and knowledge of the effects of health.” In rural areas, “solid wastes were buried or burnt but there was room for considerable improvement in this area (Malaysia, 1971). The present challenge, as posed in the Outline Perspective Plan (2001-2010) (OPP3), is the need for the Government of Malaysia to adopt “a comprehensive waste management policy, as well as to formulate strategies for waste reduction, reuse, and recycling (3Rs).” (Malaysia, 2001). In other words, the 3R strategies have to be in place with the remaining equally critical 2Rs: Recovery for Energy, and Repository of “non-marketable” materials for future use, and not dumped into and buried forever in landfills (Fig.1).

During the Eighth Malaysia Plan Period (2001-2005) (8th MP), the local authorities had to handle an estimated 16.2 million tonnes of waste throughout the country, a nationwide recycling campaign was launched in December 2000 “to promote greater awareness among the public on the need to recycle and reuse waste so as to reduce the amount of waste generated” and to be disposed off (Malaysia, 2001). However, it was estimated that about 76 per cent of the generated municipal solid waste were collected, while the remainder deposited in illegal dumps, drains, watercourses, or rivers. Of the collected waste, only about 1-2 per cent, was recycled, and the remainder taken to disposal sites (Mohamad Saib, 2004). In other words, over 20 percent of waste generated remain uncollected or littered about, and there has been hardly any waste-materials sorted at-source, which explains the very low rate of recycling in Malaysia compared to 62 per cent in Flanders, 47 per cent in the Netherlands, 30 per cent in USA, and 15 per cent in Japan (PSDC, 2004). Thus, one of the key aspects in the continuing search for an improved management of the waste was for the local authorities to take up the challenge of the 8th Malaysia Plan (MP) inter alia “to introduce various initiatives and appropriate economic approaches such as incentives and collection charges to reduce the amount of solid waste” (8th MP, 2001). Unfortunately, it was not taken up.

It is therefore the aim of this memorandum as much to reflect the potential use of various economic instruments in solid waste management, as to propose the most appropriate set of instruments in the case of a fast developing economy like Malaysia.

The remainder of this paper is structured as follows. Section 2 provides the review of appropriate enviro-economic policy instrument. Section 3 explains the context by discussing the proposed socio-enviro-economic policy instrument along with the imagined practices drawn from the proposed Indifferent Consumers-Pay Principle, and policy support. Finally, the concluding remarks of the research are presented in Section 4 together with some recommendations.

Figure 1. Most Favorable Waste Hierarchy for Waste Management in Malaysia.



2. Review of Appropriate Enviro-Economic Policy Instrument

Appropriate waste management is recognized as a vital prerequisite for sustainable development (UNEP, 2011; UNHSP, 2010). In urban contexts, public waste management focuses on eliminating potentially dangerous substances or materials away from human settlements (Wilson et al., 2012; Velis et al., 2009). As the socio-enviro-economic implications of unsustainable use of raw materials and growing waste generation in both the short and long term became apparent (The Government Office for Science, 2011a; Stern, 2006), waste management began to shift from a just pollution prevention and control exercise, towards a more holistic approach.

Frameworks and concepts, such as the waste hierarchy the '3Rs', extended producer responsibility, polluter pays principle (Engal et al., 2008), life cycle assessment and Sustainable Consumption and Production (SCP) (Pires et al., 2011), were introduced and the paradigm of 'sustainable resource management' was development (Barton et al., 1996). Sustainable resources management is grounded on the notion that 'waste' can be a 'resource' (Bringezu and Bleischwitz, 2009). Restricting resource use to more sustainable levels and applying resource efficiency can effectively reduce Greenhouse Gas (GHG) discharges linked to climate change, as well as offer other benefits of socio-economic nature (Barrett and Scott, 2012; Defra, 2011; WRAP, 2010).

As a federated nation-State like Malaysia is set to realize its Vision to be a developed country by the year 2020, it has to rise up at least to the 4th Challenge: "to establish a fully moral and ethical society" in order to ensure that "our valuable natural resources are not wasted; our land must remain productive and fertile, our atmosphere clear and clean, and our water unpolluted, the beauty of our land must not be desecrated," (Malaysia, 1991). However, ethics alone may work for some people, but not for all; as a reminder by George Orwell: "on the whole, human beings want to be good, but not too good, and not quite all the time (Orwell, 1941 in Porter, 2002). Thus, argued Richard C. Porter: "economic incentives, that is prices and taxes, can be devised as much to reinforce intrinsic moral motivation" as "to internalize the externality" by levying a tax equal to the marginal external cost, called a Pigovian tax after A.C. Pigou (Pigou, 1920 in Porter, 2002).

