

**URBANIZATION
AND RURAL
DEVELOPMENT**

*A Spatial Policy
for Equitable Growth*

*Dennis A. Rondinelli
Kenneth Ruddle*

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AID/71-10-1356

9319219

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PRAEGER PUBLISHERS
Praeger Special Studies

New York

•

London

•

Sydney

•

Toronto



Library of Congress Cataloging in Publication Data

Rondinelli, Dennis A.

Urbanization and rural development.

Bibliography: p.

Includes index.

1. Underdeveloped areas--Urbanization. 2. Rural development. I. Ruddle, Kenneth, joint author.

II. Title.

HN980.R65 309.2'63'091724 78-17790

ISBN 0-03-043111-5

PRAEGER PUBLISHERS, PRAEGER SPECIAL STUDIES
383 Madison Avenue, New York, N.Y., 10017, U.S.A.

Published in the United States of America in 1978
by Praeger Publishers,
A Division of Holt, Rinehart and Winston, CBS Inc.

89 038 987654321

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Printed in the United States of America

11

PREFACE

One of the few clear lessons from the experience with development planning over the past quarter-century is that sustained economic and social progress depends heavily on the ability of government and private organizations not only to expand gross national product but also to increase steadily the participation of subsistence populations in productive economic activity. The emphasis on rapid growth in GNP through capital-intensive industrialization without concern for other sectors of the economy, the pattern of income distribution, or the extent and nature of participation in productive activities creates dual economies in which small islands of progress emerge from a sea of backwardness and poverty. It is also clear that, contrary to conventional economic theory, the "spread" or "trickle-down" effects of highly concentrated industrialization for rural areas are extremely limited and the multiplier effects within the urban economy have been only slightly less constrained.

For us, the essence of development is expansion of participation in economic activities through the creation of social and economic systems that draw larger numbers of people into processes of production, exchange, and consumption, that involve greater numbers in entrepreneurship and employment, that increase levels of income for the poorest groups and reduce disparities between rich and poor so that a larger majority of people can obtain basic goods, save and invest, and gain access to services necessary to enrich the quality of their lives. Development is a process of expanding the productive capacity of public and private organizations, large and small firms, rural and urban regions of a country at a steady pace. It involves stimulating the use of potentially productive resources, adapting appropriate technologies and institutions to traditional as well as modern communities, transforming subsistence agricultural and rural sectors into employment- and income-generating elements of the national economy, and providing adequate social services and facilities that allow people not only to satisfy basic human needs but also to develop their productive capacity and human potential.

The growing realization that expansion of economic participation is essential to sustained development has brought about a dramatic shift in development policy since the late 1960s. National governments and international assistance agencies that once sought rapid growth in GNP through large-scale, capital-intensive, export-oriented, urban-based industrialization, guided and controlled through centrally formulated macroeconomic models, now seek to build more balanced and stable

internal economies, with greater social equity. Achievement of such goals, it was discovered, depends on the expansion of labor-intensive, smaller-scale, and more widely distributed agricultural and manufacturing industries. It requires investment in social as well as physical infrastructure, promotion of rural development and decentralized planning and administration, and increased access for marginal groups to economic resources and opportunities.

A dimension of the new directions in development policy that has been generally overlooked, however, but that is fundamental to any attempt to expand productive capacity in developing nations, is spatial planning. The spatial structures of Third World countries have been crucial constraints on the spread of growth, and changes in those structures toward creating more balanced and integrated systems of human settlements can provide enormous opportunities for increasing participation in economic activities.

For these reasons, the Office of Urban Development in the Technical Assistance Bureau of the U.S. Agency for International Development (USAID) commissioned an analysis of integrated spatial development policy, which would review experience with urban and rural development in the Third World and propose guidelines for locating urban services and facilities in support of rural development. The review was to result in a conceptual framework for spatial analysis and program design that would be tested in a series of pilot projects, the first of which is being undertaken in the Bicol River Basin of the Philippines, and for which the senior author serves as chief consultant. That research and the preliminary experience with the Bicol pilot project form the substance of this book. The study is not so much intended to explore new territory as to review comprehensively past experience with and current knowledge of urban and rural development in the Third World as a basis for making locational policy and designing development projects and for identifying the types of new research needed for spatial planning.

As with any effort of this magnitude, we could only hope to survey spatial development trends in broad scope and offer preliminary suggestions for implementing spatially integrated development policies. As we proceeded in our analysis, the evaluation of integrated spatial development proposals slowly turned to advocacy, and this book reflects some element of each. We know that much more research and testing need to be done, but our review of the development literature and our own combined 20 years of experience with development in Latin America and Asia have provided a number of clear lessons and unmistakable guidelines for action, many of which are summarized in this study. Although our suggestions are addressed primarily to countries with mixed economic systems, we drew extensively on experiments with



balanced sectoral and spatial development in socialist societies and believe that the overall strategy of integrated development can be accommodated in both.

In undertaking this work we have benefited greatly from association with a number of people who have added to our insights, critically evaluated our initial drafts, and stimulated our curiosities, but who should not be held responsible for our conclusions. William R. Miner and Eric Chetwynd, Jr., of the Office of Urban Development at USAID, provided strong and steady support at every stage of our work. Their foresight in identifying the crucial importance of the spatial dimensions of development to USAID's "new directions" initiated the study as well as the subsequent pilot projects. Emmanuel I. Astillero and Junio M. Ragragio, two young and talented Philippine planners, worked closely with the senior author in validating the problem in the Philippines and in testing methodologies for analysis. A number of other people read and commented on earlier versions of the manuscript, including Michael McNulty, Michael Conroy, Christopher Goss, and Richard Rhoda. Earlier versions of our ideas have appeared in various articles and papers, and their reappearance here in modified form is with the consent of the publishers: "Local Organization for Integrated Rural Development: Implementing Equity Policy in Developing Countries," *International Review of Administrative Science*, 63, no. 1 (1977): 20-30; "Integrating Spatial Development," *Ekistics*, 43, no. 257 (1977): 185-94; "Integrating Urban and Rural Development: The Emerging Spatial Strategy of Development Policy," *Asian Economic and Social Review*, 1, no. 3 (1977); and "Political Commitment and Administrative Support: Preconditions of Growth with Equity Policy," *Journal of Administration Overseas* (1978), forthcoming. Although this study was partially supported by the U.S. Agency for International Development, the conclusions remain those of the authors and do not necessarily reflect USAID policy.



CONTENTS

	<i>Page</i>
PREFACE	v
LIST OF TABLES AND FIGURES	xi
Chapter 1 ACHIEVING EQUITABLE GROWTH: SPATIAL INTEGRATION AND DEVELOPMENT POLICY	1
The Search for Alternative Strategies	7
The Emerging Role of Spatial Planning in Development Policy	14
Emerging Trends in International Assistance Policy	21
Requirements for an Operational Strategy	30
Notes	35
Chapter 2 A SPATIAL FRAMEWORK FOR INTEGRATED DEVELOPMENT	39
Alternative Approaches to Spatial Development: Centralization Versus Decentralization	40
The Need for Balanced Spatial Systems: Integrated Urban-Rural Development Strategy	52
Notes	60
Chapter 3 THE ROLES OF SPATIAL CENTERS IN NATIONAL DEVELOPMENT	63
Metropolitan Areas and Primate Cities	64
"Middle-Level" or Intermediate Cities	67
Market and District Towns	71
Village Centers	74
Conclusion	76
Notes	77
Chapter 4 STIMULATING THE RURAL ECONOMY: TECHNICAL COMPONENTS OF POLICY IMPLEMENTATION	79
A Framework for Integrated Rural Development	80
Technical Components of Rural Development	82
Notes	111
Chapter 5 STRENGTHENING LOCAL ORGANIZATION AND SERVICES	115
Project Implementation at the Local Level	115
Local Support Services	125
Conclusion	136
Notes	136

VIII

	<i>Page</i>
Chapter 6 NATIONAL POLITICAL AND ADMINISTRATIVE SUPPORT	139
Political Commitment	139
National Planning, Programing, and Organization	142
International Economic Policy and Foreign Assistance	154
Notes	157
Chapter 7 URBANIZATION AND RURAL DEVELOPMENT: TRANSFORMING SPATIAL STRUCTURES IN DEVELOPING NATIONS	159
Spatial Linkages and Transformation	159
Building Development Centers: Location of Urban Services and Facilities	175
Transformational Development: An Approach to Spatial Integration Strategy	180
The Role of International Assistance in Integrated Urban-Rural Development	196
Notes	198
BIBLIOGRAPHY	201
INDEX	218
ABOUT THE AUTHORS	222

LIST OF TABLES AND FIGURES

<i>Table</i>	<i>Page</i>
1 Comparative Profile of International Assistance Strategies for Integrated Rural Development	24
2 Urbanization Patterns in a Sample of Developing Countries	44
3 Major Linkages in Spatial Development	162
4 Methodologies and Information Appropriate for Integrated Spatial Development Planning	186

<i>Figure</i>	
1 Spatial System of Marketing Marine Fish, Chicken, and Eggs, Chonburi Province, Thailand	70
2 Functional Components of Integrated Rural Development	83

***URBANIZATION
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xi

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ACHIEVING EQUITABLE GROWTH: SPATIAL INTEGRATION AND DEVELOPMENT POLICY

Changes in institutional and national policies are often made not with a clear understanding of the problems to be solved or of the results to be achieved but from a curious blend of ignorance and knowledge, uncertainty and hope, myopia and vision, doubt and determination. Most policies are experiments. They generally emerge from dissatisfaction with a course of events or with results of previous policies, from the clash of ideas and interests espoused by groups suffering hardships under existing conditions or anticipating greater benefits from change. Policies are authoritative expressions of demands and aspirations. But policy making is an incremental, groping process of trial and error, and no matter how sophisticated the analysis or how intense the deliberation, consequences of policies can never be predicted with certainty. Indeed, most complex problems escape deliberate solution. But policies, nevertheless, are made. The ignorance, uncertainty, myopia, and doubt are either resolved during implementation, or the policies are displaced in the next surge of dissatisfaction.

Such is the case with changes in policies made over the past decade by governments and international assistance agencies promoting economic growth in developing nations. Dissatisfaction with the results of previous efforts to accelerate development in Asia, Africa, and Latin America blended with the hope that new strategies might narrow the widening gap between the richest and poorest nations and between a small wealthy elite and a massive rural population subsisting in poverty. The failure of the First Development Decade of the 1960s to make acceptable progress toward economic growth and social transformation profoundly influenced policy changes in the 1970s.

The First Development Decade sought to ameliorate the most in-

transigent problems plaguing the world's poverty-stricken areas. The mid-1960s saw renewed efforts to expand industrial investment, accelerate modernization, and increase food production. Although increases in GNP were recorded in most developing countries, few nations attained projected levels of growth or reached targets set by their own development policies. The United Nations reports that, by 1969, of the nearly 90 nations that had formulated national development plans at the beginning of the decade, less than one-third had achieved average rates of increase in total national production equal to or higher than planned targets. In many countries the rate of economic growth actually declined, and in others expansion of economic output failed to keep pace with population growth. Savings in most developing nations remained well below those of economically advanced countries; in most surveyed by the United Nations, a smaller proportion of government savings was recorded in 1968 than in 1962.¹ Nearly a third reported declining rates of investment, and by the end of the decade average investment rates were no higher than at the beginning. Indeed, developing countries faced a variety of serious problems: Income gaps between rich and poor widened, population grew significantly faster than in industrial nations, and import demand increased beyond export earnings. Serious balance-of-payments problems further reduced the ability of many developing nations to raise the capital needed for investment in production and social services. Foreign capital flows were sluggish, compounding debt-servicing problems.² Even in countries that did grow, expansion of GNP was largely attributable to petroleum or mineral exports, revenues from which rarely benefited lower-income groups.

Social indicators paint an even gloomier picture. Many economically lagging nations experienced periods of severe political instability, only marginally expanding their low levels of administrative capacity. Social problems became more complex during the late 1960s and early 1970s, exerting even greater pressure on inadequate political and administrative systems. Food production kept pace with local demand in less than 25 percent of the developing countries, and famine followed droughts and floods in large parts of Africa and the Indian subcontinent.

Almost everywhere the agricultural sector performed poorly, despite the transfer and adaptation of new technologies, leaving few countries with large surpluses in food supplies. A third of the countries in Asia, half of those in the Western hemisphere, and over two-thirds in Africa had rates of population growth greater than those of food production. According to the United Nations, in less than 30 percent of the 57 countries with reliable statistics did protein supplies equal recommended minimum requirements. Almost half of the nations surveyed had literacy rates below 30 percent. Unemployment, the International

Labour Office contends, became chronic and intractable. In most of the countries surveyed by the United Nations, "the industrial sector was neither large enough nor sufficiently labour intensive to absorb the share of the increment of the working age population made necessary by the slow growth of agriculture."³ Ratios of physicians and hospital beds per person dropped in a third of the developing world, as did social welfare levels generally.

Moreover, the pattern of post-World War II economic growth proved to be highly inequitable, both among countries in the global economy and among population groups and geographical regions within developing nations. The World Bank estimates that by the early 1970s only a few developing nations had achieved significant increases in GNP. Surveying 187 countries in 1974, the Bank found that nearly half had per capita GNPs below \$500 a year and that only 19 reported levels above \$5,000.⁴ The majority of countries with per capita GNP of less than \$300 also had national growth rates of less than 5 percent a year during the 1960s.⁵ In addition, there remained a group of about 30 desperately poor countries with intransigent social and economic problems, containing a substantial portion of the world's population, that were by-passed by any appreciable measure of economic and social progress. These nations, it was discovered, share common characteristics that keep their populations in dire poverty: Most are landlocked, relatively isolated, and possess few exploitable resources. They have low levels of productivity, poor records of saving and investment, and inadequate physical infrastructure to sustain productive activities. Their exports are small and concentrated in one or a few primary products. They have high population growth rates primitive health and educational systems, and severe deficiencies in other public services required to meet basic human needs. Inefficient land-tenure arrangements, scarce credit and capital, few skilled workers, disorganized and fragmented internal markets, and weak government structures further reinforced their conditions of poverty.⁶

These global inequalities in wealth are aggravated by severe income inequalities within developing nations. Only a few developing countries with socialist systems committed to reducing income disparities or with mixed economies that had stable rates of growth escaped the widening gaps in income distribution. In 35 of the 43 developing nations examined by Adelman and Morris, less than 20 percent of the population received 50 percent or more of the income. Concentrations rose as high as 80 or 90 percent in some societies. In most of those countries, the poorest 40 percent of the population receive less than 20 percent of income, and in some, only 10 to 15 percent of income went to the poorest half of the population.⁷

But the new directions in development policy were shaped more strongly, perhaps, by the growing realization that gaps in income, wealth, and productive opportunities are widening rather than diminishing and that even those nations experiencing strong economic growth have large concentrations of rural poor that remain relatively untouched by, or entirely excluded from, the benefits of development.

The World Bank estimates that nearly 85 percent, or more than 750 million, of the people in developing nations live in relative poverty, earning less than \$150 a year; 40 percent survive in absolute poverty on annual per capita incomes of less than \$50. The overwhelming majority of these people live in rural areas of Asia—principally in Indonesia, Bangladesh, Pakistan, and India—the Sahelian states of Africa, and scattered throughout Latin America.⁸ The U.S. Agency for International Development (USAID), using both social and economic benchmarks—per capita incomes, daily nutritional intake, life expectancy, birth and infant mortality rates—calculates that 800 million people live in poverty within the nations it assists.⁹

Changes in policy emerged, moreover, from the discovery that macroeconomic growth did little to improve the lives of those excluded from, or on the margins of, the productive economy. Most studies of economic progress, relying heavily on aggregate data, overlooked the worsening conditions of the urban and rural poor. The paucity and unreliability of statistical data about the subsistence sector, the unconcern of capital-intensive industrialization strategists with small-scale agricultural and urban informal sectors; and the fact that many of the poor do not participate in monetary exchange transactions, all account for the persistent failure to analyze the magnitude and seriousness of poverty in developing nations.

Long years of inattention from national governments and the seeming intransigence of rural problems combined to make progress in assisting the "poor majority" in developing countries extremely slow. In most of the Third World the poorest groups inhabit ecologically hostile environments—marginal and infertile areas subjected to recurrent natural hazards such as droughts, floods, typhoons, and insect plagues—reinforced by man-made hazards of accelerating environmental destruction, that are incapable of yielding large agricultural surpluses under existing conditions. These include the arid and semiarid uplands and basins of Iran; most of the Himalayan chain from Afghanistan to Burma; vast drought-prone tracts in India; the swampy coastal lowlands of Indonesia and East Malaysia; the Dry Zone of Sri Lanka; and the Philippine uplands. Nor have the dry savannas of Central Tanzania, Northern Kenya, and the Sahelian belt of West and Central Africa or the fragile ecosystems of the humid tropical belt been

hospitable to increased production. Use of existing technologies creates huge differentials in agricultural potential between better-endowed regions and marginal zones within the same country. When farmers in marginal zones attempt to compete in the same markets with those from better-endowed regions, they invariably become more impoverished and eventually are squeezed out of the productive process altogether.¹⁰

Massive pockets of poverty also appear in regions where competition for resources, particularly land, is intense. "Access to land is the primary axis of rural differentiation in any society," Elliott notes, "and supremely in those countries where man-land ratios are high in relation to the carrying capacity of the land."¹¹ Notwithstanding cultural differences in the symbolic and psychological value attached to land, its ownership or control is a key factor in economic success and social status in rural areas in much of the world. Rural dualism, adversely affecting vast numbers of the rural poor, is common in plantation economies of Latin America, Southeast Asia, and West Africa. The imposition of large-scale, high-productivity, export-oriented plantations on peasant agricultural systems during colonial periods led to the breakdown of traditional farming. Population growth, technological change, and ethnic discrimination often trapped farmers in a set of exploitative relationships with landowners. Where man-land ratios are high, the weakest and poorest are deprived of access to resources and invariably end up working as landless laborers at wages well below even those paid to plantation workers. In Malaysia, for example, workers on rubber smallholdings earn only 30 to 50 percent of the salaries paid to those employed in the same work on large estates.

But poverty is nowhere so stark and the rewards of labor so meager as among migrant agricultural laborers and their families. Large-scale migration within rural areas and to the cities is characteristic of nearly all developing countries, particularly where pressure on land is critical and employment opportunities are poor. Labor migration drains rural areas of their potentially most productive workers who leave behind the old, infirm, women, and children to lives of worsening impoverishment. Under the best of circumstances, where kinship bonds are strong, land is good, and remittances from the migrants are regular, families without men are vulnerable to natural disaster and human exploitation. Moreover, migrant workers tend to "make less use of what social capital is available in rural areas. Poorly housed, fed at the whim of their employers, and continually on the move . . . , they lack the incentive, time or energy to exploit the social infrastructure." As Elliott dramatically points out, "they have no contract of employment, no formal channels for settling disputes, no insurance against sickness or injury, no minimum wage, and no redress against an unjust employer. Separated

from kin and living on a precarious and insecure income, they are the least enviable of men."¹²

The rural poor who migrate to the cities in large numbers are often the most productive people, for they are nearly always above average in educational attainment, skill, and motivation. They further drain the rural areas of productive capacity, yet their rewards in the cities, while generally better than they could hope for in their rural villages, usually only sustain life. As Perlman notes in her study of the slums of Rio de Janeiro, "many who want jobs cannot find them. Those who do, get the least desirable jobs, with the least security, the fewest workers' compensation benefits and the lowest pay."¹³ The migrant slum dwellers are often exploited again in their urban neighborhoods where store owners inflate prices, water and electricity rates are up to ten times above normal, and slum landlordism spreads quickly.

Reacting to the slow progress or outright failure of previous strategies, in the late 1960s international assistance agencies and developing countries began searching for new ways to accelerate development. The goal of development plans and aid programs shifted from rapid industrialization to more balanced economic growth with social equity. The new concern was not only with accelerating growth but also with spreading the benefits of development to more people, especially those living in "absolute poverty." And since most who survive at or near subsistence levels live in rural areas or on urban fringes, the spatial focus of development also shifted. The new policies seek to extend services and facilities needed to increase rural incomes, provide employment opportunities, increase agricultural productivity, and meet basic human needs to the places where the poor live.

The shift in emphasis was reinforced by a variety of changing social, political, and economic conditions. By the early 1970s industrial and agricultural economies became more interdependent in a global economy, and underdeveloped nations were no longer content to play a subservient role in trade relationships. Within developing nations leaders could no longer easily maintain stability with the support of only a small urban elite; disparities in regional, social, and economic progress created tensions that tore at the fabric of national unity. Uncontrolled population increases in rural areas wiped out small gains in urban industrial productivity, and environmental and ecological constraints limited continued concentration of investment in a few large cities.

Nevertheless, cities remain centers of modernization and progress in most developing nations, and they will continue to provide opportunities for economic and social advancement, as well as the trappings of a better life. Indeed, urbanization is a concomitant of modernization and social transformation. Economic development measured by per capita

GNP is highly correlated with urbanization. The World Bank reports that those nations with per capita GNP of less than \$100 in 1968 had median urban populations of only 13 percent in 1970 and that none of these countries had more than 24 percent of their populations living in urban areas. Nations with per capita GNP of from \$200 to \$500 had median urban populations of 38 percent; those with \$500 to \$1,000 per capita GNPs were 55 percent urbanized; and those with the highest levels of GNP per capita had median urban populations of 75 percent.¹⁴ And within nearly every developing nation, income levels and general standards of living tend to be higher in cities than in rural areas. The concentration of the best social services, facilities, and productive activities in the urban centers holds out hope for greater economic opportunities to rural people in search of a better life for themselves or their children and is a major factor in the high rates of rural-to-urban migration in the Third World.

Thus, development theorists and practitioners turned to policies that, if they do not promote more widespread urban growth, would at least extend urban services, facilities, and amenities to more isolated and disadvantaged rural areas. But most importantly, the new development policy would shift investments away from the largest cities to smaller urban places and rural hinterlands, without undermining existing metropolitan economies, thereby seeking to create a spatial system that can generate and sustain more balanced development. But the fundamental issue implicit in the new development policies remains unresolved: How to reallocate resources to create an articulated network of development centers in rural areas that are integrated into a national system of production and exchange and that can provide access to productive resources, economic opportunities, and social services and facilities to a majority of the population.

THE SEARCH FOR ALTERNATIVE STRATEGIES

Both developing nations and aid agencies now express strong discontent with theories presuming that development can be accelerated by concentrating investment in the largest cities and that rural poverty will be ameliorated by the "trickle down" of benefits from urban industrial growth. The new development strategies focus on more equitable distribution of wealth rather than on merely increasing GNP. Many developing nations have adopted the growth-with-equity goals, but neither they nor assistance organizations have successfully implemented them. Indeed, the new policies were formulated with neither a clear conception of the problem nor a thorough understanding of its magnitude and

complexity, without detailed procedures for making strategy operational or the commitment of those whose support would make it successful. The scope of the new directions in development policy, the complexity of the problem, and the variety of attempts to cope with it can best be described through specific illustrations drawn from selected plans of developing nations, ranging in diversity from Nepal to Brazil and from the policies of major international assistance agencies.

Spatial Planning in Developing Countries

Nepal and Brazil are, in a sense, at opposite ends of the development spectrum. Yet each reflects the increasingly complex social, economic, and spatial problems facing most developing countries. Nepal, with a per capita gross domestic product of less than \$70, is one of the world's poorest countries. The landlocked, mountainous kingdom, plagued with poor soils and severe environmental damage, and with much of its terrain inaccessible, survives on subsistence agriculture that accounts for more than 65 percent of national income and absorbs 90 percent of the labor force. More than three-fourths of Nepal's 12 million people are illiterate, nearly 40 percent of its population is less than 15 years old, and life expectancy is less than 35 years. Only about 3 percent of its widely scattered population is urbanized. During the late 1960s and early 1970s the economic growth rate hovered at a nearly stagnant 2.5 percent a year. Nonagricultural sectors of the economy, composed almost entirely of crafts, cottage, and small-scale processing industries, failed to develop, in part because of inadequate infrastructure, poor communications, and limited markets. Those people not engaged in agriculture or in seminal industries work in administrative and service jobs in the national capital, and each year many unemployed Nepalis migrate to India in search of work as farm laborers or to join other migrants in already overcrowded cities.

Nepal, like other traditional economies, must devote much of its internal resources and external assistance to building basic productive capacity or to maintaining existing capacity at subsistence levels. Natural resources are marginal, and much of the potentially productive land remains unused. Lack of an agricultural surplus prevents the accumulation of investment capital, and exports are limited. Traditional technologies and customs pass unchanged among generations. Agriculture absorbs the work of the entire family, with draft animals supplementing manual labor. The ability of the government to collect taxes is limited, and mass communications are only slowly reaching beyond the capital city.

Because of its low productive and administrative capacity, change is slow and its effects are marginal, emanating almost entirely from external sources, through foreign technical advisers, a small cadre of Nepalis educated abroad, and trade contacts with India. Change rarely occurs without the support of the king and his closest advisers or without the blessing of traditional elites who hold positions of political and administrative authority. Dependent on foreign aid for more than 60 percent of its development expenditures, even external assistance has limited impact, since the country's absorptive capacity—reflected in the lack of trained manpower, poor physical infrastructure, and inadequate administrative capability—is minimal.¹⁵

Brazil, in contrast, is a dynamic and rapidly growing country where the pace of economic progress, accelerated in the mid-1960s, has been sustained for a decade. Between 1966 and 1969 expansion of infrastructure averaged over 9 percent a year, as did the growth of mining and processing industries. Construction grew at 11 percent and services by nearly 8 percent annually. Until the early 1970s, national growth rates consistently averaged more than 9 percent a year. Even more impressive is performance in the external sector, with increases of nearly 40 percent in exports and 30 percent in imports. Nearly every major component of the national economy—agriculture, manufacturing, construction, basic services, commerce, and finance—has grown at substantial rates.¹⁶ As with other countries in transition from “underdeveloped” to modern, Brazil has created the capacity to sustain economic growth by expanding and maintaining a complex and diversified production system. Expanding industrial output of the modern metropolitan areas of São Paulo and Rio de Janeiro provides urban Brazilians with higher incomes, steadily increasing investment opportunities, diversification and expansion of social and economic activities, and new institutions to organize and coordinate productive and social functions.

But despite their vast differences, Nepal and Brazil share a fundamental problem: Both countries face overwhelming obstacles to planning and controlling the spatial pattern of growth. Their national plans call for development that promotes social equity, expands employment, increases agricultural production, reduces regional income disparities, and provides educational, health, and social services to all segments of the population. Both give high priority to integrating diverse regions and experimenting with development schemes designed to link urban and rural places. Both, in short, are searching for ways to generate and spread social and economic progress throughout the country through a system of integrated spatial development.

The problems of Nepal and Brazil are vastly different, as are their basic development strategies. The spatial problem in Brazil arises from

intensive investment in the modern, sprawling south-central metropolitan regions around São Paulo, Rio de Janeiro, and Belo Horizonte, whereas the vast Northeast and Amazon regions have long rivaled rural Nepal in isolation and poverty. Brazilians, comparing their economic center with the country's other regions, refer to São Paulo as "an engine pulling twelve empty boxcars." Social and economic disparities between urban centers and the rural areas create an underlying tension that has sporadically erupted into serious political problems.

Brazil's first national development plan, for 1972-74, not only recognized the adversities of growth concentrated in a single metropolis but also proposed a massive strategy for spreading development to lagging regions. A primary component of the plan was "implementation of a regional strategy aimed at bringing about national integration." The government sought to create "one of the largest regional development programs in the world," by transferring nearly \$800 million in federal funds to the Northeast and Amazonia. Brazil's allocation for regional development exceeds the total net financial assistance provided to all of Latin America by international financial institutions at the end of the 1960s.¹⁷ Although noting the strategic benefits to national development of industrialization and urban modernization, the plan also describes the constraints of highly concentrated growth: "By virtue of the income level already achieved, the Center-South region will face in the seventies the typical problems of modern society," the plan declares, "explosive growth of urban agglomerates, such as 'Grande São Paulo' and 'Grande Rio' having each a population already in the order of 8 million people, which is comparable to that of the largest human concentrations in developed areas; pollution already critical in innumerable urban centers; technological revolution, with its effects on economic and social activity. . . ."¹⁸

The multifaceted strategy proposed in Brazil includes constructing a network of roads and transcontinental highways, promoting industrial investment in smaller cities and towns, establishing land reform, agricultural assistance, and rural development programs, extending education, health, and social services to rural areas, and selecting regional growth poles for intensive public and private investment.

The problem in Nepal is not so much one of deconcentrating urban growth as of creating a spatially integrated system that promotes development. The country's fourth national development plan, for 1970-75, sought to maximize production in agriculture and small-scale industries, build physical infrastructure, and expand the numbers of skilled laborers and trained administrators. At the same time, the government is concerned with generating development that "strikes at the very root of poverty," creates a society in which all share in the benefits of growth, and is dedicated to "broadening the base of social justice."

Nepali planners see more balanced spatial development as the key to achieving those objectives. "Any development strategy for stimulating growth should take full cognizance of the spatial dimension," they declare. "Development is highly competitive in its location policies and calls for a conscious regional strategy that promotes redistribution of resources while maximizing economic growth and national welfare."¹⁹ Thus, national development policy, set in a regional framework, attempts to disaggregate national plans and sectoral investment programs and to integrate development activities at the local level. Nepal uses regional planning as a link between micro-analysis of local needs and macro-analysis of national development requirements.

Nepal's development policy also addresses regional disparities in land productivity, natural resource endowments, industrial growth, transportation facilities, and social services, by formulating individual strategies for rural regions and the primate city of Kathmandu. The spatial framework is used to allocate investments and resources and to locate development projects. Project location is given particular emphasis, for "the elimination of imbalances between various projects depends largely on the scheduling and implementation of independent projects within a geographical location." The plan explains that the "lack of locational considerations in coordinating sectoral activities in Nepal's past planning efforts is exemplified by the numerous instances of overcapacity and underutilization of projects, e.g., overburdened canals, underused hydropower, roads with minimum vehicular traffic, and intensive projects without a road link."²⁰ Regional planning identifies complementarities among projects and geographically coordinates sectoral programs. Spatial considerations pervade development plans and policies in these two countries and provide a context for achieving social and economic objectives.

Other developing nations face essentially the same problems. India's latest plan explicitly recognizes that aggregate economic growth, concentrated largely within urban centers, has not filtered down to the majority of either the urban or rural poor and asserts that "growthmanship which results in undivided attention to the maximization of GNP can be dangerous. Elimination of abject poverty will not be attained as a corollary to a certain acceleration in the growth of the economy alone."²¹ Development plans of the Philippines, Thailand, El Salvador, and Kenya, to cite just a few, offer similar objectives and strategies. The development policy of the Philippines argues that "no longer is maximum economic growth the singular apex of goals . . . equally desired are maximum employment, promotion of social development and more equitable distribution of income and wealth." Rural modernization will receive priority equal to urban industrialization. These objectives for development in the 1980s are expressed in specific sectoral targets and

translated into spatial strategies. "In view of the glaring growth imbalances among regions, more emphasis will be given to regional development and industrialization," the national plan for 1974–77 proclaims. "Thus in addition to the correction of policies which artificially favor a few select areas, the integrated approach to regional development will be utilized."²² Physical, economic, social, administrative, and financial aspects of development are combined into common plans for specific regions and communities.

