

Sustainable Shift: Institutional Challenges for the Environment in Malaysia

Anjakan Kelestarian: Cabaran Institusi untuk Alam Sekitar di Malaysia

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ABSTRAK

Pembangunan lestari merupakan suatu cabaran sejagat. Ia merupakan suatu yang sistemik dan merupakan asas di dalam mencorak pengeluaran dan penggunaan ekonomi. Perubahan ke arah pembangunan lestari memerlukan perubahan institusi, dan perspektif dalam suatu jangka masa yang panjang. Artikel ini mengutarakan suatu fahaman evolusi persekitaran, yang dibahagikan kepada tiga fasa utama iaitu, perlindungan alam, transformasi kerajaan, dan pelaburan hijau. Ia juga membincangkan kriteria-kriteria institusi melalui tinjauan takrif-takrif dan prinsip-prinsip untuk penyusunan semula institusi. Berbanding dengan 'organisasi', perbandingan yang melibatkan 'institusi' adakah lebih luas, tahan dan berterusan. Ianya harus dipertimbangkan dengan teliti supaya penghasilan 'software' dan 'hardware' dapat dihasilkan dalam satu kitaran. Seterusnya, satu penilaian prestasi dasar ketahanan Malaysia juga turut dibentangkan di dalam artikel ini. Bahagian terakhir artikel mempersoalkan apakah cabaran-cabaran keinstitutionian untuk anjakan kelestarian di Malaysia? Turut disertakan bersama-sama kelemahan pelaksanaan agensi-agensi, konflik perhubungan di antara Kerajaan Persekutuan dan Kerajaan Negeri, sokongan kempen alam sekitar yang lemah, dan kajian polisi yang relevan memerlukan satu usaha bersepadu sesebuah institusi untuk mencari jalan penyelesaian berhubung dengan trajektori pembangunan lestari.

Kata kunci: Kelestarian; polisi alam sekitar; perubahan institusi

ABSTRACT

Sustainable development is a global challenge. It is a systemic one and is deeply embedded in the pattern of economic production and consumption. The 'shift' towards sustainable development requires an institutional change, and one which requires a long-term perspective. The article traces the evolution of environmentalism, demarcated into three main waves namely, nature protection, governmental reform, and green investment. It also discusses the nature of institutions through cursory review of definitions and principles for institutional reform. In comparison to 'organisation,' 'institution' is broader, durable and persistent, so much so that its 'hardware' and 'software' must be considered in tandem. Next, a cursory assessment of Malaysia's sustainability policy performance is also presented. The final part of the article asks what are the institutional challenges for the sustainable shift in Malaysia? Taken together, weak implementing agencies, conflicting Federal-State relationship, feeble environmental advocacy, and research that is policy-irrelevant, demand a concerted effort in thinking institutionally to find solutions to unsustainable development trajectory.

Keywords: Sustainability; environmental policy; institutional change

INTRODUCTION

Modernisation had inevitably changed the face of the Earth. Natural resource depletion, biodiversity loss, decline of ecosystem services, and intensifying pollution are examples of the problems arising from the impact of human activities on the life support systems. Ironically since the Industrial Revolution, our complex, global, and social interactions had also failed to alleviate poverty but instead had increased inequity in wealth distribution (McNeill 2000). Combined together, these socio-economic and environmental challenges are expressed in the quest for sustainable development or sustainability.

Recent years have seen an escalation in public, scientific and policy concern over issues of sustainability. Two decades after its genesis, sustainable development is now firmly established as an agenda of public policy (Meadowcroft 2000). The *sustainable shift* essentially means that development processes must operate using the logic of sustainability principles. Promoting sustainability opens up debates about our relationship with the ecosystem, about the character of development and about what constitutes national progress, leading to the formulation of new goals and strategies for sustainable development in many countries.

However, mainstreaming sustainability has proven to be difficult. After decades of struggle in creating concrete programs to address regressive global environmental trends, it dawned upon many that there was a gap between declared sustainable development objectives and their implementation (Lafferty 2004; Redclift 2005). In reality, the operation of procedures, norms and mechanisms for carrying out the stipulated goals and strategies is plain hard. Its success was negated by the conventional economic development paths, which are distinctly resilient mainly due to patterns of production and consumption. They are durable and ostensibly inimical to environmental reform (O'Toole 2004). Such implementation deficit is true both for the rich Northern countries as well as for developing ones such as Malaysia, although degree and extent may vary.

To enable the sustainable shift, scholars and practitioners point to the need for an institutional change (Connor & Dovers 2004; Vatn 2005; World Bank 2003). But how do we translate this ambition into practice? This article explores possibilities and requirements for reforming institutions to achieve the goal of sustainability. To describe the 'shift,' it begins with a section tracing the evolution of environmentalism as an alternative model to conventional development. Next, definitions of institution and principles of sustainability are reviewed. Subsequently, Malaysia's environmental policy performance is briefly surveyed, based on the three goals of environmentalism: nature protection, governmental reform, and green investment. The article then proceeds to outline four key institutional challenges confronting Malaysia, before making the concluding remarks.

