

**Sustainable Resource-Based Development in Asia and the Pacific:
Overcoming the Problem of “Dualism within Dualism”**

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Introduction

The following paper explores the problem of sustainable resource-based development in Asia and the Pacific. As this is a huge topic, it is helpful to focus this “green growth” issue on a consistent theme. Here, the theme is overcoming the problem of “dualism within dualism”.

There are currently two types of “dualism” in patterns of resource use within developing countries of Asia and the Pacific (AP) that are very much relevant to the problem of achieving environmentally sustainable growth in the region. The first “dualism” concerns aggregate resource use and dependency within the global economy, whereas the second “dualism” concerns aggregate resource use and dependency within an economy. This “dualism within dualism” pattern is symptomatic of a process of resource-based development that often perpetuates rather than alleviates problems of rural poverty and resource degradation, is accompanied by substantial resource conversion that leads often to benefits that are inequitably distributed and is exacerbated by government policies that favor wealthier households in markets for key resources, such as land. That is, the abundance of land and natural resources available in many AP developing countries does not necessarily mean that exploitation of this natural wealth will lead either to sustained economic growth, widespread benefits or substantial rural poverty alleviation.

If this “vicious cycle” is to be reversed, there are essentially two roles for policy reform within AP developing economies. Such reforms must be aimed at, first, overcoming the structural features of “dualism within dualism” in resource use patterns, and second, at reinvesting of natural resource rents in economy-wide development. Specific policies include

reform of land, tax, credit and other economic policies that generally reinforce the dominance of wealthier households in natural resource and land markets and promote the speculative investment in these resources as tax shelters. Specific investments must overcome the under-investment in human capital in rural areas, particularly by those poor households concentrated on fragile land, who must also be targeted with investments in the agricultural sector to provide effective credit markets and services to remote areas. Better integration between resource-based activities and more dynamic economic sectors means a greater commitment to promoting “agro-industrialization” generally, as well as improving the productivity of frontier lands and resource-based systems.

The paper will also draw on two recent “success stories” of resource-rich AP economies that have managed to resource the rents from natural resource exploitation into long-run sustainable growth, Malaysia and Thailand. Finally, the paper discusses briefly whether other resource-dependent low and middle-income economies in Asia and the Pacific can emulate Malaysia and Thailand and attain a “green” growth path of reinvesting resource rents, developing sound policies and institutions and lessening dualism within dualism.

The “Dualism within Dualism” Pattern of Resource Use

Barbier (2005) suggests that there are currently two types of “dualism” in patterns of resource use within developing countries that are very much relevant to the problem of “unsustainable” growth patterns and the persistence of environmental degradation and poverty.

The first “dualism” concerns aggregate resource use and dependency within the global economy.

For example, there is substantial evidence suggesting that most low and middle-income economies are highly dependent on the exploitation of natural resources. For many of these economies, primary product exports account for the vast majority of their export earnings, and one or two primary commodities make up the bulk of exports. However, there are important regional differences. Figure 1 shows the average regional changes from 1965 to 1990/99 in primary product export concentration for Sub-Saharan Africa, North Africa and the Middle East, Latin America and the Caribbean, and Asia and Oceania. In most of these regions, the share of primary products in total exports remains high. Only in Asia and Oceania has resource dependency fallen dramatically over the thirty-year period, to less than half of all exports (42%).

Thus, one indicator of this first type of dualism might be the degree of resource dependency of an economy, as measured by the share of primary commodities in total exports. For instance, an economy with a primary product export share of 50% or more would be considered highly resource dependent and more susceptible to this first type of dualism.

The second “dualism” concerns aggregate resource use and dependency within a developing economy.

Economic development in low-income countries is associated with high rates of land conversion and degradation as well as increased stress on available freshwater resources (Barbier 2005). López (1998) identifies most of Sub-Saharan Africa, parts of Asia and the tropical forests of South America as regions with "abundant land" and open-access resource conditions that are prone to agricultural expansion. Widespread land and resource conversion is also occurring in Central America, parts of Mexico and tropical South America and some East and South East Asian countries, mainly due to the high degree of integration of rural areas with the national and international economy as well as population pressures. Agricultural land expansion in many tropical regions is also spurred by the prevailing structural conditions in the agricultural sectors of many developing countries, such as low irrigation and fertilizer use as well as poor crop yields (FAO 1997). Hydrological projections of the world's freshwater resources point to a global problem from the dwindling supply of freshwater relative to the growing demand for water worldwide (E.g., see Rosegrant *et al.* 2002; Vörösmarty *et al.* 2000). Already, developing countries account for 71% of global water withdrawal. Water demand in these countries is expected to grow by 27% over 1995 to 2025. By 2025 Asia is expected to show signs of medium to high water stress (see Rosegrant *et al.* 2002).

However, many poor people in rural areas may not necessarily be benefiting from this increased resource use. Instead, a substantial proportion of the population in low and middle-income countries is concentrated in marginal areas and on ecologically “fragile” land, such as converted forest frontier areas, poor quality uplands, converted wetlands and so forth (Barbier 2005). Households on these lands not only face problems of land degradation and low productivity but also tend to be some of the poorest in the world. For instance, the World Bank has launched a major study of the concentration of rural populations in developing economies on "fragile lands", which they define as "areas that present significant constraints for intensive agriculture and where the people's links to the land are critical for the sustainability of

communities, pastures, forests, and other natural resources" (World Bank 2003, p. 59). The study found that one quarter of the people in developing countries – almost 1.3 billion – survive on fragile lands. More than 1.2 billion people on fragile lands are in the developing regions of Latin America, Africa and Asia. These populations living on fragile land in developing countries account for many of the people in extreme poverty, living on less than \$1 per day. The World Bank study also identified specific developing countries with significant shares of their populations on fragile lands, i.e. from 20-30% of their population, to 30-50%, to 50-70% to over 70% (World Bank 2003, Table 4.3).

