

Transforming Natural Resources for Human Development : A Resource Systems Framework for Development Policy

**Kenneth Ruddle and
Dennis A. Rondinelli**

RESOURCE SYSTEMS THEORY AND METHODOLOGY SERIES, NO. 1



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Accommodating future needs and numbers to the earth's natural capacities and resources will give rise to a transformation of human values, social institutions and economic structures on an order which could ultimately approach that of the agricultural and industrial revolutions. The coming transformation is lengthy in duration: a period from a half to a full century. It is enormous in scope: a three-fold increase in world population. And it is awesome in its implications for change: the need to lower birth rates drastically; the need to provide specially for the poor and disadvantaged, the upheavals of migration, the expansion of the labour force, and the growth of metropolitan areas; the need for massive substitutes in primary energy and accompanying adjustments in agriculture and industry; the need to promote intensive environmentally-sound resource use; and the need to meet the tremendous requirements of the developing countries for food, health, education and housing, or more generally, to be equipped to handle not just "another world" but a second and third world "on top of this, equal in numbers, demands and hopes."

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The United Nations University
Toho Seimei Building, 15-1 Shibuya 2-chome, Shibuya-ku, Tokyo 150, Japan
Tel (03) 499-2811 Telex J25442 Cable: UNATUNIV TOKYO

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PREFACE

This monograph – the first in a series of studies on natural resource systems theory and methodology – seeks to provide an overview of issues, problems and opportunities for planning and implementing development policies in ways that transform natural resources more effectively. It is addressed primarily to planners, administrators and policy-makers who analyze, formulate and carry out programmes and projects in developing countries that affect the transformation and utilization of natural resources and the environment. It seeks to explain the importance of natural resources in national, regional and community development and the importance of transforming them in such a way that they not only benefit people living in areas that are crucially dependent on them but those living wherever the quality of life is linked to them. Indeed, we argue that careful management of natural resources is an inextricable component of wise and effective development planning. To overlook or ignore the natural and environmental implications of development policies is likely to make them inappropriate or perverse.

This study draws heavily on research that was commissioned by the Programme on the Use and Management of Natural Resources of the United Nations University, a more expansive description of which is found in other monographs in this series, and on the growing body of literature in the field of natural resource management in developing nations. Although our study is derived primarily from the experience of countries in East and Southeast Asia, the issues should be easily recognizable to planners, administrators and scientists in other regions of the Third World as well. We have attempted to combine a review of the rapidly-changing state of knowledge about resource issues with normative guidelines for planning and analysis, while at the same time identifying problems about which much more research needs to be done.

As Chapters II and III explain in some detail, changes in the approaches of international assistance agencies and many Third World governments to development policy have placed greater emphasis on using natural resources in ways that are more sensitive to environmental and ecological concerns. The challenge facing planners and administrators in most countries is how to analyze and

plan for the use of natural resources in a more effective and responsible way and to manage them so that they can benefit the large numbers of the poor in developing countries who depend on them for their livelihood or survival.

We are not under the illusion that this monograph or the series which it introduces provide satisfactory solutions to the problems inherent in this emerging challenge. But we try to underline the urgency of these problems, identify crucial issues that must be addressed in development policies and strategies, describe the conditions and needs in developing countries, highlight some of the opportunities for using and transforming natural resources more effectively, provide some guidelines for planning, and delineate issues that remain to be explored.

Keeping our primary audience in mind, we have tried to make the implications of the sophisticated and complex research of physical and natural scientists understandable to policy planners and administrators who are often not themselves physical scientists. In so doing, we hope that our scientific colleagues will be tolerant of our need to simplify, and that our policy colleagues will be patient with our need to refer to scientific concepts and terminology.

We have benefitted greatly from the work of the authors of the other monographs in this series, from the assistance and support of Dr. Walther Manshard, who headed the Programme on the Use and Management of Natural Resources when we began this work, and from the advice of a large number of colleagues, especially Professors Dennis Johnson and Ignacy Sachs.

We alone are responsible for the interpretations and conclusions, however, for which neither the UNU nor those who freely gave us assistance should be held accountable.

Kenneth Ruddle
Osaka, Japan
Dennis A. Rondinelli
Syracuse, New York

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I. INTRODUCTION: EMERGING ISSUES IN NATURAL RESOURCE AND HUMAN DEVELOPMENT POLICY

In each generation age-old problems and issues reappear in new form, often more complex and less amenable to solution than in their previous forms. Their persistent re-emergence testifies to man's inability to understand and solve completely most of the social and physical problems that have plagued him since earliest times. Indeed, apparent solutions to some problems have either worsened the effects of these problems or created new and more complicated difficulties. The rapidity of change and the frequency of human intervention in social and natural resource systems over the past half century have complicated man's world enormously. New scientific discoveries and the expansion of human knowledge have revealed new complexities that make comprehensive solutions to social and physical problems appear to be less certain.