UNDERSTANDING THE SUSTAINABLE SHIFT

The twenty-first century has been hailed as the 'century of the environment' (Lubchenco 1998). Environmentalism

– or simply pro-environmental behaviour – is itself a product of the industrialisation process. Its actual form and practical expression is determined by perspectives about the extent of environmental problems. Perspectives, however, were triggered by the prevailing discourses of a particular point in time which shaped a variety of environmentalism. Arguably, the 'embeddedness' of a discourse is shaped by time and space, occasionally to the effect of causing 'great transformations' (Polanyi 1957). As with any sociological ideas, the central tenets and features of environmentalism have invariably undergone revisions throughout history. Because environmentalism represents one alternative model of development, tracing its history elucidates the institutional challenge we are confronted with. The evolution of environmentalism is simplified henceforth as three distinct 'waves,' namely nature protection, governmental reform, and green investment (see Figure 1 and Jones 2008). The latter two waves characterise the essence of sustainability, which ushered in a paradigmatic change in the way human being views her relationship with nature.

FIRST WAVE: NATURE PROTECTION

The first wave was sparked in response to rapid industrialisation and forest clearance in both the developed and developing countries. Inspired initially by nature writers and conservation officials, the first wave gave birth to the conservation movement (Grove 1995). The nature protection wave has two foci. These are the conservation of wilderness areas deemed as important for scientific, aesthetic and economic values and the concern over environmental pollution caused by the use of chemicals such as pesticides (Carson 1962). Witnessing the loss of valuable habitats, concerned individuals and organisations staged a fight against unrestrained use of natural resources. By 1960s, organised social movement or modern environmentalism began to emerge

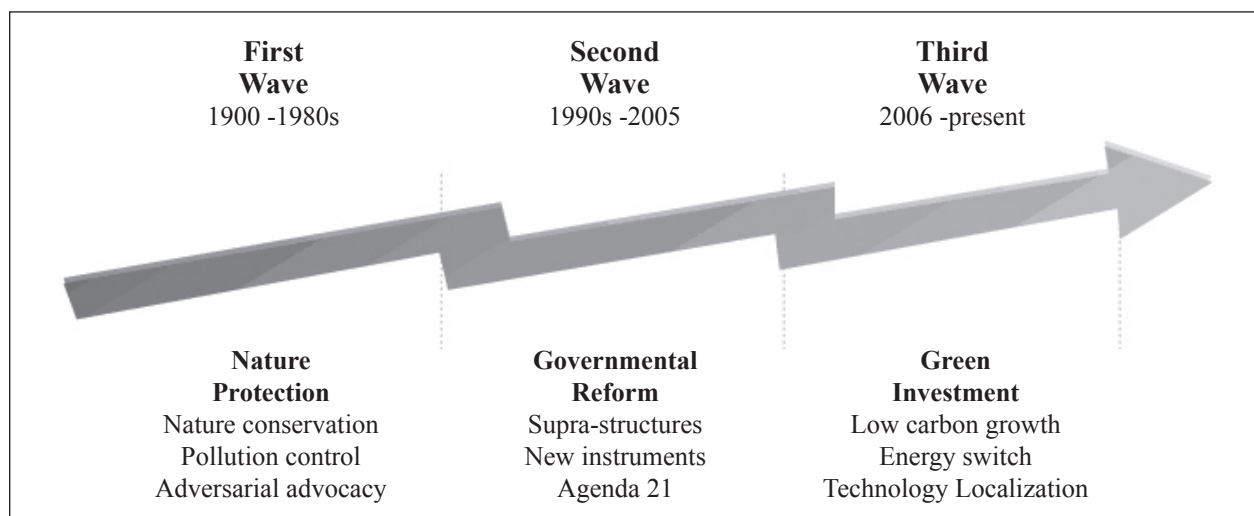


FIGURE 1. Three Waves of Environmentalism

in frontrunner countries such as USA and Japan (Janicke & Weidner 1997). This pattern was soon replicated in other developing countries. Idea-wise, industrialism and perpetual economic growth are generally seen as harmful. Hence, as a solution, human society should move away from the conditions created by industrialism. As a result, the 1980s marked a period of growth of Environmental Impact Assessments and shift from end-of-pipe to eliminating sources of pollution. In summary, attention to limits and carrying capacities defined the first wave of environmentalism.

SECOND WAVE: GOVERNMENTAL REFORM

The second wave was firmly established by the early 1990s as the condition of the global environment further declined. Series of reports such as by the World Commission of Environment and Development and international meetings like United Nations mega-conferences (Rio 1992; Johannesburg 2002) had established the position of the environment as an important agenda of public policy (WCED 1987). It is argued by some scholars that as a policy problem, sustainable development is different to what we know as environmental problem. For instance, sustainability problem such as climate change and biodiversity issues require inter-generational horizon of policy response. An environmental problem such as local water pollution issue stands in contrast with a sustainability problem such as global warming. While the former can be addressed by a local or national government, solving the latter's trans-boundary character requires international cooperation.