Thus, two indicators of the second type of dualism might be the share of the total population concentrated on fragile lands, as defined by the above World Bank (2003) study, and the share of the rural population living under conditions of absolute poverty. Combining these two indicators gives us an approximate benchmark, or “20-20 rule”, for the degree of rural poverty-resource use dualism within a developing economy: a country with 20% or more of its population concentrated on fragile land and 20% or more of its rural population living in rural poverty shows evidence of the second type of dualism.

Table 1 combines the above two sets of indicators to show the extent of “dualism within dualism” for 72 low and middle-income economies. The countries are grouped in terms of their degree of resource dependency, as measured by the share of primary products in total exports, and the extent to which their populations are concentrated on fragile land. The figure in the parentheses by each country also indicates the percentage of the rural population below the national poverty line.

According to the table, 56 out of the 72 economies have a primary product export share of 50% or more, and therefore display evidence of the first type of “dualism”, i.e. resource dependency within the global economy. All the economies have 20% or more of their population on fragile land and all but seven also have 20% or more of the rural population living in absolute poverty. Thus by the “20-20 rule”, virtually all the economies listed in Table 1 show signs of the second type of dualism, i.e. a high incidence of rural poverty-resource degradation linkage within the economy. What is more striking is that, with the exception of the Yemen Arab Republic and Indonesia, all 56 highly resource-dependent countries also satisfy the “20-20

rule”.¹ That is, three-quarters of the countries listed in Table 1 show considerable evidence of “dualism-within-dualism” characteristics.

Twelve Asian and Pacific countries (indicated in bold) are depicted in Table 1. Compared to the other countries in the table, these twelve AP economies are less resource-dependent. Only 5 of the 12 AP countries satisfy the first type of “dualism”, which is having a primary product export share of 50% or more. However, all twelve AP economies have 20% or more of their population on fragile land and all but three (China, Indonesia and Malaysia) also have 20% or more of the rural population living in absolute poverty. Although Indonesia and Malaysia do not fully satisfy the “20-20 rule” associated with the second type of “dualism”, over 15% of their population remains in absolute poverty.

In sum, although the declining resource dependency of many AP developing economies in recent years is encouraging, a sizeable number still display some “dualism-within-dualism” characteristics. In addition, reducing the high proportion of the rural population that lives in fragile areas and the number of absolute poor continues to be a persistent develop challenge for most AP low and middle-income economies.

Policies and Institutions for Successful Resource-Based Development: An Overview

As highlighted by Barbier (2005), if developing economies are to overcome the “dualism within dualism” pattern of development then they need to focus key policy reforms on four objectives:

- Reinvesting resource rents in more productive and dynamic sectors of the economy, which in turn are linked to the resource-exploiting sectors of the domestic economy.
- Developing political and legal institutions to discourage rent-seeking behavior by wealthy investors in the natural resource sectors of the economy.
- Instigating widespread reform of government policies that favor wealthier investors in markets for valuable natural resources, including arable land.
- Targeting additional policies and investments to improve the economic opportunities and livelihoods of the rural poor, rather than relying on frontier land expansion and urban migration as the principal outlet for alleviating rural poverty.

¹ In fact, with over 50% of its population in fragile areas and with a rural poverty incidence of 19.2%, Yemen shows distinct signs of the second type of dualism. Indonesia is also not far off from satisfying the “20-20 rule”, given that the country has over 20% of its population on fragile land and 15.7% of its rural population in absolute poverty.

The next section will examine policies to address the first objective, through illustrating the successful strategies of two AP developing economies, Malaysia and Thailand. The remainder of this section will discuss briefly policies to achieve the other three objectives.

One straightforward, but often politically difficult, approach to the problem of “dualism within dualism” is economy-wide land reform. As noted by Binswanger and Deininger (1997, p. 1972), “where rural capital markets are highly imperfect and the distribution of wealth is unequal, a one-time redistribution of wealth, such as a land reform, may largely eliminate the need for distortionary redistributive policies later. As the authors point out, the experience of Japan, South Korea and Taiwan indicate that land reform is also likely to alter the growth path of the economy and lead to permanently higher levels of growth as well as improvement in the livelihoods of the rural poor. As demonstrated by Dasgupta (1993, p. 496), this may be due to three effects of land redistribution to the landless and near-landless: “First, because their rental income increases, the unemployed become more attractive to employers. Second, those among the poor who are employed become more productive to the extent that they too receive land. And third, by taking land away from the gentry their reservation wages are lowered, and when this effect is strong enough it induces them to forsake leisure and enter the agricultural labour market.” Finally, the “greater wealth” arising through land reform “also increases the ability of the poor to directly participate in the political process” (Binswanger and Deininger 1997, p. 1999).²

Improving the security of property rights over land is another important reform that can contribute to both increased growth and improvement in rural livelihoods. In particular, empirical evidence from Thailand suggests that legal land titles prove to be significant in helping alleviate liquidity constraints affecting the purchase of working inputs, as well as land improvements generally (Feder and Feeny 1991; Feder and Onchon 1987). Greater land tenure security for initial agricultural smallholder settlers in frontier areas also appears to slow down the incentive for these migrants to engage in subsequent deforestation for land conversion (Barbier and Burgess 2001; Godoy *et al.* 1998). Finally, providing legal and institutional support for

² As in the case of any economic reform, if implemented poorly land reform can be ineffective, highly costly and even counter-productive. A good example is the disastrous efforts of the Mugabe Government in Zimbabwe to allow party loyalists to incite poor black landless and near landless farmers to take over by force large-scale commercial farms owned mainly by white Zimbabweans. This is a land reform strategy that AP countries do not want to emulate.

existing common property regimes may lead to better protection of encroachment and degradation of key natural resources. For example, historically ill-defined common property rights in Thailand have accelerated the rapid conversion of forests to agriculture in upland areas and mangroves to shrimp farms in coastal regions (Barbier and Sathirathai 2004; Feder *et al.* 1988; Feeny 2002).