The pursuit of "development" has been one of the most important attempts to reorder social and physical conditions during this century. This ill-defined and ever-changing concept underlies policies that have raised the living standards of millions of people in many countries; but the same policies have worsened the conditions of millions of others and introduced changes in bio-physical systems that could adversely affect the planet's entire population. Manifestations of some of those adversities have led development planners and policy-makers to reconsider previous definitions of development, to reexamine the relationships between patterns of human behaviour and the dynamics of natural resource systems, and to give greater attention to preserving and using more wisely the environment and natural resources on which human development – no matter how it is defined – ultimately depends.

The alarms raised during the past few years over environmental degradation and destruction of natural resources in the pursuit of development – the benefits of which have accrued to only a small minority of the world's population – have led many to conclude that economic development and preservation of the natural environment are incompatible goals. But increasing

evidence suggests that this conclusion may not be entirely accurate. Nor is it widely acceptable to much of the world's population that has benefited from social and economic changes, or to many of those that have not. A more accurate and increasingly acceptable conclusion is that some development policies are indeed detrimental to environmental quality and natural resources, but that others have created opportunities for large numbers of people to improve their standards of living in ways that are compatible with, complementary to, or capable of enhancing the natural resource base. The form development takes, and the way policies are designed and carried out, determine the effects on a country's natural resource systems.

The way in which natural resources have been used in many industrialized and developing nations in the past has made the potential adversities and dangers to natural resource systems clearer in recent years, and both international development organizations and governments in developing countries have begun to reassess their approaches to development. Growing awareness of the complex relationships between social and economic development and bio-physical systems has led to demands for more effective methods of analyzing natural resources and the potential impacts of development policies on them.

The increasing awareness of, and growing demand for, change in the way governments use natural resources have come at the same time that concepts and definitions of social and economic development are undergoing fundamental re-evaluation. Thus, many of the relationships between natural resource use and approaches to human development have become clearer, and the difficulties and complexities of solving the problems inherent in those relationships have become more apparent.

Various United Nations agencies now focus their research and technical assistance on clarifying and attempting to generate solutions to problems of human

and natural resource development. This book is the first in a series of monographs sponsored by the United Nations University's Programme on the Use and Management of Natural Resources that explores issues in resource systems theory and methodology. It is concerned with methods of transforming natural resources for human development, approaches that can both generate greater economic growth with social equity and protect and enhance the natural resource base on which social and economic progress depend. The purposes of this book are (1) to review recent changes in development theories and policies that seek economic growth with greater social equity; (2) to explore the relationships between human development policies and natural resource systems, especially in marginal areas where large numbers of the population live in poverty; (3) to offer a resource systems framework for planning and implementing transformational development; and (4) to examine activities that need to be undertaken to increase the capacity of international organizations and governments in developing countries to use a resource systems framework in planning development strategies and assessing development policies.

1. Changing Trends in Social and Economic Development Policy

The increasing concern with using natural resources more effectively has been reinforced by changing perceptions of development. As is noted in Chapter II, when development theories were evolving in the 1940s and 1950s they sought to maximize economic growth, industrial output and export production through capital-intensive investment strategies that largely disregarded questions of distribution and assumed that benefits would trickle down to poor countries and to poor groups within developing countries. Those natural resources that could be transformed for productive purposes were heavily exploited without concern for their preservation and renewal, and without regard for the physical, social or economic consequences of their depletion or destruction.

When it became clear during the 1960s that such policies had not ameliorated widespread poverty in developing nations and, indeed, seemed to broaden the gap between rich and poor nations and between the wealthy elite and the poverty-stricken majority in most developing countries, the attention of officials in some developing nations and in international development agencies turned to breaking the "bottlenecks" to Western-style development in poor countries by transferring institutions, technologies and concepts from industrialized nations. There was little concern, however, for differences in cultural, political, social or economic conditions that made the transfer of many methods and approaches inappropriate. Most important, the sectoral development policies pursued in many developing

nations during the 1960s ignored the fact that preconditions for Western-style development did not exist and often could not be created. Most poor countries have agricultural economies with large numbers of people living at or near subsistence levels. The exploitation and export of natural resources generated few benefits for the poor in developing countries, especially for those living in marginal areas, where low levels of income inhibited the expansion of internal demand for agricultural and industrial goods.

In the few countries in which conventional strategies worked effectively, governments pursued policies that assured more equitable distribution of income and wealth and widespread participation in productive activities. They undertook meaningful land reforms, prevented large disparities in urban and rural wages, provided agricultural incentives and price supports for farm goods, distributed physical infrastructure and social services widely in rural areas, encouraged family planning and population controls, and placed strong emphasis on human resource development through education and training so that a large majority of the population could participate in economic activities.