Throughout the 1990s, governments undertook a flurry of environmental goal-resetting activities. Alongside policy statements came the deployment of new policy instruments be they regulatory, economic, or a mix of both (Jordan et al. 2005). In the strategic policy-making domain, planning document termed National Strategy for Sustainable Development and sustainability indicators were among the new policy innovations. In some countries, ministerial portfolios were reorganised to provide greater emphasis on environmental sustainability. Participation of local stakeholders was also given a boost with the popularisation of Local Agenda 21 programs. In a nutshell, the second wave was defined by reformist mode driven by problem-solving motivation. Its aim was to dissolve the "conflicts between environmental and economic values that energize the discourses of problem solving and limits" (Dryzek 1987).

THIRD WAVE: GREEN INVESTMENT

By the turn of the century, stronger evidence of global warming was made available by scientists and

international organisations. Average global warming of more than 2° Celsius from preindustrial levels could have dangerous climatic consequences (Schellenhuber et al. 2006). Shortly after, climate change was firmly established as a critical global concern. Scientists argue that climate change could impede nations' abilities to find and achieve sustainable development pathways (Robinson et al. 2006). The needed solution is to mitigate greenhouse gas emissions. But our industrialisation is fueled by energy derived from carbon. It is widely agreed that if industrialisation is to continue, we need to diversify from fossil fuels, and move towards a sustainable low-carbon economy. But how can we break out of the current lock-in to fossil fuels and find the most promising ways forward? One alternative is to switch to green technology, for instance renewable energy from solar and biomass sources.

A low carbon economy is dependent on the development of green technology and its adoption by societies in all spheres of life. Nations are adapting to the reality of climate change by reshaping development through ecological modernisation. The total world market for environmental products and services is currently estimated at around \$1370 billion, and is set to double by 2020 (Hamdouch & Depret 2010). Several indicators confirm these forecasts. First, an increasing number of major industrial and service groups are diversifying and investing in clean technology and renewable energy sectors. Moreover there is a rise in the number and size of stock market operations in these sectors, in the USA, Europe and developing countries. Asian economies such as Japan, South Korea and China are aggressive in developing and commercialising green technologies. In 2008, investments in clean energy in Europe reached nearly \$50 billion, followed by \$30 billion by the United States. South Korea on its part is embracing 'low carbon green growth' with \$31 billion allocation to fund research in 27 green technologies. Indeed the world is seeing a race for leadership in the low-carbon age.

Addressing climate change in a development mode demands policy environment which reconciles 'green technology' with the objective of full employment. This is reflected in terms such as 'green collar economy' and 'green job' which are growing in popularity (Jones 2008). As mentioned above, the third wave saw the pouring of investments by both governments and the private sector into 'green' businesses'. Although pro-active engagement of the corporate sector with the environmental agenda began since the second wave, the fear of losing business competitiveness had kept the rest as merely foot-draggers. The industry-led shift from second to third waves stands in contrast to this as it promises a mutually beneficial relationship among industry, government, and civil society.

NATURE OF INSTITUTIONS

CLARIFYING DEFINITIONS

Reversing environmental degradation requires nothing short of an ‘institutional change.’ Institution, according to popular understanding, is the solution to unsustainable development. For some, the call to strengthen institutions is odd because institutions that we have now are a product of industrialism. They, therefore embody the logic of economic growth (Dovers 2005). This may not necessarily be compatible with sustainable development.

For a constructive discussion, clarity in the meaning of institutions is necessary. Definitions of the term institution vary from common usage, colloquial meanings to tight discipline-based descriptions. A lexical source such as the Oxford English Dictionary defines institution as “an established law, custom, usage, practice, organisation, or other element in the political or social life of a people.” The academic usage of the term institution varies significantly across and within disciplines. Simply put, institution is “the rules of the game in a society” (North 1990). Specifically, it is “the humanly devised constraints that structure political, economic and social interaction” (North 1991). Therefore, institutions allow organised, collective efforts toward achieving shared goals, meeting common challenges, and reconciling differences. The defining feature of institution is that it is stable, recurring, repetitive, and patterned (Goodin 1996). The stability of institutions is provided by *informal constraints* such as sanctions, taboos, customs, traditions, and codes of conducts, as well as by *formal constraints* which include laws, property rights and constitutions. These constraints are “institutional hardware,” whereas a discourse, custom, tradition and code of conduct form the “institutional software” (Dryzek 1996). Although durable, institutions may change following a serious crisis, a change of government, or more incrementally through policy interventions.