A related, but equally difficult, task is reform of tax, credit and other economic policies that generally reinforce the dominance of wealthier households in natural resource and land markets and promote the speculative investment in these resources as tax shelters. According to López (2003, p. 271) such policies in Latin America over the past 50 years are symptomatic of the general economic policy failure in the region that has “focused on the generation of an expensive and often incoherent system of short-run incentives to promote investment in physical capital...by undertaxing capital income and wasted in massive subsidies to the corporate sector in a futile effort to promote investment and economic growth”. This has had two overall consequences on the land degradation and deforestation process in the region. First, as described above, the resulting market and tax distortions promote this process directly, in a deliberate strategy of “wasting natural resources as a way of enticing investors” López (2003, p. 260). Second, Latin American governments are dissipating scarce revenues and financial resources “instead of concentrating their efforts in raising enough public revenues to finance the necessary investment in human and natural capital and the necessary institutional capacities to effectively enforce environmental regulations” (López 2003, p. 271). There are, perhaps, important lessons from this Latin American experience for developing countries in the Asia and Pacific region.

Finally, the third structural problem associated with “dualism within dualism” patterns of development today is the under-investment in human capital in rural areas, particularly by those poor households concentrated on fragile land. These households generate insufficient savings, suffer chronic indebtedness and rely on informal credit markets with high short-term interest rates. As a result, private investment in human capital improvement is a luxury for most poor rural households, and similarly the lack of education and marketable skills limits not only the earning potential of the rural poor but also their political bargaining power relative to wealthier rural and urban households. As argued by Binswanger and Deininger (1997, pp. 1988-9): “Primary education and health services, especially for the poor, rural inhabitants, and women, are important not only because they foster growth and help reduce poverty through several well

known channels, but also because they reduce income inequality, and thereby enhance the collective action potential of the poor.”

Clearly, current resource-dependent development in many AP poor economies is too often associated with frontier land expansion and resource exploitation (Barbier 2005). Particularly for those economies that do not have substantial mineral wealth, better integration between frontier-based activities and more dynamic economic sectors means a greater commitment to promoting “agro-industrialization” generally. As argued by Reardon and Barrett (2000), such a strategy comprises three related sets of changes: a) growth of commercial, off-farm agro-processing, distribution and input provision activities; b) institutional and organizational change in relations between farms and firms both upstream and downstream, such as marked increased in vertical integration and contract-based procurement; and c) related changes in product composition, technologies, and sectoral and market structure. Such an integrated approach to agro-industrialization is essential for developing *country-specific knowledge* in improving the productivity and sustainable exploitation of land resources, *strong forward and backward linkages* between more dynamic economic sectors (i.e., manufacturing) and agricultural activities, and finally, the opportunities for *substantial knowledge spillovers* from the farm to firm level (Barbier 2005).

However, frontier-based agricultural activities will be largely left out of the development of such agro-industrial capacity in low and middle-income economies unless specific policy reforms are aimed at improving resource management and productivity of frontier lands, and targeted especially at poor rural households farming these lands. Nevertheless, recent economic analyses are beginning to indicate what kind of policy reforms may be necessary to improve the incentives for better land management in the frontier areas and marginal farmlands of developing countries. The good news is that overall agricultural sector policy reforms that reduce price distortions, promote efficient operation of rural financial markets, and make property rights enforceable should support these incentives (Barbier 1997). In some countries, there may be a 'win-win' situation between general macroeconomic and sectoral reforms and improved land management. For example, in the Philippines and other Southeast Asian countries it was found that reducing import tariffs and export taxes may also reduce the rate of upland degradation (Coxhead and Jayasuriya 1995 and 2003). Similarly, in Indonesia reducing fertilizer, pesticide

and other subsidies for irrigated rice could be compatible with improved investment and credit strategies for the uplands of Java (Pearce *et al.* 1990).

One of the important consequences of better integration of farming systems in “frontier” areas with commercial and national agro-industry is that this may actually increase the range of policy options for influencing land and farming decisions on the frontier. For example, Coxhead *et al.* 2001, pp. 264-265) argue, in the case of Filipino upland farmers: “If market-driven incentives dominate in farmers’ decisions, there is a case for broadening the range of policy instruments brought to bear on the upland environmental problem; moreover, project design may be improved by a different balance of local action and national-level information dissemination and policy advocacy.” The authors go on to note (p. 265) that, “in spite of remoteness, the farmers in our study area produce for markets that are integrated in the national system.” As a consequence, Coxhead *et al.* demonstrate that upland deforestation, soil erosion and watershed degradation could be substantially reduced through a combination of a “national-level” policy of trade liberalization of maize and vegetables, which will reduce the farm-gate prices for the two most environmentally damaging crops in upland areas, and “local action” consisting of projects to support soil-conserving technologies and adoption of improved farming systems.

The latter example illustrates an important point: Neither economy-wide reforms aimed at increasing production through price incentives nor local projects aimed at influencing smallholders’ land conversion and land use decisions is sufficient *on their own* to overcome the “dualism within dualism” pattern prevalent in many developing economies. Economy-wide and sectoral reforms, especially those aimed at increasing aggregate production, may have unknown - and possibly negative - aggregate impacts on land and resource use strategies of rural households. Equally, the “sustainability” of local “land improvement” projects is often undermined by policy and price changes that reinforce the incentives driving rural households to convert land and over-exploit other environmental resources.