The failures of conventional development strategies in most developing countries, however, and the modifications needed in those countries where they were successful, led development theorists and practitioners to reassess conventional concepts and approaches to development during the 1970s. It became clear that the greatest obstacle or bottleneck to development in nearly all developing countries was the large number of people living at or near subsistence levels who did not participate in the productive economy. The productivity, income, purchasing power and access to productive resources of the "poor majority" would have to be increased as a condition for sustained development. "Top-down" and centrally-conceived and implemented development policies would have to be supplemented by far stronger forces from the "bottom up" to expand and diversify rural economies. Economic growth with social equity requires human resource development; it requires strategies for meeting the basic needs of the poor in order to increase their skills, entrepreneurship and productive capacity. A key to equitable growth in countries where it has occurred has been to steadily increase the access of the poor to social services, facilities and physical infrastructure as well as to other productive assets that would lead to higher productivity, higher incomes and stronger internal demand for the goods and services that stimulate sustained development.

It became equally apparent that careful transformation of natural resources – in ways that do not destroy or severely deplete those that are renewable – is essential for sustained development, especially in marginal regions.

2. Development Policy, Social Transformation and Resource Systems

New perceptions of the role of natural resources, and especially of renewable resources, in meeting basic needs and increasing the productivity and income of the poor emerged with new perceptions of socio-economic development. It became more apparent during the past decade that closer attention must be paid to preserving and renewing bio-physical systems and to transforming resources for human development. Both resources and patterns of living must be transformed to meet the needs of the human population in developing countries during the rest of this century. Special attention must be given to marginal areas, where human poverty and environmental degradation coincide and reinforce each other.

Chapter III of this book examines the changing perceptions of the roles of renewable resources in human development and focuses on the importance of resource transformation in marginal areas. The characteristics of marginal regions are identified and the concept of transformational development is discussed. The potential for transformational approaches to the development of renewable resources is illustrated with the case of the palm sago industry in Southeast Asia.

Of crucial importance to any attempt to use natural resources more effectively in socio-economic development, and to improve the capacity of governments to assess the potential impacts of alternative development policies on natural resource systems, is a better understanding of environmental and resource conditions. The complex interactions within and among resource systems is illustrated in Chapter III by the case of coastal zones. Similar interactions appear within and among all resource systems and, thus, a resource systems framework is needed to improve the quality of research, analysis, planning, policy formulation and implementation of development programmes and projects.

A resource systems framework that depicts the major relationships among biological and physical factors, elements of actual resource systems, relationships among resource systems, the political economy, social organization and demographic characteristics is offered in Chapter III. The "vertical" relationships at macro, meso and micro levels within developing nations are also examined in detail. The "macro level" includes the international economic, political and institutional influences on how developing countries perceive, transform and use natural resources, and the natural resource assemblage in the biological and physical environment of developing nations. At the "meso-level", resource systems are viewed in spatial context; regional

analysis must be concerned with the interactions and linkages among resource systems within defined geographical areas, the impact of development projects on regional resources, and the relationships between human settlement patterns and resource use and transformation. At the "micro-level," resource use and transformation must be viewed through the decision-making processes of small group and household economies.

3. Impact of International and National Development Activities on Renewable Resources

A systems perspective of natural resources illustrates vividly that the use and transformation of resources at any level of interaction – international, national, regional or local – is influenced by decisions at all other levels. In many marginal areas of developing countries, for example, the ways in which individuals, households and communities use resources depends not only on their own perceptions, cultural traditions, immediate needs and circumstances, and organizational capacity, but also on the physical characteristics of the region in which they live, on decisions about the location of services and infrastructure and on the regional pattern of human settlement. Moreover, opportunities and constraints to use or develop regional resources are often shaped by national development policies, decisions within central government ministries about the allocation of investments among regions, and decisions about location of programmes and projects within regions. National decisions are in turn shaped by international economic, political and social forces, by the policies of international funding institutions and by trends in international markets for the goods produced by developing countries. In turn, the success of national and regional development policies often depends heavily on individual and household behaviour within local communities.

Although it is rarely possible to describe and analyse completely, let alone plan and control comprehensively, all of the interactions in resource systems, a better understanding of their characteristics and dynamics is needed to plan strategically and to introduce incrementally more effective and appropriate development policies. In Chapter IV, the impacts of international economic forces on the resource policies of developing countries are illustrated by increasing petroleum costs during the 1970s and on natural resource systems by the pollution of marine waters by petroleum hydrocarbons. The detrimental impacts of some national development policies on resource systems are also visible in the forestry practices of many countries in Southeast Asia.