In common use in Malaysia, institution refers to a specific organisation or a policy program. Organisations such as a specific government agency, departments, association are a manifestation of institution. For an institution to be changed, organisations are needed. But institutional change is harder to achieve than organisational change. For instance it is easier to restructure the Department of Environment than to transform Malaysia’s federal system which is constitutionally defined.

PRINCIPLES FOR INSTITUTIONAL REFORM

The journey toward sustainability, like most long voyage, would gain by having some guidance. A vast range of political science writing is of relevance here to the theme of institutional reform, but instructive guiding principles specifically for sustainability goal are found in Dovers (2005; 2009a), which are reproduced and summarised

below. Six generic principles may be adopted and adapted by governments to suit varying contexts:

1. *Factoring in the long term* – Sustainable development addresses factors operating over decades and centuries, such as climate changes, forest growth, infrastructure planning, and the inertia of urban forms. Such timescales do not match with the much shorter time frames of politics and economics, and indeed this is a key cause of many sustainability problems.
2. *Integrating environment, society and economy in policy* – The crux of sustainability is to account for interactions between the ‘three pillars’ and to account for especially the environmental and social implications of economic policy. This task is usually termed ‘environmental policy integration.
3. *Precautionary principle* – requires recognition of uncertainty, encourages proactive rather than reactive policy actions, and shifts the onus of proof from those concerned about the environmental effects of policies and developments to those advocating development. Clearer codification of the Principle in law and policy is needed, requiring its application rather than simply ‘to take account’ of it.
4. *Global dimensions* – Sustainable development is a global issue. International concern and policy development have generally outstripped domestic policy in both intent and vigour. Yet it is at national level that agreements such as the Convention on Biological Diversity and United Nations Framework Convention on Climate Change must be implemented.
5. *Innovative policy approaches* – Policy innovation is required given the complexity of sustainable development problems and the implementation deficit so far. There is a need to develop more sophistication in the art and craft of policy instrument choice. An emphasis is required on ‘systemic’ policy instruments to address underlying causes of sustainability programs.
6. *Community participation* – This relevant and needed across scales of governance. Community-based programs tend to be poorly resourced, switched on and off according to near term government need, lacking a clear mandate and set of responsibilities, and at times seem to be more about cost-shifting and delegation of implementation tasks than sharing of knowledge and power.

Embedding these principles in their institutions is no easy feat for any government. But for those willing to, they may be a pioneer and a showcase for a sustainable society. In what follows, we briefly examine Malaysia’s achievement (or lack of it thereof) in dealing with the three waves of environmentalism discussed earlier.

ENVIRONMENTAL GOVERNANCE IN MALAYSIA

The sustainable shift has raised a new way of looking at development issues – one that views the social and environmental externalities in an integrative manner. Similar to most countries, Malaysia is no exception to the inability in viewing development from a holistic framework – which is the essence of sustainable development. True enough, Malaysia is an example of a successful developing economy. Over the last five decades, it has undergone rapid economic and social change, a process which is still continuing. This remarkable progress partly owes to the country's natural resources endowment. Malaysia's heavy reliance on its natural resources has been a salient feature from colonial days up until the 1970s (Aiken & Leigh 1992; Hezri & Hasan 2006; Kathirithamby-Wells 2005; Vincent & Ali 1997). While impressive economic achievement has advanced human development and reduced poverty, the pursuit of socio-economic progress has been accompanied by an unprecedented rate of change in the natural environment.

ARE WE ON A SUSTAINABLE DEVELOPMENT PATH?

Gauging whether any government is on a sustainable trajectory is a tricky task as national context does matter. Nevertheless, a cross-country comparison, though fraught with many shortcomings, may offer some useful clues. In an international benchmarking of national environmental stewardship called the Environmental Sustainability Index 2005, Malaysia was ranked at the 38th position among 146 countries surveyed (Esty et al. 2005). This may not be a comfortable place when compared to some countries in Latin America such as Brazil, Argentina, and Costa Rica that were ranked in better positions than Malaysia. Just like Malaysia, these countries are rapidly industrialising with substantial pollution stresses, are members of the group of twelve mega-(bio)diverse nations, and are operating with stable socio-political capacity for governance. Hence, there is a reason to assume that their policy innovations have dramatically improved their overall capacity in addressing the difficult challenges of environmental sustainability, which is one of the three pillars of sustainable development.

Another league table ranking called Environmental Performance Index (EPI) 2010 placed Malaysia at 56th position among 153 countries surveyed. According to EPI's sub-index evaluation, Malaysia's ecosystem vitality is not in the best condition. In particular, the 2010 EPI assesses three different indicators for climate change performance. These indicators are GHG emissions per capita, carbon dioxide emissions per unit of electricity generation, and industrial GHG intensity per unit of generated PPP. However, the impact on the health of citizens is manageable, as manifest in good scores on

water and air pollution impacts on humans, compared to other countries in the region. Malaysia's relatively higher income may be a plausible explanation why this was the case. However, when first published in 2005, this Yale-Columbia study placed Malaysia in the 10th position, better than the USA and other environmental frontrunners. Mainstream newspapers then were quick to highlight the ranking as Malaysia's undisputed achievement. Not unlike other international league table indices, method of calculation will be under constant improvement, and countries' position fluctuates accordingly and at times, illogically.