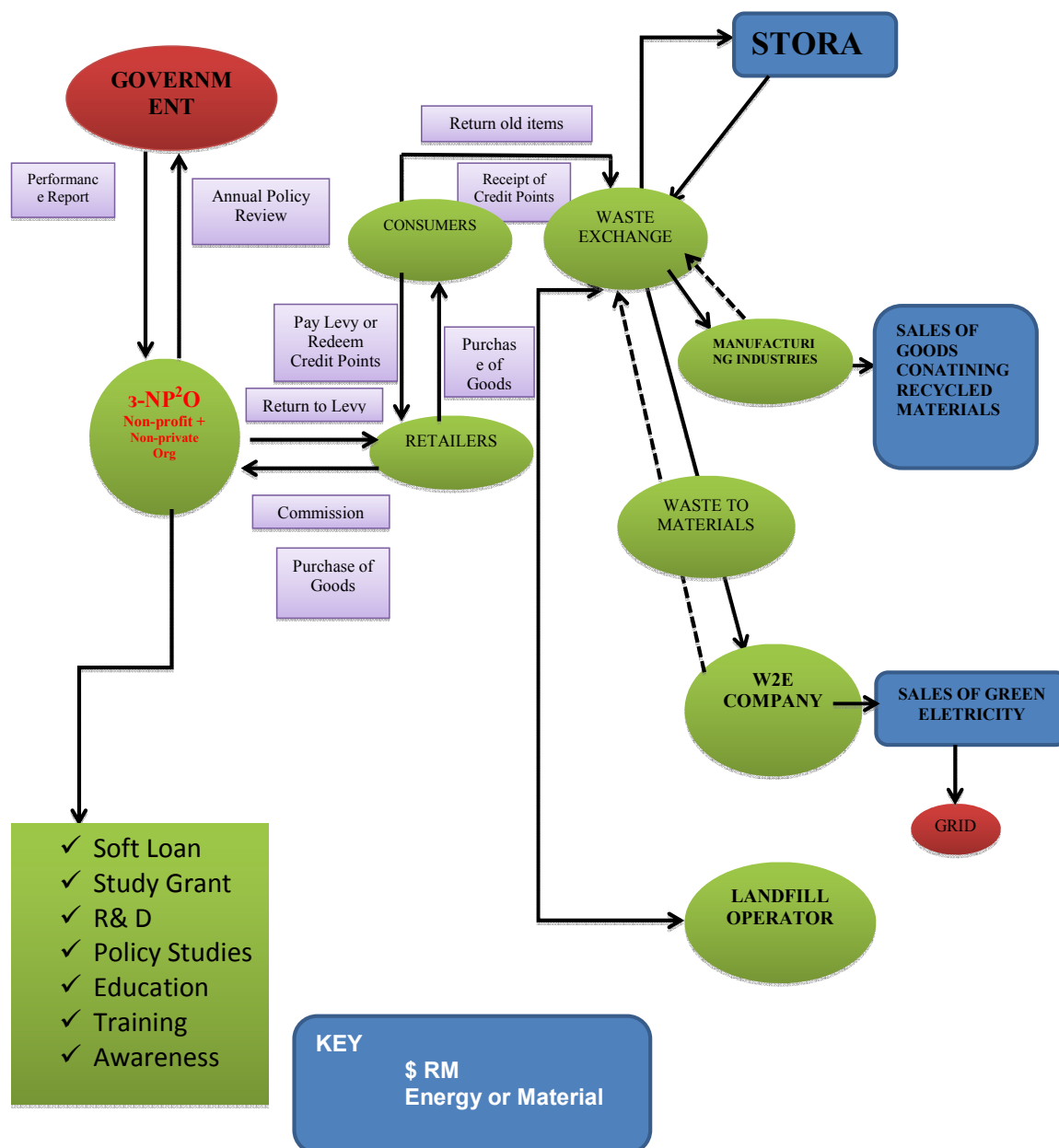
A recent review by Jamal et al., 2001 of various enviro-economic policy measures and strategies adopted in both developed and developing economies indicates at least 13 instruments have been put into place: “(i) product bans; (ii) packaging taxes; (iii) landfill taxes; (iv) household waste charges or packaging taxes-fees per bag”; (v) returnable disposal fees; (vi) taxes on virgin materials used; (vii) prohibitions on land-filling certain products; (viii) bottle deposits; (ix) voluntary or mandatory material separation; (x) recycled or recyclable labels on products; (xi) loans and technical assistance for recycling programs; (xii) public constructions of incinerator plants, and (xiii) tax credits for recycling equipment and investment by private firms. The degree of effectiveness of every type of instrument in the USA is reviewed by Porter, 2002, in Germany particularly on waste-take-back policy, and in Japan on recycling programme by Moore et al., 1994. Essentially, the application of the instruments is targeted at various stakeholders or “actors”: (i) producers; (ii) consumers; (iii) retailers; (iv) house or dwelling owners; (v) recyclers; (vi) waste contractors; (vii) financial-loan institutions; and (viii) Government.

