

From First to Second Nature: Environmental Changes in Malaysia

Dari Alam Semulajadi kepada Alam Binaan: Perubahan Persekitaran di Malaysia

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Abstract

This paper serves as an introduction to the transformation of the bio-physical environment of Malaysia by its people and their activities. Minding the fact that the world's bio-sphere was created much earlier than the birth of human beings, the environment is there as the home base for them, utilizing what is made available to ensure their comfort, safety, health, and survival. The environment provides the material base for human beings' everyday sustenance and no less what lies beyond that for their emotional and intellectual needs. Human beings thus learn to live in harmony with their environment. This simple relation is dynamic, ever changing. Transformation of the man-environment relations begin when the material components of the environment are seen as economic resources for the market while the non-material component as a commodity for aesthetic, emotional and intellectual needs of man. The environmental changes in Malaysia can be grouped to fall under two transitions; one from the changing nature of capital from the feudal state in pre-colonial intrusion of the Malay States time to the mercantile-colonial capital, and later on to capital associated with industrialism. Using the concept of sustainability defined as a process of development that goes for economic development for social welfare while protecting the environment for quality of not only the present generation but also the future, the transformation leads to the search for sustainability in a second environment.

Keywords

First and second nature, environment, man-environment, change and degradation

Abstrak

Penulisan ini adalah pengenalan kepada transformasi persekitaran biofizikal di Malaysia oleh manusia dan aktiviti-aktiviti mereka. Atas hakikat bahawa biosfera di dunia telah dicipta lebih awal daripada kelahiran manusia, alam sekitar adalah asas kehidupan, menggunakan apa yang disediakan untuk memastikan keselesaan, keselamatan, kesihatan, untuk terus hidup. Alam sekitar menyediakan bahan asas, punca rezeki setiap hari kepada manusia dan tidak kurang apa yang terdapat di dalamnya yang menjadi keperluan emosi dan intelek. Manusia itu belajar untuk hidup dalam persekitaran yang harmoni, menunjukkan bahawa hubungan dinamik, sentiasa

berubah. Transformasi hubungan manusia dan persekitaran bermula apabila komponen alam sekitar dilihat sebagai sumber ekonomi untuk pasaran manakala komponen bukan material sebagai komoditi keperluan estetik, emosi dan intelek manusia. Pemacu asas transformasi adalah aliran modal, yang ditakrifkan sebagai modal yang digunakan untuk menggerakkan pekerja, sumber dan teknologi untuk menghasilkan barangan dan perkhidmatan untuk pasaran yang lebih luas. Mereka menggalakkan pengeluaran barangan untuk pasaran. Modal dan pemerintah ini mempunyai hubungan strategik untuk menggalakkan pertumbuhan ekonomi, pembangunan sosial dengan persekitaran yang menyediakan sumber. Perubahan alam sekitar di Malaysia diletakkan bawah dua peralihan; salah satu daripada sifat perubahan modal dari kerajaan feudal dalam penjajahan pra-kolonial di Tanah Melayu berkenaan dengan perniagaan kolonial, dan kemudian modal yang berkaitan dengan industrialisme. Dengan menggunakan konsep kemampunan yang ditakrifkan sebagai satu proses pembangunan yang bersifat pembangunan ekonomi menjaga kebajikan masyarakat dalam masa yang sama melindungi kualiti alam sekitar untuk kualiti bukan sahaja generasi sekarang tetapi juga masa depan, Transformasi membawa kepada pencarian kemampunan dalam persekitaran yang kedua.

Kata kunci

Sifat semula jadi kepada sifat alam binaan, alam sekitar, alam sekitar manusia, perubahan dan kemusnahan

Introduction

This paper presents an overview of all papers in the panel with the theme of transforming the first nature to the second. The first nature, defined simply here as the all inclusive dimensions of the physical environment untouched directly by man, embedded in which are resources for human use and sustenance. All forms of life draw from this nature in their every day needs for food, shelter, comfort, security and for man, the additional emotional and intellectual needs. Man tends to consume the largest amount of the resources; when the number of man increases the pressure on the resources mounts. Man is empowered with the ability to think, plan and execute any activity fulfilling his everyday needs with the help of technology. Thus, the first nature is always vulnerable to human intervention, overriding changes due to natural extreme events such long droughts, extra-ordinary rainfall, and slope failures due to earth quake. In contrast the second nature is created by man's interference, reshape and rebuilt in new forms as witnessed in the totally rebuilt urban habitat using resources from the first nature but that has been changed.