Unfavourable international perceptions about Malaysia's state-of-the-environment are also reflected by other assessments. The Climate Change Performance Index ranked Malaysia in the league of the world's largest per capita greenhouse gas emitters such as Russia, Canada, Australia, the United States and Saudi Arabia. In the Red List of Threatened Species 2008 published by the International Union of Conservation (IUCN), Malaysia was ranked third as a country with the most number of endangered species. Malaysia was outranked only by Ecuador and the United States.

The above shows the limitation of international assessments of sustainability performance. On the positive side, Malaysia has performed well in certain areas of environmental policy. Compared to a number of neighbouring nations, Malaysia has accumulated considerable experience in pollution control since the 1970s. The ambient water quality has been progressively improved until the mid 1980s by more effective control of effluent from palm oil mills, rubber factories, and related agro-industries regulated under the *Environmental Quality Act (EQA)* 1974. Malaysia has also received accolade for its successful compliance with the Montreal Protocol in phasing out ozone depleting substances. Economic analysis suggested that Malaysia has avoided the 'resource curse' thesis, and was mainly on a sustainable path throughout 1980s and 1990s, although if disaggregated East Malaysia performed poorly (Vincent 1997). In conclusion, neither research nor league table indices tell unequivocal results. Such uncertainty is a feature of sustainability issues. But uncertainty makes the case for action stronger, not weaker, beyond the normal parameter of policy, institution and governance.

ENVIRONMENTAL POLICY EVOLUTION AND PERFORMANCE

Different countries tackle sustainability issues differently. Malaysia's economy and its associated environmental problems invite distinctive institutionalisation of policy responses. Generally, the country is not short of environment-related policies (Hezri & Dovers 2011). Broad direction for sustainable development has been outlined in policy statements such as the National Environmental Policy, National Biodiversity Policy, and

the National Climate Change Policy. These evidenced the flux of policy statements, albeit with vague principles, on the landscape of Malaysia's public policy. How do we assess these on the scale of institution and governance? If institutional change is about redirecting the machinery of public policy to align with sustainability goals, then policy statements alone will not instantly produce great advances, apart from serving as a first right step. A 'good policy' not only has a clear goal statement, it is also equipped with specification of objectives and instrument choice. Next comes calibration and fine-tuning, particularly after a period of testing and implementation.

The three waves of environmentalism described earlier are based on broad goals. Fundamentally, the first wave is premised on a conflicting relationship between environment and development. Both are pulled into different directions, fueled by crisis and adversarial advocacy (Figure 2). Guided by the idea of limit, the Federal legal framework for pollution control, the *Environmental Quality Act (EQA) 1974* was formulated. The statutory provision was supported by the following actions: the creation of a national environmental agency, the Department of Environment, and a council of environmental experts, the Environmental Quality Council, in 1975; and the establishment of an environment

portfolio in 1976. By global comparison then, Malaysia can be considered as one of the pioneers in environmental policy institutionalisation (Table 1). However, the set up was inadequately resourced. Generally these instruments worked at the margin of public policy because of limited resource and influence in government.

In the second wave, the focus of environmentalism across the world shifted from crisis to reform agenda for sustainable development. The basis of interaction between environment and development had also changed. An important turn in environmentalism was provided by the famed *Brundtland Report* suggesting that economic growth can continue with a reduced impact on the environment. Decoupling development and environmental impact was then launched as a policy focus especially in terms of ecological modernisation. Especially in high consumption societies in Europe, energy efficiency was expressed in statutory term. During the second wave, though economic development continues to be a key objective, more efforts into integrating environment into development aspect began to be seriously considered. Vertical and horizontal integration, negotiation, and trade-offs were accepted as fashionable policy vocabularies. In an earlier study, Malaysia's response to the second wave of institutionalisation was described as patchy and

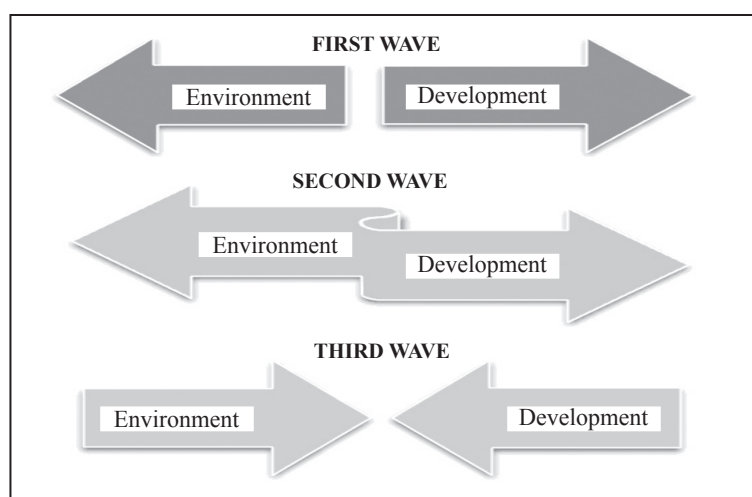


FIGURE 2. Changing Forms of Relationship between Environment and Development

TABLE 1. Institutionalisation of Environmental Policy in Six Developing Countries