Thailand's Third Economic and Social Development Plan, for 1971–76, expressed a similar desire to balance development, restructure the economic system, and reduce income inequalities. High priority is given to developing disadvantaged and economically lagging rural regions, linking them to Bangkok, diversifying their economic bases by inducing agricultural and mineral processing industries to locate in outlying areas, and strengthening interregional trade. The strategy also seeks to integrate rural and urban development within each region by coordinating agricultural and industrial production, synchronizing location decisions, concentrating public investments in smaller towns and cities, and investing in rural infrastructure, housing, educational, and social services.²³

In the Economic and Social Development Plan of El Salvador, spatial development is considered an essential component of national strategy, the goal being to reduce overcrowding in the national capital and to disperse population, community services, and productive activities to other urban centers. The plan calls for gradual improvements in intercity transportation systems, sanitation and utility services in rural communities, and administrative capabilities in small municipalities.²⁴ Spatially balanced development is also a principal objective of Kenya's policy. "The Government believes that balanced economic development can be achieved," the Kenyan plan argues, "that the necessary growth of employment opportunities can be generated and that the people as a whole can participate in the development process."²⁵ The government proposes to create a system of urban and rural development centers, selecting cities and towns for intensive growth, creating a network of smaller towns and villages as rural service centers, and establishing among them road, rail, air, energy, and communication networks.

Experiments with Balanced Economic and Spatial Development

Limited success with balanced growth experiments in some socialist countries such as Tanzania and the People's Republic of China also stimulated the interest of developing nations with mixed economies.

Reversing Western priorities, Mao's government in China gave greater attention to increasing the productivity of agriculture and light industry in rural areas as a base for building demand and mobilizing savings for investment in heavy industry in cities, arguing that agriculture and rural development enlarge the internal market for industrial goods and decrease the nation's dependence on exports and foreign trade. The strategy, based on intersectoral and interregional balance of investment, sought to reduce income inequalities between urban workers and professionals and the rural peasantry by restructuring wage rates, mobilizing rural resources to create agriculturally linked small industries, decentralizing regional planning and decision making, disseminating technology to the countryside, and providing everyone with basic health, educational, and social services as a means of increasing and equalizing real income as well as of expanding individual productivity. By establishing a "consumption floor," a standard of living below which no one was allowed to fall, China has been able to satisfy basic human needs and to eliminate abject poverty.

Regional balance was crucial to Maoist strategy. As one observer notes,

Mao's analysis of interregional balance is similar to that of intersectoral balance. In order to develop industry in poorer regions (and forestall emergence of a dual economy) it would be necessary not only to invest in the former, but also to continue investing in richer regions which could produce larger surpluses, of which part could be used for further development in less advanced areas.²⁶

Tanzania also arrested growing inequalities by investing heavily in productive activities and social services and facilities in *ujamaa* villages. "There is a clear geographic and income group correlation between [reduction] of poverty and *ujamaa* village membership," Green observes. By providing capital and services, technical training and farm management assistance, Tanzania is attempting to achieve "both immediate increases in living standards and medium term increases in productive capacity. The rapid growth of villages and the relatively low rate of members leaving suggest that the former goal is being attained."²⁷

Algeria has had initial success in slowing the rate of rural-to-urban migration, expanding agricultural productivity and increasing rural people's access to services and facilities heretofore only found in large cities by creating rural "socialist villages." A package program for stimulating rural development seeks to redistribute farm land to peasants, regroup them into villages in which new homes are constructed and given to those who join the village cooperative, and provide them with electricity, water, medical care, elementary schools, and other amenities. Farmers are guaranteed a minimum yearly wage of \$750, plus a share of the cooperative's profits. Initial success in meeting basic human needs and increasing agricultural productivity in the less than 100 villages thus

far constructed and the large waiting list of families eager to join have led to plans for constructing 1,000 such rural centers in the future.²⁸

THE EMERGING ROLE OF SPATIAL PLANNING IN DEVELOPMENT POLICY

As governments of developing nations began to realize the crucial role of spatial planning in resource allocation, they were also confronted with the enormous complexity of implementing the new development strategies. Theories and principles of spatial planning have often been elusive, abstract, and inconclusive. As in other fields of development administration, many prescriptions for spatial planning were derived from the experience of Western industrialized countries. Some prescriptions were simply not transferable, and others had to be carefully adapted to unique local needs and constraints. As with other development activities, spatial planning has also been the subject of fads and short-lived experiments. Growth pole strategy, for instance, eagerly accepted a decade ago as a generator of accelerated development, was tried and found wanting. National and regional development plans based on creation of growth poles are now either loudly repudiated or quietly revised in Latin America and Asia.²⁹ Indeed, dissatisfaction with traditional theories of spatial development, based on the Western concept of center-periphery relationships, has set in motion the search for alternative strategies.

Traditional Spatial Development Models

Theorists, in the past, drew on Western experience as a model for generating growth in developing nations. They saw primate cities as "‘beach heads’, centres of modernization which act as catalysts for economic growth, the centres from which the benefits of modernization flow outwards to revitalize the stagnating agricultural sector."³⁰ The belief that concentrated industrial investment in major urban centers creates a "ripple effect" of growth throughout a nation is reflected in the major models that have governed development thinking.³¹ Equilibrium models, extensions of classical location theory, assumed that economic processes would guide a nation automatically toward optimal growth. Spatial inequalities would be corrected through the untrammelled flow of production factors; and, without government intervention, disparities between urban centers and rural peripheries would eventually even out as economic development spread "naturally" from the center to the

hinterlands. Self-reinforcing center models asserted that “disequilibrium is built into transitional societies from the start”³² and that the primate city acts as a self-reinforcing magnet of progress. Unlike the equilibrium models, this paradigm recognized that deviation-amplifying forces increase and solidify center-periphery differences and may, in fact, promote greater inequalities. Myrdal argued that during early stages of development, forces of circular and cumulative causation increase the gaps between central investment points and other areas. In a free economy, growth at favored locations elicits “backwash effects”—labor, capital, materials, and entrepreneurial talent move from the periphery to the center—draining rural areas of resources. Development of peripheries can be permanently retarded unless spread effects exceed backwash effects.³³ Unbalanced development models also stressed natural polarization during initial stages of growth. Hirschman argued for massive investments in central locations, recognizing that such a policy would accentuate center-periphery differences. He contended, however, that after a certain point “trickle-down” or spread effects would take over, and through mutually reinforcing sets of backward and forward linkages growth impulses would spread slowly over the periphery, gradually extending benefits to poorer groups as the economy matured.³⁴

But contrary to classical *laissez-faire* economics and growth pole theories, little sustained development occurred in the rural areas of most developing nations. Indeed, the failure can be attributed largely to the lack of adequate spatial structure for promoting and spreading development. Western theories could not be applied because the spatial patterns of most developing countries are substantially different from those in North America and Europe. The overwhelming influence of primate cities in the Third World attracted important change-inducing activities to single locations, creating dual economies wherein a small island of modernization emerged from a sea of poverty. Impulses from the center did not trickle down to the periphery; but, as Berry notes, “growth and stagnation polarize; the economic system remains unarticulated.”³⁵

It is not difficult to understand the spatial patterns of developing nations and why one primate city or a few dominant centers continue to be the most desirable location for investment. Location decisions in most developing countries were tightly constrained. In some cases, colonial policy established developing nations as raw material exporters to serve industrial nations, which made an *entrepôt*, usually a major port, the only efficient location for infrastructure and services. Elsewhere, political influences shaped the pattern of spatial development, and the administrative capital became the center of social, economic, and cultural

activities and received highest priority for investment in public services and facilities. But, regardless of initial pressures, once investment was concentrated in a single location, an inevitable and irreversible chain of events reinforced continued concentration. Lower transportation costs from proximity to complementary activities, economies of scale and agglomeration, and migration of society's most talented people to the city, all created multiplier effects that provided one place with a competitive advantage over all others and attracted even larger numbers of rural people in search of economic opportunities. Resource scarcities, moreover, made creation of multiple centers difficult. The emphasis on foreign trade curtailed development of a domestic system of distribution and exchange, obviating the need for a geographically dispersed transportation system.

Advantages of initial concentration quickly increased the primate city's competitive advantages. Additional physical infrastructure, accumulation of administrative and political power, and a stronger economic base, all made it a magnet for industry, services, and social and cultural activities. Initial location decisions molded the spatial system, shaping and structuring¹¹ human interaction in space—in the development of transport and communications networks, in the growth of urban and administrative systems, [and] in the territorial distribution of political authority."³⁶

It was this skewed pattern of spatial development that constrained growth and inhibited its spread in developing nations. Johnson argues that the Third World lacks the very spatial system that provided the base for Western progress, in which "the varied hierarchy of central places has not only made possible an almost complete commercialization of agriculture but facilitated a wide spatial diffusion of light manufacturing, processing and service industries . . . [and provided] employment of a differentiated variety."³⁷ The dominance of the primate city and the absence of an articulated hierarchy of central places seriously obstructed balanced and widespread development in the Third World. Without accessible markets, farmers lacked incentives to increase output, to modernize their technology, or to adapt products to consumer demand, contributing to rural unemployment and to what Johnson calls a "wanton dissipation of ability and talent." Without competitive markets, only marginal amounts of produce are sold from near-subsistence farms; and village traders easily exploit farmers who must sell their produce immediately after harvest at depressed prices. Consequently, farm income is perpetually limited, as are savings and investment, constraining farmers from obtaining technical inputs needed to increase production. Without a national system of production and exchange, this vicious cycle of rural poverty cannot easily be broken.

The principal means of attaining the goals of the new strategy, it was suggested earlier, is through integrated spatial development. Large cities, as the plans of Nepal and Brazil both recognize, play crucial roles in generating growth, change, and modernization. Indeed, urban growth is essential to development, for as Lampard notes, "specialization of functions makes inevitable for specialization of areas: it promotes a territorial division of labor between town and country and differentiates town from town." Urbanization, he contends, "is simply the concentration of differentiated but functionally integrated specialisms in rational locales. The modern city is a mode of social organization which furthers efficiency in economic activity."³⁸

Centralization Versus Decentralization

As spatial planning emerges as a central issue in development policy, however, it is likely to regenerate the long-standing debate regarding the most efficient form of urbanization. Development theorists have argued for more than a quarter of a century over whether primate cities are "catalysts or cancers." One advocate of concentrated investment contends that primate cities are the most important centers of cultural change, especially in fields vital to economic development: education, business organization, public administration, and technological innovation. Hoselitz argues that "if economic development is associated with modernization, the mediation of new, 'more modern' forms of social action through the primate cities" is indispensable.³⁹

Although primate cities inevitably play a dominant role in the progress of most developing nations, they also produce visible and severe adversities. They allegedly draw unskilled and uneducated migrants from the rural areas to live in overcrowded slums and squatter settlements. There, unemployed, without adequate housing, income, medical care, or education and straining already overextended urban social services and facilities, the migrants become burdens on society. Rural-to-urban migration breaks up families, destroys traditional cultural ties, and adds to crime and deviance; overcrowding in the primate city leads to physical deterioration, traffic congestion, the spread of disease, and the proliferation of slums. Growth of the primate city occurs at a rate so fast that most developing nations cannot cope with it. "What needs emphasis," one analysis notes, "is the fact that the growth of the urban population in the underdeveloped world appears to be occurring at a much faster rate than the growth of urban population in their comparable period of European growth."⁴⁰ The costs of maintaining the metropolis absorb social resources and economic surpluses, thereby in-

hibiting growth in other areas of the country. The adversities of metropolitan growth on the spread of development in emerging nations generate political backlash. Many countries have enacted laws controlling or restricting the size of primate cities, and national development plans now give priority to projects and large-scale social programs located outside of principal urban centers.

Balancing Urbanization for Equitable Growth

Despite extensive and legitimate criticisms of Third World metropolises, however, negative attributes of urbanization are often overstated. Rural-to-urban migration, one of the most frequently mentioned evils of city growth, is not in itself necessarily bad; in fact, it can be a positive indicator of healthy economic change. As agricultural production increases and becomes more efficient, larger harvests can be produced with less labor. Excess agricultural workers then move to towns and cities in search of other employment. And as an economy grows, the "push" from rural areas is supplemented by the "pull" of cities. Although migration may reflect dissatisfaction with life in agricultural areas, cities also draw the more ambitious and talented people to fill expanding opportunities. A certain amount of rural-to-urban migration is inevitable in a diversifying economy.

Nor is migration always the major cause of urban population growth in developing nations. "Thinking of sprawling and spreading districts of squatters in cities throughout the underdeveloped world, one automatically attributes the ballooning of these cities to a mass influx of people from the countryside," notes demographer Kingsley Davis. "[But] it is clear that close to half the growth in the urban population of the underdeveloped countries is due to overall population growth, not to migration."⁴¹ Indeed, Davis notes that the proportion of total population of underdeveloped countries concentrated in cities is only one-third that of the developed countries. Although the rate of change in the urban proportion of underdeveloped countries almost doubled that of advanced nations between 1950 and 1970, the percentage gain in city populations over the two decades is only a little more than half that of modern societies. During the same period, rural population growth in developing nations far exceeded the increase in urban population.

The problem is not, as some theorists contend, that developing countries are overurbanized. Rather, it can be argued that developing countries are not urbanized enough, that problems arise not from the size of urban populations, or even the pace of city growth, but rather, from the spatial pattern of development. The overconcentration of

people and investments in a single primate city or a few metropolitan areas limits development potential and constrains the spread of its benefits to rural areas. A pattern of spatial development is needed that deconcentrates urbanization and promotes a system of cities and towns, integrating rural and urban areas to achieve a more balanced and mutually reinforcing network of development centers. As Johnson argues, "the underdeveloped countries cannot create tolerably satisfactory market economies without a spatially dispersed hierarchy of rural growth centers, market towns, small cities, and other central places that collectively can counterbalance the pull of their voracious metropolitan centers."⁴²

Similarly, the pattern of migration rather than its volume burdens developing nations. Without a system of intermediate and small-size cities reasonably dispersed, rural migrants have nowhere to flock to but the already overcrowded primate city. The inability of the primate city to absorb large numbers of unskilled labor creates many of the physical, social, and economic problems associated with Third World capitals. The existence of a system of cities of various sizes would allow migrants to move progressively from smaller towns to intermediate cities, which might in fact permanently absorb a large percentage of rural migrants.

Development strategies proposed by nations as diverse as Nepal and Brazil seek such a balanced spatial system. A hierarchy of cities and towns functionally linked with agricultural production areas provides a decentralized network of development centers that can increase access of large segments of the population to economic, social, and political opportunities as well as to urban services and facilities. Urban functions and services can thus complement the wide range of technical inputs required to commercialize agriculture and increase rural productivity.

Locating Urban Services and Facilities

Location of social and economic activities in rural centers lies at the core of development strategy. Many studies confirm the close relationship between location of industry, commerce, and public facilities and the distribution and concentration of population. The pattern of population distribution—the spatial arrangement of human settlement—in turn has a pervasive influence on a nation's social, economic, and political organization.⁴³ It defines to some degree the problems a society faces in attempting to guide the pace and direction of progress and largely determines the opportunities for and constraints on future development. The location of public services, physical facilities, and productive activities in rural centers can impress on developing nations a spatial

structure that influences not only the rate and distribution of national growth but also the quality of life in local communities and individual access to opportunities.

The location of public services and facilities and private investment shapes development in a number of ways. Even within relatively small and homogeneous countries, regions differ in their suitability for, and attractiveness as, locations for investment, and thus in their ability to compete for national resources. Future locational advantages depend in part on past decisions—on the quantity and quality of facilities available for production and on the existence of public infrastructure and services that attract and support private investment. Although suitable natural resources—land, water, and mineral endowments—must be available, man-made facilities are crucial. The existence of a transport network, of rail, air, water, and highway linkages, for instance, determines the cost of moving raw materials from supply sources to points of production and finished goods to distributors and final markets. Public investment in water supply, waste disposal, and energy helps determine the productivity of the labor force and of economic enterprises. Social services can contribute to the quality of human resources and to general standards of living in a community.⁴⁴

Location of investment not only affects the potential of individual communities for future development but also shapes a nation's entire spatial system. Locating services and facilities in central places of various sizes can have important impacts on the pattern of production and exchange; the concentration of economic and social activities in market towns, small cities, intermediate urban centers, and metropolitan areas can create economies of scale and spillover benefits for surrounding areas. Urban centers organize the economy of their hinterlands through supply, market, and administrative systems, attract creative and innovative personalities, and draw entrepreneurs with values, attitudes, and behavior patterns that create an environment favorable to further innovation.⁴⁵ Returns on previous investments provide a substantial portion of the capital available for future development, and this accumulated stock of assets creates not only comparative locational advantages for communities but also opportunities for future growth through "inducement effects." Investment in public infrastructure lowers production costs and attracts new economic activities, which, in turn, increase pressure to extend social services and facilities, thus creating a continuing cycle of expansion and growth. Moreover, "complementary effects" from the proximate location of related economic activities and public facilities create new markets for raw materials and semifinished goods and external economies for other producers. Through backward and forward linkages, opportunities for yet more investment lead to higher levels of development.

National development plans generally specify the location of individual projects, but only recently have governments and international assistance agencies become more directly concerned with spatial relationships among investments and their combined impact on the rate and direction of development. In developing nations, the proper location of services and facilities is particularly important, for with scarce resources, limited administrative capability, and increasingly urgent needs to expand food production and manufacturing, projects must be assessed not only by their efficiency and feasibility but also by their "multiplier effects."

Distribution of services and facilities is crucial not only for promoting economic growth but also in creating social equity and in improving the quality of life. Disparities in economic and social well-being are often measured by the number and diversity of productive and social activities located within a community or region. The growing gap between the richest and poorest groups in developing nations is largely attributable to inequitable access to productive activities and social services. In a recent policy paper on rural development, the World Bank argues that any strategy for dealing with poverty in the Third World, to be effective, must recognize that "the need for special intervention to raise rural production and income applies also to the provision of social and other services, such as health and education. . . . Compared with urban areas, rural areas have a smaller share of economic infrastructure services such as domestic water, electricity and waste disposal." And even in areas where services do exist, the Bank observes, "the poor often do not have access to them because organization is inadequate and the cost is high. A special effort is needed to provide appropriate social and economic infrastructure for the rural poor, and it is important to integrate these components into rural development projects."¹⁶

EMERGING TRENDS IN INTERNATIONAL ASSISTANCE POLICY

Among international assistance agencies, integrated urban-rural development is increasingly seen as a way of ameliorating some of the most intransigent problems of global concern. Both development theorists and aid officials have called attention in the past few years to the crucial role of spatial planning in increasing food production, relieving energy scarcities, and promoting employment and social welfare. The Pearson Commission, for example, clearly recognized that "planning strategy in developing countries must emphasize the growth of small and intermediate regional centers, to offer market, service and storage facilities, and light labor-intensive industries processing local

materials. The construction of such new centers could offer a considerable measure of employment for unskilled labor."⁴⁷

In a series of Ford Foundation seminars on employment problems, government officials and development scholars emphasized the need for more balanced spatial development: "This shift in development strategy seems to be central to the widespread creation of employment opportunities and to more effective use of the limited capital available in developing countries," their report contended. "The problem, however, is not simply one of generating activity in rural areas but rather of balancing development between rural and urban sectors. The two sectors are intimately related in their economic activities and any diversion of international efforts to rural areas will require careful reassessment of urban priorities."⁴⁸

Development theorists and officials of developing countries reached these conclusions at the same time that international agencies were seeking new directions in development policy. After an intensive review of assistance programs, Owens and Shaw urged a redirection of strategy toward integrated spatial development. "A national economy requires the organization of space, the concentration of development activities in urban centers of the different sized spatial units, a system of infrastructure within and between spaces, and the integration of agricultural and industrial development," they argued. "Each level of urban center would contain the activities appropriate to its size. This would overcome the current gross imbalance between investment in the large cities and the rest of the country."⁴⁹

Since the late 1960s and early 1970s, international assistance agencies have struggled with the complex problem of accelerating development with limited financial resources. Although their current policies for alleviating poverty have common objectives—all, for instance, view rural development as the crucial factor in promoting growth with equity—each agency sees the problems from a somewhat different perspective and pursues a distinct course of action.

Three major approaches have emerged (see Table 1). A functional coordination strategy, adopted by the World Bank, seeks to increase the quality and number of facilities, services, technical inputs, and institutions that the Bank considers essential to expand agricultural productivity and raise rural income levels. Rural modernization strategy, pursued by some elements of the United Nations Development System, seeks to uplift rural areas from traditional to more modern communities, increase food production, change attitudes, and create a diversified economic base capable of promoting higher living standards. The "new directions" in development strategy, employed by the U.S. Agency for International Development, attempt to change the structure of de-

veloping nations by focusing aid on agriculture, nutrition, health, population control, education, and human resources—sectors with the greatest impact on the “poor majority”—and by creating a network of complementary urban and rural development centers, especially market towns and intermediate-size cities, to increase rural production and exchange.⁵⁰

Functional Coordination Strategy of the World Bank

In late 1973, the World Bank began to increase rapidly the proportion of its loans for agricultural and social facilities projects and the amount of financial aid given to its poorest members. This strategy sought not only to redistribute investment but also (1) to increase lending for multiple-purpose, integrated, low-cost, replicable projects designed to generate direct benefits to large numbers of the rural poor and (2) to increase the productive capacity of small-scale agriculture and industry. Based on early experience, in 1975 the Bank announced its intention of committing substantial resources to reducing rural poverty in the Third World.

The World Bank supports projects designed to distribute services and technical inputs through low-cost delivery systems, using rural organizations or cooperatives where possible as administrative units and appropriate or adaptive technology to keep costs low. The Bank recognizes that for such projects to succeed, planning must be decentralized, means must be found to increase popular participation, and more local planners and managers must be trained in technical and administrative skills. The Bank places priority on projects that can generate capital for reinvestment but also argues that supplementary social services and facilities must be coordinated with productive investments.

Although the Bank's rural sector policy papers discuss the problems of rural development in detail, its proposals for strategy implementation are less conclusive. It cites three possible approaches to dealing with problems of rural poverty: “minimum package,” comprehensive, and “sector or special program” approaches. Reluctant to prescribe a definitive strategy, the World Bank argues that “no single package or formula is likely to be either necessary or sufficient for effective rural development. On the contrary, the activity mix most likely to work is one that is tailored to fit a particular and probably unique, set of conditions and country circumstances.”

The World Bank explicitly recognizes the spatial implications for planning, noting that “when rural development programs and projects incorporating a variety of objectives and activities are contemplated,

TABLE 1

Comparative Profile of International Assistance Strategies for Integrated Rural Development

	Functional Coordination Strategy— World Bank Approach	Rural Modernization Strategy— United Nations Approach	“New Directions” Strategy—USAID Approach
Target Group	Approximately 40 percent of the population in developing nations in absolute poverty (with incomes of less than \$50 a year) or in relative poverty (with incomes below one-third of the national average). Small-scale farmers, tenants, and landless laborers.	Low-income farmers and peasants living in rural areas, outside of cities, towns, and industrial enclaves.	Those people living primarily outside of or at the lower-income end of the modernized sector. Subsistence farm families, pastoralists, landless laborers, unemployed market town laborers, small-scale nonfarm entrepreneurs and craftsmen.
Objectives of Development Strategy	<ol style="list-style-type: none"> 1. Increase agricultural output and productivity. 2. Increase employment and raise incomes of the rural poor. 3. Provide minimum acceptable levels of food, shelter, education, and health services. 4. Diversify economic bases of rural communities. 5. Reduce overall number of people living in relative and absolute poverty. 	<ol style="list-style-type: none"> 1. Transform rural regions from subsistence to commercial agricultural areas. 2. Modernize rural inhabitants and change attitudes toward development. 3. Increase per capita incomes of economically active population. 4. Ensure minimum food supplies and basic nutritional requirements. 5. Reduce outflow of population from rural to urban areas. 6. Reorient and diversify rural economies. 	<ol style="list-style-type: none"> 1. Strengthen local institutions in order to involve the poor majority in development. 2. Increase and diversify agricultural production. 3. Integrate agricultural, industrial, and commercial development. 4. Improve nutrition. 5. Localize infrastructure and increase access of poor to services and facilities. 6. Increase employment and improve income distribution. 7. Strengthen or create linkages between rural and urban centers in a regional spatial system.

**Major Assumptions
and Perceptions
of Problem**

1. Rural poverty results from low agricultural productivity and lack of economic diversification in rural areas.
2. Poor have limited access to services and technology.
3. Vested interests limit opportunities for productivity and employment expansion.
4. Slow rate of transfer of rural people out of low-productivity agriculture.
5. Benefits of production increases are inequitably distributed.
6. Land tenure, fragmentation, and sharecropping limit opportunities for increased productivity.
7. Inputs must be functionally coordinated in order to deal with variety of related problems.
8. Quality of life in rural areas can be improved through mobilization of limited land, capital, and labor resources.

1. Low productivity in agriculture due to persistence of traditional attitudes, mores, and institutional structures.
2. Small proportions of national resources are now invested in agricultural production.
3. Traditional land-tenure systems perpetuate subsistence agriculture.
4. Lack of infrastructure, appropriate technology, services, and facilities in rural areas constrain production.
5. Gap between incomes of urban and rural workers is primary cause of rural out-migration.
6. Changes in production techniques from primitive to modern can increase agricultural production and reduce income gaps.
7. Coordinated inputs of services, facilities, and infrastructure can transform traditional communities.

1. Dual goals of increased production and social equity are consistent and interrelated.
2. Increased agricultural productivity depends on increasing access of small farmers to production inputs, technology, financial resources, and markets.
3. Local institutions must be created to deliver inputs and sustain growth.
4. Equity requires employment expansion and human resource development.
5. Rural spatial systems are neither horizontally nor vertically integrated, inhibiting creation of national spatial economy.
6. Self-sustained growth requires functionally and spatially integrated production systems.

**Operational
Premises**

1. Successful rural development requires strong national government support.
2. Rural programs can be designed to reach large numbers at low cost.

1. Adverse geographical and ecological factors must be analyzed and appropriate solutions to problems tested within each rural region.

1. Investment priorities should be balanced between urban and rural areas.
2. Spatial considerations must be taken into account in allocating

(continued)

Functional Coordination Strategy— World Bank Approach	Rural Modernization Strategy— United Nations Approach	“New Directions” Strategy—USAID Approach
<ul style="list-style-type: none"> 3. Inputs must be supplied through low-cost delivery systems. 4. Rural organizations and cooperatives are essential elements of the administrative system. 5. Central control must be balanced with decentralized spatial and project planning. 	<ul style="list-style-type: none"> 2. Projects must generate economic resources for investment in directly productive enterprises and social services. 3. Agricultural technology must be transformed and new technology adopted to increase output. 	<p>infrastructure and service projects.</p> <ul style="list-style-type: none"> 3. Planning strategies should consciously seek to develop spatial components at the lower end of the national hierarchy—market towns, small and intermediate cities.
<ul style="list-style-type: none"> 6. Popular participation is required in project planning and implementation. 7. Increased training is required for local planners and managers. 8. Project costs should be recoverable to generate capital for reinvestment. 9. Appropriate and adaptive technology packages must be developed for rural areas. 10. Supplementary social services and facilities must be provided in a coordinated package. 	<ul style="list-style-type: none"> 4. Institutional and social changes must be induced in order to transform and modernize rural communities. 5. Political and administrative mechanisms must be designed specifically to implement rural programs. 6. Services, facilities, technical and administrative inputs, and infrastructure must be combined into “minimum packages.” 7. Programs must be implemented within a regional planning and development framework. 	<ul style="list-style-type: none"> 4. Programs must emphasize domestic food production and marketing. 5. Successful implementation requires development and testing of appropriate technologies. 6. Land improvement programs are preferable to land resettlement and large-scale colonization. 7. Emphasis should be placed on small-scale social services and appropriate-size infrastructure and facilities. 8. “Bottom-up” planning and local participation in rural development are essential for successful implementation.

Approaches to
Implementation

- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. No single approach recommended—functional coordination of inputs is considered essential in any strategy. 2. Experiment with: <ol style="list-style-type: none"> a. Minimum package approaches. b. Comprehensive national or area development programs. c. Sector or special programs supplementing coordinated rural development projects. 3. Bank to provide financial and technical assistance in research, project design, and implementation. | <ol style="list-style-type: none"> 1. No single approach recommended—rural transformation should be the basic objective of any integrated strategy. 2. Evaluate on-going programs in various developing countries and determine how they can best be expanded into integrated projects. 3. UN to provide technical assistance in strategy design and evaluation of successful projects for potential replicability in other countries. | <ol style="list-style-type: none"> 1. Each country must determine most appropriate approach based on internal needs and capabilities—spatial and functional components should be integrated in any strategy. 2. Programs and projects should be designed by general guidelines stated in operational premises, but tested against past experience. 3. AID to provide financial and technical assistance through country missions for program and project design and funding for components in accordance with AID Development Assistance Priorities. |
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Sources: compiled by authors from International Bank for Reconstruction and Development (IBRD), *Rural Development Sector Policy Papers*, 1975; United Nations, Economic Commission for Africa, *Integrated Approach to Rural Development in Africa*, 1971; United Nations Asian Development Institute, *An Approach to Evolving Guidelines for Rural Development* (Bangkok: United Nations Asian Development Institute, 1975); U.S. Agency for International Development, Working Group on the Rural Poor, "Working Papers," 1975.

including not only private agricultural and industrial activity, but also governmental infrastructure and social services, the locational aspects of the units of nonfarm activities require careful consideration." But the need to integrate urban services and facilities within rural projects is only mentioned as one of the many problems confronting investment planners; no substantive recommendations are made other than to observe that "increasing migration and changes in the geographical distribution of the poor and the unemployed add urgency to the need for a coordinated provision of public services in contiguous rural and urban settlements."⁵¹

Rural Modernization Strategy of the United Nations

Although the United Nations lacks an overall, unified, integrated investment strategy and each of its specialized agencies, regional commissions, and semiautonomous research institutes is usually concerned with only a specialized aspect of development, two primary trends can be discerned in UN policy. The first focuses on providing increased financial and technical assistance to the world's least developed countries. The second is the stronger emphasis given to the social aspects of financial and technical aid. UN agencies are providing greater support for integrated, multisectoral projects aimed at "the marginal people on society's fringes."⁵²

A strategy of rural modernization, the UN postulates, must deal with the multiple and interlocking forces that influence rural life.⁵³ Taking ecological and cultural conditions into account, projects must be designed to strengthen productive enterprises and social services in rural areas. The policy contends that agricultural technology must be adapted to local conditions, institutional and social changes must be induced to transform behavior, and new political and administrative mechanisms must be designed to implement rural programs. Services, facilities, and technical and administrative inputs must be combined into "minimum packages" for rural development. UN agencies recognize the complexity of rural modernization and argue that it must be carefully and systematically planned, preferably on a regional basis, but within the framework of a national strategy. Using regions as the level of programming, the UN Economic Commission for Africa (UNECA) contends, "might be regarded as a means of achieving rural-urban integration within the context of the national development process."⁵⁴

United Nations documents are vague about implementing integrated development policy, apart from suggesting specific activities commonly associated with rural development—land reform, agricultural credit, new technology, infrastructure investment, training, and small-

scale industrialization. Spatial aspects are implicit but not a central focus of proposed policies. "Rural development presupposes the recognition of a rural-urban continuum and the implication that the rural area cannot be considered in isolation but in relation to the urban counterpart," UNECA notes, "for it is in this sense that the problem of rural-urban migration, rural exodus and agricultural and industrial development can be tackled."⁵⁵

USAID's "New Directions" in Development Strategy

Changing trends in international assistance policy are most clearly reflected in USAID's mandate to concentrate technical and financial aid on sectors having the greatest impact on the poorest groups in developing countries. The Foreign Assistance Act of 1973 changed USAID's direction and goals toward programs that (1) establish a more collaborative style of assistance, by placing developing countries at the center of development efforts, (2) concentrate on the solution of a few key human problems, to which the United States could contribute significant technical competence and financial resources, (3) emphasize innovative activities rather than relying on traditional approaches, (4) focus on growing problems of income redistribution and unemployment by designing and supporting projects aimed at benefiting the largest possible number of the rural poor and (5) integrate technical, capital, and food assistance within development programs and projects.⁵⁶

Besides recognizing that traditional elements of development, such as roads, irrigation, public works, and rural electrification are necessary, USAID analysts note that they alone are not sufficient to promote rural development. Alternative employment opportunities must be provided as a complement, and human resources development programs are needed to encourage small, dispersed, labor-intensive, rural industries.⁵⁷

USAID strategy recognizes that spatial integration of investment is crucial to establishing successful rural development programs. Creating linkages between rural areas and urban centers can extend services and facilities into rural areas and expand markets for agricultural products. Major economic linkages, agency planners emphasize, are almost entirely through urban activities and institutions, making cities essential components of any rural development strategy. "The system of cities and towns in any country is a totality," the Working Group on the Rural Poor points out. "There are a number of linkages and interdependencies between the essentially rural-based centers at the lower end of the urban hierarchy and the larger cities in the urban system which ought to flow in both directions, up and down the hierarchy."⁵⁸ But the critical problem in most developing countries is that almost all linkages needed to pro-

mote and sustain agricultural growth are downward, because the lower levels of the national spatial system are neither well-developed nor properly organized. USAID strategists argue that, in most developing nations, villages are too small to support the services needed for growth and that vertical linkages must be created among rural settlements and between them and urban centers if development is to occur.⁵⁹

USAID's modus operandi is outlined succinctly by the Working Group on the Rural Poor and provides a set of guidelines for designing specific programs and projects. To achieve the objectives of integrated development policy, investment in developing nations must be balanced more equitably between urban and rural areas, and spatial factors must be taken into consideration in allocating resources for infrastructure construction and delivery of services. Planners should consciously seek to develop places at the lower end of the spatial hierarchy—market towns, rural service centers, and small and medium-size cities—in order to increase production and exchange between rural and urban areas. Projects must emphasize increased domestic food production, distribution, and marketing, both to reduce agricultural imports and to meet internal needs. Technologies introduced into rural areas should be carefully tested and appropriately adapted. Emphasis should be placed on small-scale services and facilities in rural settlements that are suitable to local needs. Land improvements are required in most developing countries and are usually preferable to large-scale colonization and resettlement schemes. Finally, USAID contends that “bottom-up” planning and local participation are essential to the success of rural development projects.