In Malaysia, the responsibility to manage the waste rests with the Local Authorities: Cities and Municipalities by the Guidelines of the Ministry of Housing and Local Government; and other non-urban or rural areas by the supervision of the Ministry of Health, through their appointed contractors, or as an interim measure prior to the enactment of the pending Solid Waste Management Bill, through their respective designated concessionaires: Idaman Bersih Sdn Bhd (formerly Northern Waste Industries), Alam Flora Sdn Bhd, Southern Waste Management Sdn Bhd, and Eastern Waste Management (Mohd Nazeri Salleh, 2001). Issues and problems arising from the current practice were highlighted by Jamaludin Md. Jahi, 2001, but the suggestions to address these issues were confined to institutional measures, but short of recommending an application of economic instruments other than that “the residents be made to pay extra” for having generated more than an allowable amount of waste. Continuing search by Jamal et al., 2001 discover the “deposit and refund” scheme was the most preferred policy instrument by 369 respondents of various socio-economic background, over two other competing instruments: “fee per bag”, and “tradable discharge permits”. But “the problem with all such deposit-refund systems is that they require a second waste collection that duplicates the first system” (Porter, 2002). Furthermore, the “deposit” is imposed on every purchaser or consumer, whether or not one cares to “recycle”.

3. Proposed Socio-Enviro-Economic Policy Instrument: Indifferent Consumers- Pay Principle

It is, hereby, argued and proposed that, those who care to recycle, do not have to leave a deposit-for-refund; and those who do not care or are indifferent toward any recycling programme or efforts, instead, have to pay a certain form of “levy” at points of sales. Those who return unwanted items at designated collection centres are to be rewarded with “levy-equivalent credit points” which can be redeemed at the time of purchase of controlled items or goods. The List of Controlled Goods, with Published Levy-Equivalent Credit Points, could be developed based on the nature and extent of different types of waste being generated, or littered about, as per jurisdictional area of local authority. The immediate effect of the proposed “Indifferent Consumers-Pay” (ICP) Principle and its application as a socio-enviro-economic Policy Instrument, would be that any litter on land, in the street, drains, streams, rivers, or in the seas would be picked up by “poor” souls, as “waste” and “resource” are essentially the same substance, except in value (A. Bakar Jaafar, 2001). In other words, the application of the proposed Principle has the effect of adding value to the “waste” substance into becoming “resource” (see Fig.2).

Figure 2. ICP Principle.



3.1. Envisaged Practices Drawn from the ICP-Principle

Waste generators would voluntarily sort the items to be “disposed off” into at least three major “material streams”: “Toxic”, “Dry” or not perishable, and “Wet” or perishable, and deposit them, in order to earn “credit points” with equivalent cash value, at designated collection centres, either fully manned or with full automation, equipped with sorting-bins for different types of materials or recyclables: such as metals (ferrous and non-ferrous), bottles and other glasses, plastics, papers (magazine and newsprints), paper-boxes, and wood and timbers, etc. Those who gather, sort, and deposit any “toxics” at the designated centres would earn premium credit points. All are encouraged to handle the perishables themselves at source, either by composting the materials in their yards, or by rapid bio-enzyme process in-situ; if not, such waste be put out, as usual, for scheduled collection by local contractors or concessionaires for further regionalized resource recovery or treatment.

The immediate positive impact of such a practice, waste-to-material sorting at source, can be numerous, including the following:

(i) the costs of sorting and collection to “appointed recyclers”, for recyclables, would be greatly reduced, as these costs are now shifted to waste generators who want to avoid paying

the levy. The saving, in the cost of door-to-door collection alone, to the recyclers can be as high as US\$ 123 per tonne, and in sorting, by US\$ 50 per tonne (Ackerman, 1997). In Malaysia, the saving can be as high as 60 to 70 per cent of the total costs of managing solid waste by the current practice: door-to-door collection, transfer, and landfilling;

(ii) the quality of the recyclables is maintained, not tainted nor damaged; and thus, it can attract premium value;

(iii) as a result, the costs of producing new goods containing recyclables would be lowered;

(iv) the frequency of door-to-door waste collection can be reduced, if all perishables are composted or bio-digested at source. There is a premium for good quality compost in organic gardening or landscaping; and

(v) the sorted “toxics” are now prevented into entering the waste streams, and thus, the environment.