4. Natural Resource Transformation and Regional Development Planning

Regions within developing countries often differ drastically in their states of development, cultural, ethnic, social and economic conditions, physical characteristics and in the configuration of their natural resource systems. Some ecosystems, such as coastal zones and river basins, form distinctive regions. It cannot be assumed, therefore, that uniform or standardized development policies will have similar impacts in all areas of developing countries. National development policies must be tailored to the particular needs and conditions of specific regions and communities if they are to be effective.

Thus, regional analysis and planning are essential elements of national development policy-making. As is noted in Chapter V, "meso-level" planning is necessary not only because regions differ from each other, but also because elements of resource systems within regions are inextricably linked. Interventions in one part of the system affect all others. Ecosystems within regions can be damaged or threatened by inappropriate decisions about the design and location of development projects such as dams, reservoirs, irrigation schemes and other forms of physical infrastructure. Similarly, better understanding of such systems can lead to design and location decisions that enhance and expand the resource base in developing regions.

Moreover, the close relationships among patterns of human settlement, natural resource use and transformation and the pace and direction of development are becoming more apparent. The pattern of human settlement is especially important in marginal areas, where unarticulated and unintegrated settlements can limit rural people's access to the services, facilities, and assets needed to increase their incomes and productive capacities. Often the settlement pattern in marginal areas reinforces resource exploitation or inhibits the transformation of renewable resources in ways that can sustain and improve the livelihoods of their populations.

Regional planning provides a geographical focus through which to analyse the complex interactions between and within social and natural resource systems and through which to link the activities of various sectoral agencies. The United Nations Secretary-General, in a report to the U.N. Economic and Social Council, has pointed out that

Improving the linkages between development processes and sectors ensures an environmentally sound distribution of existing concentrations of population, human settlements and economic activities, and facilitates effective and equitable resource use. The

concept of distribution must be placed in a dynamic context. Shifts in population and human settlement patterns are necessary for increased productivity in agriculture, industrialization and realizing socio-economic and environmental improvements. At the same time such shifts can be characterized by a number of lags, so that the process of spatial transition often gives rise to imbalances between the rates of sectoral, population and economic growth, inefficient distribution of population in relation to resources and technical capacities, glaring spatial and social inequities in income and development levels and incapacity of institutions and resources to cope with changing demands and complexities of urbanization.¹

The manifestation of these problems in many developing countries has led both national governments and international agencies to revise development policies in recent years to seek more geographically-balanced patterns of urbanization. In Chapter V, methodologies for integrated regional development planning and for spatial analysis are discussed, and their application in the Bicol River Basin of the Philippines is reviewed and analyzed.

5. Renewable Resource Transformation in Small Group and Household Economies

Ultimately, in every society, decisions about how resources are used and transformed are made by large numbers of individuals, households and small groups. National and regional development policies are unlikely to be effective unless they reflect an understanding of individual and household behaviour. Micro-analysis is the foundation of a resource systems framework for development planning and policy-making.

In Chapter VI, the need for micro-level analysis is described in more detail. Economic theory, on which many of the psychological and marketing models of human behavior are based, is often deficient or irrelevant in understanding the behaviour of the poor in developing countries. It is especially inappropriate in explaining how people in marginal regions perceive, use and transform the natural resources on which their livelihoods depend. Much more must be learned about their attitudes toward risk and uncertainty, about the dynamics of household economic behaviour and about the values and perceptions of the poor in marginal regions toward renewable resources. Conventional behavioural models that are often based on studies of decision-making in Western societies must be modified or replaced by studies of individual and household behaviour in developing societies.

An argument is made in Chapter VI that local participation – an ambiguous and overused term in development literature – is essential to understanding individual and household behaviour and to formulating policies and designing programmes and projects that will be appropriate and effective in marginal regions of developing countries. New procedures must be found to elicit the involvement of individuals, households and communities in the process of transformational development. And, equally important, new ways must be found to make local participation in policy analysis, planning, formulation and implementation more acceptable to national and regional decision-makers.

6. Transforming Natural Resources for Human Development: Implications for Research, Planning and Policy

Finally, in Chapter VII, suggestions are offered for improving the research, planning and policy analysis capabilities within governments of developing countries to transform natural resources for human development in ways that preserve and renew the resource base and that seek economic growth with greater social equity. Few governments now have the capacity to use effectively a

resource systems framework such as that described in Chapter III.

In the long term, improving the effectiveness of governments and private organizations to transform natural resources for human development depends on: (1) increasing awareness in developing countries of the complex and multiple relationships between natural resources and socio-economic development; (2) strengthening administrative, institutional, and legal procedures for protecting the physical environment and for transforming natural resources in ways that stimulate human development; (3) expanding the research and data base for development planning and policy-making and strengthening the methodologies for applying the resource systems framework in policy analysis; and (4) building the educational and training capacity of public and private institutions in natural resource analysis and transformational planning.