To reverse such counter-productive policies and investments requires a dual strategy that combines both “national-level” policies with “local action”. In particular, to improve the effectiveness of economy-wide and sectoral reforms will require complementing these reforms with specific, targeted policies to generate direct incentives for improved rural resource management in “fragile” areas where many of the rural poor are located. The main purpose of such policies should be to increase the economic returns of existing as opposed to frontier lands;

improve the access of poorer rural households to credit and land markets; and alleviate any remaining policy biases in these markets that favor relatively wealthy farmers and individuals (Barbier 1997). In some cases, specific non-price transfers in the form of targeted subsidies could reduce significantly the incentives for land degradation and forest conversion in developing countries. This is particularly true for expenditures that aimed to improve access by the rural poor to credit, research and extension, investments to disseminate conservation, information and technologies to smallholders, and investments in small-scale irrigation and other productivity improvements on existing smallholder land.

Targeting public investments and expenditures to the agricultural sector to provide effective credit markets and services to reach poor rural households, while continuing to eliminate subsidies and credit rationing that benefit mainly wealthier households, may also be important in achieving a more efficient pattern of land use - and a less extensive one - in many developing countries. An important inducement for many poor smallholders to invest in improved land management is to establish proper land titling and ownership claims on the land they currently occupy. To improve land tenure services in frontier areas it may be necessary to develop more formal policies for smallholder settlement, such as a policy to allocate preferentially public land with fully demarcated ownership and tenure rights to smallholders.

In addition, policies that have increased processes of land degradation and deforestation as an unintended side effect should be mitigated. For example, expansion of the road network in frontier areas has been identified as a major factor in opening up forestlands and thus making these lands artificially cheap and abundantly available (Barbier 1998; Cropper *et al.* 2001). This suggests the building of new roads and large-scale infrastructure investments in tropical forest areas need to be evaluated routinely for their potential impacts on subsequent frontier migration and deforestation. Tax policies that encourage the holding of agricultural land as a speculative asset not only artificially inflate the price of existing arable land but promote much idling of potentially productive land (Vincent *et al.* 1997).

Finally, in many developing AP countries policy reform will have to be complemented by investments in key infrastructural services. Several have been mentioned already - availability of rural credit, conservation and general extension services, land tenure and titling services, and irrigation and other land improvement investments for existing smallholder land. However, other services may also be important. For example, in most rural areas there needs to be a general

development of adequate post-harvest and marketing facilities targeted to smallholder production, in order to ensure that such production participates in an overall agro-industrial development strategy. In frontier areas, there is a need not only to increase credit and extension services to initial settlers but also more basic services such as improved community, education and health care services.

Perhaps one of the greatest challenges for policy reform in developing countries in the Asia and Pacific region will be to reduce the propensity for corruption and rent seeking in resource-based sectors. The institutional “failures” that promote such practices appear to be deep-seated and endemic, and will be difficult to change. Nevertheless, as argued by Ascher (1999, p. 299) there is some hope for reform even in this difficult area: “The fact that some government officials may intend to sacrifice resource-exploitation soundness for other objectives does not mean that they will necessarily have their way, even if they are chiefs of state. Prior arrangements, public outcry, and adverse reactions by international institutions can raise the political or economic costs too high. Other officials may be in a position to block their actions, especially if the structures of natural-resource policymaking reveal policy failures for what they are.”

Reinvesting Resource Rents: Malaysia and Thailand

Gylfason (2001) indicates that, out of 65 resource-rich countries, only four managed to achieve a) long-term investment exceeding 25% of GDP on average over 1965-98, equal to that of industrialized countries lacking raw materials, and b) average annual per capita economic growth rates exceeding 4% during the same period. The four countries are Botswana, Indonesia, Malaysia and Thailand. As noted by Gylfason (2001, p. 566), “the three Asian countries achieved this success by diversifying their economies and by industrialising; Botswana without doing so.” As noted by Coxhead and Jayasuriya (2003, p. 61), the extent of diversification in Malaysia and Thailand is particularly noteworthy for the profound structural changes occurring in those economies: “In Thailand and Malaysia, the fastest-growing resource-rich economies of tropical Asia, labour productivity growth in manufacturing caused rural wages to rise sharply and the agricultural labour force to decline not merely in relative terms but absolutely.”

Table 2 provides some key economic indicators for Indonesia, Malaysia and Thailand as a comparison to averages for 95 low and middle-income economies, high-income economies and

the world. However, despite its favorable economic indicators, Indonesia may not necessarily be considered a long-term “success” story compared to the other three resource-rich economies, as according to Gylfason (2001, p. 566), “a broader measure of economic success – including the absence of corruption, for instance – would put Indonesia in less favourable light. Moreover, Indonesia has weathered the crash of 1997-1998 much less well than either Malaysia or Thailand.” For example, Table 3 shows that Indonesia performs relatively poorly with regard to a number of key governance indicators, including control of corruption.

Finally, it has been pointed out that Malaysia, Thailand and Indonesia can be considered “rapidly growing countries with open land frontiers”, in the sense that their economic success corresponded with continued agricultural land expansion (Coxhead and Jayasuriya 2003, p. 61). In this regard, these three countries, or at least Malaysia and Thailand, can be considered examples of “successful” resource-based development. We will therefore focus on the policies and development strategies in Malaysia and Thailand as examples of successful “diversification” through reinvesting resource rents.