Once the waste-materials are well-sorted out, and accumulated, they would require other supporting measures, including the following Policy instruments:

(i) “Recyclables-Exchange of Malaysia” (REM) be established;

(ii) consistent with the adoption of ISO 14000 series of standards, and other product-stewardship programmes, including Responsible-Care, manufacturers can now be required to produce new products containing recyclables, and are encouraged to go for eco-labelling;

(iii) energy-materials that can no longer be recycled be utilized for power generation, for which, the waste-to-energy producers be given an attractive tariff and other fiscal incentives for the promotion of the renewable programme;

(iv) sorters for the “toxic wastes” be rewarded with premium credit points or equivalent monetary incentives, and such wastes be sent to prescribed resource recovery facilities or toxic and hazardous waste concessionaire for further treatment and repository;

(v) any remaining waste-residues should not be landfilled, but rather deposited at managed-repository facilities for future use-options;

(vi) the earned “credit points” are transferable, and can be traded in the secondary market;

(vii) to maintain the value of the credit-points, and to add value to those points, traded or otherwise, it is anticipated that the Government of Malaysia would increase annually, after Budget review and tabling in the Parliament, the extent of the levy imposed to those having not earned credit-points which can be redeemed at points of sales of “controlled Goods” under the Recycling Programme;

(viii) “the rate of recycling” within a State-constituency, or within a Federal-Territory, be introduced as one of the Key Performance Indicators (KPIs) of every Yang Berhormat, or even Yang Amat Berhormat; and

(ix) a Non-Private, Non-Profit Making Organization (Enviro-NP2O), with its Governance to oversee the collection of the Levy into a Trust Fund and its disbursement for promotional and supporting activities including R&D, be established, as the “driver” or “manager” of the above scheme of measures, as advocated earlier by the author (A. Bakar Jaafar et al, 2002).

The only downside of the proposed solid waste management scheme, for Malaysia and perhaps, for other countries, would be an expected increase of petty theft which can be overcome by tightening security measures, including the following:

(i) every waste sorting and collection centre (WSCC) be fully manned, and even equipped with sophisticated recording and surveillance equipment; and

(ii) each item that is to be received at the WSCC be screened for “stolen” goods, and any suspect-carrier be required to declare his or her identity.

Table 1. Problem and solution of waste by ICP.

PROBLEM=WASTE	
SOLUTIONS	
Concept	Waste Resource, no difference except in value
Principle	Indifferent consumers must pay
Method	Consumers buying new goods must return the old ones, if not, they pay in the form of levy
Effects	(i) consumers will return old items and earn smart credit points AND (ii) Any litter in the street or drainage will be somehow collected; because it has value.
Practices	(i) "Dry", "Wet", and "Toxic" Waste are sorted at source. (ii) Those who return old/used items at designated smart-collection centres. will earn points

3.2. Policy Support

The proposed Policy, with its Scheme of policy measures, is in line with the current Outline Perspective Plan (OPP3): "the Government will consider the adoption of a comprehensive waste management policy as well as to formulate strategies for waste reduction, reuse, and recycling." (Malaysia, 2001:187); and in support of the provisions of the 8MP:

- (i) "The adoption of a comprehensive waste management policy to address the issues of waste reduction, reuse, and recycling";
- (ii) "the conduct of relevant studies and demonstration projects to ascertain the viability and the acceptability of a waste recycling industry";
- (iii) "the introduction by local authorities of various initiatives and appropriate economic approaches such as incentives and collection charges to reduce the amount of household waste";
- (iv) "a clearing house mechanism be established to facilitate industrial symbiosis, whereby one industry's waste could be another's resource." (8MP:550).

4. Conclusion and Recommendation

The need for the Government of Malaysia to introduce a very specific socio-environmental Policy instrument based on the recently advanced "Indifferent Consumers-Pay Principle" (ICP), targeted first at "consumers", with the support of "retailing business and commerce", and secondly, at "industrial producers" would make a significant difference to the current practices and approaches in solid waste management of Malaysia. The experience of other countries in applying various other Principles and Policy instruments prove to be irrelevant in Malaysia, where enforcement is much to be desired; discipline rather lacking; the right culture for recycling yet to evolve fully; less "the will-to-pay" for common services, and thus, short of "political-will" and public finance. Thus, the generation of the Fund through the collection of the proposed "ICP Levy" would help support the expected non-profit making activities: policy review and studies, R&D, public information, education, awareness campaign, training, and promotion of public-private partnership and participation. The responsibility to manage the proposed Waste Management Scheme should rest with the proposed Non-Private, Non-Profit Organization for the Environment (Enviro-NP2O), which should be incorporated by the Registrar of Company, rather than by the Registrar of Society. Only under such a management that it would attract private investment to develop and finance the full-chain of waste sorting-to-materials, logistics, recyclables-exchange, and waste-to-energy streams, and waste-residue repository. In short, instead of carrying on only with the current 3R programme: Reduce, Reuse, and Recycle; the programme ought to be extended to 5R Scheme: Reduce, Reuse, Recycle, Recovery of Energy and Materials, and Repository, and not landfilling.

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