Countries	Ministry of the Environment	National Environmental Agency	National Environmental Report	Legal Framework for the Environment	Article in Constitution	Council of Environmental Experts
Brazil	1985/1992	1989	-	1981	1988	1984/1997
India	1980/1985	1974	1982	1986	1976/1994	1993
Malaysia	1976/2004	1975	1978	1974	-	1975/1985
Mexico	1982/1994	1992	1986	1972/1988	1988	1995
Nigeria	-	1988	1992	1988	1979/1989	1990
Vietnam	1992	1993	1995	1994	-	-

Source: Adapted from Weidner, 2002

Note: Years in slash indicate major changes from initial to contemporary institutional set up

haphazard (Hezri & Hasan 2006). Neither prominent structures and processes, nor statutory review were introduced to equip the policy system in addressing the challenge of sustainable development. Given that Malaysia was one of the pioneers in establishing a framework for environmental governance in the 1970s, its response to the post-1992 sustainable development agenda is a disappointment. Until recently, the nation is still grappling with issues and policy responses that were formulated in the 1970s.

The third wave aims for changing pattern of production, an industrial revolution where ‘greening’ is the focus, as much as Fordism was the basis for the first Industrial Revolution (Milani 2000). As alternatives, Malaysia may continue developing via the ecological modernisation trail, following Europe and North East Asian countries, or develop its own green model. An ecological modernisation pathway essentially means co-evolution of human and nature. Economy and nature can be favourably combined through dematerialisation, or re-adaptation of economic growth and industrial development, based on the principles of doing more with less. This green economy will be place-based whereby technology choice meets local ecological and human development needs. Contemporary ‘greening’ applications include green buildings, smart-grid energy distribution, and eco-urban design, to name a few examples. But is the ecological modernisation trajectory possible for Malaysia? A basic architecture responding to the low carbon restructuring agenda was undertaken recently through the incorporation of the green technology portfolio into the Ministry of Energy, Green Technology, and Water (MEGTW). In addition, this was soon after equipped with the launch of the *National Green Technology Policy* and the *Malaysian Green Technology Corporation* (formerly National Energy Centre). If the tempo of change is an indicator of political will, the speed the policy statement was formulated was unprecedented. Compared to the six years gestation period for the endorsement of National Environmental Policy, and the one decade it took for the *Solid Waste Management and Public Cleansing Act 2007* to be accepted, the Green Technology Policy launch surprisingly did not take more than 100 days after MEGTW was established.

TRANSITION TOWARD SUSTAINABILITY

By the end of 1970s, land conversion from forest to plantations and urban settlements was a firmly established biophysical phenomenon in Malaysia. With rapid change came a highly compressed time and space, regulated as it were by legislation and policies on the environment. Clearly, a reversal or turnaround in policy trends from a period of environmental neglect to a period of environmental gain had to be established. To no avail, this needed transition did not take place as planned. Arguably Malaysia’s response to the second wave of environmental

policy institutionalisation was only haphazard at best. The specific window for change was the period of 1990s. Limited government resources prevented a credible policy reform to be established in favour of sustainable development. A more desirable transition is best shouldered by a stronger coalition of the government, industry and education sectors. More recently, the third wave of environmental policy propounds a focus on ‘greening’ technology and investments, opening up yet another opportunity and challenges for such an institutional change to happen.

FOUR INSTITUTIONAL CHALLENGES

A number of constraints thwart the sustainable shift from taking place smoothly. The usual suspects are weak implementing agencies, conflicting Federal-State relationship, feeble environmental advocacy, and research that is policy-irrelevant. Without any intent to be comprehensive, this section identifies four institutional challenges confronting Malaysia. As stated earlier, the phrase ‘institutional framework’ is commonly used in Malaysia with reference to improving organisations and policy programs. While not incorrect, this is only a partial interpretation of the term. To recapitulate institution is “underlying rules, customs and patterns of behavior” (Dovers 2009b). Certainly, engineering institutional change for sustainable development is a Herculean task. Because an institution is durable and persistent, sustainability policy interventions must acknowledge the importance of both its ‘hardware’ and ‘software’. In what follows, the hardware components focus on the two prospects – first, agency redesign for integrated policy implementation and second, transcending federalism for conservation financing. Constituents of the institutional software are the creation of a new environmental advocacy and the deepening of our collective understanding about Malaysia’s changing environment.