Human impacts on the earth as he draws resources for consumption leave a trail for all to see; some as permanent scars while others mere scratches that heals with time. The permanent impacts are registered in various forms, namely as vast protected forest-reserved for posterity, extensive agricultural area for food, commercial agriculture for industrial inputs to produce other forms of goods, to permanent form creating a totally

built-up environment in towns and cities. Illustrations for the paper are drawn from our work in the extended mega urban region, spreading from the Linggi river basin to the Bernam river basin, with data sources from published materials such as books, reports materials and maps.

Triggering Process of Change

Triggering the environmental change is human use of resources to meet his basic needs, at first, simple in demand when the total number of people is small. The amount extracted is also small. The pristine condition of first nature is disturbed by the entry of man. It is narrated in all the Al-Kittab that the environment was already in existence when the first man (Adam A.S.) was moved to inhabit the earth. That entry starts the environmental change. Man then draws from the surrounding area all the basic needs at first, water, materials to cover his body against the vagary of daily temperature changes, shelter and later on extensive utilization of land to farm and raise domesticated animals, and for settlements helped by rudimentary technology. Transformation of the simple man and environment relationship begins when some resources are seen as strategic commodity for the market, having economic values and thereby earning money through exchange. A basic driver in triggering the change in the man and environment relationship is capital flows (Harvey 2010). According to Harvey (2010) capital flows is a process whereby capital is used to mobilize labour, resources and technology to produce goods for the wider market for profit. Implied therein is that the larger the volume of goods produced, the lower the cost per item and the higher the gain in profits. Trade in the products leads to spread effects, seen in a variety of services including transport, insurance and wider social benefits. Accruing to the owners of capital is of course, wealth accumulation that in turn can be further invested for expanding resource utilization. In linear thinking we would expect that wealth accumulation will lead to social development whereby workers earn wages and they need to buy shelter, health facilities, food and to pay for ease movement from home to places of work. To meet all those needs, more resources from the first nature are utilized. Extensive land areas are converted for food and industrial agriculture, mining of minerals and carbon source of energy. And much later towns and cities are established- complete with industrial areas, physical and social infrastructures, recreational areas for leisure. Thus, the first nature is transformed into second nature, a nature according to Harvey that has been reshaped by man. The whole process has been described by scholars as the process of constructive destruction (Harvey, 2005). One way to delve into its meaning is that the first nature is completely changed into a new form of built-up environment very much sought after by people at present.

In the framework of structure and agency advanced by Giddens (1990), the transformation of first nature to second involves the work of many agents, two of which highlighted by Harvey (2005; 2010) are capital and the state. In simple terms, the state provides the security, development policies, administrative and financial institutions

to facilitate attractive conditions for the owners of capital to come and invest. Capital would come when the political and social conditions are right for making profits, without socio-political problems but with opportunities in terms of rich resources, including nowadays skill, creative and innovative workers, available at reasonable cost.

Many works have pointed out to us the problematic capital flows (for example: Hobsbawm, 1975; Thurow, 1996; Walker and Storper 1989; Rist, 1997). In real world situations, the search for profits is a primary objective in capital flows. From there wealth accumulation will evolve, bringing riches to the owners. What about the people in the country? They gain in the forms of works, wages and the ability to consume basic modern goods and services that are made available. But the gain is certainly much less because in the investment equation the people is considered secondary to the bounty (profits). In this sense capital flows are necessary but may lead to more social inequality.