Note

1. United Nations Economic and Social Council, *Interrelationships Between Population, Resources, Environment and Development: Report of the Secretary General*, Document E/1981/5, (New York: United Nations, 1981), p. 26.

II. CHANGES IN DEVELOPMENT THEORIES AND POLICIES: TOWARD ECONOMIC GROWTH WITH SOCIAL EQUITY

Theories of international development have undergone serious evaluation and fundamental change over the past two decades. These changes were in part a response to the shortcomings and failures of policies and programmes implemented during the 1940s and 1950s, and in part a reaction to changing economic and social conditions during the 1960s and 1970s. Dissatisfaction with the pace and direction of economic growth, and with the severe problems of social inequity, spreading poverty and dualism in the economies of developing countries, led development planners and policy-makers to re-examine strategies emphasizing capital-intensive, export-oriented industrialization. Increasing concern about the inappropriate and ineffective use of natural resources in developing countries and the declining quality of the physical environment also led to the search for new approaches to development during the late 1970s and early 1980s.

These changes in the perceptions of, and approaches to, development can be traced by reviewing development theories and strategies during three recent periods of evolution: (1) the period from the early 1940s to the late 1950s, when international assistance organizations and governments in developing countries were pursuing policies aimed at maximizing economic growth, industrial output and export production through capital-intensive investment strategies and were relying on the free operation of market systems and “trickle-down” effects to generate sustained economic growth; (2) the period from the early 1960s to the early 1970s, when international development agencies and national governments were concerned with removing “obstacles” or “bottlenecks” to development primarily by concentrating investments in “key sectors” of the national economy and attempting to “modernize” developing societies by transferring methods and institutions from Western industrial countries; and (3) the period from the early 1970s to the present, during which international assistance organizations and developing country governments were seeking to achieve more “balanced” development in the international economy by

reducing the growing disparities between rich and poor countries, to achieve greater equity in the distribution of the benefits of economic growth within developing nations, to reduce the high and growing levels of absolute poverty in the poorest developing countries, and to provide for the basic human needs of those living in absolute poverty while increasing their productivity and income.¹

1. Growth Maximization and Trickle-down Policies

When the Point Four Program, or Marshall Plan, was initiated in the 1940s, the intention of aid-giving nations was to rebuild the physical and industrial structure of countries that had attained relatively high levels of productive capacity before the Second World War. American aid was primarily aimed at rehabilitating physical infrastructure and industrial plant, at temporarily feeding large numbers of people displaced from their livelihoods by the war, and at re-establishing market mechanisms in European economies. Other international funding organizations, established in the wake of the Marshall Plan, had similar objectives. The World Bank’s mission, for instance, was clearly reflected in the organization’s formal title – the International Bank for Reconstruction and Development – and in the order in which elements of the title appear. Concern for promoting development in poor countries was subordinate to reconstructing productive capacity in more economically advanced nations that had been devastated in a long and intense global conflict. In the late 1940s and early 1950s the emphasis of aid-giving organizations was on macro-economic development, national planning and construction of capital-intensive industries, highways and power generating systems and on rebuilding the financial capacity of European countries to continue their own reconstruction. The plans called for large-scale and expensive projects requiring sophisticated engineering skills and high technology equipment. The governments receiving aid were generally experienced in industrial

development. They had well-trained professionals and skilled workers, high levels of planning and managerial capability and a strong motivation to recover as quickly as possible.²

With their success in rehabilitating European economies, bilateral and international aid organizations turned their attention increasingly to poor nations of the world that had never attained high levels of industrial production. Their economic, social and political characteristics were quite different from those of European nations, as were the motivations of their leaders. Their poverty was far greater than in Europe and preconditions for economic growth that were taken for granted in European nations did not exist in most countries of the Third World. But international aid agencies largely pursued the same strategies in poor countries that they had used successfully in reconstructing the economies of Europe. During the 1950s, little attention was given to differences in the Third World's conditions and needs, until these appeared to create obstacles to achieving high levels of industrial output. A strong belief that the same processes of industrialization that brought economic growth to Europe would stimulate and modernize the developing nations' economies pervaded aid organizations, as did the confidence of development theorists that the benefits of growth would eventually reach the vast majority of people in poor countries through automatic market mechanisms and through spread and "trickle-down" effects.