REQUIREMENTS FOR AN OPERATIONAL STRATEGY

If the plans of national governments and the strategies of international assistance agencies for economic growth with social equity are weak, the frailties are most clearly visible in their approaches to implementation. Although the guidelines and prescriptions are numerous and detailed—some based on experience and others on speculation—none of the strategies clearly maps the paths to attaining its objectives. In particular, each assistance agency admits, more or less explicitly, that the new strategies are complex social experiments and that even the most strongly stated assumptions and premises are only hypotheses, the validity and feasibility of which remain untested. Basic theoretical and operational problems, essential to the successful design and execution of rural development projects and integrated spatial development programs, remain unresolved.

But if progress is to be made in implementing the new strategies,

development planners must confront the difficult problems inherent in program design and execution. Knowledge is always incomplete and circumstances among countries always differ; research and experimentation must proceed simultaneously in policy analysis.

At least six tasks are prerequisites to effective implementation of integrated development strategies: (1) developing operational procedures for policy execution, (2) expanding knowledge of human ecosystems that will be affected by the strategies, (3) increasing indigenous analytical abilities to determine effective patterns of investment, (4) establishing procedures for local participation, (5) determining subsistence system indicators as a basis for selecting development investments in rural areas, and (6) expanding national and local administrative capacity to support and carry out the strategies.

Developing Operational Theory

Although extensive experiments with rural development have been conducted for more than two decades, neither assistance agencies nor many developing countries have the experience needed to plan and execute the proposed integrated spatial development policies. "Although A.I.D. does not have experience in organizing local market areas and market towns," the agency admits, "there is a sound theoretical base (from several academic disciplines of which regional planning is the most important) plus solid, practical experience in a small number of countries, principally Israel, Egypt, Yugoslavia and Taiwan, upon which policies can be built."⁶⁰ Yet it is not clear how the theoretical base will be translated into operational guidelines. Definition of such terms as "regional development," "integrated spatial planning," "growth centers," and "market towns" used repeatedly in policy statements and plans will be a complex task since most developing nations and aid agencies use them differently. Once basic concepts are defined, they must be translated into design and implementation standards. Complex issues also arise here: determining the best means of allocating resources among functions and geographic areas, the appropriate mixes of investment, and the proper sequencing of activities.

Expanding Knowledge of Human Ecosystems in Developing Nations

Social, economic, and human ecological implications of the emerging strategy remain, at best, vague conjecture. Although strenuously

advocating an integrated approach, the Ford Foundation seminars on employment problems in developing nations identified fundamental issues requiring intensive research. "Unfortunately, the concentration of planners and central government policy-makers on macro-economic considerations and on large projects which might attract foreign aid has meant," participants noted, "that the basic homework necessary to define practical strategies for balanced rural-urban development has been seriously neglected."⁶¹ Among the questions requiring attention are determination of the following: ways of generating nonagricultural work opportunities; costs of creating jobs in rural areas as compared with cities; costs of infrastructure and social services in small towns, market centers, and intermediate cities; and the potential impact of alternative spatial patterns on income distribution and employment.

But, even more importantly, no new approach to spatial development can succeed unless it clearly reflects a thorough understanding of the traditional human ecosystems it intends to change and of the "client population's" values, aspirations, mores, and perceptions of the biophysical environment, especially as the latter pertain to renewable resources. In the absence of a thorough understanding of pre-existing human ecosystems, wholesale alteration of the biophysical environment in which food procurement systems operate, together with major infrastructure changes, may elicit responses from the local population unintended by development planners. Environmental perceptions of client populations are basic indicators for assessing the potential for traditional systems to be modernized and in predicting the likely "human" impact of planned changes.⁶²

Increasing Analytical Ability

It is uncertain, moreover, that the poorest developing countries now have the capacity to design integrated spatial systems. Inevitably, strategies for building an effective hierarchy of market towns, intermediate centers, and regional growth points must be based on an accurate analysis of the existing spatial system and of social and functional differentiation among settlements as well as their natural and human resources, development potential, and economic specializations. From such an analysis, the potential for creating comparative economic advantages and of strengthening the economic bases of development centers must be determined, and regional centers must be designated for the location of infrastructure, services, and facilities. Smaller urban places to serve as processing points and markets for agricultural areas

must be identified. To forge dispersed development centers into a national spatial system, a network of interurban transportation, communication, and energy facilities must be constructed linking urban areas and facilitating interchange between urban centers and rural hinterlands.

Creating Procedures for Local Participation

For planned change to be adaptable to local conditions, moreover, local people should have a major role in influencing the decisions and plans that will affect their lives. Their input is fundamental, largely because so little is known about traditional subsistence systems that developers seek to change. The relevance and characteristics of various elements, functions, and structures of human ecosystems can probably never be adequately discerned by outsiders. Description and analysis of the rural environment to be "developed" must either be done by local planners or in close collaboration with them. But traditional approaches to development have either ignored this aspect of the problem or heavily discounted it in practice. Many agricultural extension workers and rural development planners often claim that a two-way flow of information exists between the national government and local communities, but realistically, in most countries, information flows only from the top down. The problem is often exacerbated by the fact that most development planners consider client populations able neither to diagnose their problems nor to formulate clear statements of their needs; they are thought to be incapable of devising strategies for their own development.

Establishing Subsistence Systems Indicators

The ultimate aim of the new development policy is to redistribute the benefits of growth and change to those living at or near subsistence levels. Yet little is really known about the nature or environment of subsistence systems. Generally defined, a subsistence system is a particular combination of technologies, institutions, and strategies through which a community modifies and exploits renewable natural resources in order to sustain itself. The concept involves complex relationships between the human community and its biophysical environment through which both human and environmental elements mutually affect each other. Because of the circular relationship between people and environment, the environment can be regarded as "both a result of and an

influence on human behavior. Man affects the environment; in turn, the changed environment requires new responses from and acts to rearrange man's image of his surroundings."⁶³

The term "subsistence" generally evokes the stereotype of a hard-scrabble family farm, whereon food is procured by "primitive" hit-or-miss methods of cultivation, complemented by animal husbandry, fishing, hunting, and gathering. Generally it is assumed that hard work, just to survive, is continuous; labor yields pitifully low returns; life is insecure and miserable; and dietary, nutritional, and health levels are abnormally inadequate. It is thought that subsistence farming is incapable of producing marketable surpluses and that its labor force lives largely outside the cash economy. Although these may indeed be characteristics of many forms of subsistence, systems vary widely, and development plans cannot safely assume that all subsistence systems are the same and attempt to intervene without understanding particular ecologies. For practical decision making, it is important that there be re-evaluation of the productivity of relationships among labor, technology, and natural and human resources and that the capability of different subsistence systems to sustain life over several generations and to produce food of an acceptable dietary quality be determined. The long-term ecological stability of individual systems and their potential for transformation into more highly developed communities must also be assessed.

Similarly the nature of other components of the spatial system have not been adequately investigated. The means of creating rural market, processing, and industrial centers, and distribution and service towns, each of which is an essential element of an integrated spatial network, are only vaguely known. The role and functions of small and medium-size cities and provincial and regional administrative centers in developing nations have received scant attention.

Expanding Administrative Capacity

Finally, both assistance agencies and governments of developing nations will have to discover a means of quickly expanding the organizational capacity of countries with severe shortages of trained professionals and efficient bureaucracies to deliver technical and functional support to dispersed spatial locations. Where integrated rural development has been tried and evaluated, the lessons for effective implementation are clear.⁶⁴ Success depends on the government's ability to provide a combination of related inputs that include (1) administrative arrangements for resource mobilization and coordination, (2) continuing and reliable ad-

ministrative support for each project, (3) local commitment to and participation in program activities, and (4) organizational, functional, and technical input delivery to spatially dispersed project sites.

In brief, international assistance agencies and developing nations, in formulating growth-with-equity and integrated spatial development strategies, are pursuing policies that both reason and experience indicate are of critical importance to social and economic progress, but that require mobilization of resources from nearly every sector of emerging societies. The operational implications for executing such strategies are profound and complex. Plans and policy statements yield little evidence, however, that the implications have been clearly identified, carefully considered, and intensively explored.

The following chapters examine the spatial aspects of equitable growth strategy and the technical, administrative, and political components of a rural development program required for balancing spatial development. A spatial framework for growth-with-equity policy is outlined in Chapters 2 and 3, which establish the need for and dimensions of more balanced urbanization in support of rural development, and discuss the functions of various types of human settlements in national economic and social transformation. Chapters 4, 5, and 6 identify and evaluate various components of an integrated rural development approach to achieving equitable growth, focusing on the technical inputs required to stimulate rural economies, local organizational efforts needed to sustain rural development projects, and national political and administrative support necessary to reallocate resources and investments. The last chapter offers an operational strategy for integrating urban and rural areas and identifies and analyzes the functions needed at each level of the spatial hierarchy in order to increase agricultural production in rural areas, distribute services more equitably, and link urban and rural settlements into a national system of production and exchange. The concept of transformational development provides the context for specific recommendations for implementing an integrated development policy.

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2

A SPATIAL FRAMEWORK FOR INTEGRATED DEVELOPMENT

The increasing disparities between the richest and poorest regions in developing nations, and their wealthiest and most poverty-stricken people, can largely be attributed to uneven access to productive resources, social services, and physical facilities. The problem of disparity has arisen because most developing nations have poorly articulated and badly integrated spatial systems in which a vast, sprawling primate city or a few major metropolitan centers have little or no productive relationship to the numerous small villages and hamlets scattered over the rural landscape. Human settlements are not linked together in a mutually beneficial system of production and exchange, and the spatial system as a whole is not conducive to fostering development or equitably distributing the benefits of growth. And because the components of the existing spatial system are not integrated and their potential functions are not clearly understood, planners cannot locate development projects in such a way that they will maximize equitable growth.

But the new development policies demand, above all, that the spatial systems of developing nations, within which individual location decisions are made, be thoroughly understood; however unbalanced the existing spatial structure, its urban centers already perform vital functions in the national economy and have influenced the pattern of physical development by establishing the conditions for future investment. "The selection of future service centers, especially at the higher levels, should be one of the main components of a national physical plan and of the regional plans based on it," one theorist argues. "While the choice of future centers will be greatly influenced by the existing pattern of communication, it will in turn largely determine future changes in the pattern. Service centers and communications together provide the physical

framework within which economic and social development is taking place."¹

This chapter and the next have a twofold purpose. First, they review the main theories underlying integrated development strategy, which, in many ways, provides an alternative to classical theories of centralized and decentralized investment. Thus, the two traditional approaches are briefly summarized, and the rationale for more balanced spatial development is then outlined. Second, because little is known about either the most effective means of implementing the strategy of integrated spatial development or of the types of functions and services performed at various levels in the spatial systems of developing nations, some specific cases are examined: Aspects of spatial development in Kenya, Ghana, Peninsular Malaysia, India, and Thailand are described, and the functions, services, and patterns of linkage among rural hinterlands, villages, towns, and cities are identified.

ALTERNATIVE APPROACHES TO SPATIAL DEVELOPMENT: CENTRALIZATION VERSUS DECENTRALIZATION

A wide range of perceptions and attitudes regarding urbanization and its relationship to national development are reflected in the literature. One school of theorists sees urbanization as a cancer in the growth of developing nations, the spread of which must be arrested. Others view urbanization as a necessary evil and advocate policies that minimize its negative effects. Still another school of theory contends that urbanization is a positive factor in development and that policies should reinforce the development impacts of city growth. And a final group sees cities as catalytic forces in generating development and argues that plans and policies must go beyond mere reinforcement to accelerate the pace and spread of urbanization.²

Much of the existing development literature, however, regards the growth of urban centers in developing countries with alarm. Notwithstanding the importance of cities, some observers still consider urbanization in the developing world to be artificial, a "pseudo-urbanization" because "the process has not been similar to one that occurred in the advanced countries at comparable stages of industrialization and economic growth."³ In the West "the growing cities gradually involved an increasing proportion of the total population until the majority . . . was living in cities and an 'urbanized society' had come into being."⁴ Western cities were able to absorb their natural population increases as well as large flows of rural migrants because "the industrial revolution

... introduced technical improvements which made possible increased productivity in agriculture and allowed rural population to shift to cities."⁵ But theorists embracing the pseudo-urbanization argument predict that a great regional "wasteland" will emerge in areas such as Southeast Asia if cities are allowed to grow despite low levels of industrialization and argue that

certain Asian cities, unhinged from the industrialization that caused Western urbanization, are growing at dangerously fast rates . . . growth of this magnitude may cause serious economic and political difficulties for the nations involved. The provision of infrastructure and employment to accommodate the population polarization that this urban centralization will bring may preclude significant overall economic growth for Asian nations.⁶

The theme is reinforced by arguments pointing out that "the nineteenth century industrial revolution in Europe and North America . . . proceeded at a relatively moderate rate," with new social and economic structures emerging as Western cities grew, but that "the rush to the capitals and metropolises of Africa, Asia, and Latin America is the most intensive, massive and rapid in countries whose natural resources remain underdeveloped and their man-made counterparts—the economic and technical resources and skills—are insufficient."⁷

Some of those taking a more positive view of urban growth challenge the idea that Third World countries are overurbanized in comparison with industrial nations at a comparable period of development. "For example," Sovani points out, "when in 1895 the degree of urbanization in Sweden was comparable to that of Asia today (8.2 percent in cities of 100,000 or more), the proportion of the labor force in non-agricultural occupations there was less than 45 percent. Even in 1970, though urbanization has increased slightly to 9.3 percent, this proportion was only 51 percent." Other examples are also cited to contest the comparative overurbanization theory: "In Switzerland, though the proportion of the labor force in non-agricultural occupations was 60 percent in 1888, there was no city with a population of 100,000 or more in the entire country at the time."⁸ Still others argue that "trade disadvantages and late starts apparently have not precluded urbanization and rapid national development in Japan, Taiwan and Australia."⁹

Indeed, some demographers question whether towns and cities in developing countries are really growing much faster than other places. In Asia, it has been found that the growth rates of cities in Malaysia, Burma, and Sri Lanka were "comparable for all towns throughout the size spectrum."¹⁰ For five provinces of India, larger cities did not have greater population growth between 1951 and 1961; indeed, the rates for small towns in 1951 were comparable with those of larger cities during

the succeeding decades. In fact, the largest increases occurred in towns with a population of between 20,000 and 100,000.¹¹ Scattered evidence from Latin America also questions the notion that the largest cities can continue growing most rapidly, for studies of capital cities in Mexico, Cuba, and all South American countries except Bolivia indicate that "the capital grows in an inverse relation to its relative size. Relatively small capitals, i.e., capitals small relative to the population of their countries, will grow at more rapid rates than relatively large capitals."¹²

Those who see rapid urbanization positively disagree with the view that a high rate of city growth is economically undesirable, noting that it is an "essential condition for the rapid expansion of national economies."¹³ Friedmann argues that heavy rural-to-urban migration, even with limited employment opportunities in the industrial sector, is a better indicator of economic growth than limited urbanization, for "the latter implies a static condition, while the former is a sign of flux and disruption of old patterns which leads to economic betterment."¹⁴ Others express, in much vaguer terms, the "obvious superiority" of city life, even in the worst slums,¹⁵ and suggest that the "greater concentration and higher visibility of poverty in the city" has misled many observers into underestimating the superior social benefits available to slum dwellers contrasted with villagers.¹⁶ Positivists also see urbanization as leading to the modernization of attitudes, which they consider to be prerequisite to development.¹⁷ Still other theorists tend to accept urbanization even though it brings new social and economic problems;¹⁸ this group "sees the poor and minorities as a possibly undesirable but nevertheless natural and inevitable part of the urban landscape, and likens the developmental process to the growth of a garden, weeds and all."¹⁹

In contrast, many radical social scientists, particularly those in Latin America, view poverty as a symptom of a more profound evil, namely internal colonialism brought about or perpetuated by the concentration of investment in metropolitan centers and by external dependence. The radical perspective maintains that urbanization intensifies internal colonialism and exacerbates underdevelopment and that social equity cannot be achieved until external dependence and the dominance of the metropolitan centers are eliminated.²⁰

Part of the confusion and disagreement concerning the rate of urbanization in developing countries, and the impact of that growth on future development, arises from the failure to discriminate among nations at different stages of modernization. The World Bank, disaggregating the data and categorizing developing countries into four major types, argues that the rate of urban growth and its future impact

varies widely. Attempting to project the pattern of urbanization in developing countries at the end of the century, World Bank analysts find four distinct categories:

Type I. Those countries in which the process of urbanization is well underway. The population is already more than half urban, incomes are relatively high and there is little pressure of population on arable land and natural resources. The end of the urbanization process will occur before the turn of the century when most of the population will be in urban areas and rural areas will begin to experience absolute declines.

Type II. In these countries the urbanization experience is more recent. Over half the population is still in rural areas. Population pressures exist on the land and incomes are at relatively low levels. If population pressures can be eased and resource constraints overcome, this group of countries by the turn of the century should obtain levels of urbanization similar to those found in the Type I countries today.

Type III. This group of countries is predominantly rural but urbanizing rapidly. Even so, by the year 2000 they will still be predominantly rural with high rates of growth of the rural population. The outcome of the race between population growth and resources (and the resulting growth of per capita income) is uncertain.

Type IV. These countries are dominated by severe pressures on the land in largely rural, subsistence-level income societies. If the projected population growth rates are sustainable they will still be characterized in the year 2000 by large and growing rural populations living in absolute poverty.²¹

As Table 2 indicates, the size of urban populations, the level of rural habitation, and the compound growth rates of urban and rural areas vary widely among developing nations.

The debate over whether or not developing nations are “overurbanized” is unlikely to be settled in the near future. Indeed, since urbanization is relative and its effects can be judged only in terms of existing conditions and precise developmental objectives, such a subjective argument can never be definitely resolved. But another set of arguments—over whether or not urban growth contributes to national development—is reflected in two opposing theories that impinge more directly on implementing the new development policies. One, which basically views large cities as catalytic forces in national development, generally advocates a spatial strategy that centralizes investments, services, and functions in metropolitan growth centers; the other, skeptical of the increasing growth of primate cities, argues for decentralized urbanization and investment in rural areas. Arguments over centralization versus decentralization are not merely academic exercises, for one or the other of the theories influences nearly all spatial development plans and

TABLE 2

Urbanization Patterns in a Sample of Developing Countries

Country	Per Capita GNP Level In 1972 US\$	Size of Population (in 000's)				Percentage of Urban Population		Compound Urban Growth Rate		Compound Rural Growth Rate	
		1975		2000		1975	2000	1970-75	1995-2000	1970-75	1995-2000
		Urban	Rural	Urban	Rural						
<i>Type I</i>											
Argentina	1,290	20,293	5,091	29,288	3,573	79.9	89.1	2.19	1.11	-2.46	-1.66
Mexico	750	37,319	21,855	103,287	28,957	63.1	78.1	-1.86	3.60	1.19	0.82
Colombia	400	15,938	9,952	40,115	11,349	61.6	78.0	5.24	2.96	2.58	0.13
Brazil	530	65,128	44,602	161,604	50,903	59.4	76.1	4.72	3.13	1.67	0.31
<i>Type II</i>											
Algeria	430	8,432	8,455	27,205	11,199	49.9	70.8	6.78	3.85	1.52	0.94
Egypt	240	17,822	19,546	42,716	23,726	47.7	64.3	4.20	3.24	1.15	0.49
Korea	310	16,074	17,875	36,019	15,979	47.4	69.3	6.66	2.26	-1.36	-0.68
Philippines	220	15,837	29,468	46,068	47,956	35.0	49.0	4.25	3.66	3.02	0.99
Malaysia	430	3,641	8,666	9,888	12,589	29.6	44.0	3.34	3.28	2.09	0.58

Type III

Senegal	260	1,262	3,190	3,740	5,013	28.4	42.7	3.89	4.18	1.83	1.47
Ivory Coast	340	994	3,891	3,718	5,899	20.4	38.7	7.02	4.46	1.51	1.54
Nigeria	130	11,419	51,511	40,953	94,008	18.2	30.3	4.67	5.10	2.07	2.36
Sudan	120	2,400	15,782	9,438	31,704	13.2	22.9	6.10	5.43	2.57	2.69
Kenya	170	1,483	11,625	6,458	24,743	11.3	20.7	6.48	5.61	3.38	2.83
Upper Volta	70	502	5,556	1,827	9,828	8.3	15.7	5.01	4.87	1.84	2.10

Type II

Pakistan	130	18,939	53,418	65,357	93,170	26.2	41.2	4.45	4.28	2.42	1.53
India	110	132,367	488,742	354,872	748,834	21.3	32.2	3.62	3.92	2.09	1.27
Indonesia	90	26,232	110,284	78,433	171,519	19.2	31.4	4.54	4.01	2.32	1.29
China (Mainland)	170	207,510	630,406	478,404	673,555	24.8	41.5	4.31	2.75	0.84	-0.07

Source: International Bank for Reconstruction and Development, *The Task Ahead for the Cities of the Developing Countries* (Washington, D.C.: IBRD, 1975), p. 7.

investment policies in Third World countries. For this reason, and because balanced development strategies draw on elements of both positions, each must be examined in more detail.

The Centralization Argument

Concentration of investment in the primate city or a few metropolitan areas has been the strategy most frequently chosen by developing countries, sometimes more by happenstance than by design, owing to the influence of previous and external decisions, existing geographic characteristics, and recognition of the benefits of locational proximity and economies of scale.

Historical circumstances in many developing countries determined the concentration of investment in a single large city. Throughout most of the colonial world, but particularly in tropical Africa and parts of Asia, European nations maintained a classical relationship with their colonies, with each territorial economy subordinated to that of a foreign industrial economy and forced to concentrate production on raw materials for export. Under colonial domination, industrial development was almost everywhere discouraged. In the late 1950s, however, many countries began a process of industrialization based mainly on natural resources and import substitution. Valorization of export commodities required construction of facilities for processing raw materials. In agricultural economies this meant establishing ginning plants for cotton lint production, mills to extract palm and groundnut oil, factories to can fruits and vegetables, and tanneries for leather and saw mills. But, as independence approached, many colonies shifted to import substitution, which was perceived as a logical strategy to correct balance-of-payments problems by producing locally many of the consumer goods previously imported. These industries would thrive, it was argued, because markets for the products were already established. This phase of industrialization progressed rapidly during the 1960s with incentives to induce local investment by producers of import substitutes.

But the location of export-oriented and import-substitution investments in developing nations, even after independence, was highly concentrated and had a profound influence on their entire spatial systems. "The economic enclave character of manufacturing is strongly reflected in the high spatial concentration in one or a few centers in those countries," Mabogunje points out. "The development of manufacturing has, in fact, tended to encourage the rise of primate cities in many African countries."²² Actually, the situation occurred because of the interplay of

a number of forces, relating to both the colonial history of these countries and their continued political and economic dependence on European powers after independence. The effect was to establish coastal sites as capital cities: Of the 20 tropical African countries with coasts only one, Kenya, does not have its capital at a port; and even in most landlocked countries, capital cities serve as a major break-of-bulk point, thus functioning like ports. This had profound implications during the colonial period when commerce and administration were the principal urban economic activities carried out by the port-capitals. First, people with relatively high incomes concentrated in the primate city, creating a ready market for a wide range of imported manufactures, and in turn this attracted the headquarters of most import-export firms. Second, these cities had the best infrastructure, services, and facilities, largely because of the political and economic power wielded by higher-income groups. Moreover, essential services such as electricity and water supply in primate cities were the cheapest and most reliable in the nation, providing quite an incentive for large industries to locate within their boundaries. Finally, these primate cities became the foci of domestic transport and communication networks both to facilitate greater control by colonial administrators and to expedite the exploitation of raw materials.

The overwhelming advantages of primate cities, and the lack of alternative locations for large-scale projects in most developing countries, led analysts to argue that major investment must continue to be centralized in metropolitan areas and that attempts to decentralize urban development would be at the cost of future economic growth. Most of the policies designed to decentralize investment and disperse social and economic functions, some theorists contend, have either not been effective or have had unintended consequences. World Bank analysts conclude that

the fact that the growth of urban areas—and in particular large urban areas—is to be found in all countries whether they have high or low levels of protection or terms of trade for and against agriculture suggests that the impact of such policies may be marginal. Expanding educational or transportation investments in rural areas may raise incomes in rural areas, but it is also just as likely to encourage migration. Removing protection from industry could encourage a different type of industry, perhaps more labor-intensive ones which would improve the absorptive capacity of cities and encourage their more rapid growth.²³

Reviewing possible policies to limit rural-to-urban migration, Bank analysts argue that “regardless of how desirable the goal, serious doubt must be expressed about the ability of most governments to have any-

thing but a very marginal impact on the movement of people. The task is too big and the changes are occurring too rapidly to hold out much hope for success of such decentralization efforts."²⁴

The assertion that large metropolitan areas in developing nations have excessive and therefore inefficient concentrations of population and investment is strongly challenged by theorists who argue that the highest levels of economic efficiency continue to be attained by investing national resources in the primate city and that by using productivity criteria, "even the largest metropolitan area in the world is likely to be less than the 'optimal' size." Koichi Mera, analyzing the effects of centralized and decentralized investment in Japan, found that whereas interregional income disparities can be reduced by increasing the distribution of industrial capital in developing regions of the country, interregional equity is achieved at the cost of reduced GNP. He cites comparable studies of industrializing countries in Latin America and Asia and concludes that "large cities are more productive. Therefore, a decentralization policy of investment and population distribution over the country cannot be encouraged, particularly for less developed countries, if the national goal is to maximize the growth rate of national product."²⁵

The Decentralization Argument

Few advocates of decentralized investment and dispersed development, however, believe that expansion of GNP should be the major goal of national policy or view economic criteria as the primary standard of strategy design. Decentralization is concerned with spreading development through dispersed investment in the "lower end" of the spatial hierarchy, in small towns, villages, and rural hinterlands. To some degree, dispersal is promoted on its own merits, but in larger part it is a reaction to the alleged evils of urbanization. Advocates of decentralized development argue along the following lines:²⁶

1. Primate cities and large urban centers cannot provide enough jobs for even their own populations and therefore cannot absorb the additional migrants who flow to the cities in search of employment.
2. Because of burgeoning population growth in the largest cities, unskilled or less educated people accept demeaning or low-wage jobs, which provide at best a bare subsistence income, and are forced to live in conditions worse than those in rural areas.
3. Rural migrants generally expect to be provided with goods and services that are neither available nor expected in rural hinterlands or small towns, including nonessential foodstuffs, housing, fuel, entertain-

ment, and "apparel suitable for city life." The lack of these provisions in urban areas is a cause of social alienation and resentment.

4. Growing urban populations place increasing demands on public facilities and services such as health care, education, transportation, electricity, roads, sanitation, police and fire protection, and public administration, which usually are already overstrained.

5. Most of the larger metropolitan areas are budgetarily constrained with either limited income bases or inefficient revenue collection systems, or both, and unable to provide the level of services and number of facilities required for existing inhabitants, let alone the additional migrants expected to pour in from rural areas over the next few decades.

6. Most metropolises are afflicted with traditional urban infrastructures, to which modern ad hoc accretions have been made, and thus are incapable of serving the physical functions of large cities in developed countries. In most cities of developing nations life is ostensibly demoralizing not only for the urban poor, but for the emerging middle classes. City life is thus dangerous to both the health and welfare of individuals and to the community as a whole because of high levels of crime and the absence of physical and economic necessities.

7. Continued migration to the major metropolises results in the concentration of the urban poor in slums and squatter settlements, adding to the physical deterioration and social demoralization of the city.

8. Continued concentration of people and resources in the primate city and metropolitan areas drains resources from the hinterland, perpetuates regional income differences, and prevents significant growth from occurring in smaller towns and villages, leading to the establishment and maintenance of dual economies.

Those and other arguments against concentrated development are reflected in the public policies of a number of countries, especially in South and Southeast Asia, where an overt attempt has been made to decentralize development. "Public investments and interventions choose—to the extent that they are conscious and effective—to divert, retard, or stop urban growth," Dotson observes.