Malaysia

Present-day Malaysia is the classic case of a newly industrializing economy, which exports plantation crops (including timber) and bases industrial development on export-oriented, labor-intensive manufacturing (Coxhead and Jayasuriya 2003). As indicated in Table 1, Malaysia is one of the few developing countries in the Asia and Pacific region as well as the world that appears to be emerging from the “dualism within dualism” pattern of underdevelopment. Although 20-30% of Malaysia’s population is still concentrated on fragile land, over 1990-99 the share of primary product to total exports was 33%, and the share of the rural population living in poverty had fallen to 15.5% (see Table 2(a)). The decline in Malaysia’s resource dependency is particularly remarkable given that primary product export share was 94% in 1965 and still 80% as recently as 1980-81 (Barbier 2005).

Malaysia’s long-run economic growth performance has been strong, reflecting the reinvestment of resource rents over the decades in physical and human capital (see Table 2(b)). Over 1965-2001, annual growth in Malaysia has averaged 4.0%. During this period, investment in gross fixed capital formation as a share of gross domestic product (GDP) has averaged 28%, which is greater than the world average or that of higher income economies. Vincent *et al.*

(1997) calculate that in the 1970s and 1980s that net investment in Malaysia, adjusted for depletion of minerals and timber, was positive in all years but one, and net domestic product rose by 2.9% per year. Gross primary and secondary school enrolment rates in Malaysia have been considerably higher than in other low and middle-income countries, and in the case of primary school enrolment, the rates match that of higher income economies. As noted above, this reinvestment of resource rents has been the key to the diversification of the Malaysian economy, including the rapid decline in its resource dependency, rising rural wages and the absolute as well as relative fall in the agricultural labor force. Other economy-wide benefits also occurred. During the 1970s and 1980s Malaysia increased rapidly the number of urban and rural households with access to piped, treated water (Vincent *et al.* 1997).

As in the case of other low and middle-income economies, Malaysia's development has been accompanied by significant agricultural land expansion, especially at the expense of tropical forests. However, an important difference for Malaysia is that much frontier land expansion has occurred through the use of new land for perennial plantation crops such as oil palm and rubber (see Table 2(c)). Malaysia is also a major world exporter of tropical timber products, and is the leading world exporter of wood-based panels (Barbier 1998). Thus considerable investments have occurred in Malaysia in agro-industrial and forest-based industries, with extensive forward and backward linkages to domestic plantation crops and tropical forestry.

With regard to governance, Table 3 indicates that Malaysia ranks comparably with high-income economies in terms of political stability, government effectiveness, regulatory framework, rule of law and control of corruption. Although at the time the governance indicators in the table were formulated (1997/8), political "voice" and accountability in Malaysia were considered relatively low. However, recent elections and transfer of power over 2002-3 would suggest that even this political economy indicator has improved. The long-term political stability of Malaysia is particularly remarkable, given that the population is ethnically diverse, containing a Malay majority with a sizable Chinese and Indian minority. Overall, Malaysia appears to have the "good governance" necessary for long-run management of its natural resource wealth and the reinvestment of resource rents to achieve a more diversified and prosperous economy.

Vincent *et al.* (1997) identify several policies that were critical to the successful strategy of reinvesting resource rents in Malaysia. First, rents from minerals and timber amount to about one third of gross domestic investment during the 1970s and 1980s, and the most effective policies were aimed at capturing and reinvesting these key resource rents. These policies included petroleum-sharing contracts, which both attracted investment from international oil companies to provide essential capital and technology while at the same time ensuring that substantial oil rents were retained within Malaysia. The establishment of the Permanent Forest Estate in Peninsular Malaysia also enhanced the development of long-term timber management for forest-based industries as well as maintaining a sustained flow of timber rents. Although substantial tropical deforestation did occur, forest and land use policies were implemented to ensure that deforestation led to the expansion of tree-crop plantations for export. As argued by Vincent *et al.* (1997, p. 353), this is “evidently a sustainable land use, thanks in large part to the country’s investment in agricultural research. This contrasts with the situation in many other tropical countries, where the end result of deforestation has been unproductive, degraded land.” Finally, the substantial reinvestment of resource rents from minerals, timber and plantation crop exports was vital to the industrial development of export-oriented, labor-intensive manufacturing, which has in turn led to the diversification of the present-day Malaysian economy (Coxhead and Jayasuriya 2003). Thus, these policies ensured that “Malaysia as a nation succeeded in using investible funds from resource rents and other sources to build up stocks of physical capital that more than offset the depletion of mineral and timber resources” (Vincent *et al.* 1997, pp.351-2).

Diversification of the Malaysian economy has created its own “virtuous circle” with regard to reducing land degradation and deforestation, halting depletion of fisheries and other renewable resources and combating rural poverty: “For example, reductions in deforestation and traditional fishing effort in Peninsular Malaysia owed much to the region’s rapid economic growth and diversification. Superior employment opportunities raised production costs in traditional activities as labor flowed out of rural areas, resulting in less land clearing and less demand for fishing licenses. Although state governments could in principle still excise areas from the Permanent Forest Estate for development, reduced returns to agricultural expansion diminished this threat” (Vincent *et al.* 1997, pp. 353-4). Increased rural-urban migration and the absolute decline in the agricultural labor force were accompanied by rising rural wages and

better employment prospects for the rural poor (Coxhead and Jayasuriya 2003). As a consequence, the share of the population living in rural poverty in Malaysia has fallen to 15.5%, one of the lowest rates among low and middle-income economies (see Table 2(a)). Finally, the declining pressure on rural resources and land has also enabled Malaysia to implement better resource management policies in agriculture and fisheries. For example, the government has implemented land rehabilitation programs for smallholder rice and rubber, which has overcome problems of land fragmentation and improved the economic viability of these smallholdings. In marine fisheries, several policies have been instigated to reduce overfishing in commercial and traditional coastal fisheries through controlling fishing effort and increasing rents (Vincent *et al.* 1997).