The industrialization policies prescribed by economic development theorists during the 1950s and 1960s sought high levels of economic growth and rapid increases in gross national product (GNP). The only real debate concerned the means by which these goals would be achieved. Some argued that the most effective way of attaining high levels of economic growth was through heavy investment in capital-intensive industry as a "leading sector," whereas others contended that a "big push" was needed in all sectors at the same time to increase output and demand for industrial goods. Both theories were modelled on processes of economic growth that had occurred in Western Europe and North America during the second half of the nineteenth and first half of the twentieth centuries.³

The underlying rationale for these theories was that GNP could be increased most rapidly by raising the level of industrial output. Developing nations were urged to seek large amounts of foreign capital, promote specialization in low-wage or raw material industries, and apply capital-intensive technology to the production process. Export production and import substitution industries were usually favoured. Since many developing countries had comparative advantages in natural resources and raw materials, these were often exploited by colonial

governments, foreign investors or national governments. Exports of natural resources would generate the flow of foreign capital needed for investment in the industrial sector.

As industrial output grew it would generate more employment and higher incomes, which in turn would raise the level of demand for both agricultural and industrial goods, increase savings, allow for expanded capital formation and generate new investment. Public expenditures, bolstered by foreign aid, would be used to construct the physical infrastructure that would lower production costs and improve distribution. Nearly three-fourths of the loans made by the World Bank and International Development Association (IDA) from 1946 to 1963 were made for physical infrastructure projects, especially for transport, electrical power, ports and harbours and industrial plant.⁴

One group of economists – "leading sector" theorists – insisted that the most effective means of generating and sustaining high levels of economic growth was by investing heavily in a single sector. Industry was usually considered the "engine of growth" for developing economies, but some economists argued that other sectors might be more appropriate for initiating the growth process. Some, such as Arthur Lewis and Theodore Schultz, contended that agricultural investment would provide the capital needed for industrialization in rural nations, and still others insisted that investment in the housing and social services sectors would stimulate demand for industrial products and set off a new spiral of growth.⁵

But many economists, such as Albert Hirschman, maintained that it mattered little which sector was chosen initially, because heavy investment in any sector would generate increased demand and induce investment in all other sectors. Growth in the leading sector would spread and thereby raise the overall level of economic output. Hirschman argued that heavy public investment in either directly productive or social overhead activities would lower costs and, through complementarities in the economy, increase demand for the investment of private capital. The ripple effect from this initial stimulation would generate growth throughout the economy. Thus, the objective of "leading sector" theorists was to create a set of continuous tensions: a sequence of investments that "leads away from equilibrium is precisely the ideal pattern of development," Hirschman insisted. Unbalanced growth would generate and enlist resources and abilities for development that had previously been "hidden, scattered or badly utilized." The mechanisms by which growth would spread were thought to be largely automatic once investment began. "If such a chain of unbalanced growth sequences could be set up," Hirschman predicted, "the

economic policy makers could just watch the proceedings from the sidelines.”⁶

Other economists, embracing the same ultimate goal of maximizing economic growth, argued for a different approach. They noted that in labour-surplus economies, investment in one industry or set of industries could not generate sufficient employment, income and demand to absorb output. Moreover, heavy investment in one industry precluded development of other sectors needed to provide inputs for industry. They argued that massive amounts of foreign aid should be used in combination with domestic resources to make a “big push” for development by investing simultaneously in all sectors. Balanced investment would create the internal complementarities that Hirschman and others assumed already existed in developing economies. It would allow each sector to supply the others without heavy reliance on imports; appropriate use could therefore be made of natural resources; employment would increase in all sectors of the economy at the same time; and greater demand would be created for outputs in each sector. Agriculture and commerce would benefit as well as manufacturing. Moreover, expansion of industry would proceed at pace with improvements in labour skills and entrepreneurial experience. Investment in physical infrastructure, public utilities, productive equipment and plant would be balanced, but sizeable enough in each sector to push the economy into a stage of rapid and sustained growth. Such a strategy was necessary, Nurkse insisted, because, in the long run, productive capacity, the level of production and ability to use capital to increase output were all limited by the size of the market, which was extremely small in most poor countries.⁷

But the question of how massive poverty – a major factor limiting the size of markets in developing nations – would be alleviated was rarely asked by development theorists or directly addressed in aid strategies. The problem of reducing the large gaps in income and wealth between rich and poor nations would be solved, Rosenstein-Rodan argued in the 1940s, by achieving “a more equal distribution of income between different areas of the world, by raising incomes in depressed areas at a higher rate than in the rich areas.”⁸ This would occur internationally through the same automatic mechanisms that Hirschman relied on within national economies. Public investments would set in motion complementary activities that would spread growth throughout the economic system. As industrial production increased, new jobs would be created, demand for new products would rise and through forward and backward linkages, new opportunities for investments would be created. They, in turn, would create new employment opportunities and raise overall levels of income. Some of the income would be spent on food, shelter, education

and health care; some would be taxed to provide public services; some would be saved and reinvested. New employment opportunities would not only draw larger numbers of people into the productive system, but the resulting demand for labour, goods and services would spread from major urban centres where large-scale industries were to be concentrated to smaller towns and rural areas.