To that end a great range of instrumentalities is brought into play: rural community development, cottage industries, alternative growth poles, satellite cities, new towns and so on. The anti-urban influence extends into political representation, in which rural populations are quite unequally represented. No national policy seeks overall to foster urbanization.²⁷

Much of the underlying motivation for decentralization is philosophical and lends insight into the aims and objectives of those

advocating the dispersal of resources to rural areas. In its extreme form, the theory argues that investments should be completely dispersed and that industrial investments would be limited to those that are labor intensive. This approach is nowhere more clearly expressed than in Gandhi's policy for the development of India. In India, the concept of decentralization "in the industrial and other fields was an integral part of Gandhian theory for self-sufficiency in the preservation of traditional cultural values."²⁸ Gandhian thought has had tremendous influence on India's regional development as expressed in the five-year plans, industrial location policy, and the emphasis on villages and small industries, all geared to disperse urbanization. As a result, excessive reliance on village growth continues to dominate the views of Indian planners.²⁹ The orientation of the Indian political, administrative, and social leaders, moreover, as well as that of the intelligentsia, is clearly antiurban,³⁰ and "the attempt to bring the whole development ethic into correct spatial focus is likewise seriously obscured by a dichotomizing of development issues along rural-urban lines."³¹ This strong antiurban bias is easily traced to Gandhi's distrust of urban politics; he considered "city dwellers the agents of exploitation of the people of India—every piece that went into their pockets was tainted money."³² At the All India Village Industries Association Meeting in 1934, Gandhi launched a program of village industries to build self-sufficient village economies.³³ Although Indian planners do not follow his extreme idealism concerning the self-sufficiency of villages, their thinking has been dominated by Gandhi's concept of a homogeneous cooperative community, which was perpetuated by Jawaharlal Nehru and succeeding political leaders.³⁴ The few who think differently constitute a bare minority, but some analysts such as Mitra suggest that even Calcutta is not growing fast enough to take full advantage of its economic infrastructure.³⁵

Although balanced spatial development and the narrowing of inter-regional disparities have become major objectives in many development plans, only rarely have specific solutions been proposed. The Indian five-year plans are an exception, specifying means for distributing investment in new industry more equitably among regions and identifying suitable small-scale industry for rural or small town development. Nonetheless, Indian planners admit that decentralization efforts have had only limited success; industrial aggregation continues in large towns, and cities and regional disparities have increased rather than lessened.³⁶

The "principle of decentralization," which purports to prevent further overconcentration in large cities and to promote balanced urban and regional growth, commonly reflects an oversimplified and partial understanding of the causes of urban agglomeration. Most decentralization proposals involve elements of industrial dispersion, restriction of

migration, and creation of new towns in interior regions. Dispersing industry is based on the notion that further investment in large cities reinforces regional disparity and rural poverty. It is therefore recommended that new investment be located at points far enough removed from metropolises so as not to be readily absorbed by growth centers. This notion suggests that existing small and medium-size towns in interior regions may offer the most promising locations for relocated industrial investment.³⁷ Commonly used techniques for implementing industrial dispersion plans include selective licensing, concessionary tax treatment, government loans and grants, and publicly supported industrial estates.

An alternative approach entails restricting migration to or deflecting it from the primate city or other metropolises by reorienting migrant flows toward new growth centers to which industrial investment has been dispersed; establishing programs of rural land reform and community development to retain agricultural workers; encouraging rural migrants to proceed toward existing smaller and medium-size towns; and discouraging migrants from taking up permanent residence in major urban centers by refusing to legalize or provide basic social and public services to squatter settlements and to deny them welfare benefits.

Another aspect of this quest for decentralization is expressed in the development of new towns, modeled on the British "garden city." The social and economic costs of this form of urbanization however are enormous.³⁸ In developing countries, new cities—Ciudad Guayana in Venezuela and Brasilia in Brazil, for example—have been established in the distant interior. But the motivation for their creation was mixed. The former was developed not only in an attempt to stem the growth of Caracas and other urban areas on the north coast of Venezuela but also to provide a development center for the exploitation of major mineral resources of the south. The principal factor underlying the development of Brasilia was not so much the desire to relieve congestion in Rio de Janeiro and other centers along the Atlantic littoral of Brazil but rather to open vast new areas for settlement in the largely untapped interior of that nation.

Regardless of the social and psychological advantages of village and rural life, the hinterlands have few advantages for the location of most economic activities. Their scattered population and relative lack of consumer demand, inadequate markets, and scarcity of skilled labor and management, all mean that they are frequently without essential services, facilities, and amenities. Moreover, most modern factory production systems are not readily adapted to conditions in rural areas. Without strong government intervention, the economic forces of concentration will usually prevail over incentives for decentralization.

THE NEED FOR BALANCED SPATIAL SYSTEMS: INTEGRATED URBAN-RURAL DEVELOPMENT STRATEGY

Developing nations need a middle course between centralized and decentralized investment, between continued growth of large metropolitan areas and the scattering of resources among small towns and villages. Clearly, metropolitan areas have been and will continue to be the prime location for major investment by nations concerned with economic growth and modernization. At the same time, both developing nations and international assistance agencies recognize that economic growth alone cannot generate the fundamental transformations required of traditional societies in order to survive in a complex, modernizing world. Promotion of social equity requires deconcentrating some types of investments, but more importantly, strengthening economic, administrative, industrial, commercial, and technological resources of private organizations and government units outside of primate cities, in order to make market towns and intermediate cities more attractive to investors and to serve the rural populations more effectively.

But neither a highly concentrated nor highly dispersed investment scheme will achieve growth-with-equity goals. Large cities and rural communities both play crucial roles in the development process. The whole spectrum of human settlements—villages, market towns, intermediate cities, and metropolitan areas—must be strengthened and integrated into a mutually sustaining network of national production, distribution, and exchange centers. Basic structural imbalances are the primary obstacles to achieving growth with greater equity, and the dualism that now characterizes most developing societies must be radically reduced.

The Conceptual Framework for Balanced Spatial Development

Self-sustaining economic growth cannot occur without a well-articulated spatial system composed of dispersed and interlinked central places, performing specialized and diversified production, distribution, consumption, and exchange functions. A "developed country," according to E. A. J. Johnson, whose arguments concerning the organization of space in developing nations have directly or indirectly influenced much of current spatial development policy, is one that

has diversified its economic activities, thereby permitting people to engage in tasks and occupations for which they are best suited by aptitude and training. It has availed itself, whether by invention or adoption, of enough modern technology so that the productivity of its work force is of a high

order, and it is this degree of productivity that permits the earnings of producers for goods or services to be sufficiently large so that average consumption insures a satisfactory standard of living.

The entire economy is integrated through an interdependent market structure with infrastructure and services dispersed enough to allow accumulation of savings and to encourage investment. Part of the accumulated capital is used to maintain existing productive capacity, and part is invested in new productive assets and social services. Development is reflected not only in an integrated system of production and exchange but also in the relatively easy access to opportunity afforded to individuals. "Even though there may be very great differences in wealth and income," Johnson observes, "a developed country will normally be more egalitarian than one less-developed because both the incentives and the opportunity for increasing status are present in societies that put a premium on achievement."³⁹ Historically, Johnson argues, the key to economic development in industrial societies was the relationship between urban centers and the countryside and in the emergence of a spatial pattern in which conveniently located central places, especially market towns, stimulated the commercialization of agriculture and facilitated an efficient exchange of goods and services.

In the early stages of growth in developed economies, market towns emerged in a regularly dispersed pattern over the landscape, providing institutionalized markets for surplus agricultural products and supplied goods and services—farm implements, livestock, clothing, crafts—which farmers could exchange for their produce or buy with its proceeds. Larger towns grew at transport crossings, providing channels for shipping agricultural goods to more distant places, and accommodating facilities for small-scale processing and manufacturing. Market and distribution centers also afforded locations for specialized and skilled craftsmen to produce goods needed on farms. These places provided nonagricultural activities, and employment opportunities for laborers displaced by increasing farm efficiency and offered nonformal education and apprenticeship training in a wide variety of skills. As interaction increased between farmers and town residents, the towns became social as well as service centers. As markets widened, some towns grew and developed commercial ties with major urban centers, further extending trade networks for agricultural products and manufactured goods. Thus, market towns served as important linkages between urban and rural economies.

As exchange developed and agriculture became more commercialized, the number of central places grew, offering farmers competing local markets for their products. Competition brought higher prices, and increased incomes generated both greater demand for industrial goods and commercial services and expanded savings and investment,

permitting farmers to buy better livestock and equipment, to specialize in various products, and to increase efficiency and productivity. Increased demand and investment stimulated new manufacturing and commercial ventures, diversifying the economic base of smaller towns and allowing them to grow into medium-size cities, more closely linked to both the rural areas and larger centers. Middlemen and traders found in the market towns both a need for their brokerage services and opportunities for new enterprises such as warehousing, storage, shipping, and money lending. In the process, they institutionalized many functions that hitherto had been performed periodically. Towns assumed functional specializations as administrative, manufacturing, service, financial, educational, or processing centers, and, as they became more specialized, they also became increasingly interdependent with similarly specialized towns and organizations in larger cities. The increasing linkages resulted from and helped create stronger networks of horizontal and vertical interaction among various levels in the spatial system.

These interdependences stimulated in turn the demand for efficient transport facilities, public utilities, and reliable communications among the metropolis, regional centers, intermediate-size cities, towns, market centers, villages, and rural areas, tying them more tightly into a self-sustaining national economy. The need to mobilize resources in order to provide public services led to more reliable tax collection and resource allocation, better-trained government officials, and a wider range of social services and infrastructure. In brief, the linkages among dispersed market centers provided not only the basis for economic growth but the means by which a large majority of the population participated in and benefited from the development process. Citing as an example of such a process, Johnson observes of China during its period of economic expansion that

the product of thousands of years of cautious experimentation and slow pragmatic development, the Chinese marketing system has taken the form of "interlocking networks." Since each standard market town is linked with two or three intermediate market systems, and since each intermediate market center is in turn functionally related to two or three central market systems, the whole complex serves not only particular territorial regions but an entire national area.¹⁰

Inadequacies of Spatial Systems in Developing Countries

Thus, in many ways economic growth and spatial development are mutually interdependent. Savings and investment derived from com-

mercialization of agriculture allow services and facilities to be concentrated in central places in industrial nations. The system of production and exchange that provided markets for agricultural commodities in developed countries depended on the emergence of a widely dispersed yet closely integrated system of central places. But the drastic difference between economically advanced and underdeveloped countries is that the latter lack a spatial system that promotes equitable growth. "It is not that underdeveloped regions lack central places," Johnson argues, "for some have too many! What is amiss is that they rarely constitute a functional hierarchy and for this reason they fail to provide an intermeshed system of exchange that will provide the requisite incentives for increased application of labor, capital and human skills."⁴¹ Instead of emerging as economic systems with dispersed market towns linking rural and urban centers, developing nations remain village economies that do not provide large enough markets for commercial agriculture or a network of industrial production and exchange. A population scattered in small hamlets and villages does not permit large enough concentrations to form regular, institutional markets for higher agricultural productivity. There is little reason to save and invest; specialization and division of labor do not occur, and opportunities for market expansion and non-agricultural employment are few.

In many respects the settlement pattern of Kenya is typical of that of much of formerly colonial Africa and, indeed, of the former colonial world as a whole. Tribal centers existed in Kenya before the coming of the Europeans, and an indigenous system of local markets and trading patterns had developed. With the arrival of the Europeans new settlements were established for administration and commerce, which generally were located for administrative convenience and sometimes at the whim of the individual colonial officer or by various missionary groups. As a result, several unrelated spatial systems emerged in Kenya, each serving a different function. In some cases, all three entities, native settlements, colonial centers, and mission stations were physically located in the same center, but because of the lack of cooperation among them the spatial system remained unarticulated.⁴² Colonial trading centers were clearly parasitic serving as assembly points for exporting goods from the hinterland to overseas markets, communications nodes for the colonial regime, and settlement outposts to demonstrate that the colonial power was effectively occupying the area that it claimed as a colony, in accordance with treaty obligations.

With the end of the colonial era, the expatriate and indigenous spatial systems began to merge, and in rural areas, tribal periodic markets evolved into small urban centers. As periodic markets acquired more business, they developed larger threshold populations and met more

frequently; instead of two or three times per week, they met daily, thereby creating a need for greater permanence and construction of infrastructure at the market site. Construction of buildings and compounds provided itinerant peddlers, who had formerly traveled among various periodic market sites, with the permanence of a particular market and a sedentary retail role. But Carvalho found a considerable number of social services and facilities were located outside the centers, in no discernible pattern. Thirty-five percent of all dispensaries, and 40 percent of the total number of secondary schools, for example, were randomly located in rural areas. Educational facilities were more widely distributed than any other service, and the dispersal was both uneconomic and inconvenient, with 45 percent of the schools having only three classes or less, and the majority having only one. This type of ad hoc dispersion and duplication of services contributed little to an ordered pattern of development.⁴³ Kenyan planners later recognized that dispersed and scattered investment resulted in a low multiplier effect and to remedy the situation began focusing investment primarily on small urban places and on designated rural areas, where most of the population was located. "In a very real sense rural development will imply rising urbanization, not in the major cities . . . but through growth of commercial activity in a large number of small trading centers . . . [as] foci of trade, social services, and communications with surrounding farm areas."⁴⁴

Another manifestation of unbalanced spatial development is in India where, in 1971, about 20 percent of the population lived in urban areas. The distribution of urban population by size of urban center, however, has been grossly uneven, with about 56 percent of the total urban population concentrated in cities of 100,000 or more inhabitants. Medium-size cities (those between 20,000 and 100,000 inhabitants), on the other hand, constitute only about 28 percent of the total urban population, "indicating a weak middle base to sustain the urban structure of the country."⁴⁵ Thus one of the fundamental problems constraining rural development in India has been the "non-viability of its settlement pattern,"⁴⁶ with nearly 38 percent of the total rural population living in villages with less than 1,000 people, and 25 percent in the 1,000-2,000 size range. In many states, the percentage of rural population living in villages of less than 2,000 inhabitants is enormous—Assam, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh, all have more than 75 percent of their populations living in hamlets. "This kind of settlement pattern," one observer argues, "can hardly support any system of communal services and facilities and poses some hard choice issues for the planners."⁴⁷

Analysis of the intermediate and small towns in central peninsular

Malaysia finds a similar pattern with, at the lower end of the spatial system, service centers with populations of less than 5,000 growing rapidly, thereby changing the relative importance of larger centers and increasing spatial dualism. The tendency is reinforced by growing investment in large-scale enterprises. With increased customer and trader mobility and access to cheap transport and communication, the role of the intermediate-size town is slowly eroding and the small center and large regional or national center is becoming more important.⁴⁸ The emerging spatial system, then, is characterized not only by the expansion of a number of service centers, which satisfy the local population's demand for a relatively small range of wholesale and manufacturing activity, but also by a lack of intermediate cities capable of meeting increased demands generated by rising rural incomes.

As a result, in these and other developing countries, poorly integrated spatial systems provide little opportunity for interaction between villages, marketing centers, intermediate cities, and metropolitan areas, or for linkages to be created among their activities. Periodic local markets do not provide a sufficient range of activities for interaction with other towns and villages and are not large enough to stimulate commercial agriculture and small industry. The International Labour Office observed the lack of industry in the rural Philippines and that, "in spite of substantial transport costs, textiles are shipped from Manila to the smallest towns in Mindanao. Shoes are produced only in large towns. There is, in short, a surprising absence of the kind of lower cost adaptive consumer good produced for the domestic rural market and traded among and within the islands."⁴⁹ In many countries, nonagricultural goods are either home-made by farmers themselves or provided at periodic intervals by traders through bartering. "Although there are exceptions," Johnson notes, "the small rural traders cannot expand the scale of their operations. They have neither the capital nor the entrepreneurial daring needed to restructure an inefficient market system."⁵⁰

Problems arising from the lack of market centers and intermediate cities are compounded by the dominance of a primate city and the polarizing forces of a dual economy. "In less-developed village-structured economies cities are relatively few and inordinately large," Johnson contends; "consequently a satisfactory interconnection between town and country by means of a hierarchy of central places, functionally dispersed over a landscape in descending scale of utility and size, is either lacking or so imperfectly developed as to leave unserved interstices."⁵¹

The way most developing countries selected industrial locations in the past contributed to the problem. Starting in the early 1950s, for

example, Ghana embarked on an industrial estate program aimed at providing the benefits of external economies to reduce the manufacturing cost of foreign investors, thus attracting new industries without offering special favors. Planners failed to note, however, that goods produced on these estates were largely for export and that linkages between large and small enterprises did not emerge domestically nor did the advantages afforded by complementarity create interdependent and functional economic areas within the country. This oversight seriously limited the potential contribution of such an investment program to spatial development. During the country's second development plan, more than 600 factories were constructed, providing some 100 products. But the pressures for modernization in rural areas left location decisions to politicians, who scattered factories widely in villages ill-equipped with transport, public utilities, manpower, and entrepreneurship. The opportunity to create an integrated spatial industrial hierarchy or to establish industrial nuclei as new central places was not considered. As a result, Darkoh observes, "Ghanaian industrialization is characterized by weak and perhaps insignificant development of intersectoral and inter-regional linkages, that is, insignificant flows inside the productive system."⁵²

Overconcentration of urban growth in primate cities and the scattering of investment in rural areas not only reinforce obstacles to rural market expansion but also drain the hinterlands of whatever resources are developed, constrain investment dispersal, and create a set of political, economic, and social problems in the primate city that developing nations lack the resources to solve. In the absence of a spatial system composed of integrated central places, incentives for increased agricultural productivity are weak, human resources are wasted, and poverty and inequity are perpetuated.

Creating More Articulated Spatial Systems

Reducing spatial and economic disparities and ameliorating poverty in developing countries can only be achieved through a deliberate policy of economic intervention and spatial planning of investment. An integrated spatial network of central places functioning as linked markets in a national system of exchange must be deliberately created in developing countries. Historical evidence demonstrates, Johnson contends, that "the creation of necessary market towns cannot wisely be left wholly to atomistic market forces." The process of integrated spatial development must be "guided, assisted, quickened and induced by careful overall preplanning even as it should be properly implemented by integrating

the whole market-town making programme with a nation's overall planning of patterns, targets and goals."⁵⁴ The strategy must flow from a deliberate policy of integrated urban-rural development rather than waiting for "the slow, hesitant, groping, local market forces painfully and planlessly to bring regional market centers into being." Johnson contends:

For one thing is certain: adequate regional market and production centers must come into being before there can be any real capacity for organic development and transformation. The longer this decision is postponed or evaded, the lower the real-income yield on net national investment, and the slower the rate of improvement in real wages. For in modern societies productivity is not merely the resultant of a ratio between a man and his tools; it is this in relation to the organizational efficiency which the enterprise, the regional market community, and the entire market provides.⁵⁴

During the last decade, development planners increasingly urged that investment be analyzed in terms of its impact on the spatial system. Such arguments were based on concepts of geographic rather than economic space. In India it was proposed that the planned urban pattern be "one which provides a rural-urban continuum from the smallest of villages to the largest metropolis."⁵⁵

Assessments of the West African urban situation note that problems caused by congestion of cities and the deterioration of the countryside demand joint solutions,⁵⁶ and for this reason town and country should be linked and the roles of industrial complexes and smaller towns made complementary. Dispersal of capital-intensive industries was regarded as economically infeasible, whereas the creation of small, labor-intensive industries located in smaller towns with reasonably well-populated markets was seen as a potentially appropriate response to the widespread need for nonagricultural jobs.

Rather than attempting to restrain the growth of large cities, recent development strategy concentrates on countering potentially negative effects of rapid urban growth by encouraging industry and commerce to locate in those medium and small towns. Encouraging the growth of existing smaller towns to provide employment, services, and facilities to agricultural hinterlands is increasingly recognized in the plans of developing nations as a means of creating way stations for migrants, permitting an easy adjustment from rural to urban life, slowing or stemming the flow of migration directly from the hinterlands to the city, and providing initial training in industrial skills while retaining useful ties to the land. Market towns would also better sustain the traditional craftsman and might encourage creation of skills in the villages.

Although development of each level in the spatial hierarchy of economically less advanced nations is now more widely accepted as opposed to building one level at the expense of the others, relatively little is known about the most effective means of implementing the concept. In some countries, experiments have attempted to accelerate the growth of medium-size cities and regional centers whereas other nations have tried to contain the growth of major metropolitan areas. All had mixed results. The most intractable problem, however, remains that of generating and sustaining market towns and smaller cities that can be linked into a system of exchange with intermediate and larger urban areas. Relatively little is known about smaller central places, the kinds of services, facilities, and functions they perform, or their pattern of linkages. But because the existing spatial system must be the base for effective spatial development strategies, the types of small central places in developing nations and their functions, services, and linkages must be identified and analyzed.

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3

THE ROLES OF SPATIAL CENTERS IN NATIONAL DEVELOPMENT

Relatively little is known about the most effective means of distributing physical infrastructure, facilities, and services or about locating productive activities in order to achieve integrated spatial development; and even less is known about the functions performed by smaller centers in the spatial systems of developing countries. Evidence clearly shows that some types of central places—market towns, small cities, and intermediate-size regional centers—are inadequately developed or distributed in Third World nations, but where they do exist, few studies of their economic and social functions provide a basis for planning and strategy design. And the difficulties of defining and comparing elements of spatial systems in developing countries add to the analytical and operational problems. Although central places are usually defined as those human settlements providing residentiary functions (goods or services primarily for local consumption) and basic functions (production of goods for consumption outside the community), the two activities are sometimes difficult to distinguish in developing nations. Determining size and rank of settlements in a spatial hierarchy has also been a recurring problem in cross-cultural analysis. Scale is always relative; a village in a country such as India may be considered a medium-size town in a less densely populated country such as Venezuela. Population size alone, moreover, does not define a central place. In the absence of more precise data, many studies consider places of 5,000 population or more to be economically viable communities.¹ But that distinction may be too arbitrary in some developing nations, where many small settlements perform distinctly “urban” functions, while other larger places may not. Nor can towns and cities always be identified by their physical characteristics, because, in many countries, the towns, villages, and small cities look much the same; they have similar population densities and physical patterns and a similar mix of urban and rural activities.

Clearly, there are severe limitations to generalizing about the functions of different size settlements in developing countries or even about the types of settlements that exist. Cultural, historical, administrative, political, economic, and physical conditions vary widely among countries, producing spatial hierarchies that differ drastically in their components, configurations, and functions. But if integrated development strategy is to be made operational, in the absence of detailed research and comparative analysis, some general conclusions must be drawn concerning the roles of various types of central places in developing nations and the functions that they seem to perform or are potentially capable of performing.

The conclusions that follow, therefore, should be treated as propositional statements concerning the types of functions most likely to be found at various-size settlements in developing nations. The propositions must be tested for any specific country through on-site surveys. The general classification used here relies more on order of magnitude than on precise quantitative distinctions between one level of settlement and another, and on the general range of functions that seem to appear in comparing a limited sample of countries. In any case, however, the smallest community—labeled village or hamlet here—is at the lower end of the hierarchy, and the primate city or metropolitan center, with the largest population and range of functions, is at the higher end. Within this range, four general types of settlements seem to characterize the spatial systems of developing countries, each performing a somewhat different, but not always consistent, set of functions: (1) villages, (2) market or district towns, (3) “mid-level” or intermediate cities, and (4) metropolitan centers or primate cities.

METROPOLITAN AREAS AND PRIMATE CITIES

For whatever particular reasons they emerged in developing nations, large metropolitan centers now play a dominant role in national economic and social development. Thus, the functions of these metropolitan areas must be better understood in order to design realistic spatial strategies for achieving growth-with-equity goals. Primate cities and large metropolises will probably continue to perform a diversity of economic production functions with relatively high levels of efficiency in most countries over the next few decades. In most countries, as Brutzkus has pointed out, they usually have the largest population sizes and highest densities by far than any other urban areas and provide significant economies of scale for manufacturing and large commercial enterprises.² They are generally the communications and transport hubs of the nation, containing the best ports and harbors, airport facilities connecting the nation to the rest of the world, and the most modern trans-

port vehicles. The primate city is usually the focus of internal transport linkages; in most developing countries, the national transportation system—road, rail, and riverine, as well as air routes—converge on the primate city. The metropolis has both internal connections with intermediate-size cities and external linkages with other nations. The major metropolitan center is generally the location of the banking and financial system's headquarters and provides the largest and most diversified commercial and professional services. It usually contains most of the modern physical infrastructure and utilities, the most specialized technical skills, equipment, and repair facilities. The primate city often has the largest commercial markets with vast purchasing power, well above the national average. Its superior purchasing power, infrastructure, facilities, and services attract not only the bulk of indigenous manufacturing, commercial, and service industries but also most of the foreign capital investment coming into the country.

The largest city or metropolis occupies the highest level in the nation's spatial hierarchy. It is often, although not always, the seat of national government, the center of political power and authority, headquarters for government departments and foreign diplomatic missions, and the seat of the judiciary with high and lower courts, judges, and specialized legal services. Most municipal public utilities and services are usually available on a high order, as are universities, professional and technical schools, specialized training institutions, research organizations, cultural and artistic groups, and major medical facilities. The metropolis is usually the nation's center of trade and wholesale and retail commerce, offering the greatest range of goods within the country and supported by a complete array of financial institutions—insurance companies, domestic and foreign banks, chambers of commerce, and trade associations.

The metropolis is generally unsurpassed in cultural and recreational activities. It is the center of printing, publishing, bookselling, the hub of journalistic activity, and the repository of national treasures in museums and art galleries, with a national ballet and opera. It boasts hotels and restaurants of every size and quality, cinemas, and other forms of diversion. Those advantages, as Brutzkus confirms,

are self-perpetuating and are responsible for the high momentum of continued growth. In conditions of general scarcity of capital and skills in developing countries those advantages are not easily achieved outside the primate cities or transplanted to other localities, especially if a deliberate, consistent regional policy is lacking.³

The external economics of primate cities and large metropolises continue to influence strongly the location decisions of new enterprises. In considering the full range of externalities, those responsible for location decisions consider not only

the obvious savings to firms by virtue of mutual proximity of labor and other factor supply, government and financial centers, markets, and complementary commercial-industrial activities, but the less easily measured externalities of an acceptable social atmosphere for persons with managerial and other high-level skills, the attractiveness and prestige to a former rural resident of living in a "name city" with known amenities and advantages; a lower cost of search for labor on the part of firms, and for jobs in business opportunities for individuals.⁴

It is often those "less easily measured externalities" that are the most important functions provided for location-seeking activities by primate cities. Recent research shows that personal contacts and information linkages are of major importance in deciding on location. In many developing countries, face-to-face contacts and personal interaction are the most effective means of exchanging information for both high-level public administrators and private executives, with such personal contacts occupying a large part of their working time.⁵ And, for small companies, the potential for "seed-bed" growth found in large cities is the main reason for locating in the metropolis. In close proximity to existing large industries, smaller firms can benefit from second-hand machinery, skilled labor, potential customers, and easy access to supplies and materials.⁶

Indeed, the critical role that metropolitan areas play in attracting growth-inducing activities results from their domination of the spatial structures of developing countries, and the lack of large-scale central places to compete with the metropolis. The lack of urban services and functions in smaller cities and towns reinforces the pull of the primate city. Conditions in many developing countries strongly resemble those in India, where, as Harris observes, "the reliability of power and communication services, the accessibility of cultural and education facilities, the resourcefulness of local service technicians, the passability of the roads, and the work outlook of the labor force tend to fall off with movement down the scale of size and outward from the metropolitan center."⁷ For precisely these reasons, the concentration of light industry, which constitutes the bulk of Colombia's manufacturing sector, has been in large urban areas. Because Colombia's physical infrastructure is concentrated in large cities, and the supply of such services as electricity, gas, water, transport, or telephones is either unavailable or unreliable elsewhere, industrial location in smaller towns and rural areas may be either impossible or prohibitively expensive. Such factors suggest that Colombian manufacturers are faced with steeper production costs and poorer markets than those facing similar companies in developed countries. Hence fewer Colombian industries are footloose, and there is a stronger tendency to locate in major cities, thus reinforcing the advantages of the metropolis over other components of the spatial system.⁸

In nearly every developing nation, however, the primate city has a disproportionate share of national resources, and this situation may well inhibit both overall national economic growth and emergence of a more balanced pattern of urbanization. The concentration of national resources in a single city, moreover, creates huge disparities in income, wealth, standards of living, and productive capacity there compared to other regions of the country. Metropolitan Manila's relationship to the rest of the Philippines is a good example of the type of dominance the primate city exerts over the national economy in many countries. Although it contains about a quarter of the Philippines' total population, in 1970 Manila accounted for 40 percent of the labor force in secondary and tertiary industries, 65 percent of family income, 45 percent of all government revenue, 72 percent of the nation's manufacturing firms, and nearly 80 percent of all manufacturing employment and production; it consumed 83 percent of the nation's electrical power and nearly 40 percent of the water supply, had 61 percent of all hospital beds, and over 67 percent of all transportation vehicles in the country.⁹ In India, the Calcutta metropolis, which is the primate city of West Bengal, exerts great influence over its region as well as other parts of the country, ranking as the nation's second largest economic center and one of the leading cities for scientific and technical research and higher education. A large functional gap separates the Calcutta metropolis from lower-order urban centers. Although services are concentrated in the metropolis, they are not commensurate with its population, and lower-order centers are inadequately endowed with either services and facilities or other urban amenities in proportion to their population sizes.

“MIDDLE-LEVEL” OR INTERMEDIATE CITIES

The next level of central places generally found in developing countries is the middle-level or intermediate city, which includes urban centers in Kenya, municipal area centers in Thailand, intermediate cities in Ghana, and district towns in India. The intermediate city is usually a regional or provincial economic and administrative center and is the headquarters for specialized government services, such as those concerned with agriculture, health, regional police, and the judicial system. Such cities offer relatively good medical facilities—regional medical offices, hospitals, specialized medical practitioners, large drugstores—as well as public sewer systems, electricity, large post offices, and telegraph and telephone offices. Secondary schools are ubiquitous, and colleges or technical schools have often been established at these locations. Intermediate cities generally function as regional collection and distribution

centers, containing large wholesaling and distributing firms in addition to a wide range of general and specialized retail outlets. As the regional focus for primary product transactions, they often contain a wide range of brokerage enterprises and middlemen and many of the larger financial, insurance, commercial, and transportation facilities. The middle-level city may also be an important agroindustrial and primary product warehousing center, as it is in Thailand. Usually it lacks any big, nonprocessing industries, particularly in India, where industrial towns constitute a distinct category of urban settlement that performs few general urban functions. The middle-size city is well linked to the national transportation system. In India, besides being the regional focus of an all-weather road system transversed by regular public transportation, the intermediate town is usually an important railroad stop.

Intermediate cities in India take the form of "district towns" and satellite industrial cities, both striking features of the urban landscape in a region such as lower West Bengal, where these "industrial satellite towns and cities, including the predominantly industrial district city of Howrah, cluster along both banks of the Hooghly river within a stretch of about 35 miles along the river."¹⁰ The district town, with an average population of about 50,000, apart from the metropolis of Calcutta itself, represents the highest order of settlement in West Bengal's regional spatial system. In addition to containing district headquarters and offices of various government agencies and public utilities and providing specialized administrative, medical, and financial services, the district town is characterized by the presence of large wholesale and distributing outlets, specialized retail shops (opticians, electrical goods, branches of a national chainstore), one or more colleges, and a weekly newspaper.

In Ghana, intermediate-size cities are mainly administrative and commercial centers, but social service and communications functions are almost as important. Intermediate cities constitute the greatest number of industrial centers in Ghana, whereas only two of them are dominated by mining. In some towns, the development of social services has not kept pace with the rapid expansion of other sectors, and thus the functions performed by Ghanaian intermediate cities vary considerably among regions. In the northern half of the country, administration, communications, and commerce are widely represented in the intermediate city, which however is strikingly lacking in social and industrial functions. In the Ashanti region, the situation is similar except for better social services, but in the Volta region social services are exceptionally well represented. Near the coast, the most rapidly developing intermediate cities show a preponderance of communications and commerce services, and all of them are industrial centers, but none is an important administrative or social center.¹¹ In the regional centers, most services

are typically present, but sometimes with the exception of air transport, universities, and specialized hospitals. Regional commissioners, municipal bus services, hotels, day and night telephone exchanges, libraries, railway stations, and main road junctions are sometimes present. Thus regional cities are typically communication centers, and all are administrative centers. Services typically present in a Ghanaian intermediate-size city include district commissioners, police stations, post offices, rest houses, gasoline stations, United Africa Company wholesale outlets, main road junctions, local courts, hospitals, banks, and government treasuries. And often they have secondary schools, police district headquarters, construction and road camps, service stations, and wholesaling district offices.