However, not all resource management strategies have been successful in Malaysia (Vincent *et al.* 1997). In agriculture, some government programs wasted substantial subsidies on attempting to rehabilitate smallholder land that was not economically viable, while at the same time policy-induced rigidities in land markets actually increased the amount of productive land that was idled. Although policies to control overfishing in coastal areas were implemented, deep-sea fishing remained largely open access. In addition, too often resource management strategies in Malaysia have been driven by an emphasis on maximizing physical production rather than on maximizing net economic benefits. This has been exacerbated by direct involvement of public enterprises in key sectors, such as forestry, petroleum and fishing. Finally, “over-mining” of Malaysia’s remaining tropical timber reserves in Sabah and Sarawak to feed the forest-based industries in Peninsular Malaysia is a worrisome problem, which has been fueled by long-term policies of log export restrictions and protection of wood panels and furniture industries that has led to over-capacity and inefficiencies in timber processing (Barbier 1998).

Thailand

In many ways, Thailand’s success resembles that of Malaysia. Since the 1970s Thailand has also been a prototype newly industrializing economy, which is a net food exporter that bases industrial development on export-oriented, labor-intensive manufacturing (Coxhead and Jayasuriya 2003). As a consequence, resource dependency in the Thai economy has declined steadily; primary product export share was 95% in 1965, 68% in 1980-81 and 30% in 1990-99

(see Barbier 2005). Although 80% of the population still lives in rural areas, the share of the rural population living in poverty is only 18% (see Table 2(a)). As in the case of Malaysia, diversification of the Thai economy and the decline in its resource dependency has been accompanied by rising rural wages and the absolute as well as relative fall in the agricultural labor force.

The successful diversification of the Thai economy is reflected in its long-run growth and investment patterns (see Table 2(b)). Annual growth in GDP per capita has averaged 4.7% over 1965-2000, and the share of gross fixed capital formation in GDP has averaged 28% over the same period. Both of these trends exceed world averages or that of high-income economies. In addition, primary and secondary school enrolment rates are above those of low and middle-income economies and comparable with world rates.

Like Malaysia, Thailand's development has been accompanied by significant agricultural land expansion at the expense of tropical forests, mainly through new land for perennial plantation crops (see Table 2(c)). However, unlike Malaysia, Thailand has never had substantial mineral and timber reserves. Thus, Thailand's remarkable success with resource-based development has occurred without the benefit of large resource rents to tap. Instead, this development has been accomplished through considerable investments in agro-industrial industries, with extensive forward and backward linkages to domestic plantation crops, food crops and fisheries. Again, "good governance" appears to be crucial to the success of this long-term development strategy in Thailand (see Table 3).

In Thailand's economy, traded food production and plantation crops dominate both upland and lowland farming, and so the pressures on upland forests are solely determined by inter-regional labor migration. Any increase in labor demand in the lowlands will result in reduced deforestation as the total area of upland agriculture declines (Coxhead and Jayasuriya 2003). Thus the emphasis on agro-industrialization, with forward and backward linkages, and on reinvestment of rents in labor-intensive manufacturing has generated a "virtuous cycle" of reducing land degradation and deforestation, better management of fisheries and other renewable resources and improving rural livelihoods. However, the key to this process was a profound structural change in the Thai economy, reflected in rising prices for non-trade, mainly non-agricultural goods, growth of non-agricultural investment and rising labor productivity outside of the farm sector. The result has been increased employment opportunities outside of agriculture,

rising rural wages, declining relative agricultural prices and thus a reduction in farm profits and investment (Coxhead and Jayasuriya 2003; Pingali 2001). The overall outcome was a relative decline in the agricultural sector relative to the rest of the Thai economy, accompanied by a fall in total planted area, which in turn reduced pressures for land conversion and deforestation. Meanwhile, the agricultural sector has been forced to become more efficient, commercially oriented and internationally competitive (Pingali 2001). As a result, substantial inter-regional migration has occurred from highland to lowland areas to take advantage of rising rural wages accompanying the commercialization of agriculture on favorable and productive lands, even as total rural employment opportunities and planted area across Thailand have declined. In addition, the economy-wide trade reforms implemented in Thailand provided further stimulus to labor-intensive manufacturing industries, greater employment opportunities outside of rural areas, and significantly reduced pressures on frontier agricultural soils, forests and watersheds (Coxhead and Jayasuriya 2003).

In other sectors, such as fisheries, Thailand has also promoted export-oriented industries, particularly shrimp.³ Since 1979, Thailand has been the world's major shrimp producer, and one third of all shrimp marketed internationally is from Thailand. Although shrimp are also caught in coastal fisheries, the vast majority of Thailand's shrimp production now comes from aquaculture. In the late 1990s, the total value of export earnings for shrimp was around \$1-2 billion annually, and the government has been keen to expand these exports. Thailand has also sought to manage its coastal fisheries through zoning. Since 1972, the 3 km off-shore coastal zone in Southern Thailand has been reserved for small-scale, traditional marine fisheries. The Gulf of Thailand is divided into four such major zones, and the Andaman Sea (Indian Ocean) comprises a separate fifth zone.