Directly, capital flows and its speculative gain in the form of wealth accumulation is involved in the constructive destruction of first nature, aided by the state and indirectly by the people's expectation for a better life promised by capital flows (Harvey, 2005). Aided by companies, investments are mobilized to produce goods and services for the market. The so-called spread effects from the investments albeit small, are readily accepted by the people especially in the developing economies. The outcomes on the first nature are readily played down. After all wealth and development can pay for the negative outcomes on the first nature that remains, and can also undertake programs to increase people's awareness about environmental degradation, and let people take part to protect the environment. All agents then will join to take steps to protect the environment. We often cry foul of the 'wrath of nature', blaming others but never oneself (Harvey, 2010)

The relationship between man and nature is more complex than what has been outlined above. Man himself is very dynamic; His numbers keep on increasing over time. Man has to depend on the first nature especially to meet his basic needs. In the second nature, he finds more of the material as well as non-material choices to meet his needs arising from his changing conditions such as improving quality of life. Above all, man has to cope with the changing first nature and the negative consequences. He has to bear the environmental problems in the second nature.

In the study area, the flow of capital is seen to have triggered systematic transformations of the first nature. The transformation can be organized in a system framework involving initial condition of the area- natural resources and the people, the process mainly capital flows, the state and its development policies, and the outcome, as shown in the diagram below (Figure 1). If the framework seems to lead to a linear discourse on environmental transformation it is not intended so, for the framework provides a convenient conception of the issue. The real process and response is dynamic and systemic. Further, the transformation involves 'time'. The condition, the process and the outcome are subjected to dynamic changes. In the last two decades every country worldwide has been working towards sustainable development (WCED, 1987) whereby the triple bottom lines of economy, society and environment have to

be considered at all time in any development pursuit. They need to be in ‘balance’ and the natural resources preserved. But in the circumstance resources have to be empowered to undertake development (Amartya Sen, 2000) and not preserved per se, thus allowing subsequently for ethically selective and managed utilization of resources for sustainability.

Table 1 A system framework in the transformation of first nature to second

Initial Condition	Process	Outcome
Resources	capital	Utilization
Physical endowment	investment	new products
Accessibility	development policy	market

The transition in the transformation of first nature to second

At the general level, the transformation of the first nature to second in the observation area, is the outcome of two different orientations of capital flows; First, capital flows associated with the British East India Company which later paved the way for the British colonial administration to intervene and governed the Malay States in the 19th century, and second, capital flows associated with the administration of the Independent government of Malaya in 1957 and Malaysia in 1963 to the present. It should be pointed out that we can identify minor transitions during the second transition to take account of the role of the government at first in 1957 onwards, using the paradigm of developmental state, and second the government’s call for a greater role of the market in the development of the country in the 1980s and 1990s when the advanced economies, in particular the United States and Britain, initiated the globalization of development in which the market is given a wider role and the state withdraws from leveraging development. But in the aftermath of the Asian currency melt-down in 1998, the neo-liberal perspective came under closer scrutiny. Malaysia then on took the perspective that the government should take the lead in development but working together with the market in development. Each transition produces observable impacts on nature. Consequently, the first nature changes in respond to the vibrant activities in the market place.

Transformation of First nature in the First Transition

Life among the people in the observation area in about three centuries ago is characterized by simple relations between them and the environment. Resources are ethically selected and used to meet daily needs in the form of food items, parts of clothing, shelter-house materials from bark of trees, bamboo and materials for their housing roof. Drawing information from reports by early British administrators and scholars in Negeri Sembilan (Andaya and Andaya, 2001; Gullick, 2003; Norhalim, 1998) we can summarized that the observation area was sparsely populated, with traditional

villages in strategic locations along river valleys and in the forested areas, in the Linggi river basin and Labu in parts of Negeri Sembilan, the Langat, Klang and Selangor to the Bernam river basin on the border of Selangor and Perak. The people used simple available technology to harness water from the river and to grow wet rice for self-consumption. The paddy ecosystem was sustainable in that the water requirement for paddy planting needs to be regulated from the time of preparing the field to replanting of paddy seedlings right to the time of paddy ready to be harvested. The traditional life styles then showed a man and environment relation that was always in harmony. A few examples of the *Adat* sayings among the *Adat Perpatih* people of Negeri Sembilan will illustrate the symbiotic relations between the people and the environment (Mohd Rosli, 2009).