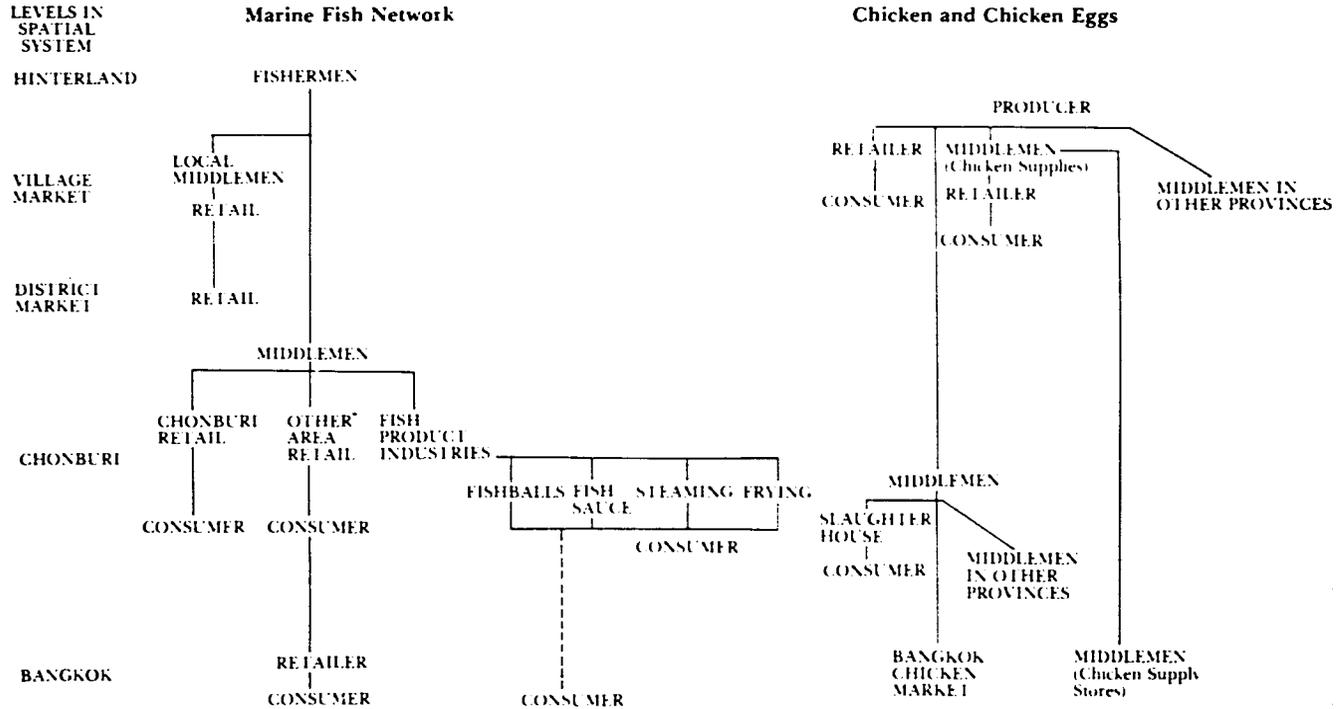
The crucial role that intermediate or regional centers can play in national development is vividly illustrated by Chonburi town, the major urban center in Chonburi province, Thailand.¹² Chonburi, one of the most important provinces in eastern Thailand, includes seven administrative districts, or municipalities. In Thailand, the municipality is the center of provincial administration and political activities and of postal, telephone, and telegraph services, the provincial radio station, and the local newspaper. From the municipality the transportation officer runs the provincial bus lines. Generally, the functional roles of urban and rural centers in Thailand are well differentiated, with many rural centers functioning principally as marketplaces for the exchange of agricultural and commercial products. At each center in Chonburi province, distinct goods and services are provided to a definable market area. Various centers are spatially interdependent, with overlapping and interlocking market areas for goods and services.

In Chonburi province, markets exist at each center, which correspond quite closely to provincial administrative divisions. Chonburi town stands out as the highest-order center with the largest population, market area, and economic reach. District centers (*amphoe*) form the second level in the hierarchy with considerable range in market area size and functions. District centers at the lower end of the range perform eight specialized functions that characterize the lower-level centers. Sanitary districts (*sukaphiban*) contain "Class A" pharmacies, hotels, pawnshops, restaurants, motorcycle agencies, and retail outlets for consumer durables, and relatively well-equipped medical clinics.

Chonburi town acts as a focal point for trade between the rural areas and towns within the province and between the province and Bangkok. For some commodities, the first "post-production" activity is undertaken in the hinterland and does not depend on any urban center. Chickens and chicken eggs are sold directly by farmers to hinterland retailers and customers and to middlemen from other provinces (see Figure 1). Own-

FIGURE 1

Spatial System of Marketing Marine Fish, Chicken, and Eggs,
Chonburi Province, Thailand



Source: Adapted from Chulalongkorn University, Social Science Research Institute, *Institutional and Human Resources Development in the Chonburi Region* (Bangkok, Thailand: The University, 1974).

ers of chicken supply stores, located near the farms, also act as hinterland-based middlemen, who sell both to their counterparts in Bangkok and to retailers in the hinterland. Truckdrivers who collect duck eggs from various farms for transport to the Bangkok egg center act on behalf of the farmers at the market. For convenience they are called, somewhat inaccurately, "brokers." In the fruit network, too, local brokers serve as collectors from different orchard owners, combining the products and delivering them to middlemen in the village market. Sugar farmers deliver their harvest directly to mills located in the hinterland, along highways, whereas Chonburi rice producers deliver their product either to middlemen or to brokers, who, in turn, deliver it to the mills. Commercial rice mills are not located in the hinterland.

Thus Chonburi town is the focus of all major provincial commodity marketing networks: Chicken, duck, fruit, and vegetable farmers sell to Chonburi middlemen, who, in turn, wholesale to town retailers; fishermen and shellfish producers do the same; fish middlemen sell to Chonburi fish product factories; and oyster producers sell directly to restaurants. Chonburi is the site of white sugar warehouses, which supply local retailers, and of middlemen who deal in polished rice. Besides selling to local retailers, Chonburi middlemen also deal with Bangkok merchants and middlemen in other provinces of Thailand.

Thus, although medium-size towns and intermediate cities offer important functions for rural development, in most developing nations they are relatively few in number and are often concentrated in one or a few industrialized regions of the country. Their growth and development, moreover, are frequently constrained by the dominance of the primate city. In Nigeria, for example, where there were 24 cities of over 100,000 population in the 1960s, half were located in Western State, close to the Lagos metropolitan area. The other half were scattered throughout eight of the remaining 11 states. "One major consequence of the absence of middle size towns in most parts of the country is the high cost of movement between many remote villages and the few available towns, especially in areas where there are no motorable roads," Onokerhoraye observes of Nigeria. "This factor has placed many rural dwellers at a disadvantage in terms of obtaining modern public services such as secondary school education and hospitals, the marketing of their products and the purchase of manufactured goods available in the urban areas."¹³

MARKET AND DISTRICT TOWNS

Market towns extend some specialized functions to lower-order centers: Administrative functions are reflected in the presence of district

officers, courthouses, police stations with jail facilities, and often specialized officials such as an agricultural extension agent. At this level of settlement, health services include physicians, sometimes a dentist, and a maternity and general health clinic or small hospitals. Towns at this level may also have a small pharmacy, post office, and telegraph facilities and be partially serviced with electricity and secondary education. The market town in most countries also boasts some small-scale financial institutions, either commercial, cooperative, or post office banks, financial company offices, and pawnbrokers. Moneylenders still play an important role in the financial structure of these towns. In the commercial sector, the marketplace and the general retail stores are supplemented by specialized shops; goldsmiths and jewelers, photographic studios, beauty salons, electrical appliance shops, and furniture stores.

Market towns are usually linked to larger settlements by a surfaced road or a railroad. In Ghana, market towns are often located at a main road junction; in Kenya and Malaysia, they are at the hub of the district transportation system.¹⁴ In India, these *thana*, or block development centers, have an average population of 2,500 and provide administrative services to clusters of nearby villages. Originally, most were large agricultural collection centers that eventually spawned daily markets, relatively large grocery stores, and cottage industries and then became locations for a cooperative bank, branch post office, sometimes a doctor and pharmacy, and, occasionally, a secondary school.¹⁵ In Thailand, district market centers have populations of from 1,000 to 7,000 and may serve a rural hinterland of 40,000 inhabitants with retail service and administrative functions. Retail businesses located in such centers—as many as 200 in some district markets—include laundry and drycleaner, print shop, photo studio, bottled gas, grocery shops, electrical goods stores, jewelry and gold sellers, furniture shops, construction materials and outlets for farm machinery, fertilizers, pesticides, and animal feeds. Wholesalers are also important in district market centers, since they act as large buyers and transfer agents for agricultural products as well.¹⁶

District towns in Ghana provide only three medium-level services—district commission activities, police stations, and post offices. Nine services are sometimes present including government rest houses, gasoline stations, United Africa Company wholesale outlets, main road junctions, local courts, Ghana National Construction and Corporation (GNNC) road camps, hospitals, and secondary schools. Other services are typically absent. Most district towns are communications, administrative, or commercial centers.

Only one district town is an industrial center, whereas six are mining towns—the largest number in any class of town, a situation that confirms

that mining is not necessarily accompanied by services with a high level of centrality. Administration is the preponderant service provided by the district town in the more backward low-population-density areas, with increasing numbers of communication centers toward the south and commercial centers toward the east. In the eastern region, towns of this rank are giving up their administrative functions to higher-grade towns. In the north of Ghana, the absence of enough high-grade centers has forced the government to create new centers at lower levels, many of which are solely administrative entities.¹⁷

In Malaysia, only the district towns support a range of stores selling different types of household nondurables. In no lower-level center is there any store selling these products. Only those with above-average incomes buy such consumer durables as electrical goods, for few live in houses supplied with electricity, and most such goods (for example, refrigerators or radios) are expensive and must be paid for in installments.¹⁸ Furniture stores, however, are ubiquitous—all households require furniture—and manufacturing and retailing is small scale and dispersed in all urban places. Tailors, photography studios, dentists, clinics, and goldsmiths are located in larger market centers. The location of commercial banks, finance companies, and cooperative societies reflects administrative decisions rather than consumer demand; most sites are selected according to the company's own evaluation of the local money market or the presence of a sizable government administration. Demand is more important in determining the location of pawnshops, which are limited by government regulation to one per town. The automotive trade is highly variable within the region. Data indicate that "considerable specialization has occurred not only in the field of transportation but also with respect to activities which have backward linkages with the region," especially those related to logging.¹⁹ These linkages include investment in tractors, farming and earth-moving equipment, business and industrial machinery and equipment, lumber and timber outlets, building materials and builder's hardware, and sellers of chemical products and petroleum.

The marketplace continues to have an important role in the retail trade of the district town in Malaysia just as it does in the smaller urban place, for it is a town's major source of perishable foodstuffs, particularly fruit and vegetables, and only rarely do retail stores stock these items. Apart from being the source of a town's daily provisions, many markets also have a regional importance, on a particular day attracting vendors from throughout the region. "A multiplicity of trading functions can be observed; the number of vendors increases radically; a greater range of items is displayed," Cohen and Brookfield note. "Wholesale vendors cater to non-local buyers; traders from both inside and outside the

town's immediate hinterland come to retail, and in some cases micro-retail products."²⁰

VILLAGE CENTERS

Although varying considerably in population size and in the dimensions of the hinterland served, villages are the smallest central places in nearly all countries, performing only very localized functions, often only for a population within walking distance. Ubiquitous in this class of settlement are retail and marketplace functions. Small retail shops are the most common enterprises along with coffee or tea shops. More specialized functions, such as beauty parlors, barbershops, hardware stores, and bicycle repair shops are rare. The marketplace may be open daily or periodically (two or three times per week), but no other function appears as often at the village level. Administration may be represented by a police post; there may be a dispensary or other public services such as a school or a branch post office. Usually the only financial institution is the village moneylender. Industry is generally limited to production by a few artisans, although as with the sugar mills of Chonburi province in Thailand, modern factories may sometimes be located close to the smallest centers. Recreational facilities are usually limited to a simple bar or small café, and there are usually basic religious facilities.

In India, agricultural collecting centers or urbanized villages are either nodes in a rich agricultural area or sites along a waterway. Traditionally, such centers boast grocery stores, grain storage facilities, and biweekly markets for the sale of agricultural produce, livestock, and crafts. These large villages represent the first sign of a central function in a predominantly rural landscape, offering blacksmiths, carpentry, weaving, pottery, and other crafts and annual fairs, held in such places since time immemorial. Many of these small centers, occupying the lowest rank in the urban hierarchy, have been designated union board centers, or *Panchayat* centers. As such they have been endowed with a gendarme (village headman), a small maternity health center, and government agricultural stores selling seeds and dispensing information.

Villages in Ghana are divided into two subgroups based on the functions performed. Postal agencies are the only service typically present in some villages, together with the combination of three or four of the following: district commissioners, police stations, post offices, rest houses, gasoline stations, United Africa Company wholesale outlets, health centers, and main road junctions. One of the following services is also present: local courts, GNCC road camps, hospitals, secondary schools, or banks. The services are very diffuse, and no locational pat-

tern is discernible. In other villages, from one to four services or facilities are present, and generally only three are found in more than 25 percent of the villages: district commissioners, post offices and agencies, and police posts. But police stations, rest houses, gasoline stations, and main road junctions closely follow, and the number of United Africa Company wholesale outlets is comparatively high. None of the services is represented in more than 75 percent of the centers. A definite pattern is discernible in the combination of services: Post offices or postal agencies usually accompany district commissioners, police stations, United Africa Company wholesale outlets, local courts, or secondary schools, whereas hospitals and health centers are usually associated with transport services, such as rest houses, gasoline stations, or main road junctions. External economies operate even where the distribution of services was not consciously planned. Though low-order services typically occur alongside higher-order ones, it is not usual for a service that needs a major area for its support to appear in a village.²¹

In Malaysia, *kampung* towns are small primary centers, generally with less than 1,000 inhabitants, which service hinterlands occupied largely by small-scale farmers and landless laborers. Small stores and market stalls constitute their two types of retail outlets—most sell non-perishable foodstuffs and spices, onions, matches, sugar, tea, and soap—and are distinguishable by the permanence of the structure from which the retailer operates, rather than on the basis of goods sold. The periodic market is the most common commercial institution, continuing to be a weekly occurrence in many *kampung* towns. Sellers are either *kampung* people, mainly selling either prepared foodstuffs or batik, or itinerant vendors. Batik selling is done mainly by women either at the market or by visiting households in different *kampongs* each day, regardless of market cycles. There are two groups of itinerant vendors: One includes the small-scale petty traders who buy in bulk from wholesalers for resale on the *kampung* marketplaces; the other encompasses those sellers who are agents, employees, or relatives of town shopkeepers, operating mobile branches to sell the store goods along the market circuit. Both the number of vendors and the range of goods displayed may be extensive: For example, 21 vendors in one village sell prepared food dishes, fresh fish, fish nets, cloth, dry goods, fresh fruit and vegetables, jewelry, toiletries, and batik as well as freshly ground coffee.²² In some larger villages established by the Federal Land Development Authority (FELDA), shops provide household necessities; durable goods are not stocked, however, and must be ordered through a store. Much of the wholesale purchasing is organized centrally, and staples are often bought directly from the producer or importer. The villagers generally seek out the least expensive markets for daily con-

sumption items; cigarettes and biscuits are bought locally from itinerant vendors. Local trade is of small volume and of limited significance to the regional economy.

CONCLUSION

In brief, developing nations exhibit a wide variety of spatial patterns with settlements that perform highly differentiated sets of functions and services. The problem is that in many countries essential components of the spatial hierarchy, especially at the middle levels, are missing, underdeveloped, or poorly distributed and that the linkages and interactions among settlements are absent or not well-developed. The majority of the population, especially the rural poor, live in scattered villages too small to support basic services and facilities and too isolated to benefit from the growth of large urban places. Thus, the dynamics of trade that stimulated commercialization of agriculture and industrialization in economically advanced nations and that spread the benefits of growth widely throughout the nation do not easily occur in developing countries with unbalanced spatial systems.

It has become increasingly clear that the slow, groping, experimental actions that allowed articulated and integrated spatial systems to emerge in more advanced countries can only be accelerated in developing nations through careful location of productive investments and social services at strategic points in the spatial system. Equally certain is that the ability to create and sustain economically viable settlements at the middle levels of the hierarchy, to increase the productivity of smaller villages, and to integrate the various settlements into the national economy requires the stimulation of rural economies through development of agriculture and small-scale industry. Increased agricultural production can provide higher levels of income for the poorest groups in rural areas, offering opportunities as well for the establishment and growth of agro-processing and farm-related industry. It can create demand for commercial goods, services, and durable inputs, which in turn can increase nonagricultural employment opportunities in rural areas. Programs for agricultural development, small-scale industrialization, and infrastructure investment in selected rural towns can strengthen the currently weak middle level of settlements in the spatial systems of developing countries.

An integrated "package" of technical inputs and services is needed to increase agricultural productivity. A closely related set of agricultural services, physical infrastructure, public and social services, marketing, credit and financial institutions, and other inputs are needed to create

preconditions in rural areas for private investment, and these must be located at or delivered to appropriate settlements in rural regions to transform existing communities into more productive and interdependent units in the national spatial system. In short, a more balanced spatial system can be achieved in most developing countries by building from the "bottom up," by stimulating increased production, employment, and demand in rural areas, and by extending to smaller settlements the services and facilities that will encourage increased productivity and the consolidation of rural populations into larger economic centers. A strategy for building such an integrated spatial system is outlined in Chapters 4, 5, and 6, which describe the essential technical and administrative elements, and in Chapter 7, which calls for a "transformational approach" to spatial development, identifies the major linkages that create interaction among various levels in the spatial hierarchy, defines the types of services and facilities needed at each level of settlement in a well-articulated spatial system, and provides program and policy recommendations for making the strategy operational.

NOTES

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4

STIMULATING THE RURAL ECONOMY: TECHNICAL COMPONENTS OF POLICY IMPLEMENTATION

A major constraint on implementing integrated rural development strategies is the difficulty of determining the most effective combination of inputs for promoting rural growth. The United Nations Asian Development Institute notes the serious gaps "in the knowledge of economic and social relations and in the working of institutions as well as in techniques and analysis,"¹ and the World Bank's rural sector policy paper cites the "inadequacy of information concerning the circumstances of the rural poor and the ways in which rural development can be accelerated."² In its report to Congress on the new directions in development assistance, the U.S. Agency for International Development, puts the problem more bluntly: "determining the precise application of general development approaches in specific cases remains, despite all of our efforts and those of thousands of practitioners and scholars alike, a very murky, difficult, uncertain, complex and intractable business."³

Difficulties arise from a number of sources. Although much has been written about techniques for increasing agricultural production, little is known about the best combination of technical, social, economic, and administrative resources needed to stimulate rural development. When social equity and antipoverty objectives are added to those of increasing agricultural productivity, the problem becomes more complicated than one of merely raising economic output. Neither assistance agencies nor governments in developing nations have had much experience with integrated rural development, expanding employment, redistributing income, reducing regional growth disparities, and balancing spatial development. The ultimate beneficiaries of integrated rural development, moreover, have only been generally identified; their

characteristics, behavioral patterns, and institutional practices are poorly understood, making it difficult to determine the most appropriate combination of activities needed to alleviate their problems.

Strategy implementation is also complex because rural development always requires a combination of functional inputs; no single service, facility, or resource is likely to make a substantial impact. Yet each input has a range of possible effects on rural society, causing changes that can be neither clearly foreseen nor totally controlled. Indeed, intervention often generates consequences that are unanticipated and unintended, and when a variety of inputs of the number needed for rural development are combined in a single integrated project, they produce a large array of unintentional consequences. The problem is further compounded by the fact that no universally applicable strategy can be designed for all developing nations or even for groups of nations at similar levels of development. Conditions differ drastically among countries and among regions within the same country. Because spatial patterns, cultural, social, political, and economic traditions, and administrative practices are so diverse, the needs, constraints, and capacities for problem solving vary. Hence, functional inputs essential for increasing agricultural productivity and expanding income in one country may be of marginal importance in others.

But if progress is to be made in implementing the new development strategies, planners must confront the difficult problems inherent in program design and execution. Knowledge is always incomplete and circumstances always differ; and therefore, research and experimentation must proceed simultaneously in policy analysis. Thus, the next few chapters of this study have two major purposes: (1) to compile an inventory of components identified in rural development literature as being essential for implementing programs and projects and (2) to review and evaluate experience of developing nations in using those components to stimulate rural economies. Ultimately, projects must be tailored to the needs and constraints of individual countries, and although a review of potential inputs may provide insights that assist project planners and managers to avoid mistakes and to improve designs, any particular combination must always be retested within each new environment.

A FRAMEWORK FOR INTEGRATED RURAL DEVELOPMENT

Rural development literature contains a bewildering and sometimes contradictory array of recommendations regarding inputs essential to achieve policy objectives, but at the same time it reveals some pervasive

patterns of agreement. Four general sets of inputs are recurrently identified:

1. *National policy and organizational inputs* include such factors as political commitment to the goals of rural development and social equity, national administrative support for rural development policy, planning and programing procedures for setting priorities and translating policies into programs, a system to provide continuing budgetary resources to rural development projects, and the organizational capacity to coordinate and implement rural development activities. Other inputs include arrangements for decentralizing decision making and implementation authority; appropriate international trade policies for maintaining balance of payments and export markets for surplus goods; clearly defined national policies supporting rural development in such areas as migration, education, labor, land distribution, and population planning; and access to international funding and technical assistance.

2. *Technical inputs and direct program components* are elements of the "package" of services and facilities delivered to rural areas or those included in a discrete rural development project. Among the essential technical inputs are appropriate technologies for primary production, local institutions such as cooperatives and farmers associations, an accessible system of credit and finance, marketing and storage facilities, physical infrastructure, and public utilities. Other direct components include extension services, agricultural training programs, systems for testing and diffusing innovations, formal and nonformal education, land improvement and resettlement schemes, and small-scale industries directly related to the local primary resource base.

3. *Programmatic inputs for project organization and implementation* include organizational structures and managerial manpower and procedures required to plan and execute rural projects. These inputs include an adequately staffed and funded project implementation unit with direct responsibility for executing rural development activities, appropriate project planning, and programing systems capability, an ongoing evaluation capacity, staff training procedures, and effective mechanisms for involving local people in project planning and implementation.

4. *Local support components* are comprised of those inputs needed to build, expand, and maintain the capacity of local, district, or regional governments and private institutions performing support functions in the project area. Among the inputs needed are local political commitment to national rural development programs, local government planning and administrative capacity, agricultural research and experimentation units, minimum levels of public services, small-scale nonagricultural industries and commercial activities, adequate housing and shelter,

basic health and social services, repair and maintenance facilities, and physical infrastructure and roads.

Together the inputs depicted in Figure 2 represent a protean array of requirements, the nature and impact of which are only vaguely understood. This chapter describes the technical inputs and services needed to stimulate rural economies, Chapter 5 concentrates on local organizational needs for project implementation, and Chapter 6 outlines national political and administrative inputs for policy implementation.

Three major points emerge as the analysis proceeds: First, ultimately all of the inputs are related, forming a mutually reinforcing set of preconditions and components for building the productive capacity of rural areas; second, inherent within these inputs is a "hierarchy" of functions, each essential to settlements at different levels of development and each performing a valid role in transforming rural areas into more productive communities or regions; and, third, corresponding to the hierarchy of functions is a hierarchy of settlements to which those inputs must be delivered in order to promote social transformation and economic growth.

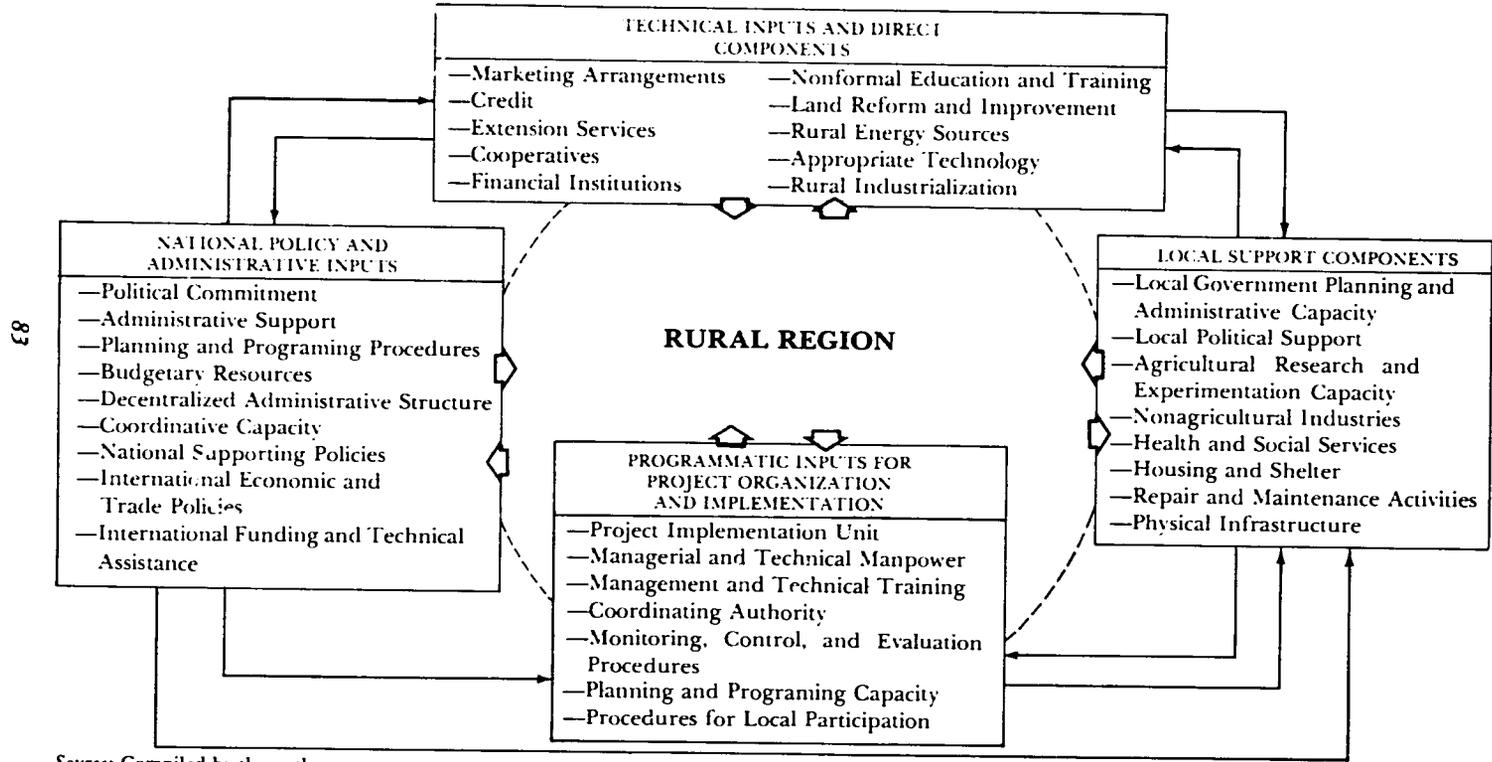
TECHNICAL COMPONENTS OF RURAL DEVELOPMENT

Identifying appropriate technical inputs needed to stimulate rural development should be given priority in integrated development planning. The literature on rural development offers a vast array of possibilities, but the following inputs are considered fundamental to any program of economic and social transformation: marketing, credit and financial institutions, extension and training services, cooperative arrangements, land improvement and resettlement, rural energy sources, appropriate technology, and rural industrialization. These elements of rural development must be created through government intervention or strengthened by public incentives to and regulation of private organizations in most developing nations.

Marketing Arrangements

Deficiencies in marketing structure are a serious bottleneck to increased agricultural productivity in nearly every developing country. Marketing problems appear in rural areas throughout the Third World, yet governments have paid only sporadic attention to them. To increase productivity, farmers must be able to convert increased production to cash quickly, for without greater income they cannot save, invest in new technologies, or acquire other inputs needed to expand output. And to obtain cash for their crops, farmers depend on access to a relatively free

FIGURE 2
Functional Components of Integrated Rural Development



Source: Compiled by the authors.

competitive market system to provide fair prices for their goods. In most developing countries, however, free market operations are unlikely to evolve spontaneously; rather, in isolated rural areas, most of the crops are purchased by owners of storage and processing facilities, trucker-buyers, commission agents, and market intermediaries.* "In general," Nelson notes, "this situation is characterized by a few market elements that create a monopsonistic situation in which such elements are integrated with production and consumer credit and trucking services and [where producers] have difficulty in organizing themselves."⁴

A wide variety of marketing problems limit agricultural output in developing countries. Among the most important are limited access, lack of adequate organization, the small scale of agricultural production, and structural problems. Many small-scale farmers in economically lagging regions can market their products only with great difficulty. Physical limitations sometimes prove insurmountable: The few existing rural highways are usually hazardous and poorly maintained, and bridges washed out by torrential rains may not be rebuilt for months. Commodities that do not reach market spoil quickly. Some producers are far removed from even rudimentary roads, and if they do make the long and arduous trip to market, they are sometimes forced to sell their goods at a loss. Physical difficulties are compounded by lack of information. If market prices were available, the small-scale farmer could better assess the worth of undertaking an arduous marketing trip, or could choose to store his produce in anticipation of better returns at a later time. Inadequate and unreliable market information reduces his bargaining power and, ultimately, the prices he receives for his products. Research in Ethiopia shows that the flow of price information is closely related to distance from market, and to the nature of the crop, with price information on commercial products disseminating more widely. Access problems are exacerbated by high freight rates, often inflated by low backhaul ratios, and the shortage of rural entrepreneurs, who migrate to towns or cities, where their talents will bring higher returns.⁵ Thus, in many remote areas, farmers often respond to market access difficulties by producing only low-bulk, high-value commodities, particularly those that can be conveniently stored for relatively long periods without spoiling.

*Marketing intermediaries play a very important role in the absence of a comprehensive rural regional infrastructure; working for a small commission, one or two farmers sell small quantities of their neighbors' produce at the nearest center; other types of intermediaries buy at each farm gate and move produce to the nearest arterial route for resale to national and international buyers; others buy small quantities of produce along rural roads and, in minor markets, consolidating the lots for domestic and foreign resale.

Lacking competitive markets, small farmers act on inadequate information and are exploited by middlemen or brokers. They are often forced to sell most of their commodities immediately after harvesting in order to pay loans and taxes and meet other obligations. Frequently, the small-scale farmer must harvest a small portion of his crop, sell it for whatever price he can get, and only then hire laborers to bring in the remainder. Consequently, farmers are forced to sell at depressed prices in a period of plenty and, without cooperative or other organizational alternatives to protect their interests, never save enough to invest in more productive technology. Government policies commonly reinforce this cycle of penury. Even most official credit loans must be repaid after harvest with fixed-price sales. The operation of publicly sponsored organizations, particularly commodity marketing boards, often inhibits market expansion, since most boards deal only in export commodities and with commercial operations located near large cities. They generally display marked aversion to dealing with scattered producers from remote regions.

The development of modern marketing structures is also inhibited by traditional agriculture's low volume of production and the lack of product standardization, making it increasingly difficult to meet export quality standards. In Ethiopia, for example, where grain is spread on the ground and threshed by running oxen over it, foreign matter sometimes comprises as much as 25 percent of actual grain weight. Modern marketing arrangements are also constrained by the failure of most small-scale farmers to use modern grades and standards and by the problem of enforcing the use of correct weights. Lele notes that the average illiterate Ethiopian farmer can lose as much as \$4 per quintal by either false weighing or incorrect calculation of product value.⁶ Finally, even existing marketing structures in rural areas are highly prejudicial to the small producer. Problems of access, the nature of his product, lack of storage, inadequacy of other supporting organizations, and weak government regulation of the market, all lock the "little man" into a vicious cycle of poverty and inequity.