However, there have been problems with some resource management strategies pursued in Thailand. First, ill-defined property rights for forest areas have contributed to excessive upland deforestation and the rapid conversion of mangroves to shrimp farms in Thailand. Historically, this has been a common problem for all forested areas in Thailand (Feder *et al.* 1988; Feeny 2002). Although the state through the Royal Forestry Department ostensibly owns and controls forest areas, in practice they are *de facto* open access areas onto which anyone can

³ The following discussion of shrimp farm expansion and mangrove loss in Thailand is drawn from Barbier and Sathirathai (2004).

encroach. Estimates of the amount of mangrove conversion due to shrimp farming vary, but studies suggest that up to 50-65% of Thailand's mangroves have been lost to shrimp farm conversion since 1975 (Barbier and Sathirathai 2004). In provinces close to Bangkok, such as Chanthaburi, mangrove areas have been devastated by shrimp farm developments. This has led to substantial losses to local communities dependent on mangrove-based activities and the habitat support provided by the mangroves for coastal fisheries. Second, the build-up of manufacturing and agro-industries coupled with the increasing commercialization of agriculture may lead to better land and water management but is worsening other environmental problems, such as pollution and congestion in cities (particularly Bangkok), industrial and toxic waste, over-use of pesticides and non-point pollution in agriculture. Finally, the increasing commercialization of agriculture is likely to continue the trends towards consolidation of land holdings, adoption of labor-saving innovations and reductions in cropping intensities, which is likely to further labor substitution and declining employment opportunities in agriculture (Pingali 2001). Although this may have removed less productive, marginal upland areas from food production, rural employment opportunities in lowland areas are likely to slow down and provide less work for the rural poor from upland areas. In Thailand, there does not appear to be a set of policies targeted at the upland areas to i) manage the transition from movement of rice and subsistence-crop production to a variety of commercial-oriented agricultural enterprises, such as maize, horticulture, tree crops, dairy and livestock-raising, ii) promote these enterprises in those upland areas with the most suitable agro-ecological conditions, i.e. areas that are less susceptible to erosion and have favorable micro-climates, iii) provide research and development support to develop adequate post-harvest and marketing facilities, targeted to smallholder production, and to facilitate the integration of these upland enterprises with the economy's agro-industrial development strategy and iv) encourage the commercialization of upland agriculture as an alternative source of employment for the rural poor in these areas.

Final Remarks

Can other resource-dependent low and middle-income economies in the Asia and Pacific region emulate Malaysia and Thailand and also launch themselves on a "virtuous cycle" growth path of reinvesting resource rents, developing sound policies and institutions and lessening dualism within dualism? This paper suggests that the answer is "yes". Unfortunately, however,

breaking out of the dualism-within-dualism pattern of development appears to be a difficult task for most present-day economies. If this were not so, then clearly we would have more success stories in the Asia and Pacific region as well as the world.

An important lesson from history is that, simply because a developing economy or region is endowed with abundant natural resources, the country may not necessarily end up exploiting this natural wealth efficiently and generating productive investments. Or, as Wright (1990, p. 666) suggests: "there is no iron law associating natural resource abundance with national industrial strength." On the other hand, even in the present age when so many resource-dependent developing economies appear to perform relatively poorly, one should not draw the conclusion that, simply because a developing economy is well endowed with natural resource wealth, it is always doomed to slow growth and widespread poverty. Present-day Malaysia and Thailand are the counter-examples that there is also no "iron law" associating natural resource abundance, or even a particular type of natural resource endowment, with poor economic performance.

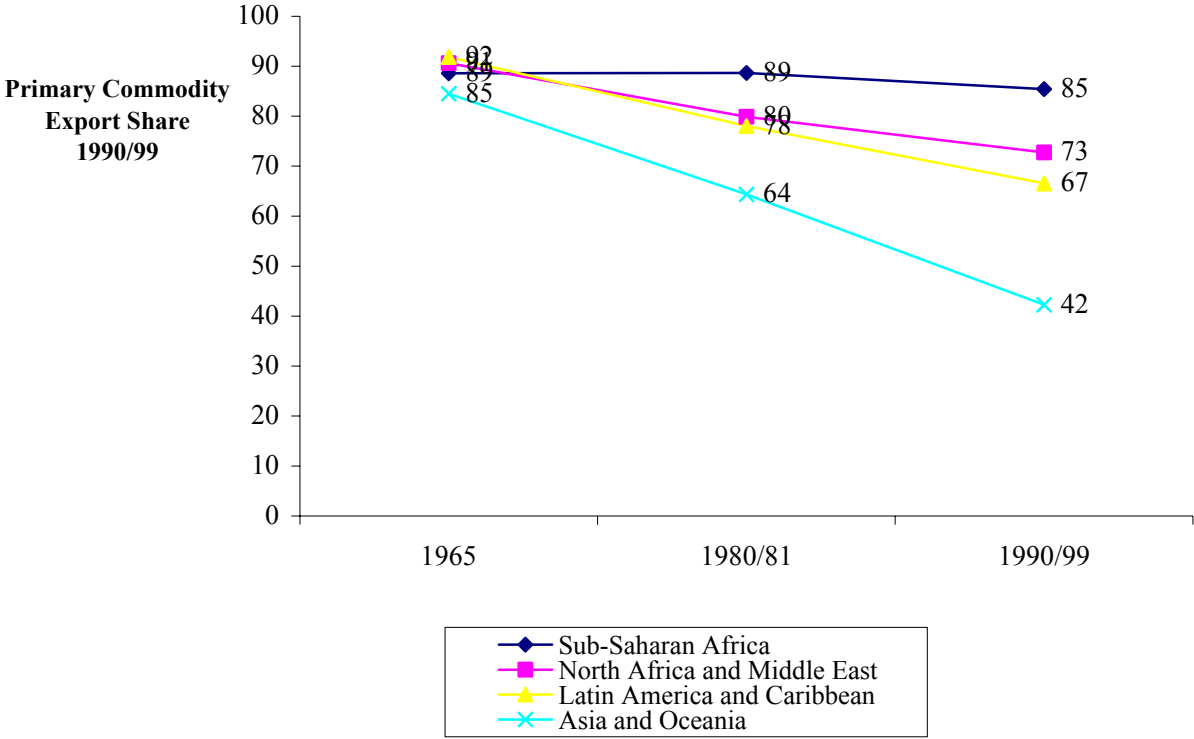
Instead, the key to successful resource-based development appears to sound policies and favorable institutions, especially those aimed at attaining the "virtuous cycle" growth path of reinvesting resource rents, developing sound policies and institutions and lessening dualism within dualism. Unfortunately, many developing countries throughout the Asia and Pacific region and in the world appear to be trapped in the opposite, "vicious cycle" of unsuccessful frontier land expansion and resource exploitation that is perpetuating, rather than alleviating, dualism within dualism.