REDESIGNING AGENCIES

Sustainability presents a systemic challenge for governments. Nevertheless, the logic of government is based on specialisation and task disaggregation for effective service delivery. One inevitable outcome of sector-based planning and implementation is policy fragmentation. This choice in turns leads to program redundancies, turf war among agencies, uncoordinated implementation and glaringly overlooked sectors. Policy integration is hence crucial for sustainable development policy. To be fair, many structures exist – Malaysia has ministerial councils on green technology, forestry and biodiversity, two (or more) dedicated ministries on environment and natural resources, numerous cabinet processes, cross-agency task forces such as the Inter-

Agency Planning Council, and a *de facto* environmental policy unit in central planning agency. It is convenient to dismiss their performance as being inadequate and ineffectual, a lament which is possibly shared by citizens in most countries of the developing South. Moving forward towards a sustainable shift begs the following questions:

1. If the existing structures are enough, what are the aspects that need empowerment – greater finance and budgetary allocation for sustainability; larger and appropriate human resource allotment; procedural improvements in approving development projects (strategic environmental assessments); new policy instruments such as carbon tax, voluntary agreements, and sustainability indicators; revision of statute law EQA 1974 or emulate ‘sustainability legislation’ such as India’s *Biological Diversity Act 2002* and Australia’s *Environmental Protection and Biodiversity Conservation Act 1999*?
2. Could the creation of a new ‘mega-agency’ or ‘mega-ministry’ with breadth of policy responsibilities and administrative capacities help to elevate environmental policy implementation concerns from merely a first wave response to second- and third-wave policy problems?
3. Apart from policy design, there are also new advisory and strategic mechanisms and programs which have been tested in many countries. Examples include the creation of a National Council for Sustainable Development aimed at inclusion of non-government interests into policy process. Would this be a possibility in Malaysia? Canada and Australia (in a state government) have also experimented with the appointment of the Commissioner of Sustainable Development. Could Malaysia copy this by providing adequate resource and strategic placement within (Prime Minister’s Department) or outside the government system (may even be in Bursa Malaysia)?
4. Earlier on in the 1990s the call to develop national sustainable development strategy was dismissed on the ground of its redundancy. What is the merit of having a ‘green’ plan to guide sustainability transition in addition to our Malaysia Plans? Elsewhere, the world is changing in response to the third wave of environmentalism. Cambodia, for instance had recently formulated its comprehensive *Green Growth Plan* under the guidance of South Korea which is now leading the thinking and action on green growth. Malaysia, on the other hand, is responding by treating ‘green technology’ as a separate portfolio, and not a potentially cross-sectoral policy agenda which may serve a double-edge sword that concomitantly addresses both our economy and the environment.

FINANCING CONSERVATION

Federalism constrains environmental policy because land is a State jurisdiction (Aiken & Leigh 1988). By extension, land encompasses agriculture, forestry, and water. Generally, some gains in the environment will involve costs and trade-offs. For State governments, conservation option is often costly as it occasionally bars development programs. Conserving a tract of forest for its biodiversity means a loss of timber revenue for the States. More recently, the necessity of inter-State water transfers or watershed protection invites debates about water pricing and compensation. Paying for the ecosystem services provided by the States is crucial now more than ever. This is because further encroachments into the interior of ecologically sensitive areas will plausibly increase the risk of environmental tragedy. Consider the following issues:

1. Some available options for financing conservation are implementable. Well planned ecotourism not only benefits local livelihood but also increases States’ revenue. The State of Kedah has proven that timber revenue may be improved by over 200% just by adopting an open tender system for logging license without violating annual coupe. What are other options to increase State revenue that can be implemented within the parameter of existing institutions?
2. Under the emerging climate change governance, how can the States tap the growing carbon market, be it from emissions trading, Reducing Emissions from Deforestation and Forest Degradation (REDD) mechanism, and Clean Development Mechanism (CDM)?
3. What other market instruments are feasible in the context of Malaysia, for instance, for water trading? What could be the new fiscal arrangement with the Federal government over natural resources?
4. In a surprising turn, the limited success of water supply services and waste management privatisation had prompted the transfer of authority from State and local governments to the Federal government. Is this desirable? Does federalisation of water and waste management support conservation priorities at the State level?

SHAPING ENVIRONMENTAL ADVOCACY

It is often claimed that public apathy and environmentally-irresponsible private sector contributes to Malaysia’s current state-of-the-environment. Surveys revealed that although awareness is fair, Malaysians generally lack understanding of the underlying causes of environmental problems (Aini et al. 2003; Haron et al. 2005). The findings also suggest that the practice of environmentally responsible behaviour does not follow awareness level.