Air setitik jadikan laut
Tanah sekepal jadikan gunung
Alam terkembang jadikan guru

Orang dulu dulu bersabati dengan bumi
Disinilah tempat mencari nafkah

Hidup bergantung pada alam
Kalau tiada laut hampalah perut
Bila tak ada hutan binasalah badan

Orang dulu-dulu berpesan
Bumi dijaga, petua diingat
Pantang merosak hutan dan tanah

Merosak bumi ia berpantang
Menjaga bumi hatinya kukuh
Merosak bumi dia jauhi
Manfaatkan hutan hutan ianya ingat
Merosak hutan hatinya malu
Laut dijaga, bumi dipelihara

Menjaga alam dia utamakan
Memanfaatkan alam dia berhati hati

Bumi yang kaya tidak dirosakkan

The transition to the close relationship between man and nature began by the advent of western power to the Malayan shore in search of tradable materials from the biologically diversified resources of the vast equatorial forests. The Portuguese in the 16th century and the Dutch (17th century) trading vassals visited the Malayan shore for

local goods. The port town of Melaka had its golden era when it became an entre-port town of the Malay kingdom. But the trading activities did not lead to a considerable area of constructive destruction. Forest products were made available for trading with products from the western world.

The most lasting change took place after the appearance of the British East India Company which came for trade but ended up in wresting the administration of the Malay States in the 18th century. Beginning with establishing a port settlement in Penang, then controlling Melaka and Singapore, the British colonial government intervened in the Malay States and gradually to the other states in the Peninsula in the 19th century. What was begun as leading power to bring peace to the political commotion among the chiefs within the Malay States and consequently offering advice to the Malay rulers, the British interest evolved slowly into a dominant force. The British administrators were to administer the modernization of the Malay States, extracting valuable mineral and replacing local multi bio-diversity forested lowlands and gentle slope with a mono foreign plant species the *Hevea Brasilliencis* for the market in the West, creating townships in strategic locations with road networks, connecting these urban centres and railway lines to transport heavy and bulky local produce to the main port towns. The mechanism of calculated change was found in the technology applied by British or associated companies, compounded by the migrant Chinese capitals. In the tin mining venture the larger British companies had the most advance technology of the time with the ability to devastate the landscape. Rubber plantations too received investments by British companies at first and later Chinese capital from among the workers. Areas of land in the first nature were converted slowly at first but eventually merging into vast rubber estates. Companies initiated by the British capitals in those days and remain to this day include Sime Darby, Guthrie, High Land and Low Land (but owned by Malaysian consortium today).

Tin exploitation and rubber growing registered the most visible impacts on the land. Mining changed the landscape from one of continuous green coverage to badland landscape with holes on the topography and some occupied by lakes of various sizes. Rubber produced a monotonous single species plant landscape. Until lately, mining was destructive destruction of undulating landscape while rubber growing was somewhat more constructive in destruction of the Peninsula Malaysia's first nature. The urban area offers the complete change from first nature to second. In place of the first nature man's imprint was evident. Using resources from the environment, built-up areas were created, in the forms of buildings, streets and railway lines, new water channels with massive linkages of pipes for water distribution, power lines and ornamental trees, often of foreign species and pavements for walkways.

Second transformation of first nature to second

The second transformation grew out of the aftermath of the Second World War, subsequent internal political devolution towards Independence and the internal

political problems during the Emergency. There was a need for socio-economic development, to solve the widespread poverty among the people. Capital flows during the colonial administration of Malaya then produced the relatively well-to-do sector of society in the urban-modern sector, leaving the rural people with their self sufficient economy under widespread poverty. With that kind of background there was a need for socio-economic development in which the Independent government had to take the lead. Investment in import substitution industries and in physical infrastructures led to more imbalances socio-economically among the multi-ethnic peoples. A visible socio-economic division was seen, that cut along racial lines and regions.