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Figure 1. Regional Trends in Resource Dependency



Source: Barbier (2005).

Table 1. Selective Countries Displaying "Dualism within Dualism" Characteristics

	Share of Population on Fragile Land \geq 50%	Share of Population on Fragile Land 30-50%	Share of Population on Fragile Land 20-30%
Primary Product Export Share \geq 90%	Burkina Faso (61.2) Chad (67.0) Congo Dem. Rep. (NA) Laos (53.0) Mali (72.8) Niger (66.0) Papua New Guinea (NA) Somalia (NA) Sudan (NA) Yemen A.R. (19.2)	Algeria (30.3) Angola (NA) Benin (33.0) Botswana (NA) Cameroon (32.4) Comoros (NA) Eq. Guinea (NA) Ethiopia (31.3) Gambia (64.0) Guyana (NA) Iran (NA) Mauritania (57.0) Nigeria (36.4) Rwanda (51.2) Uganda (55.0)	Ecuador (47.0) Congo, Rep. (NA) Liberia (NA) Zambia (88.0)
Primary Product Export Share 50-90%	Egypt (23.3) Zimbabwe (31.0)	Central Af. Rep. (66.6) Chad (67.0) Guatemala (71.9) Guinea (40.0) Kenya (46.4) Morocco (27.2) Senegal (40.4) Sierra Leone (76.0) Syria (NA) Tanzania (51.1)	Bolivia (79.1) Burundi (36.2) Côte d'Ivoire (32.3) El Salvador (55.7) Ghana (34.3) Guinea-Bissau (48.7) Honduras (51.0) Indonesia (15.7) Madagascar (77.0) Mozambique (37.9) Myanmar (NA) Panama (64.9) Peru (64.7) Togo (32.3) Trinidad & Tobago (20.0)
Primary Product Export Share $<$ 50%		Costa Rica (25.5) Haiti (66.0) Lesotho (53.9) Nepal (44.0) Pakistan (36.9) South Africa (11.5) Tunisia (21.6)	China (4.6) Dominican Rep. (29.8) India (36.7) Jamaica (33.9) Jordan (15.0) Malaysia (15.5) Mexico (10.1) Sri Lanka (20.0) Vietnam (57.2)

Notes: Primary commodity export share is the average export share 1990/99 for low and middle-income countries. Share of population on fragile land is from World Bank, *World Development Report 2003*, Table 4.3. Figure in parenthesis is the percentage of the rural population below the national poverty line, from World Bank, 2002 World Development Indicators.

Source: Barbier (2005).

Table 2. Successful Resource-Rich Countries: Key Economic Indicators

<i>(a) Dualism within dualism (%)</i>				
Country	Primary product export share a/	Share of population in rural areas b/	Share of population on fragile land c/	Share of rural population in poverty a/
Indonesia	54	59	20-30	15.7
Malaysia	33	43	20-30	15.5
Thailand	30	80	..	18.0
95 Low & middle income d/	71	53	..	42.8
High income e/	17	23
World	22	53

<i>(b) Long-run growth and investment (% , 1965-2001) c/</i>				
Country	Annual growth in GDP per capita	Investment share of GDP	Primary school enrolment rate f/	Secondary school enrolment rate f/
Indonesia	4.0	25	108	42
Malaysia	4.0	28	98	57
Thailand	4.7	28	92	42
95 Low & middle income	1.4	20	86	39
High income	2.5	23	102	98
World	1.7	23	100	55

<i>(c) Long-run land use trends (% of total land area) c/</i>				
Country	Arable cropland		Permanent cropland	
	1970	2000	1970	2000
Indonesia	9.9	11.3	4.4	7.2
Malaysia	2.8	5.5	10.7	17.6
Thailand	24.1	28.8	2.9	6.5
95 Low & middle income	11.1	12.9	2.7	4.1
High income	12.0	11.6	0.5	0.5
World	9.9	10.5	0.8	1.0

Notes: a/ World Bank, World Development Indicators 2001.

b/ World Bank, World Development Indicators 2003.

c/ World Bank, World Development Report 2003.

d/ From Barbier (2005).

e/ High-income economies are those in which 2001 GNI per capita was \$9,206 or more.

f/ Gross rates, which may exceed 100%.

Table 3. Successful Resource-Rich Countries: Key Governance Indicators a/

Country	Voice and Accountability	Political Stability/ Lack of Violence	Government Effectiveness	Regulatory Framework	Rule of Law	Control of Corruption
Indonesia	-1.165	-1.289	-0.528	0.121	-0.918	-0.799
Malaysia	-0.144	0.552	0.714	0.477	0.834	0.633
Thailand	0.215	0.246	0.010	0.192	0.413	-0.165
95 Low & middle income b/	-0.321	-0.406	-0.350	-0.174	-0.393	-0.377
High income c/	0.910	0.908	1.026	0.714	1.180	1.143
World	0.000	-0.020	-0.014	0.002	0.004	-0.001

Notes: a/ Indicators range from -2.5 (lowest) to 2.5 (highest).

b/ From Barbier (2005)

c/ High-income economies are those in which 2001 GNI per capita was \$9,206 or more.

Source: Kaufmann *et al.* (1999).