For all of those reasons, marketing has attracted greater attention in the new rural development strategies. But because of complex relationships between traditional and modern institutions and between local community problems and the broader economic policy questions, even the best-designed plans often go awry. Lele warns that precipitous price declines may accompany a technological revolution where production surpluses have to be marketed locally—because of "market fragmentation" resulting from lack of transportation, communication, and storage facilities in central places.⁷ Elaborate market development plans often fail to achieve desired results because they are beyond local administra-

tive capacity and do not take advantage of informal structures already in place.

Despite such difficulties, government intervention can both assist in establishing small-scale producers' organizations and in regulating marketing practices. Intervention is needed to promote additional marketing enterprises, especially in urban areas, perhaps taking the form of state purchasing organizations. Additional credit must be granted to producer cooperatives or private industrial and commercial interests to increase the number and competitiveness of outlets for agricultural goods in rural areas. Government purchasing contracts and tax concessions, together with location of services to attract businesses to marketing towns in rural areas, can contribute to expanding the consumer market for agricultural produce. Small-scale farmers usually gain the most where both credit and alternative markets are available.

Linking remote rural areas to market towns and larger cities by increasing physical infrastructure investments and locating agro-processing industries in rural areas can have highly beneficial effects on marketing practices. Where this happened in Iran, for instance, it is reported that subsistence agriculture rapidly became commercialized. As Thompson has observed, rather than depending on landlords and wholesalers to buy their crops for resale,

Farmers are now taking more responsibility for transport and sale of crops and their activities in this direction have been facilitated by the improved road system and the increase in the numbers of busses, minibusses, trucks and private cars using the roads. . . . Whereas peasant farmers were previously concerned only with that portion of their crops which was to be used to support their households, alternatives and choices in kinds of produce they grow and decisions about the amount of land and time they will devote to cash and subsistence crops must be confronted.

The location of agricultural-processing and cloth-spinning mills in nearby towns and accessible larger cities also created new markets for their goods and established new and more profitable marketing practices wherein "the peasant farmer has begun to participate more in the urban bazaar marketing system and less in the peasant marketing system."⁸

Marketing has large multiplier potentials and deserves a place in most rural development plans, for, as Lele concisely states, "there seems to be a wide scope for adopting a pluralistic approach in the development of marketing institutions . . . to increase efficiency through competition between formal and informal channels."⁹

Agricultural Credit

For most small- and medium-scale farmers, access to credit is a necessity for increasing output and productivity. Yet the great mass of farmers in developing nations must operate without it. Most farmers are unable to avail themselves of existing services even where government agencies provide credit or where they extend it as part of a larger development program. Low income and the lack of collateral exclude poor farmers from obtaining bank loans, forcing them to depend on such traditional sources as moneylenders, merchants, brokers and landlords.* But the problem in most developing nations is that rural people become tied to these traditional sources in a vicious cycle of debt from which escape is virtually impossible. They borrow against ensuing harvests, but low productivity permits little capital accumulation, thus forcing them back to the moneylender to borrow again for the next planting.

There are compelling social and institutional reasons for the small-scale farmer's continued use of traditional sources of credit: He needs to pay for weddings, funerals, baptisms, and the like; and, perhaps more important, he has learned from experience not to trust the government and official institutions. In most developing countries, credit programs are administered by government or by publicly controlled institutions, which, in almost all cases, insist on tangible assets as security. Hence, credit is usually extended only to those who least need it, which, in part, reinforces the position of traditional moneylenders who can profit from bureaucratic red tape and unnecessary complications and from the inability of government to render assistance when it is needed. To escape from this inevitable chain of events, credit reforms are needed to ensure that productivity increases lead to the accumulation of enough capital to finance agricultural inputs and qualify farmers for commercial loans.

Although new sources of credit are urgently needed in developing nations, commercial credit provided without technical assistance, cooperatives, and marketing facilities usually fails to increase small farm production and favors large-scale commercial farmers who are good banking risks. Credit extended without complementary inputs is static, generating little or no permanent increases in output at the end of the

*The traditional village moneylender is often unjustly maligned. In addition to providing various kinds of cultural buffers the traditional creditor often assumes the risk of crop failure as well as default on repayment. Moreover, in a society where opportunity costs of capital are very high—sometimes near 50 percent per annum—a moneylender's return may reflect considerable loss.

borrowing period. Rural development projects must make provision for dynamic credit, which leaves the farmer with increased assets, productive power, and income and which, the UN's Food and Agriculture Organization (FAO) contends, will lead to "a gradual change in internal economic structure of the farm, by providing it with the fixed and/or semifixed means of production necessary to enhance the efficiency of labor and to change traditional, primitive farming practices."¹⁰ But increasing the quantity of credit alone will not break the cycle of rural poverty. "Credit must be so designed as to give a strong positive inducement to the improvement of farm techniques, institutions and organizations and it must be supported by, and closely linked with, such related services as cooperatives, agricultural extension, marketing and agrarian reform programs."¹¹ Cooperatives can play a crucial role by combining credit, farm supply, and marketing facilities, and such programs are generally more sound when they incorporate group repayment schemes.¹²

Eligibility requirements must be drastically modified in most countries to relieve the high collateral constraints for small farmers and tenants; loan procedures should be simplified for illiterate or semiliterate peasants and crop insurance provided to protect borrowers and lenders against the vagaries of nature. As the World Bank points out, farm management assistance should be given to small-scale farmers as an inherent part of their loans in order to increase productivity and raise the probabilities of repayment. Interest rates for agricultural loans, moreover, must be substantially restructured and, where necessary, interest subsidies provided to encourage larger numbers of small-scale farmers to borrow. Additionally, new and more appropriate credit channels must be established to reach larger numbers of rural peasants by making credit conveniently available in the villages, on a timely basis with reasonable, appropriate, and simplified application and repayment requirements.¹³

Experience with agricultural credit programs in developing countries suggests that the programs cannot function effectively divorced from other rural development inputs. Credit does not create new resources; it is simply one important element of an integrated approach that should also include advisory services, marketing, land reform, and cooperatives, to redistribute resources more equitably. Since, under most conditions, agriculture does not compete well with other sectors of the economy in securing funds, a greater emphasis should be placed on encouraging saving among rural populations to finance their own development. Where rural credit institutions are created, they should be "public service instruments" sponsored by government to increase agricultural productivity rather than as banking enterprises. Government

should also be responsible for organizing related inputs, providing regular training for credit and cooperative personnel, and establishing a research function to evaluate and redirect credit policy. Improvements in services and organization are invariably more helpful to farmers than subsidized interest rates. Farmers benefit most directly when credit can be provided to them, especially in remote rural areas, rather than waiting for them to come to credit institutions for help.¹⁴

Financial Institutions

Saving and investment are essential for promoting economic growth, and the expansion of financial institutions is crucial to generating savings and investment in rural areas. But, as with other inputs, the financial system cannot be considered in isolation. Small-scale farmers in developing nations face three major financial problems: the lack of secure means of saving, adverse effects of "shallow finance," and economic fragmentation in rural areas.

In most developing nations, farmers operating low-yield holdings could increase output by investing in such modern inputs as improved varieties of seeds, chemical fertilizers, pesticides, herbicides, and farm machinery. But locally available resources are not enough for such investment, and financial institutions, geared mostly to industrial and commercial lending, find it uneconomical to lend to small farmers. Potential savings, available at attractive rates, do exist in rural areas, but the saver "lacks information about investment opportunities," as Lehr and Horvitz point out, "just as the farmer lacks information about the availability and location of credit."¹⁵ Even so, savers would probably be unwilling to risk their funds by making loans directly to some farmers. Indeed, small farmers usually prefer to keep their savings as currency or bank deposits or in the form of perishable farm commodities, which can quickly diminish in value because of inadequate storage facilities and market price fluctuations. A properly organized rural financial system could mediate between saver, by providing a secure means of savings at attractive interest rates, and the small-scale farmer who needs relatively inexpensive credit. Although they charge the farmer higher rates than government lending agencies give to prime customers, the rates of financial institutions for small farmers are much less than those charged by traditional moneylenders.

Rural development is also inhibited by economic fragmentation. As McKinnon points out, "The economy is 'fragmented' in the sense that firms and households are so isolated that they face different effective prices for land, labor, capital, and produced commodities, and do not

have access to the same technologies." He continues, "authorities then cannot presume that socially profitable investment opportunities will be taken up by the private sector . . . at least not for large segments of the population. One manifestation is . . . continuing mechanization on farms and in factories in the presence of heavy rural and urban unemployment. . . . In rural areas, tiny landholdings may be split up into small noncontiguous parcels, with inadequate incentives for agricultural land improvements."¹⁶ So-called "indivisibilities" or "discontinuities" give rise to fragmentation, for example, when a small-scale farmer does not have the wherewithal to invest in a complete "package" of modern inputs such as the seeds, fertilizers, herbicides, and machines required by high-yield varieties. Since much investment in developing countries is self-financed, with farmers or small businessmen saving from their own incomes, McKinnon observes that "the farmer can provide his own saving to increase the amount of fertilizer he is now using, but finds it virtually impossible to finance, from his current savings, the whole of the balanced investment needed to adopt a new technology." Financing a new technology usually requires the assistance of modern rural financial institutions.

An efficiently operated rural financial system can go far toward overcoming the problem of fragmentation, but few developing countries permit free operation of financial activities, and rarely are financial institutions found in rural hinterlands.¹⁷ Moreover, as Lehr and Horvitz point out, "government deficits frequently preempt the limited lending resources of the banking system and financing of the rest of the economy tends to be met from the meager resources of moneylenders and pawnbrokers."¹⁸ Policy generally discourages the intermediary role of financial institutions, resulting in "financial repression" of rural areas.

Savings can be increased in rural areas when financial intermediaries provide greater safety, higher yield, and liquidity than would be obtained by a saver lending directly to a borrower. When interest rates are significantly increased, for example, the level of rural savings has been shown to increase correspondingly. This was demonstrated in Taiwan and Korea, where studies show considerable voluntary savings when financial services and facilities were made available in rural areas.¹⁹ "There is adequate evidence," Lehr and Horvitz conclude, "that some of the rural development problems that characterize less developed countries can be assisted by giving greater scope to the operations of financial institutions."²⁰ Their activities must be liberalized, and interest rate restrictions must be lifted.

Although plans for financial development must be adapted to local conditions, certain institutions—commercial banks, savings and loan associations, credit unions, pension funds, investment companies, and

brokerage houses—will be needed in nearly every developing country. Financial development policies for rural areas should include (1) mechanisms for collecting basic information on the state of the financial system, including types of existing government and private financial institutions, the sectors they serve, the geographical distribution of institutions, and their profitability; (2) policies to control inflation—the experience in Taiwan, Korea, and the Philippines shows that inflation control measures have, as a side effect, encouraged personal savings; (3) wider distribution of financial intermediaries in rural areas—branch offices or mobile facilities reasonably convenient to rural populations, especially in villages on market days, can increase saving; (4) creation of rural financial institutions that offer secure financial instruments consistent with the savers' preferences; and (5) organization of rural insurance schemes—such as crop insurance schemes—that contribute to the credit worthiness of small farmers.²¹

Agricultural Extension Programs

Agricultural extension education is almost universally a part of rural development projects, for it is imperative that small- and medium-scale farmers have access to new agricultural technology and the skills to apply it. The objective of extension education is to transmit this technical knowledge in a systematic manner and to improve rural living conditions by training housewives and youth in a variety of household and vocational skills.

A well-designed and operated extension system should combine, transform, and disseminate information. Modifications are made on the basis of feedback from users. Extension systems should combine information about markets and opportunities, data on farmers' needs and desires, and research recommendations with information on policy objectives for agricultural development. Information is transformed and disseminated by translating it into the language of the local farmer and by building on his existing knowledge through mass media, pamphlets, brochures, posters, formal meetings, and demonstrations.

In most countries, however, agricultural extension programs face enormous operational problems, which can be traced to institutional, organizational, educational, and communication difficulties caused by inadequate interpersonal communication. Unfortunately, most extension services seek solutions to their problems by intensifying service, that is, by increasing the agent-to-farmer ratio. Quantitative rather than qualitative change is erroneously seen as the solution. But the number of extension agents per unit area is less important than individual perfor-

mance. Moreover, because of enormous expense, most programs could be neither replicated nor intensified enough to reach a majority of the rural population. To expand the Kenyan small-holder tea development program, for example, now costing about \$18 per farmer, to cover the entire nation would cost some \$38 million, more than the total expenditure in the whole agricultural sector in the late 1960s.

Many of the problems of diffusing innovation in developing nations, moreover, relate directly to deficiencies in extension education. Most commonly encountered problems are the attitudes and behavior of the extension agent, the nature of the agent's job, the lack of local social and cultural information, the failure to understand local agricultural systems, and errors in program design. The agent's sense of elitism causes recurrent problems in relations with local people. This was clearly observed in the Cameroon, where it is suggested that extension workers' salaries be reduced so that their living standards would not differ substantially from those of the average farmer.²² A similar problem was noted in Venezuela by Chesterfield and Ruddle:

Galling to the peasants is their perception of the agents' sense of superiority and maintenance of social distance. The islanders are always spoken to with the familiar "tú" whereas the agents insist on being addressed as "doctor." The perception is reinforced because the agents never leave their jeeps to visit the houses but instead beckon members of the household to their car. They seldom show any of the normal Venezuelan signs of friendship such as an *abrazo* or the slapping of arms. The seemingly foppish cleaning of town shoes with a paper handkerchief to remove the mere suggestion of mud and the taking of fruit without asking are other perceived manifestations of the extension agents' sense of superiority.²³

Other problems arise from the urban backgrounds of most extension agents, and their lack of identification with the rural communities to which they are assigned. In many cases, agents refuse to live in rural areas, preferring to travel—as infrequently as possible—from the nearest town to the field site. In Tanzania, where agents live as well as work in close contact with farmers, the rate of adoption of innovations and agricultural production increases significantly.

But perhaps the biggest block to successful diffusion of innovation is the extension agents' lack of understanding of traditional human ecosystems and their frequent contempt for time-honored ways of using renewable natural resources, which are often sophisticated systems for managing available resources and technologies. Freire argues that inherent in the concept of extension is an element of colonization or cultural invasion. In other words, extension generally aims at a total replacement of a time-honored system, the parameters of which are fully

understood by cultivators, with one that is considered to be "modern" or "better."²⁴ Thus, despite the aspirations of those involved in extension work, many projects are doomed to failure, given the change agent's a priori attitude that traditional agricultural systems are inefficient, maladaptive, and unsophisticated.

Extension problems are compounded, moreover, by widespread dissatisfaction among agents. Staffs often complain of low pay, slight chance of promotion—which is not generally geared to performance—poor working conditions, and inept program administration. Poor morale generally has an adverse impact on the agents' relationships with farmers and their ability to secure local support for programs. Agents are generally too swamped with a miscellany of unrelated time-consuming tasks to pay proper attention to their extension job. This situation may well account for the superficiality of many preextension work surveys and lead to the misidentification of opinion leaders, for example, and to the faulty analysis of human ecosystems. Many extension agents spend little time in the field because of heavy work loads, logistical problems, or perhaps simply disinclination. They prefer to work through intermediaries, opinion leaders, who they feel will have more success in reaching the entire community than would outsiders like themselves. Extension agents usually concentrate on the most vocal and visible elements of the local populace. But, in many cases, these people are not regarded by other members of their community as opinion leaders.

Attempts to solve the problems of extension services by simply intensifying inputs are futile, however, in the absence of complementary efforts to make innovations profitable to the small-scale adopter; equip extension agents to solve a range of specific field problems; devise an incentive system to stimulate extension workers; organize complementary institutions to handle complementary inputs such as credit, so that extension agents can confine themselves to teaching; and develop strong user population support for extension programs. Design of an ideal rural extension system, however, is extremely complicated. As Lele notes, variability in interinstitutional arrangements, climatic and soil differences, and social and cultural conditions in local communities "may often be far more important in explaining yield differences than is the effectiveness of any particular intervention, including extension."²⁵ Given the great variety of extension programs and the diversity of technologies they seek to introduce, it is virtually impossible to compare the impacts of the programs.

Close involvement of rural people in extension program design and implementation appears to be essential for success. Salient features of such an approach are clearly visible in the French technical assistance

programs in the Cameroon, the application of which may prove useful in designing projects in other countries. In the Cameroon, agents and farmers discuss local needs and problems in advance of technical assistance. The discussions, if properly conducted, allow farmers to perceive their individual problems as community concerns best handled by community action, and make farmers feel self-reliant, thus creating a more equitable relationship between farmer and extension agent. Later, actual demonstrations accompany group meetings, and research application centers for permanent demonstration are established. If genuine desire for change is aroused, then selected volunteers try out innovations, and innovators determine successes and failures through self-evaluation. Constraints are identified and steps outlined to eradicate them. At this stage, the extension agent is consulted as an adviser and successful innovators are trained to take over the role of adviser for other groups who will test the innovation later.

Nonformal Education and Training

Rural education is usually considered an important vehicle for introducing change in developing countries. But rural primary schools are few and, even in areas where they exist, do not generally deal with agricultural problems. Rural training programs and out-of-school education are also largely unsuccessful in providing agricultural education. Rural development is not likely to be self-sustaining, however, without a range of diverse yet related training programs to complement other project inputs. Training can be a mechanism for involving local people in the development process and for creating modern institutions. But, to be effective, training programs must sensitize people to the needs of rural development, create a receptive local atmosphere, improve the technical and administrative performance of field staff and upper-echelon administrative staff, and improve coordination to make implementation more effective.²⁶

Training programs in rural development projects can take a number of forms aimed at a variety of groups within rural areas: participant training, functional literacy, vocational, general skills, and women's training, as well as training for farmers and for trainers.

1. *Participant training programs.* Although "popular participation" is a goal of most rural development projects, it is rarely achieved. Projects calling for "client population" involvement in planning and assessing local needs often emphasize that such participation can develop the self-reliance needed for accelerated rural development. But when proj-

ects are implemented, local participation often falls by the wayside or, at most, is limited to token activities. As Lele notes from her survey of African cases, even "the most ambitious efforts to foster popular involvement can be thwarted by subtle forms of paternalism."²⁷ Even in the *ujamaa* scheme of Tanzania, where local participation is espoused "as an important objective of rural development and where political education in mass participation is a key element of the development strategy," genuine grass-roots participation often has not evolved.²⁸ In the Kenyan Special Rural Development Program, participation has been limited to self-help schemes, such as building cattle dips, and even that has not been particularly successful. Observations of the Kenyan program and that of the Venezuelan Corporación Venezolana de Guayana project in the Orinoco Delta, among others, indicate that in most instances people are not even informed of projects that are to be implemented in their areas,²⁹ and if they are, it is generally perfunctorily, through either formal public meetings, or notices, bulletins, or via mass media communications. When local populations actually meet with employees of the development authority, communications are generally one way (from top down) with few questions permitted and little evidence of willingness to modify approved plans in the light of local conditions.³⁰

2. *Functional literacy programs.* Rural development, to be self-sustaining, requires that at least some adult members of a community be functionally literate. The inability of illiterate farmers to defend their interests at market or to keep accurate records is a cause of many agricultural development project failures. Although illiteracy is a major constraint on rural development, relatively few development projects include adult literacy programs. Where they have been included, however, they contribute substantially to increasing communications and understanding of both development problems and project objectives. Imaginative variants of this idea, which convey the rudiments of numeracy and standard symbols but make no attempt to teach people to read, involve the use of traditional village theaters. In Niger, for example, village theatrical techniques were used to induce farmers to act out and repeatedly rehearse marketing scenes and encounters with credit agents, so that when the real situation arose, they could avoid being duped.³¹ Clearly, the traditional theater has wide application to the transmission of development messages, as evidenced by its extensive use in the People's Republic of China and the social commentary written into many rural dramas in Indonesia.

3. *Nonagricultural vocational training.* In most rural regions with high seasonal unemployment and underemployment, properly designed training programs teaching nonagricultural skills could contribute greatly to the reduction of joblessness. The range of new skills needed in

rural areas includes those for workers in agro-industries, for routine maintenance of physical infrastructure such as roads, construction work, and machinery and equipment repair. Other programs should seek to upgrade such traditional skills as carpentry and blacksmithing to make them more relevant to the demands of a modernizing region. Programs based on upgrading traditional skills appear to be more successful than those teaching new ones, since they build on the familiarity with traditional tools and materials and show a greater comprehension of how modest, sequential, and additive improvements to time-honored ways contribute to development. The program in Mali run by the *Compagnie Française pour le Développement des Fibres et Textiles*, which trained local blacksmiths to repair multicultivators, plows, and other modern agricultural implements and later to manufacture simple spare parts for them, was so successful that some smiths bought welding equipment and began to repair bicycles and motorcycles.³²

4. *General skills for rural development.* The main thrust of rural training activities is on skills related to agriculture and social services. In many instances these relate specifically to training extension demonstrators (for example, Wolamo Agricultural Development Unit, Ethiopia; Escuela de Demonstradores del Hogar, Venezuela) or to training model farmers (Chilalo Agricultural Development Unit, Ethiopia).

5. *Women's training programs.* In almost all developing countries, programs aimed at preparing rural women to participate in development focus on child welfare, nutrition, meal preparation, home economics, hygiene, dooryard gardening, domestic fowl, and sometimes handicraft production. In most instances, however, women's programs are biased by foreign curriculum developers: "All too frequently," laments Lele, "women's training programs also seem to miss the important point that the traditional roles of an African woman have often been quite different than in the West." African women, she continues, "have constituted an important portion of the productive rural labor force; yet their participation in agricultural training programs has been very limited."³³ Typical is the experience of the Chewa, in the Lilongwe area of Malawi, where, although women comprise 30 percent of the region's farm managers, they are virtually ignored in the agricultural development program, "despite the fact that Chewa women generally interact freely with men in all major rural activities and play an important role in decision-making."³⁴ Clearly, greater involvement of African women could increase the impact of rural development projects.

6. *Training for trainers.* "Client population" training can only be successful if those who train local rural populations are technically competent, understand local human ecosystems, in which "client populations" live, can translate technical knowledge into locally acceptable terms, and

have the ability to communicate with traditional, rural people. Once again, the litany of trainer defects is repetitiously familiar regardless of the differences in culture. Malian extension staffs are taken to task for their "paucity of technical knowledge . . . often compounded by their ignorance of the rural social structure and by their poor ability to communicate effectively with rural people. The staff that was in direct contact with the people lacked sociological and pedagogical training."³⁵ Strikingly similar responses are reported for Venezuela.³⁶

Thus an effective training program (1) provides or improves skills that cater to the fundamental needs of rural people and build on those already familiar, (2) addresses the needs of all clients—adult males and females, out-of-school youth, and children, (3) is flexible in design, building on the inherent advantages of formal, nonformal, and informal education and can be readily adapted to function in a wide range of circumstances, (4) coordinates various public and private bodies involved, and (5) uses teachers who are able to communicate with local populations and are willing to incorporate locals into the system as more than just students.

Cooperatives

The need to build organizational structure at the village level, in order to mobilize resources, coordinate inputs, and permit local populations to participate in planning and decision making is a recurrent theme of rural development studies. Rural people must not only understand and sympathize with plans and play a large role in their implementation but also see direct economic and social benefits in undertaking activities that will lead to rural transformation. Cooperatives enable small- and medium-scale farmers with similar needs and resources to join together to rationalize and expedite the input of modern factors and market agricultural produce. Their range is wide: from multi-purpose cooperatives designed to handle inputs, products, and seeds or fertilizers to those that market a single commercial crop. In some areas, cooperatives supply credit or perform simple banking functions. In Africa, colonial and national governments, international agencies, bilateral development programs, churches, political parties, and nongovernmental organizations have formed cooperatives; in some Asian nations (Sri Lanka, Iran, and Pakistan) they are primarily the creations of government. North African cooperatives are predominantly associated with land reform programs and those in West Africa with export crops. In Central Africa they play only a minor role in rural development, whereas in East Africa

they pursue social as well as economic development objectives. Latin American cooperatives form part of broader land development and reform programs. Some Asian cooperatives play specific roles in development—for example, in the relief of population pressure in Sri Lanka and as channels for disbursing government funds to increase food production and agricultural productivity in Iran. Organizational structures are equally diverse. In Venezuela, Ecuador, and Colombia many cooperatives are based on individual hamlets, a neighborhood group, or a village. African cooperatives are often based on the village, and those in Asia on groups of villages. Many developing countries' cooperatives are regarded as the most effective means of mobilizing resources and eliciting local participation. Although local institutions embrace a wide variety of organizations—farmers' associations, peasant unions, or syndicates—the cooperative is the most widely encountered.

Several facets of local social structure impinge directly on the ability of cooperatives to introduce self-sustaining change. They thrive where decisions are made internally, but, where external control is strong, they easily become instruments of outside forces. Sharp or rigid inequalities of wealth, power, and status within a community are not conducive to the development of cooperatives; nor, on the other hand, is an atmosphere of equality hostile to leadership and discipline. Social solidarity—a collective communal resolve to work toward development—has a major impact on cooperative development. Finally, cooperative organization must be attuned to the structural differentiation within a community; a single cooperative will not work in highly differentiated areas. Instead it may be more feasible in such areas to introduce cooperatives based on group rather than community interest.

Although, theoretically, membership should be wholly voluntary, in reality farmers are often pressured or induced into joining cooperatives. They may be induced by the prospect of receiving credit, pressured where cooperatives are monopolistic by the prospect of losing access to supplies or markets by not joining, obliged to join in order to receive land under a settlement or reform program, or denounced as heretical by refusing to join a church-sponsored scheme in Latin America. State-run schemes often require membership.

Little progress has been made toward achieving an egalitarian membership and an even distribution of benefits. Few organizations cater to the needs of the landless; instead, organizations usually benefit large- and medium-scale farmers, thereby reinforcing the status quo. More prosperous farmers tend to exert a preponderant influence over cooperative administration and to capture credit resources since they are usually the only members who meet bank requirements for obtaining loans. Rural elites can easily subvert the aims of the cooperatives for

their own ends and so short-circuit the rural development process. Common in Latin America is for one key individual to assume leadership and gradually to take over the local mantle of patronage and paternalism, distorting the cooperative to his own purposes. In Africa, where the real leadership decisions tend to be made by government agencies, serious abuse and mismanagement are rampant and members participate only marginally in decision making. In Asia, cooperative leadership often devolves on the relatively educated who have had work experience outside their village.

Certain traits characterize successful rural cooperatives, however, particularly in Asia, and they include (1) strong links with outside agencies that train local leaders, provide credit and other inputs, and audit accounts, disciplining those responsible for irregularities, (2) a socioeconomic structure that is not strongly hierarchical and relatively homogeneous membership in the cooperatives, (3) the ability to provide a major technological innovation (such as tube-wells), (4) leaders who are accountable to members, and (5) resolution of community conflicts through traditional institutions.

Land Improvement, Redistribution, and Settlement

Land tenure, the base of the economic structure of most rural societies, "embodies those legal and contractual or customary arrangements whereby people in farming gain access to productive opportunities on the land." It constitutes, according to Dorner, "the rules and procedures governing the rights, duties, liberties and exposures of individuals and groups in the use and control over the basic resources of land and water."³⁷ Land reform attempts to reformulate those rules and procedures so that tenure patterns are consistent with the goals of economic and social development. The principal types of changes include expropriation of large estates, which attempts to distribute land to tillers in either collective or individual ownership; abolition of tenant farming where tenants become owner-occupiers; amelioration of tenancy conditions through rent reduction, compensation for improvements, or greater security of tenure; issuance of land titles to improve tenure security; and changes in tribal or traditional farms to improve cultivators' rights.

Although viewed in the past as an instrument for achieving social justice and reducing economic disparities, land reform is now also seen as a means of increasing agricultural productivity. To be effective, however, land reform, like most inputs to rural development, must be ac-

accompanied by other changes in rural social systems. Moreover, if not properly administered, and in the absence of complementary inputs, land reform can have deleterious effects. In parts of Bolivia, for example, when large haciendas were divided among tenant farmers, poor cultivation practices soon led to widespread environmental destruction through soil erosion and vegetation damage.

The greatest obstacle to land reform is usually economic and political opposition by vested interests, which most often can only be overcome through confrontations between political elites and organizations representing farmers and laborers or through external pressure by assistance agencies. But many countries lack local organizations effectively representing tenant farmers, sharecroppers, and laborers that politically mobilize rural people, and there is no pressure group either to ensure that reform laws are passed or to enforce existing laws on rent control or minimum wages. The legislation that is passed is usually ineffective, which confirms the rural populations' view that government acts in bad faith and has no interest in improving the lot of the rural poor. When legislation is enacted in many developing countries, it lacks specific procedures to redistribute land in long-settled areas or to compensate owners at fair prices. Reform laws often focus on small holdings, ignoring the large estate; set up inordinately complex and excessively legalistic procedures; and fail to provide adequate budgets for implementation. In most developing countries, official land records have not been kept, and as a result claimants' statements cannot be verified or titles readily upheld. Similarly, the lack of statistics on the critical development variables provides planners with a poor data base preventing them from properly measuring the impact of programs.

No single approach to land reform is appropriate for the wide variety of conditions and problems that appear in developing countries. Strategies must be based on a nation's natural resource endowment, institutions, and sociocultural conditions, which vary greatly and include heterogeneous cultural mixes and land tenure systems, ranging from plantations to traditional small holdings. Equally varied have been the methods for redistributing land, which range from confiscation without compensation to expropriation with compensation by the state.

Schemes to open up pioneer zones on agricultural frontiers are common in South America and are also used in central Africa and Malaysia and Indonesia. Other resettlement schemes, in occupied areas, aim at rationalizing the distribution of population and creating a more equitable pattern of landholding. An example of the latter approach is to be found in eastern and north-central Sri Lanka. The largest number of individual resettlement and pioneer colonization schemes is found in Latin America, which include projects directed by governments and

"spontaneous colonization." Varied levels of success have been reported, and, because of the complexity of variables affecting performance, evaluation of this method of land development in Latin America is difficult.

A review of land reform programs indicates that the following needs to be done in designing policy: First, incentives must be created for those who would preserve the status quo and those reluctant to divest themselves of their holdings either through compensatory or punitive measures. Second, rural organizations must be created to enable peasants to express their needs and grievances. Third, two-way communications must be established to facilitate rural people's participation in program planning and implementation and government technicians should thoroughly understand the physical and sociocultural environments that they seek to change. Fourth, the natures of private property, freedom of contract, and competition need re-evaluation in legislation and policy making to place them within the context of development, for, in relation to land tenure, all three concepts may serve to perpetuate and exacerbate existing disparities.

Rural Energy and Rural Electrification

Economic and social progress is intimately related to the controlled use of energy. In developed nations, and in urban sectors of the developing countries, most energy is supplied by central electric power grids and petroleum fuels delivered via sophisticated transportation systems. Elsewhere, a variety of traditional sources of power generally depend on the use of indigenous materials. Originally, man depended on his own muscular energy, as many contemporary societies still do, a source hopelessly inadequate for rural development. Merriam notes that one man-year of muscle power is the equivalent of only about 150 kwh and is economically undesirable even at subsistence wage rates.³⁸ Animal traction is also basically inefficient and, under land tenure and ecological constraints, is not useful on a large scale because of severe limits on available grazing land.