The rising level of income would create more demand for agricultural goods and the application of new technology would make agriculture more productive and less labour-intensive. Surplus agricultural labour would be absorbed in the expanding industrial sector. As agricultural production increased, profits would be reinvested in more efficient technology, better seed varieties, irrigation and other inputs that would generate even higher yields with less labour and land. Rostow, and others, believed that the exploitation of land and natural resources would stimulate the growth of a self-sustaining industrial sector because the export of natural resources would generate the capital needed to finance industrial expansion and service foreign debt. Once the economy reached the “take-off” stage, more of the poor would begin to benefit and the growth cycle would generate higher levels of output, create incentives for diversification and allow more technologically advanced industries to succeed lower wage and natural resource export industries.⁹

Many economists believed, along with Kuznets who formalized the theory, that in the initial stages of growth the largest share of income would go to higher income groups. But as growth continued, the poor’s relative share of income would increase.¹⁰ When growth became rapid enough to change the dualistic structure of the economy, benefits would be distributed more equitably and poverty would gradually be eliminated. Many economists argued that the premature reallocation of investments to increase the distribution of income and to provide welfare for the poor would slow the pace of economic growth and thus delay the time at which the poor’s share of income would begin to rise on the “Kuznets curve.”¹¹

Reassessment of Classical Economic Development Theory

By the early 1960s it became increasingly apparent that in most developing nations a strategy of rapid growth through capital intensive industrialization was not working satisfactorily. Growth occurred in some Third World nations during the 1950s and early 1960s, but at rates well below those sought in national development plans. Studies found that foreign aid had little direct impact on increasing the levels of GNP in less developed countries. Griffin and Enos discovered, for instance, that the correlation between foreign aid and increases in GNP

during the 1950s was weak or insignificant for African and Asian countries. Aid and growth were negatively correlated for Latin American countries: "the greater the inflow of capital from abroad, the lower the rate of growth of the receiving nation."¹² Most countries had difficulty obtaining large amounts of foreign capital needed to finance ambitious industrialization plans and had little success in mobilizing sufficient savings internally to achieve high rates of capital formation.

Some theorists began questioning the assumptions underlying capital-intensive industrialization models. Dudley Seers, among others, pointed out that the prevailing conditions that made rapid and sustained industrialization possible in Western societies constituted a "special case," and that economic development policies applied successfully under those conditions could not be transferred or replicated in developing nations.¹³ He noted that in Europe and North America factors of production had been abundant during their periods of industrialization; labour was educated, skilled, mobile and could easily be organized for productive purposes. Land was also abundant, arable and widely held in private ownership. Capital was readily available, most sectors of the economy were heavily capitalized, entrepreneurship was well established, and governments provided inducements for entrepreneurial expansion. The structure of the economy was diversified and dominated by a competitive manufacturing sector that had evolved from numerous cottage and artisanal enterprises. Agriculture was largely commercialized in Western societies by the time of the industrial revolution, and an extensive marketing network had evolved that provided farmers with accessible and competitive outlets for their products. Public revenue collection and allocation procedures were firmly established and savings could be mobilized by an efficient banking system. The level of national investment was already high. Exports were diversified in products for which there was also an internal market. Income distribution was relatively equitable and a comparatively small percentage of the population remained impoverished. Population growth was below two per cent a year and a large percentage of the people lived in urban areas.¹⁴

But in developing nations the conditions were far different. In most poor countries, governments lacked analytical and administrative capacity to formulate and implement the comprehensive, complex national development plans that were prescribed by international assistance organizations to achieve in a short time what had been attained incrementally over a long period, and without comprehensive planning, in the West. The ability of governments to coordinate their activities among a variety of ministries and agencies to implement a "big push" or a leading sector strategy was weak. Few governments could manage public investments

effectively, let alone guide or control those of the private sector. Low levels of education within developing societies limited the number of skilled workers, and the poor countries lacked experienced managers. Low levels of agricultural production and massive poverty in rural areas limited the expansion of domestic demand. W. Arthur Lewis noted that in countries with large surpluses of labour the import of foreign capital would not raise real wages unless the capital was invested in industries that produced goods for domestic consumption.¹⁵ But with natural resource exports yielding prices far below the costs of imported industrial plant and machinery, and with foreign private corporations investing in low-wage production sectors, there was little hope either of increasing the income of the majority of the poor or of producing goods at a price they could afford. The severe income disparities in developing countries created by industrialization strategies undermined the very market systems that economic development theorists claimed would be the engine of growth in developing nations. Myint pointed out that

... disequalizing factors work not only on the supply side but also on the demand side, and unequal distribution of incomes and of activities combine with each other to inhibit economic development. One of the most important reasons why the backward countries have been prevented from enjoying the stimulating effect of manufacturing industries is not the wickedness of foreign capitalists and their exclusive concern with raw materials supplies but merely the limitation of the domestic market for manufactured articles.¹⁶