Developmental state, neo-liberalism and state with market

The newly independent government set out to bring socio-economic development through investments in land development (Malaya, 1956), to resettle mainly rural poor households without land into land schemes that came to popularly known as the FELDA scheme. Another direction of investments was into physical infrastructures, rural and urban roads and import-substitution industries. The impacts on the first nature was visible; first, thousands of hectares of virgin forest was converted into mono culture cultivation of rubber and oil palm with settlements, notable areas in the Linggi basin to the Bernam basin area in Negeri Sembilan East, merging with the vast FELDA area of central Pahang, western areas of Negeri Sembilan, within Selangor such as in Sungai Raya, close to Bernam river valley. Converting the first nature into built-up habitat in the Linggi-Bernam valley urban region was seen in the major towns, especially in the federal capital city, Kuala Lumpur. Overall, towns and major urban centres did not grow much to replace the first nature.

To move further out from the sluggish and under-development syndrome of the country, the New Economic Policy was put in place by the government in 1970 (Malaysia, 1970), with the twin aims to eradicate poverty irrespective of race among the multi-racial population, and to eliminate the identification of race with economic functions. The policy thus provides the tipping point for development that is more inclusive. Wealth accumulation was given a special focus, carried out through government led programs but friendly to market. The development policy made the country more open to foreign capital flows. By liberalizing the Malaysian market, the country could capture some of the capital flows from the developed countries; Investments in export industrialism became widespread. With it was the conversion of land for industrial sites, commercial centres in support of the rising number of workers and hostels for them, with high end shopping points and housings for the expatriates, mainly chief executive officers of corporations. New industrial towns and new industrial neighbourhoods soon emerged in the urbanized landscape, as witnessed in the Klang valley urban conurbation, with towns formation growing into each other stretching from the mountain top entertainment centre in the east to Port Klang on the Melaka straits, and in urban region in the Linggi river valley encompassing the

township of Port Dickson, Municipal town of Seremban and Nilai township. From then on the conversion of land from the first nature and also lands that had been converted into agriculture in past decades continued at a fast rate, accommodating along with it the development of infrastructures and amenities (Malaysia, 1976; 2001; 2006; 2010).

However, in the decades when liberalism thinking was current as a new development paradigm in the West, in which the market was given a free hand in evolving socio-economic development, the Malaysian government in the late 1980's and in the 1990's seemed to have favoured a larger role of the market in development. Investments flowed in from the advanced economies, the rising tigers in Asia and also local players, for more industries to utilize more land and basic resources. These foreign and local investments participated to produce Malaysian made goods for foreign market. This was the era when speculative money capital also moved into the country, and it nearly destroyed the Malaysian economy. But the spread effects of the continued development initiatives were registered on more extended urbanized areas around the periphery of existing urban areas. From Figure 1, habitat related to urban use spread far and wide in the Linggi river basin to the Bernam river basin. To this habitat if we were to include the commercial agriculture and rural non farm families in parts of the Linggi river basin and in Selangor the whole urban areas extending from the Linggi river basin to the Bernam river basin has been converted to an urbanized area. In 2010, the total population of the area from the population census was estimated at around eight million people, that is about 44 % of the total Peninsula Malaysia's population. With that number and the complex man-nature relationship the area can represent the transformation of first nature to second in an extended mega urban region (EMUR).

Embedded in the extended mega urban region is a socio-economic performance that has surpassed any other region in terms of most development indicators. Yet, the region too has its own share of environmental problems; problems related to the total annihilation of first nature to second in the heart of the towns and cities, and the rise of a problematic man-environment relations in the production and re-production of environmental degradation. The fury of nature has its sign everywhere from the vulnerable areas to flash floods, slope failures in densely built-up area to areas open to chemical problems. The urbanites have come face to face with all kinds of wastes. Further, they become vulnerable to social issues and to shortage of basic amenities, clean water and cheap energy. The accumulated riches are increasingly being used to protect the quality of the environment. Efforts are being constantly taken to recreate the first nature within the brick and mortar habitat in the forms of green public places, green lung in all housing areas and others. Money is being spent too to go green at all fronts.