Rural people usually burn wood, charcoal, or dung to satisfy fuel needs. At least half of all timber cut in the world is used as a domestic fuel, and 90 percent of the population of most poor countries depend on firewood, the average user burning up to one ton a year.³⁹ As fuel prices increase, urban people scrounge anything burnable, including twigs and garbage. In Pakistan the bark is stripped from trees; in India wood is "poached" from protected areas; and in the People's Republic of China newly planted saplings are stolen from reforestation schemes.⁴⁰ But the

problem is basically localized; the economies of wood as fuel do not permit trucking more than a few hundred miles beyond growing points. "The accelerating degradation of woodlands throughout Africa, Asia and Latin America, caused in part by fuel gathering," Eckholm points out, "lies at the heart of what will likely be the most profound ecological challenge of the late twentieth century."⁴¹ Deforestation leads to soil erosion, landslides, diastrous floods, dustbowls, the spread of deserts, degraded wild vegetation, and the silting of dams, reservoirs, and irrigation works.

In areas short of firewood, animal dung is used for domestic fuel, a common occurrence in the Indian subcontinent, the Sahelian Zone of Africa, Ethiopia, Iraq, and in treeless tracts of the Bolivian and Peruvian Andes. In India, Pakistan, and Bangladesh, dung patties are a traditional domestic fuel—animal waste used for fuel is equivalent to more than 30 percent of the chemical fertilizers used annually in India. Other substitutes are used elsewhere. In highland South Korea, villagers cause soil erosion by raking whole hillsides clean of leaves, vegetation litter, and burnable materials, in addition to cutting branches, shrubs, seedlings, and grasses for fuel.⁴² The Tiv people of Eastern Nigeria react to fuel scarcity by uprooting and burning crop residues formerly left to reduce erosion and enrich the soil.⁴³

A number of alternative energy sources are available in rural areas: wind and water power (mechanical); solar energy and "bio-gas" plants (thermal); local, regional or national grids; auto-generators; and "solar batteries" (electrical). In purely economic terms, most of these alternatives are too expensive for either individuals or communities, and a "socially oriented" public institution must usually bear the financial costs of developing and providing alternative energy supplies in rural areas. Locally available nontraditional sources in rural areas include the following:

Wind power. The great advantage of this source is that it is mechanical, whereas most local energy sources are thermal.* Its major disadvantage is that it is undependable, hence best suited for tasks such as lifting water and grinding grain, which do not demand continuous work. The most appropriate use of wind power is for charging electrical storage batteries.⁴⁴

Water power. If available (usually it is either absent or only seasonally present), this source should be used first; small streams can be dammed

*Different forms of energy are interconvertible, but some may be more efficiently converted than others. Thermal sources are the least efficient.

for multiple purposes (for example, for irrigation, fish ponds, and power) to produce either mechanical or electrical power in small amounts and at a reasonable price for small local communities.

Sunshine. "Solar energy" in the form of direct solar radiation has five unique advantages: It is inexhaustible, intrinsically pollution free, abundantly available, widely distributed, and freely available without political complications. Like wind power, however, its intermittent supply and diffusion in space is an additional drawback leading to collection difficulties. And the conversion of solar radiation to everyday energy uses is still an expensive and sophisticated process as yet unsuited to the rural needs of developing countries. Merriam suggests that its best use is for refrigeration (household refrigerators, space cooling, air conditioning, and icemaking) and for produce storage in agro-industrial processing plants and in wholesale and retail outlets.⁴⁵

"Bio-gas" plants. Butane, a highly combustible gas produced under anaerobic conditions by bacterial action on organic matter, can provide a cheap source of domestic gas in rural areas. On certain small Pacific islands—which face particularly difficult energy development problems—Chan has shown that a 300-gallon tank can supply the lighting, cooling, and refrigeration needs of a family of six when filled with pig manure.⁴⁶

All of these nontraditional energy sources, however, can only serve small, isolated population clusters and individual farmsteads, and they offer no extensive solution to the energy requirements of rural development. Such needs demand rural electrification. Rural electrification can only be supplied, however, with the growth of sufficient demand. Before a public grid makes supplies available, large farms, businesses, and small communities frequently produce their own electricity from small, diesel, or water-powered generators. This type of "auto-generation" ranges in size from five-kilowatt plants producing enough for small-scale refrigeration and lighting on a farm to 1500-kilowatt plants capable of powering an entire sugar mill. Auto-generation is relatively expensive, but because of demand such enterprises are generally profitable. As demand develops, supplies eventually come from public power grids, established first in major urban centers, gradually extending to smaller towns, and eventually reaching villages, scattered farms, and individual agro-industrial plants. Most public investment is in supplies from a main grid, although some is made in auto-generation. The World Bank notes that "capital costs of supplies from the grid are much higher than those of auto-generation, but the fuel, operation and maintenance costs are much less. When the utilization of the project is high, this strongly favors the more capital-intensive

and less fuel-intensive investment in supplies from the grid." Auto-generation compares well only when use levels are low but is heavily penalized by fuel costs. In remote localities, however, a grid system cannot compete because to extend a transmission line of 25 kilometers to an isolated demand center costs almost \$100,000. Rural electrification costs are acutely sensitive to the level and growth of demand, level of use, distance between demand centers, and nature of topography.⁴⁷ Initial investment in public supplies may cost about \$50,000 per demand center, but marginal extensions to neighboring communities may cost only \$5,000.

Rural electrification presents certain unique planning problems not encountered in other public utilities. These problems fall mainly into two categories: ordering priorities, and the economics of location and distribution. The question of priorities concerns both the importance of rural electrification in comparison with other investments needed in rural areas—such as physical infrastructure, new agricultural technology, credit, marketing arrangements, and land improvement—and the most effective sequence for introducing electrical energy in a rural area. Rigging transmission lines, putting in other components, and servicing electrical plants are often much cheaper if preceded by road development.⁴⁸

The economics of location and distribution also constitutes a special problem for planning rural electrification programs. The 100,000 villages of Mexico obviously cannot all be provided with independent "micro-grids." Because of the geographic pattern of demand—a hierarchy of nodal demand centers, with scattered individual demand units (farms)—and the nature of electrical technology (nodes and linkages), the most sensible rural electrification planning unit is the region. "Costs can be reduced considerably by coordinated planning rather than by *ad hoc* piecemeal extensions in a region," according to the World Bank, and mobilization of local administrative and technical talent is easier at the regional level.⁴⁹

The following principal criteria should be used to identify regions most suitable for investment in rural electrification: fairly well-developed complementary infrastructure, growth of agricultural output, growing number of local productive uses of electricity in farms and agro-industries, number of not too widely distributed village demand centers, improvement of local income and living levels, already existing regional development plans, and proximity of the region to a main grid. World Bank experience indicates that "the returns to rural electrification increase with the level of development in rural areas . . . improved roads reduce the costs of construction, maintenance, and administration of programs."⁵⁰ Several interrelated benefits accrue from an investment in

rural electricity—growth of commercial activity resulting from increased rural incomes and the growth of infrastructure—together stimulate demand for increased power and energy.

Appropriate Technology

Technology embraces a range of definitions, a vast spectrum of “tools,” “software” and “hardware” components, social organization, and production machinery. Those in industrial nations who criticize modern technology for its adverse effects on society and the environment and for absorbing nonrenewable natural resources are undoubtedly correct in claiming that high technology does not produce “trickle-down” development and that it is too expensive for most developing countries. But modern technology is also extremely innovative in devising synthetic substitutes for the resources that it absorbs, and, clearly, high-technology-based industries in large urban centers have stimulated much of the growth that has taken place in developing nations. But to maximize benefits, modern technologies must be properly located in an articulated spatial system and complemented at different levels in a spatial hierarchy by intermediate and village-level technologies. A variety of technologies must be made available to developing countries, appropriate to their physical and sociocultural environments, ranging from the sophisticated oil refinery to the shifting cultivator’s digging stick. Each element has its appropriate function and place in national development.

The fundamental role of appropriate technology in rural development is to upgrade the welfare and increase the production of the small- and medium-scale farmer and tradesman. Intermediate technology is perhaps most suitable for the more prosperous and for farmers organized cooperatively, whereas the poorest majority may be better served by village technology. Schumacher argues that the task of intermediate technology “is to bring into existence millions of new work places in the rural areas and small towns,” to enable the poor to “work their way out of misery. The primary task must be to maximize work opportunities for the unemployed and underemployed.”⁵¹ More precisely, he formulates the real task of intermediate technology in terms of four basic propositions: Work places must be located where people now live; work places must be low cost and not call for insupportable amounts of capital; production methods, organization, raw material supply, financing, and marketing arrangements should mainly demand locally available skills; and production should use local materials and be aimed primarily at local consumers. Whereas intermediate technology

is concerned with small-scale industry starting with existing techniques and using knowledge of advanced techniques to transform them, village technology is aimed primarily at the small-scale "peasant farmer."⁵² In most of the poorer developing countries, where peasant farmers perform all operations using manual techniques and where goods are taken to market by human portorage, limited cash surpluses are allocated to purchasing essentials that cannot be produced at home (such as salt, clothes, kerosene, and modern medicine). Investment in new technologies has a very low priority, because of the high risk involved in adapting innovations and the lack of guarantees that new technologies will bring improvements.⁵³

In the poorest communities technological innovation must be low cost and of minimal risk. That realization, based on field experience in Tanzania, prompts MacPherson and Jackson to advocate village technology as the most appropriate form of agricultural innovation for rural development, arguing that "even intermediate technology is still too costly for subsistence farmers."⁵⁴ Advocates of village technology assume that innovation should begin at the current level of village technical competence (using, for example, carpenters and blacksmiths versed in traditional techniques), materials should be available locally at relatively low cost (the working of metal into the implements required by intermediate technology is largely beyond village technical capacity), and the technology should be capable of local maintenance and repair (a major factor, as breakdowns are a common occurrence and generally lead to inordinate time losses). Village technology should seek principally to reduce bottlenecks and constraints in production systems.

Two fundamental notions are implicit in making the concept of appropriate technology operational: (1) that certain levels of technology have an appropriate spatial location in a hierarchy of settlements, and (2) that individual farms or hamlets require a technological mix, with elements derived from different technological levels. To be appropriate, a technology must also fit into its environment and be congruent with national technological policies. A major problem in developing countries is labor absorption. Although technology policies should generate employment, no technology is useful if it produces goods or services for which there is no demand. To be relevant, technology should seek to fulfill demands for low-cost products within the purchasing power of local populations, a demand that often goes unmet in rural areas. "The marketability of products and services must be the overriding consideration in the selection of appropriate technologies for developing countries," Khan contends; hence consideration must "begin with an assessment of the primary needs of the local population, the demand for products and services to meet these needs, and a subsequent analysis of

the technologies that could economically cater to these demands through an optimum use of local resources."⁵⁵

There are few universally applicable technologies; those introduced in rural areas must be adaptable to local conditions, problems, and needs. Among basic criteria for choosing appropriate rural technologies should be their suitability in terms of (1) capital expenditure in relationship to what area residents can afford, (2) labor-extensive potential—technologies transferred and adapted by rural people should increase the amount of labor used or improve its productivity, (3) smallness of scale, in that the production from new technology does not oversaturate a limited domestic market and inhibit other entrepreneurial activities, (4) low-level skill requirements—that is, technologies transferred to rural areas should not have high skill requirements nor should it be assumed that large numbers of technically competent people will be available to operate them, (5) input requirements that use domestically or locally available materials, and (6) market-oriented product characteristics, in that products developed should be useful to local residents, relatively inexpensive, durable, versatile, and not cater exclusively to the demands of the wealthy. To stimulate rural development, a balance must be struck between traditional and modern technologies, each having its appropriate functions at different levels of the spatial hierarchy for communities at different levels of economic development.

Rural Industrialization

If economic participation is to be significantly expanded in developing countries over the next decade, far greater attention must be given to promoting small- and medium-scale industries in the agricultural and manufacturing sectors.⁵⁶ Experience in developing nations testifies to the close relationship between agricultural productivity and rural industrialization. Farmers will simply not produce more unless they can market and receive a fair price for their goods and obtain fertilizer and other inputs needed to increase output. Expanding agricultural production requires increased processing capacity in rural areas, and production of farm implements, fertilizers, irrigation equipment, and light construction materials at prices farmers can afford. Through creation of smaller industries, widely dispersed in rural service centers, market towns, and intermediate-size cities, developing nations can substantially increase opportunities for employment in the nonagricultural sector, expand the production of inputs needed to increase agricultural output, and multiply the number of plants available for processing farm commodities.

Where a deliberate policy of promoting smaller industries has been seriously attempted, experience has shown that small- and medium-scale operations can significantly stimulate resource mobilization, capital investment, and entrepreneurship. Smaller industries are usually the primary, and sometimes only, means through which rural people, serving as apprentices, can obtain specialized skills and experience. Smaller industries can also be important generators of employment opportunities. In Japan, which has strongly supported such entrepreneurial efforts through government programs, small and medium-size firms now represent more than 90 percent of the total manufacturing establishments, employing almost 70 percent of all nonagricultural industrial workers.⁵⁷ Not only can small industries provide a greater quantity and diversity of goods in smaller cities, towns, and villages at prices within the reach of lower-income groups, but experience in India, Japan, and Korea shows that they can also contribute to export production. Where they have been successful, small industries generally require lower investment costs per job, use labor more intensively, have lower capital requirements, and make use of more local resources and materials than do larger industries. Small-scale industrialization can thus serve as a base for a strategy of attaining more equitable distribution of income, overcoming regional disparities, and transforming stagnant rural villages into more viable and productive economic communities.⁵⁸

But like small farmers, rural entrepreneurs and small-scale industrialists face a myriad of problems in establishing themselves and surviving in developing countries. They often lack the skills necessary to identify good potential investments, to prepare projects for external funding, to test their feasibility, or to negotiate loans from commercial banks and government agencies. They are generally excluded from government incentive schemes that benefit large industries and lack access to manpower and markets needed to produce and sell their goods. They finance their activities either from family savings or from credit obtained at high interest rates from moneylenders or buyers. Small industries are generally characterized by low levels of productivity, poor-quality output and packaging, inadequate technology, obsolete equipment, and limited and uncertain markets. In addition to poor access to credit and finance, they generally have insufficient raw materials and lack the managerial skills and knowledge of modern marketing, production, and accounting methods that might help them to increase profits. Without resources, they lack access to technical assistance and managerial advice.⁵⁹

The potential small-scale industrialist in most developing countries rarely has the resources for systematically identifying sound investments, and thus project identification must often be done by government agencies, commercial banks, or development organizations. Entrepreneur-

ship in rural areas is not widespread and the initiation of new ventures is often a "hit-or-miss" proposition. Without organized assistance with project identification, potential opportunities in rural regions usually go unexploited—and these opportunities are often more extensive than is generally realized. In regions where agricultural production and income have risen above subsistence levels, there is usually latent demand for goods and services provided informally or through unorganized effort or which are imported from other regions or large cities. This is especially true for local market goods such as furniture, basic clothing, housing construction materials, hardware, millwork, and fabrics; processing of agricultural commodities and extraction of natural resources; charcoal and brick making; light construction and transportation; and a wide variety of commercial services such as appliances, vehicle and machinery repair, spare parts manufacturing, and agricultural equipment production and repair.⁶⁰ Agriculturally linked industries can also provide the base of economic expansion in subsistence areas where new seed varieties, irrigation, or farm-to-market roads are being introduced.⁶¹

A combination of government programs is often necessary to initiate small-scale investment. India, for instance, has made some progress through pilot rural industries projects in areas where agricultural conditions seem favorable and production is increasing, in high unemployment areas, in tribal and economically lagging regions, and in areas where large industrial projects, rural universities, or research institutes provide potential opportunities through linkage activities.⁶² In particularly underdeveloped rural areas, where individual entrepreneurs may be unable or unwilling to risk their capital in setting up small industries, more direct government intervention may be needed. In Orissa, India, for example, stimulation of small-scale industrialization is the responsibility of the Panchayat Samithi Industries Program, through which village governments set up industrial cooperatives comprising agricultural laborers, artisans, and local or state government representatives. A small industries corporation in Orissa identifies and selects appropriate activities, constructs factory buildings, supplies machinery, trains workers, procures raw materials, gives technical advice, and assists in marketing surplus products. The units are managed by a state government or industrial extension officer. They provide on-the-job training for employees and potential managers.⁶³

Through industrial extension services such as those offered in India, Japan, and Korea, prospective entrepreneurs and owners of small industries can be advised on design alternatives for more effective production, and on plant layout, machinery installation and operation, and other aspects of industrial management. Demonstration of efficient

technical processes are conducted in extension service centers in India. More remote rural areas are covered by small mobile workshops mounted on trucks.⁶⁴ Some Asian governments also provide industrial profiles to potential entrepreneurs that outline capital investment, infrastructure, power, equipment and facilities requirements, and the size and type of community most likely to have sufficient population and infrastructure support efficient operations of a plant to produce products in a particular industry. In Korea and other countries, the government has leasing or hire-purchase options to provide factories to smaller industrialists, especially those capable of producing exportable goods but who do not have the capital to purchase adequate facilities.⁶⁵ Indeed, the inability of most small-scale producers to find adequate facilities has made construction of industrial estates an essential part of promotion programs in most Asian countries. Generally the government acquires and prepares suitable sites, provides basic infrastructure such as roads and power, water, waste disposal, and service facilities, builds and modifies plants, and in some cases provides warehouses, common services facilities, repair shops, and financial services at the site.

Perhaps the most serious problems reported by small-scale industrialists are the lack of access to adequate credit from commercial lending institutions, general shortages of capital, and high rates of interest. New entrepreneurs and rural industrialists are usually considered poor credit risks. With small amounts of personal savings, meager assets to offer as collateral, and shallow backgrounds in business, small rural entrepreneurs, like small farmers, are often excluded from serious consideration for loans by organized credit institutions. Moreover, cultural gaps between bank loan officers and rural small businessmen often make the process of appraisal and negotiation of loans for small enterprises even more difficult. "Integrated lending packages" that combine credit, technical assistance, design and marketing advice, and managerial training for small-scale borrowers should be created by government agencies and commercial lenders for specific industries and rural regions. Appraisal and lending procedures must also be modified and liberalized; more simplified appraisal criteria, flexible loan conditions, streamlined application and processing procedures, lower collateral requirements, the provision of credit insurance at nominal cost, and single credit screening based on the proposal's merit rather than the credit rating of the borrower are essential to rural industrial promotion efforts.⁶⁶ Much of Japan's success in generating small-scale industrialization can be attributed to the fact that an "impressive array of government financial institutions are engaged in financing small industries"; as the writer notes, "no other Asian country has such a vast network of lending institutions to help small industries."⁶⁷ Where small-scale in-

dustrialization programs have been even moderately successful, as in Japan, Korea, Malaysia, and India, it has been due to the attitude among government and private bankers that this sector represents vast opportunities for expanding productive activity, income, savings, and investment, and that extensive efforts should be made to extend credit and technical assistance more widely to small-scale industrialists.

In brief, to stimulate rural economies in developing countries requires a vast array of technical components for increasing agricultural production and creating nonagricultural employment opportunities, and experience with rural development projects throughout the developing world strongly indicates that the inputs must be "packaged" in carefully sequenced and well-integrated programs designed to meet the particular needs and conditions of different rural regions.

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STRENGTHENING LOCAL ORGANIZATION AND SERVICES

After an appropriate combination of technical components has been identified, two other preconditions are necessary for integrated rural development: efficient project implementation organizations at the local level and a set of local support services.

PROJECT IMPLEMENTATION AT THE LOCAL LEVEL

Well-established institutional constraints must be overcome in order to expand government capacity to manage integrated rural development projects and to make the new development strategies operational. Technical, financial, and administrative elements simply will not be coordinated unless a specific organization is made directly responsible for project management. Thus, either the capacity of existing ministries to manage development projects must be expanded or autonomous units with effective coordinating powers and skilled technical and administrative staff must be established to oversee the project at the local level. Project organizations must have not only the capacity to plan, program, and coordinate rural development activities but also the ability to train indigenous staff, monitor and control project activities, and elicit the participation of clients and beneficiaries. The importance of strengthening local organization for project planning and implementation in developing countries is emphasized by the World Bank in its rural sector policy paper. "Much more attention needs to be paid to public sector organization, procedures and personnel management, and to the manner in which project organizations should be fitted into improved public sector systems," the Bank contends. "Multisectoral rural development projects,

in particular, depend critically on inter-agency cooperation and coordination. Hence, those responsible for preparing such projects must seek to identify the real institutional constraints in the public sector and seek practical solutions."¹

Project Implementation Unit

Rural development projects succeed or fail on the strength and competence of implementing organizations. To succeed, projects must be assigned to a specific organization with sufficient resources and authority to perform its functions. Developing nations generally use one of three organizational arrangements for implementing rural projects: (1) assignment to an existing government agency, usually the Ministry of Agriculture or Rural Development, or to a provincial government unit, from which regular civil service staff are obtained for management and coordination, (2) creation of an area-based coordination council or committee that attempts to integrate the inputs of a variety of ministries, agencies, and private organizations through a board of directors composed of the heads of participating agencies and with a staff seconded from one or more of the ministries for temporary duty, and (3) establishment of a distinct project implementation unit, usually autonomous from and outside of the regular government structure, with staff recruited specifically to serve with the unit, earmarked financial resources, and independent authority to perform specified functions.

There is little agreement on which arrangement is best. Assigning projects to existing ministries or coordinating councils is favored by some because it places responsibility for execution directly with government agencies and can thus help build the administrative capability of operating ministries. The theory that autonomous units are more effective is based on the weakness of public administration in most developing countries and the need to secure a degree of independence for project organization and operations. The lack of planning and administrative capabilities and the dearth of trained manpower has forced many governments to create autonomous agencies, and international lending agencies, especially the World Bank, have insisted on this arrangement as a means of increasing the probabilities of successful execution and loan repayment. Assessing projects in Cameroon, Malawi, and Ethiopia, Lele notes that the low levels of administrative capacity made implementation of rural development programs by operating ministries nearly impossible, mandating the use of autonomous units. "In creating such autonomous administrative units," she observes, "it was assumed that the improvements in the indigenous administrative systems essential to achieve similar results on a wider scale could often be initiated more

effectively by the demonstration effect of the integrated projects than by the alternative of improving the inadequate, uncoordinated and ill-trained existing administration."² Creation of autonomous units allows developing countries with severe shortages in trained manpower to recruit expatriate managers to supplement civil service personnel. A number of other advantages are also ascribed to that approach:

1. It guarantees that the project will be assigned to an identifiable organization that can easily be held responsible for its activities, thus creating greater incentives to show visible results;

2. Clear authority can be granted to a single organization to coordinate activities and supervise performance of project functions within a specific region;

3. Financial resources for the project can be shielded from the routine budgeting process by creating special funds for the unit or by allowing it to raise revenues outside of regular budgetary processes;

4. Autonomous units can be granted authority to give higher salaries, better fringe benefits, and other amenities to attract highly skilled technicians and administrators outside civil service personnel and pay-scale constraints;

5. Independent organizations often have greater flexibility to innovate and experiment than do regular government agencies;

6. They generally have greater freedom from bureaucratic routine, red tape, and complex interorganizational procedures for approving operating decisions;

7. Because they are organized to implement a single project or a related set of projects, they can focus on a limited number of tasks, performing them more efficiently and expeditiously;

8. They can often perform highly specialized functions and activities that regular government agencies lack the competence or resources to undertake;

9. Sometimes they can be sheltered from the political in-fighting and bureaucratic conflicts that plague regular government agencies.

But establishing autonomous units for each major project can have serious disadvantages. Too often they become "powers unto themselves" responding more to international professional standards, pressures of funding agencies, and their own political interests than to directions from the national government or the needs of clients. In addition, the proliferation of autonomous agencies fragments budgetary resources and weakens the ability of the central government to make strategic budget decisions. In many cases autonomous units compete with operating ministries for the best talent and financial resources, draining regular agencies of their most skilled personnel. By isolating project

management and planning functions in specialized organizations, the administrative capacity of regular government agencies is weakened, or at least not improved. Tensions, jealousies, and conflicts frequently develop between indigenous personnel seconded to the autonomous organizations and the expatriates who often occupy higher-level positions. Being outside the structure of government, autonomous units often find it difficult to obtain the cooperation of regular ministries and agencies and of civil servants over whom they have no direct control or claims. Perhaps most important, autonomous agencies often attempt to perpetuate their own existence after completing projects and fail to transfer the procedures, methods, and outputs to regular government agencies. In many countries, autonomous project organizations are necessary because administrative reforms, training, and modernization cannot proceed quickly enough to increase the capacity of ministries to manage additional projects in the immediate future. But, at best, creating autonomous units is only a temporary palliative; national, provincial, and local government units must be strengthened in order to plan and manage projects as an integral part of public administration. Based on experience with African rural development projects, Lele argues,

if project authorities are to be established as a way of alleviating the constraint of absorptive capacity and of creating a noticeable impact in the short run, there is an important advantage in facing the problem of its integration with the existing government structure at the outset in that it facilitates the necessary adjustments in project design, thus increasing the long run effectiveness of the project.³

Managerial and Technical Manpower

The shortage of skilled manpower to plan, manage, and operate projects is a major bottleneck to implementing integrated rural development. Assistance agency evaluation reports repeatedly stress the need for trained project managers. "The constraint most frequently mentioned in connection with absorptive capacity in Ethiopia is the availability of trained manpower, availability in terms of numbers, quality and ability of the government to contract those it requires," notes one USAID evaluation team. "On the basis of an objective appraisal of the manpower situation one has to conclude that Ethiopia needs additional highly trained and experienced personnel if it is to initiate new projects and activities."⁴ This finding is echoed by a World Bank Mission to West Africa: "A major restraint in the region is the shortage of skilled local manpower to identify and prepare projects."⁵ And the Asian Development Bank argues that "the further development of institutions to

provide a steady stream of trained cadres for the more effective use of resources is a necessary ingredient in raising the absorptive capacity of the smaller and less developed countries."⁶

Most African and some Latin American and Asian nations depend heavily on expatriate managers and technicians to staff rural development projects; but this also produces problems, for experts with language skills and cultural knowledge are scarce, and low salaries, poor housing, and the lack of amenities in rural areas make foreign experts reluctant to live in remote regions. Expatriates often have difficulties working effectively with indigenous personnel, and the high turnover and dissatisfaction among indigenous professionals, relegated to junior positions in project implementation units, is a serious deterrent to more effective administration. Uma Lele notes, in her analysis of African rural development projects, some of the problems in Ethiopia:

Whether prompted by legitimate or perceived grievances, the dissatisfaction of WADU's [Wolamo Agricultural Development Unit] staff illustrates the vicious circle created by initial staffing problems: poor working conditions, and inadequate training given to the available indigenous staff and, hence, inadequate incentive to remain in project authorities. Because of staffing difficulties, project authorities are generally left with relatively few, if any African employees in management positions and with a considerable concentration of expatriate manpower at the project headquarters. . . . The minority position of indigenous staff is also not very conducive to a profitable interaction between the expatriate management and the few relatively less trained and less experienced African counterparts.⁷

Integrated rural development policies must attempt to expand the number of trained project managers through both formal training and supervised experience. Projects should be designed to provide indigenous professionals with a broad range of experience in administering rural development activities, and ensure that expatriates work closely with local counterparts in order to leave behind a cadre of trained administrators and technicians capable of manning future rural development projects.

Project Management and Technical Training

Until developing nations expand their cadres of professional project managers and technicians, rural development projects themselves must be used as training vehicles, and thus must have the capacity to organize, implement, and evaluate internal training programs for staff, participants, and temporarily assigned civil servants. From the World Bank's

evaluation of rural development projects in Africa, it found that the following factors influenced the effectiveness of training programs in autonomously organized projects:⁸

1. Close expatriate-national interaction in administration of the projects, aimed at replacing as quickly as possible foreign managers and technicians with African personnel, reduces tensions and gives indigenous staff a sense of purpose and an incentive to learn;

2. Administrative flexibility is essential to allow indigenous staff to be assigned increasingly more important tasks without being constrained by bureaucratic rigidities and narrow job classifications. "Only when the programs are able to respond quickly to provide deserving Africans with genuine managerial experience before expatriates leave will the quality of management be maintained," Lele observes;⁹

3. An adequate training budget must be provided to recruit more trainees than the number of potential managerial positions available in order to overcome manpower shortages caused by rapid turnover and attrition;

4. Expert assistance should be provided when unusual difficulties requiring special advice arises during the implementation of the project, but its routine operations should be left as much as possible to indigenous management personnel; and,

5. Management training should provide a constant emphasis on research and evaluation rather than on rigid or standardized management techniques; since integrated rural development projects are experimental and complex, the most important managerial skill is the ability to analyze problems and respond with appropriate solutions rather than in applying any particular management principles.

Planning, Programing, Coordination, Monitoring, and Control Procedures

Regardless of organizational structure—whether projects are assigned to operating ministries, coordinating councils, or autonomous implementation units—the executing entity must have the authority and capability to plan and program activities and to monitor and control their progress within the project area. Ideally, these functions should be joined within a single organization, for planning, programing, coordination, and control are basic and closely related managerial activities. Weitz and Rokach found in their studies of integrated rural development in Israel that success ultimately depends on the ability of the project authority to blend planning with implementation and to coordinate

varied inputs and components. The project implementation unit must have either the budgetary support to execute all activities and components itself or the authority to guide government agencies in making their inputs as needed. "Planning and implementation must be closely interwoven," they contend, "with the plan continuously modified to fit real conditions. The institutional framework must be such that this dynamic interaction can proceed smoothly."¹⁰

Experience with rural development planning in other countries also indicates that, to be effective, it must be directly related to functional activities and to decision-making processes; the stronger the relationship of planning to implementation, the more likely plans are to be relevant and realistic. Since rural development is essentially a site-bound activity, planning can most easily be linked with implementation at the regional level. Egypt's experiments with regional development, which consciously attempted to vest both planning and implementation responsibilities within single authorities, found that the regions provided a more manageable base for planning than either national or sectoral frameworks, provided opportunities for attaining more detailed knowledge of local conditions, and allowed the authorities to exercise greater control over development activities. Plans could be tailored and projects designed to fit more closely the resources and needs of an area, and since regional institutions conducted the studies and formulated the plans, they could more easily stimulate local interest and support for regional projects.¹¹ In the Aswan region, for instance, in order to combine planning and implementation, the Development Planning Authority established sector development centers, each responsible for a specific sector of the regional economy. Each center collects data, conducts surveys of resources and needs, and identifies, plans, and prepares projects, then executes them after they are appraised and approved. A strategy board composed of two staff members of the authority and two representatives of the national ministries responsible for the sector are jointly accountable for providing staff, material, and financial resources for project implementation. Unless planning is done by or directly linked to the organizational units responsible for project and program execution, as in the Aswan region, planning is likely to remain extraneous and irrelevant to policy making.

An effective project organization must also be capable of guiding and scheduling the resource decisions of participating organizations and of monitoring and controlling its own internal activities. Tasks must be assigned to teams, groups, or individuals within the project staff. At the same time procedures must be created to secure facilities, equipment, land, labor, supplies, financial resources, and technical manpower to perform those tasks. Progress is measured by control techniques that

monitor project performance and the likelihood that results will meet planned objectives.