Even natural resource export industries in developing countries were at the mercy of international markets in which they were uncompetitive or at a severe disadvantage. Myint pointed out as early as the mid-1950s that

on closer examination, it turns out that the only type of investment which private investors are willing to undertake in the underdeveloped countries, is the exploitation of raw materials, e.g., petroleum, and it is precisely in this field that the governments of the underdeveloped countries are frequently unwilling to admit private foreign capital because they fear that this 'nineteenth century type of investment' will merely develop the natural resources and not the people and will result in 'foreign economic domination' aggravating the economic 'backwardness' of their people.¹⁷

Moreover, poor countries had to pay substantially higher prices for their imports of equipment, technical know-how, intermediate and finished goods than they received for their natural resources and raw material exports, leading to serious deficits in their balance of payments. High population growth rates offset advances in output and income, leaving much of the population no better off economically at the end of the 1950s than they had been a decade earlier.¹⁸

Market mechanisms that were supposed to act as channels for the spread of growth impulses and the filtering down of benefits in developing economies either did not exist or worked imperfectly. Instead of growth spreading throughout developing economies, resources were often drained from rural hinterlands, through what Myrdal called "backwash effects," to support industries located in metropolitan centres.¹⁹ Political instability, low levels of administrative capacity, pervasive corruption among politicians and bureaucratic elites, and an unwillingness of political leaders to share power, or to enforce laws that would maintain order with justice, led to the creation of "soft states" in which governments were unable to organize society for developmental purposes.²⁰ Productive assets such as land were generally owned or controlled by a small, privileged elite who opposed reforms that might lead to a greater distribution of income and wealth. Their profits were often invested in the largest urban centres or entirely outside of the country.

Under these conditions entrepreneurship could not easily be promoted, and the low levels of income received by the vast majority of people continued to inhibit the expansion of internal demand. It was extremely difficult for governments in developing countries with large subsistence populations to mobilize savings or generate revenue through direct taxes. Thus, the level of public investment depended on revenue raised through indirect taxes, export earnings, foreign aid and external borrowing. As a result, investment remained a small percentage of gross domestic product.²¹

The spread or trickle-down effects of growth were constrained by weak market and trade linkages between major industrial centres and rural areas. Many developing nations had "primate city" spatial structures: the bulk of modern economic activities, social services, infrastructure and facilities had been concentrated in the capital city or a single large metropolitan area which dominated the spatial system and economy of the nation.²² Few secondary cities could emerge and large disparities in income and wealth arose between the primary city and the rest of the nation. Disparities between the largest city and the rural hinterlands pulled large numbers of younger, more ambitious and better educated rural people into the metropolitan centre. They

were followed by less educated and unskilled relatives and friends who, often, could not find jobs in the city or had access only to the lowest paying ones. Slums and squatter settlements of the poor grew quickly in the largest cities.²³

Thus, not only did the capital-intensive industrialization strategies of the 1950s fail to produce rapid and widespread growth in developing countries but, in many, it created "dual economies" and reinforced a cycle of poverty that became more difficult to break. The unfettered operation of the international market did not lead to the effects that development theorists expected. "In practice, the free play of economic forces in backward countries has resulted, not in a division of labour according to individual abilities, but in a division of labour according to stratified groups," Myint pointed out. The exploitation of natural resources reinforced the underdevelopment of human resources to create a vicious cycle of poverty. "The accurate selection of different types and qualities of natural resources by the automatic market mechanism contrasts dramatically with its lack of selectivity concerning human resources which has resulted in the 'fossilisation' of the backward peoples in their conventional roles of undifferentiated cheap labour and unspecialized peasant producers."²⁴

The foreign aid strategies of the 1950s strengthened the forces perpetuating poverty in developing nations, and by the end of the decade came under attack by both liberal and conservative economists. Milton Friedman, for instance, while supporting the concept of foreign aid, questioned the three major assumptions underlying capital-intensive industrialization policies. He challenged the propositions that availability of capital was the key to economic development, that underdeveloped countries were unable to mobilize capital internally, and that centralized, comprehensive macro-economic planning was a prerequisite to development. "All three propositions are at best misleading half-truths," Friedman argued.²⁵ He noted that developing nations had been mobilizing capital and other resources for high priority investments for centuries. But, he insisted, other conditions were more important for promoting economic development and that these had to be created before capital could be used effectively. Moreover, Friedman argued that the prescriptions for macro-economic development planning were unlikely to be useful or appropriate in developing nations. "Such a centralized program is likely to be a hindrance, not a help," he maintained.

Economic development is a process of changing old ways of doing things, of venturing into the unknown. It requires a maximum of flexibility, of possibility for experimentation. No one can predict in