Educating the public about the environment has been a stronghold of non-governmental organisations (NGOs). They also provide the leadership for environmental activism, influencing policy processes by using both inside- and outside-tactics (Rusli & Cheh 1999). The former involves administrative lobbying and maintaining informal contact with officials whereas the latter entails working with the media, organising protests and grassroots lobbying and raising public awareness through conferences. Usually, NGOs' approach is pragmatic and incremental. They solve one issue at a time, addressing the effect of environmental problems but barely the root cause to the outcome of tinkering at the margin of public policy.

Although the strategies adopted by environmental NGOs suited the features of first and second waves, a tactical shift is necessary to confront the third wave. Specifically, the scope for corporate sector involvement is expanding. Recent surge of 'green' prefix – technology, product, processes, and economy, if anything, portends further growth of capitalism. In the course of shifting, there will be leaders and laggards, winners and losers. The following demands more contemplation:

1. When the business sector joins force with governments, how would environmental activists ensure profitability is not pursued at the expense of communities? For instance, switching from incandescent lamps to compact fluorescent lamps will incur higher cost which may not be affordable to people from the lower income bracket. How does one ensure that the new 'green' market work for both the environment and the people?
2. What ethical standards should be pursued in the era of green economy, and what roles can the environmental groups play, that is, at the margin or the core of party politics? And a related question would be, do they have the necessary human resource with the skills to cope with the shift?
3. What are the possibilities of designing a new philanthropy (beyond CSR) that links up the corporate sector with community as well as academia in addressing systemic (i.e. not a one-off pilot project) environmental issues?
4. How do we transcend the alarmist politics of limit (of the first and second waves) to embrace the new politics of hope that unleashes innovation among Malaysians?

UNDERSTANDING THE ENVIRONMENT

Scientifically, sustainability issues are immensely complex. The key to understanding this riddle is to deepen the knowledge about Malaysia's ecology. To date, we still have very little understanding about the critical ecosystem services that are most important or absolutely

essential, or even the general mechanism of ecosystem functioning. Arguably, much of our environmental policies are based on unsound science (Vun et al. 2004). In medicine, a physician would not attempt a surgery before understanding anatomy. Ironically, without sufficient reference to ecology, much of past policies had been based on assumptions that were not scientifically appropriate. Two examples are worth highlighting. First, our Land Classification System was based on soil science, not ecology. The latter is more relevant for land-use planning than the former. Second, placed in highlands, most of our protected areas are void of endemic lowland biological diversity. The following points merit further scrutiny:

1. What are the tipping elements in Malaysia, or thresholds beyond which a resource or an ecosystem function will collapse? Do they exist and, if so, what are they?
2. Much university-based research and policy assessments on the environment are not easily accessible, begging the question of how to collate disparate information and research findings. What platform should be best established to enable wide sharing?
3. A systematic evaluation of past environmental policy experiments in Malaysia ought to be properly studied. Because the impacts of these interventions are not well understood, a more structured policy research on impacts needs to be established to avoid reliance on anecdotal evidence or speculation on success and failure. In addition, numerous pilot projects and organisational structures had been developed in the past, registering a wealth of information on strategies, plans, and roadmaps.
4. It is not too farfetched to suggest that environmental research is subject to intellectual fashions. For example, climate change had drained much resource which would otherwise be channeled to analyse more urgent environmental problems such as habitat fragmentation, waste management and renewable energy. What mechanisms should be put in place to refocus research and development investments and priorities to concentrate more on long term, sustainability issues of particular importance to Malaysia?

CONCLUDING REMARKS

The article has discussed the nature of the sustainable shift and its associated institutional challenges. It traced the history of environmentalism to understand our current predicament. As a caveat, the three waves of environmentalism should be used merely as a thinking guide, or heuristics. One can argue that, for most developing countries, the three waves may all occur at

the same time instead of in distinct stages. In which case, tsunami makes a better metaphor than waves. The intent here, though, is not to debate the merit of the 'shift,' but to sketch a spectrum of institutional challenges for Malaysia as it grapples with the future transition toward sustainability.

How do we now chart the road ahead? To implement the sustainable shift, we must reframe the challenges we face. Malaysia must approach them not from the compartmentalised perspective with which we tend to frame and separate our many problems. Instead, governments and societies should frame the challenges from a systemic perspective that attempts to identify the common root causes of all of these symptoms of an overarching unsustainability. In other words, we need to think institutionally. To undertake the sustainable shift, stronger alliances are still needed to overcome the "silo effect" that separates government agencies, the business sector, civil society, and the academe.

However, there is neither silver bullet nor a one-size-fit-all solution to addressing sustainability. The challenges outlined in this article are undoubtedly enormous. Be that as it may, Malaysians are already accustomed to major institutional reforms in the past. Take the case of its economic performance, inconceivable it may have seemed decades earlier, Malaysia's current low poverty indices are exemplary by international standard. By encouraging greater social ingenuity and ethical politics as the basis for environmental governance, Malaysia may even play a greater international role in profiting from the emerging sustainable shift.

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