Conclusion

From the discussion, the first nature in the Extended Mega Urban Area-from the Linggi river basin to the Bernam river basin has undergone continual changes, from an ethical

utilization of resources among the people in pre-contact society, changing at a faster rate with the entry of British East India Company and British colonial intervention and administration to more widespread changes in the last forty years under the development programs of the independent government of Malaysia. Malaysia was opened to foreign direct investments that helped to establish export industrial development.

The discourse on the transformation of first nature to second as seen from the simple progression appears linear and predictable. Changes to the first nature in one

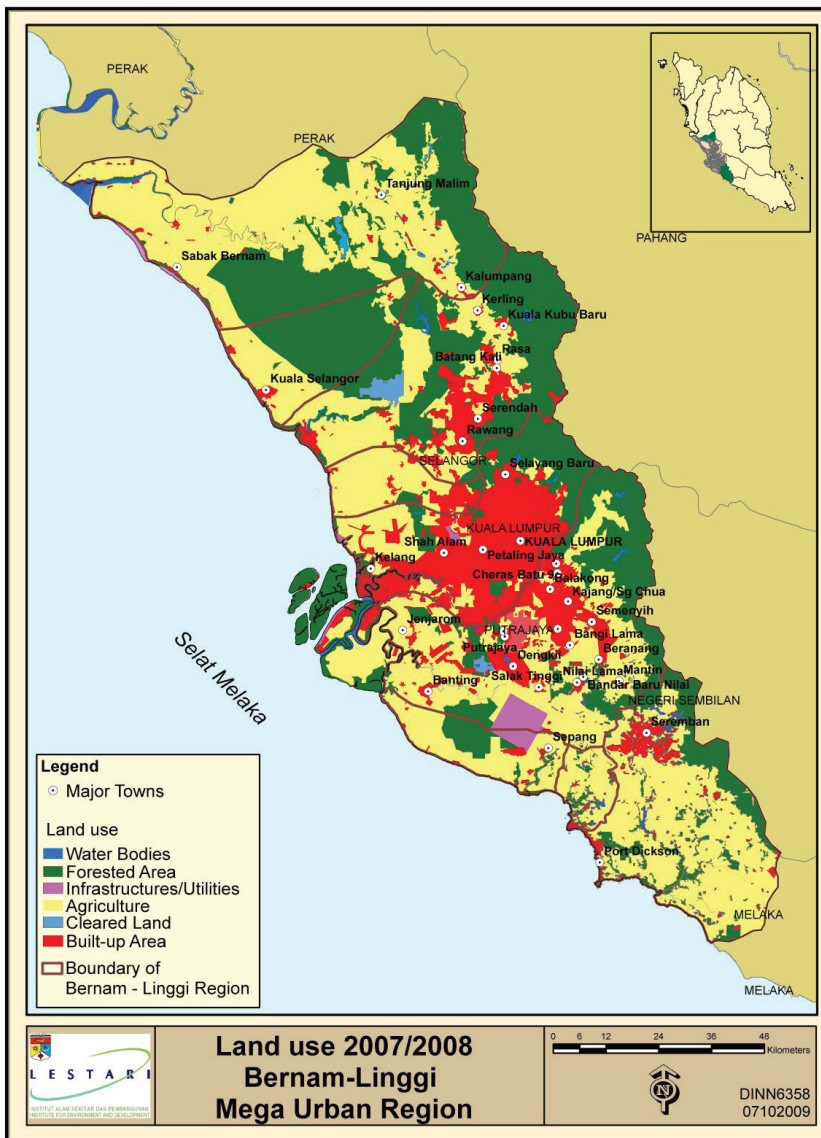


Figure 1 Land use in Bernam-Linggi Mega urban Region, 2007/2008
Source: Department of Agriculture, 2010

period seem to continue along the same path because of the similar process in the man-environment relation; the outcome is also more widespread. But the process of change at the local area and among local communities may show greater complexity. Parts of the issues are examined in the accompanying papers.

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