In designing the planning, coordinating, and monitoring procedures for project units, however, as Belshaw and Chambers found in their analysis of the Kenya's Special Rural Development Program (SRDP), techniques must be simple, appropriate to local conditions and needs, and directly related to programing decisions. Rural development planning must use analytical methods and procedures appropriate to the skill levels of indigenous planners and to the capacity of local policy makers to understand their results. Too often planning is unnecessarily oversophisticated, aimed more at satisfying the methodological rigor of scholars or the requirements of international funding agencies than at meeting the needs of national and local decision makers for useful information and recommendations for action. Overly sophisticated or needlessly exacting procedures can hinder rather than facilitate decision making. As Chambers and Belshaw observe,

The perfectionist planner and the intellectual academic are both susceptible to recommending yet more planning—more detailed and specific statement of objectives, the generation and analysis of more data, the identification, elaboration and choice between more alternatives. But planning, like politics, is the art of the possible; and perfectionist planning is liable to have two unfortunate effects: generating an insatiable appetite for planners, who are far from costless; and reducing the chances of anything happening on the ground.¹²

Their involvement in African rural development planning led Chambers and Belshaw to the conviction that effective planning must be appropriately tailored to the constraints in rural areas. They argue that simple procedures and usable techniques do assist policy makers and administrators in analyzing their problems but that the temptation to introduce ever more complex requirements and measures, more elaborate models, and more sophisticated analytical tools in many cases simply paralyzes activity. "Ingenuity and courage are needed," they contend, "to devise and use simplification—through quick and dirty surveys, through collapsing data, through rules of thumb, through the use of proxy indicators—accepting imperfections and inaccuracies as a price it is worth paying in order to improve outcomes."¹³

Appropriate systems are especially important in programing and management control, for overly sophisticated schemes will not only fail but may be perverse, causing serious problems and delays in project implementation. The main principals of an appropriate system of programing and review, tested in Kenya and found highly successful, are that (1) all those responsible for implementation should be required to

follow joint programming procedures; (2) staff should take part in setting their own work targets with flexible supervision from the project's managers; (3) collegial sanctions for poor work should be encouraged rather than punitive measures by project managers; (4) reports should be "lean and functional," encouraging those who are reporting to summarize essential information and recommendations for action rather than dwelling on justifications for a mistake or delay; (5) communication should be direct from the implementor to those responsible for a constraint without filtering requests through multiple layers of bureaucracy; and (6) meetings should be functional and used sparingly.¹⁴

Among the most important and least carefully considered functions of programming is the transfer of project activities, methodologies, and outputs to regular administrative agencies in order to ensure that services to beneficiaries are continued when a project is completed. Lele points out that African rural development projects faced two types of transfer problems: some components—roads, soil conservation, boreholes, community development, health clinics, housing and training, for instance—must be transferred to regional agencies or local governments; and profit-making activities, marketing, or credit distribution must ultimately become the responsibility of commercial institutions.¹⁵ The ability of the project implementation unit to transfer steadily functions to operating ministries, provincial and local government units, and private organizations is essential for strengthening the administrative capacity of public agencies in developing countries and for building institutional infrastructure in rural areas.

Procedures for Local Participation

Local participation in project planning and implementation is almost universally identified as an essential input for rural development, for participation increases the probability not only that local problems and needs will be expressed in the design and administration of rural development projects but that the results of the project will be more widely disseminated and more effectively used. Ultimately, it is the dissemination and use of those outputs that generate economic and social transformation. The more successful experiments in rural development have involved local leaders and rural communities directly in major activities. Evaluators note that a primary factor contributing to the success of the Lilongwe project in Malawi, for instance, was its ability to involve both tribal units and their chiefs in the project's operations, encouraging the chiefs to serve as members of the land board overseeing implementation of one of the project's vital activities.¹⁶

The ability to elicit local involvement depends primarily on the attitudes of project staffs and on efforts that they make to provide local residents with opportunities for participation. The success of the Comilla project in Bangladesh, for example, was attributed to the belief of staff members in the value of rural life, the basic wisdom of local farmers concerning agricultural processes and cultural traditions, and the ability to improve rural conditions through solution of problems at the local level.¹⁷ Studies of small farm rural development projects in Latin America and Africa show that participation by farmers can lead to ideas for more effectively designing projects, particularly those components dealing with agricultural production techniques; they can help to adapt components tested and proven successful in other projects to local conditions and needs; and they can test new technologies and organizational arrangements prior to introducing them on a broader scale.¹⁸

A survey of more than 80 projects for small farm development in rural areas of Africa and Latin America found that the following factors contributed to increasing local participation:¹⁹ (1) Geographical boundaries of the projects were well-defined and the client population easily identifiable; (2) project staff held a series of meetings with local leaders and farmers, delegating to them participation in or control over decisions concerning project design; (3) farmers were involved jointly with project staff in testing technological packages and organizational arrangements to be used in the project; (4) participants in subprojects were generally homogeneous in terms of social group and economic class; (5) the project staff developed an effective communication process with and among local participants; (6) organizational arrangements were created to give farmers a voice in decisions concerning project management; (7) high priority was placed on technical training of participants, and many were used as paraprofessionals to teach others technical skills; (8) involvement was related initially to single-purpose activities, such as credit provision or crop promotion, and later broadened; (9) systems of accountability were established to permit changes in leadership among local participants and to ensure that services were provided efficiently; and (10) opportunities were offered initially for local organizations to participate in income-generating activities.

In brief, experience with rural development indicates that success partly depends on good organization, the clear assignment of responsibility to an executing agency staffed with well-trained manpower, sufficient resources to coordinate and integrate technical and administrative inputs in the project area, effective procedures for programing, monitoring, and control, and procedures for involving local people in project planning and implementation. But since projects are, by their very nature, temporary and narrowly focused activities, they both de-

pend on and should contribute to the organizational infrastructure and administrative capability of the public and private sectors in the areas in which they operate.

LOCAL SUPPORT SERVICES

The success of even those rural development projects that are well organized to deliver a wide range of technical inputs depend in large measure on the support of public and private organizations in rural areas. At the same time, the projects themselves should contribute to building rural organizational capacity and to diversifying social and economic activities. Sustaining social and economic transformation in rural areas requires strengthening local government's capacity to plan for and manage public facilities and to deliver basic social services. Local political leaders and elites must be committed to the goals of rural transformation, and productive and social infrastructure—agricultural research units, public utilities, nonagricultural industries and commercial activities, repair and maintenance services, basic housing and shelter, and roads and highways—must either be in place or be developed in order to stimulate rural economies. Health, education, and social services are also needed. Where they do not exist, projects must be designed to provide these basic inputs prior to undertaking more sophisticated or complex activities. Indeed, the three other sets of components—national policy and organizational inputs, technical inputs and programmatic inputs for project organization and implementation—should all focus directly on building the capacity of governments and private institutions to sustain rural transformation.

Local Government Capacity and Political Support

Local governments play varied, but critical, roles in rural development. The Cornell Rural Development Committee found, in case studies of 18 countries, that local governments can be important channels for executing national policies, plans, and programs. The functions they are assigned include planning for and administering a number of national services and facilities at the local level: providing small-scale infrastructure, irrigation, and drainage facilities; coordinating a variety of public and private development functions, sometimes through direct action and other times through regulation, within their jurisdictions; and budgeting and allocating local and national revenues for municipal

operating expenses and small-scale capital investments. In some countries they are also charged with collecting local taxes, levies, and other revenues; arbitrating local conflicts, processing claims, channeling requests and demands to higher levels of government; and managing small local and provincial projects. In other nations, they provide a communications link between national and provincial governments and local communities and private organizations, allocate resources for self-help programs, and provide basic social services.²⁰ Evaluations of rural development programs in India, Pakistan, and China, moreover, indicate that local governments can perform broad political mobilization and popular participation functions, including the extension of institutional procedures for local participation in decision making, strengthening links between urban and rural places, expanding local leadership opportunities, and encouraging politically responsible and socially conscious bureaucracies in rural areas.²¹

In few developing nations, however, do local governments perform these functions effectively. In many, local government is the least capable organization in the national institutional structure, ignored by central government and local populations alike. Its effectiveness, at least in China, India, and Pakistan, was found to vary directly with the financial resources and administrative capabilities of local officials and with the degree of political support received from the national government. One analyst found,

If the local political system has the unfaltering political support of the national leadership and is regarded as a significant instrument in the developmental process, then its overall impact on the society will be far-reaching. Conversely, if it is merely an extension of field administration or is dominated by the bureaucracy its role performance will be limited in scope. The formal delegation of functions which is not accompanied by the capacity to mobilize resources and administrative skills will not suffice to make rural local bodies important instruments of social action.²²

But local governments in developing nations are generally so weak that they have not been able to provide adequate support for rural development projects. Hence, from the outset, policies must attempt to overcome some of the basic weaknesses in local governments if they are to sustain the process of rural transformation. Among the problems to be overcome are the following:

1. Poor tax collection systems. In most countries, the majority of local revenues are generated by taxes on commercial activities, vehicles, and social transactions amenable to licensing or regulation. Few local

governments have been able to create and maintain a large and diversified revenue base from which to finance development activities.

2. Dependence on central governments for revenues. The weak position of local governments in relation to other public institutions often stems from their dependence on central agencies or legislatures for appropriations. Where municipalities have been dependent on central governments for capital investment funds, improvement projects are often funded through "pork barrel" allocations made by political connections and influence rather than by development priorities.

3. Lack of effective revenue-sharing mechanisms. Problems resulting from poor tax collection systems of local governments and their dependence on the central government are further aggravated by the ineffectiveness of revenue-sharing systems in developing nations. The situation in Paraguay, described in one AID survey, is typical of the problem that local governments face in a number of countries: "there is little concept of sharing resources between the central government and the municipalities. Thus, nearly all monies raised by the central government are spent in Asunción. On the other hand, the municipalities lack sufficient know-how to utilize their independent taxing power."²³

4. Dependence on the central government for approval of operating and expenditure decisions. Most of the limited resources raised at the local level in developing countries are used to pay the salaries of local officials and for recurring expenses. Decisions concerning capital improvements usually must be approved by higher levels of government and are dependent on funding through central agency budgets. Again, the situation in Paraguay is typical. "There are virtually no revenues for investment in municipal improvements," an AID evaluation points out. "Any improvements are necessarily spread over a long period because of antiquated methods of planning financial needs and anticipated revenues. The planning process is basically the yearly budget submission which is at best a rough estimate of expected funds."²⁴

5. Poorly trained local officials. In most countries of Asia, Latin America, and Africa, local government officials are poorly trained and demonstrate little knowledge or skills in tax collection, budgeting, record keeping, planning, or service delivery. Training programs are sparse and sporadic, often with little follow-up to assure that what limited training local officials do receive is put into practice.

6. Staffing through political appointment. Finally, in a number of countries, local officials are appointed by the central government, usually on the basis of political loyalty rather than on administrative ability and experience. Political appointees, in turn, usually appoint their own cronies to lower-level administrative positions. In countries such as Bolivia, which for political reasons has had a high turnover rate of

mayors, there was a tendency for each new mayor to staff key positions with people loyal to him, usually those with little or no previous experience in government. Few reliable records of government activities and transactions are kept, and each employee takes whatever experience has been accumulated with him when he leaves the job.²⁵

In most countries, a strong argument can be made for including in rural development projects municipal development components, training programs for local officials, and institution-building activities, not only to expand administrative capacity of local governments but also to solidify the political support of local officials for the project's goals and activities.

Basic Health and Social Services

Low levels of rural welfare and productivity in developing nations have multiple and complex causes. As a result, social and health services are usually defined broadly, to include immunization against disease, provision of rural clinics, potable water supply, improved household and living conditions, and upgraded diets. Rural housing and sanitation programs and education and training endeavors are also sometimes included. Unfortunately, information on the role of social services in rural development is "sparse and provides little systematic evidence, either on the impact of these various social service interventions on rural welfare or productivity," Lele notes. "Nor does much systematic analysis exist of alternative technical and administrative choices in the provision of social services or of the effect of these choices on the costs of organizing social services."²⁶

Farm families undertaking heavy labor are especially susceptible to diseases, in the absence of health facilities and programs. In Kenya, for example, both adults and children commonly succumb to malaria and parasites, debilitating ailments that can be easily overcome by simple preventive treatment at a local dispensary and through the use of inexpensive water filters.²⁷ In many rural areas, proneness to disease is exacerbated by local food shortages and inadequate nutrition. Perceptions of prestige with regard to foods can also lead to nutritional problems. In northeastern Tanzania, for instance, surveys have found that the increasing prestige of cabbage over wild spinach has limited vitamin A intake.²⁸ Indeed, the problems of insufficient food, lack of nutrients, and susceptibility to debilitating diseases form a cruel, self-sustaining cycle leading to chronic malnutrition and, sometimes, mental deficiency among the poorest groups in rural areas. Nutritional improvement programs are fundamental to integrated rural development. These are

best focused on rural women—who are frequently in charge of the dooryard garden, where initial crop innovation experiments are made—particularly where development programs emphasize commercial cropping. In the absence of increased cash surplus for purchasing foodstuffs, simple methods of preservation—such as sun drying of fruit and vegetables—maintain food value, prevent food poisoning, and help eradicate the “hungry season.”

Available data suggest a large latent demand for rural social services, but the main constraints on increasing them are the limited financial, manpower, and organizational resources available for effective service delivery. In view of limited resources in most rural areas, social services often can only be provided prior to productive investments where additional financial resources can be raised locally to cover their construction or recurring costs or where social choices regarding local allocation of resources are related to the residents' willingness to pay for them. Some progress has been made where social services delivery systems were organized to use locally available talents. A high level of local participation is often easy to obtain; local resources are often provided enthusiastically for health and social services projects, reflected, for example, in the eagerness of many rural people to donate their labor to school or clinic construction.

Although the costs of social services can be reduced by using “barefoot” doctors and paramedics and traditional, communal work organizations, such programs are frequently hampered by organizational constraints. Some services, such as provision of a potable water supply, involve considerable capital costs and technical inputs, and the high recurrent expenditures involved in providing such physical facilities as school buildings and health clinics may create insupportable recurrent expenditures.

Agricultural Research and Experimentation Units

Research stations and agricultural laboratories of governments, universities, and agro-industrial corporations are the main sources of technological innovations in rural areas. But, in most countries, these high-level institutions maintain little contact with extension services and with ultimate users of their products. Those small-scale farmers aware of the work undertaken in such places usually find it irrelevant to their particular needs.²⁹

To support rural development, a hierarchy of agricultural research and experiment stations is required. A national institution concerned with capital-intensive agricultural technologies, chemical fertilizers,

heavy machinery, aerial dusting, hybrid seeds, export crops, and the management of large farms, among other things, is needed, and it should be complemented by an agricultural statistics and documentation service and national institutions of nutrition and public health. But researchers in national institutions are members of a scientific community who disseminate their findings through scholarly publications, and their choice of research is usually guided by personal interest, academic curiosity, donor priority, or concern with meeting international commodity standards. Invariably interests are externally oriented rather than concerned with filling local knowledge gaps and solving the problems of local areas.

Although they play a vital role in the growth of agricultural productivity in developing nations, national institutions can be made more relevant by focusing on the needs of the small farmer, such as by coordinating national studies on traditional crops and agricultural technologies. If modern technological innovations are to be effectively diffused to the small-scale user, they must be made culture- and site-specific. Thus considerable research and experimentation beyond the capability of extension agents are necessary and require creating smaller-scale centers located in rural areas devoted to working on agricultural problems of local communities.

The mandate of a rural agricultural research and experimentation unit should be to undertake adaptive research, tailoring complex technological recommendations to the specific needs of small farmers. Adapting technologies to local conditions requires extensive field testing, which leads, as one report points out, to recommendations that

account for local physical production constraints such as land, water and weather conditions . . . [and] would permit researchers to document more precisely the interplay of conflicting demands and/or impact of the new technology on farmer strategies of response to fluctuation in product prices, labor supply, credit availability and other contingencies.

Finally, local testing would involve detailed data collection, and a "continuing dialog with . . . the small farmers."³⁰ Above all, the local research unit should be in the vanguard of developing innovative cropping systems and farm technologies that would combine advantages of traditional practices and modern techniques.

Several examples of this type of local adaptive research can be found in developing countries—the Puebla project in Mexico, the Cáqueza project of Colombia, and a potato scheme in Bolivia being particularly noteworthy. Agricultural experimentation on the Puebla project has identified fertilizer uses for 16 different physical microzones of

the region and evaluated the performance of new hybrid maize varieties. Several technological packages were adapted on the Cáqueza project for both hybrid and traditional maizes; and on a Bolivian potato production and seed improvement project, five technological packages especially adapted for variations in altitude, availability of water, and seed variety were developed for small-scale cultivators.

Evidence from many developing countries clearly indicates the vital role that agricultural research and experimentation units can play in rural development. That role can be enhanced if local units concern themselves specifically with means for adapting technology, credit, cooperative, and other inputs to local conditions.

Commercial and Professional Services

Although the majority of industrial enterprises in rural areas are generally agro-industries, there is an urgent need to create additional sources of employment. As a region begins to grow, it requires a greater diversity of small-scale industrial and commercial enterprises to absorb underemployed and unemployed manpower. Nonagricultural industries support the rural development process both by supplying essential goods and new inputs and by providing alternative employment. Progress in rural areas also requires basic public transportation systems for moving goods and people as agriculture becomes commercialized and social and economic linkages are established with other areas. Certain basic commercial services are also important prerequisites to rural development. These include banking, insurance, brokerage, and marketing facilities, along with other basic financial and business services, retail outlets supplying foodstuffs, clothes, footwear, and other essential goods, and medical, public, and social services.

Housing and Shelter

A review of rural development experience indicates that although there is a great need to upgrade the quality of housing in rural areas, development can proceed without major housing programs. Although construction is clearly an important employment-generating activity, demanding only relatively low skill levels, the upgrading of rural dwellings is probably best facilitated by self-help assisted by site-and-services programs. The self-help plus site-and-services approach to filling rural housing needs has a number of distinct advantages over low-cost and prefabricated housing schemes. In economic terms, self-help is consid-

erably cheaper; data from the Philippines indicate that a low-cost house constructed on its own site is 25 percent cheaper, excluding land and amenity costs, than a prefabricated version, and in addition, generates more local employment. This is substantiated by other data showing that "prefabrication on a national level is advantageous only if some 80-90 percent of total housing is done with standardized prefabricated elements."³¹

Advantages of a self-help plus site-and-services scheme are that it is flexible, represents a relatively low capital investment, and is easily adapted to changing conditions as a region gradually develops. Philippine research shows that a low-income urban house evolves over some 20 years from a shanty to a "standard" dwelling unit.

Thus, squatters' housing should be considered not as permanently "temporary" housing but as a process which, if properly encouraged, could easily evolve into socially acceptable housing. If, instead, these squatter communities are bulldozed away, barring health or fire hazards, such actions may unnecessarily destroy capital and the foundation for productive living by substantial numbers of families working in the services sector.³²

Comparable data are not available from rural regions, but there is little reason to expect substantial differences.

The requirements of the larger places in the settlement hierarchy are somewhat different. Residential and nonresidential buildings of modern design and materials are required, and a higher level of site-and-services is called for. Those demands can support a viable local construction industry, which, with its many backward linkages, can be an important stimulus to the local economy. A healthy construction industry based in an intermediate-size city is essential to a regional economy; it can provide the opportunity for technological choice and the use of labor-intensive methods employing relatively unskilled labor. Moreover, being site-bound, construction also implies a heavy bias toward the use of local labor and materials, providing a relatively high level of domestic value-added.³³

Repair and Maintenance Services

Repair and maintenance services are commonly neglected in developing countries, yet the failure to maintain infrastructure, transport, mechanical, and other inputs in rural areas can mean both an enormous waste of scarce resources and the deterioration of existing facilities. Maintenance is neglected both because of the lack of trained manpower

and the difficulties of obtaining recurrent expenditures to repair facilities and equipment. In addition to prolonging the useful life of assets, creation of specialized repair and maintenance capacity, coupled with local production of spare parts, can contribute to development by helping to create a local capital goods industry, promoting national technological development, and creating a stable and skilled labor-intensive industry. The stimulation of rural nonagricultural industrialization through small-scale, dispersed production units and subcontracting, can reduce costs and wasteful duplication for large-scale industry by eliminating the need for each major plant to have its own repair and maintenance facilities.

The problems caused in developing countries by inadequate maintenance is typified by the case of Kenya, where, it is estimated, some 50 percent of tractors and other farm machines are out of order at any one time, owing in large part to the lack of skilled maintenance and repair personnel. It is estimated that over \$4 million could be saved each year if this machinery could be returned to service.³⁴ Industrial plants require such disproportionately large repair and maintenance facilities in developing countries because this service generally has failed to develop.

Small repair and maintenance shops could be scattered throughout a rural region. In smaller settlements, they would perform more generalized functions, whereas in larger towns and intermediate cities, they could provide more specialized services. Empirical data show that such small enterprises save capital, principally by renting expensive equipment from larger shops and also by pooling funds to enable artisans jointly to purchase larger tools. Besides being relatively low cost and using capital more efficiently than do the larger shops, the small-scale repair and maintenance workshop can serve as a focal point for diffusing new technology throughout rural areas. To be successful at the local level, these services must be complemented by local production of simple spare parts and tools and by the expansion of training schools for mechanics.

Physical Infrastructure and Roads

Investments in physical infrastructure and public utilities usually include highway, drainage irrigation, water supply and sewerage systems, and public office buildings for health, education, security services, regional development programs, governmental services, banks, and community centers. Except for the infrastructure of totally planned land settlement schemes and new town developments, the term does not gen-

erally include retail stores, warehouses, workshops, hotels, and the like, which in most rural development projects come from private investment. Although comprising part of a comprehensive infrastructure required for self-sustaining, balanced development, they are not usually early inputs. Building physical infrastructure and public utilities for development is complicated by the nature of human settlement, which over much of the developing world is widely scattered. Where capital is scarce, hierarchical nucleation into small towns and villages makes physical development less costly.

Roads are perhaps the most crucial public investment in rural development projects. In 14 of the 24 Latin American projects surveyed by Nelson, roads absorbed an average of 38 percent of the total investment. Highway construction and upgrading is usually justified in terms of both overall development and user benefits.³⁵ USAID estimates of road construction plans in Nicaragua, for example, show that by the extension of access roads, efficiency was increased, costs were reduced, and agricultural production was raised. In Nicaragua, farm transportation costs were reduced by 50 percent by switching from pack animals to motor vehicles.³⁶

In addition to direct economic gains, less easily measured social benefits result from communication infrastructure. "Access to amenities in other centers reduces isolation, improves living conditions," and, as Nelson notes, "makes frontier areas more attractive to qualified teachers, doctors, and other professional personnel."³⁷ Among the social benefits of transportation observed in Malaysia is that improved access accelerates the rate of immigration to pioneer areas.³⁸ In the "spontaneous settlements" of Bolivia, Colombia, Ecuador, and Mexico, Nelson observed similar trends related to access improvement.³⁹

Although the exact nature of social benefits from road development is more difficult to specify, certain critical changes seem to occur.⁴⁰ Principal among these are (1) once major highways and access roads have been built, all other programmed developmental inputs can be made in a phased and additive manner; (2) the adoption and diffusion of new agricultural technologies is facilitated; (3) in most instances, the productivity of agricultural, agro-industries, and cottage industries increases markedly; (4) local transportation facilities improve substantially; truck and minibus and other low-cost transportation routes considerably increase the mobility of people hitherto limited to horseback and pack animals; and fares are low, permitting people from rural villages to sell small quantities of produce in the nearest market town; (5) improved mobility for the hitherto isolated rural dweller means access to "information," a powerful force in promoting development; and (6) the most important social changes following road construction are access to medical facilities and schools. USAID's agricultural assessment of Nicaragua

reveals that if children can travel to the nearest small town and then be required to take three years of formal schooling, they will be equipped, by the age of 15, to follow basic agricultural courses, with incalculable impact on regional agricultural development.

Empirical proof of the impact of highway investment is not easily obtained, but in Latin America there are many examples of development following construction of a penetration highway. In the Lower La Lana-La Trinidad Basin, located on the southeastern edge of the Papaloapan region of Mexico, it appears that "the roads, which took 30 percent of the colonization outlay, were largely responsible for stimulating private investment in agriculture that paid handsome dividends," for relatively few other public investments were made.⁴¹ In the Caranavi "spontaneous colonization" scheme of Bolivia 90 percent of public and 50 percent of private total investments were devoted to construction trunk highway and feeder roads. In the Puyo-Tena Zone of the Ecuadorian Oriente, a successful tropical colonization venture was brought about by capitalizing on a network of pre-existing privately constructed access roads (built by the Shell Oil Company for petroleum exploration); providing key services, especially credit, after demand—initially promoted by roads—grew; providing agricultural extension services; and granting title to land.

Roads are needed to move inputs and outputs efficiently and to link human settlements in a well-articulated spatial system. But the overriding objective in selecting roads for construction or upgrading should be to enable a development center to serve the greatest number of families living in its hinterland at the least cost. A road system seeking to link settlements of different sizes in a spatial system should comprise four main elements: Arterial routes to integrate all regions of a nation; feeder roads linking to the arteries, joining market town with the intermediate city; rural access roads, traversed by trucks and rural buses to link villages to the nearest market town; and bullock cart routes and bicycle paths to link farmstead and hamlets with the nearest central village.

Because of the "high visibility" and therefore political impact of major arterial routes, feeder roads are generally neglected in land settlement programs. In many areas, feeder roads should be given top priority in order to consolidate gains already made, a point stressed in colonization projects financed by the Inter-American Development Bank. Again, although no definitive data are available, it appears that the density of feeder road development is positively correlated with higher levels of development.

Perhaps the greatest problem with feeder roads, especially in humid tropical climates, is maintenance. Access roads should be constructed to all-weather standards and built to permit the passage of heavy equip-

ment and truck traffic, particularly during critical planting and harvest times. Nevertheless, consonant with both quality and cost, they should be built primarily from locally available materials, utilizing as far as possible local labor for both construction and maintenance. Creation of regional road maintenance zones and material dumps and the training of local personnel in road upkeep are as important as road construction. Data from Latin America underscore the critical importance of local labor and administration in maintaining feeder roads. Clearly feeder roads are most efficiently maintained by municipalities, but in most developing countries local governments are poorly organized, and, in pioneer zones, virtually nonexistent. In the initial stages of rural development, the central government must prevent local roads from deteriorating, while at the same time organizing municipal maintenance capacities.

Of all physical infrastructure, investments in rural road construction and improvement should command high priority, for, as Johnson contends, "a road system is something more than prepared surfaces on which porters, pack animals, or wheeled vehicles . . . can move." It can "become a unifying instrumentality that consolidates the productive power of an area and releases a latent social dynamism."⁴²

CONCLUSION

This review of experience with rural development projects highlights the enormous variety and complexity of components needed to put a self-sustaining strategy into operation. A myriad of functions and services must be provided by public and private organizations at the regional and community levels. In addition, projects must enhance the capacity of rural communities to sustain social and economic transformation, and local governments must be capable of supporting, with social services and facilities, the gains achieved from integrated rural development projects.

But if the new development strategies are to be implemented in rural areas, strong support must come from the national government in the form of political and administrative commitment to the goals of increasing agricultural productivity, changing rural social and economic structure, and expanding participation in economic activity.

NOTES

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NATIONAL POLITICAL AND ADMINISTRATIVE SUPPORT

In developing countries the national government is generally the only entity capable of initiating, organizing, and guiding programs of the magnitude and complexity of integrated rural development. Without national political, administrative, financial, and technical support, integrated rural development programs fail. National inputs must be substantive, extensive, and continuous. Commitment to a complex program aimed at transforming social and economic structures in rural areas, breaking political bottlenecks, and consolidating local support must be strong if change is to be initiated and sustained. Among the most important inputs to the new development strategies are high-level political commitment, organizational support from national bureaucracies, and the willingness and capacity of ministries and agencies to establish a set of complementary policies and programs to reinforce rural development projects and sustain rural transformation.

POLITICAL COMMITMENT

Top-level political and administrative support for rural development policy is the *sine qua non* of strategy implementation. International assistance agencies recognize its importance and that it is often an element missing in developing countries. USAID notes that "a great gap remains between sentiment, rhetoric and policy in many nations" and that narrowing this gap is a prerequisite to operationalizing policy.¹ The World Bank similarly contends that

a strong commitment to rural development policies at the national level is required if the impact on the problems of poverty is to be effective and

broad based. In some developing countries, present policies and institutional structures are so far from favorable to rural development that a policy shift could only follow major political change.²

Political commitment must involve a strong, pervasive, and sustained determination by the highest levels of leadership to achieve the goals of rural transformation, economic reorganization, and social equity. Simple declarations of intent without strong measures for administrative reform are, at best, vacuous promises. But at the same time, top-level political commitment must rest on a broad base of political support from government agencies, political groups, and cooperative associations. Farmers must be able to sustain enough pressure on government to prevent the sabotaging of programs by elites and entrenched interests in national and local bureaucracies.

High-level political support is necessary for three basic reasons. First, political commitment is needed to articulate strategy in national policies, major legislative declarations, national plans, and administrative orders. The history of rural development, especially in Asia and Africa, indicates that political initiative by charismatic leaders and ideological movements were prime forces in sparking rural development. In India, Pakistan, Taiwan, Malaysia, and the People's Republic of China, widely varying yet equally forceful political commitments generated national policies for reallocating national resources to rural areas. In Africa, particularly in recently independent countries, nationalistic political leaders seized on the concept of rural development to consolidate tribal support and create a new national polity. As Cowan notes in his review of African rural development, the strong motivation by national political leaders was required to stimulate rural development plans, and their conception of the role of rural areas in national political development overwhelmingly influenced the scope and content of those plans. As Cowan observes,

If the party in power sees the need for rural mobilization as part of the program of total transformation of society, the approach used to bring about rural change will involve different methods than if government sees its role only as that of providing favorable conditions within which the responsibility for progress lies with the individual. The ideological preconceptions of the leaders toward which rural development is aimed will affect the rate and direction of change as well as the distribution of opportunity extended to different groups within the rural community.³

In Africa, the strength of political commitment has determined not only the extent to which rural development needs were reflected in national

development plans but also the combination of elements included in programs and projects.

Second, political support is needed to ensure high priority for rural development policies in resource allocation decisions. Without stable and continuous political commitment from the highest levels of government, policy statements and plans remain mere rhetoric. Rural development requires the continuous attention, indeed the almost single-minded commitment, of political leaders to ensure that plans are transformed into action and that resources are reallocated to rural development activities. The lack of political support in Sri Lanka, for example, aborted national attempts to initiate and sustain a serious rural development policy. Kanesalingham points out in his evaluation of that country's rural development program, that a succession of plans "were generally not implemented—that they lapsed soon after their formulation" simply because no forceful political commitment directed the allocation of resources and the machinery of government toward accomplishing policy objectives.⁴ The structure of the political system—a parliamentary coalition of contending minority parties—could not sustain political support, and frequent changes in government left rural development plans in a state of continuous uncertainty, ignored by cabinet ministers, the bureaucracy, local government leaders, and elites. On the other hand, partly because of the persistence of President Ayub Khan, Pakistan was more successful in launching an extensive rural development program and in reallocating national resources to rural areas. Khan's commitment to the Basic Democracies program placed political support behind government actions to restructure the bureaucracy and organizational framework in rural areas and to redirect the flow of resources to them.⁵

Political commitment is needed, finally, to break the barriers raised by entrenched interests against redistribution of investment. Analyses of Indian experience confirm the degree to which national political commitment is required to overcome vested interests at both national and local levels. Mathur argues that in India "vested interests already entrenched in the rural society and rising new agricultural classes have been mainly responsible for insulating the poor from the benefits of development. It has not been possible for the government to penetrate this barrier."⁶ Rural elites generally promote programs from which they will benefit and block those likely to change the rural social or economic structure to their disadvantage. By using political contacts at the national level, elite groups can generally "distort or twist the objectives of the program as well as procedures for implementation" and redirect the flow of benefits toward themselves. When distortion at the national level is not possible, they attempt to block implementation or undermine administrative agencies within the state, and if that fails, elites provide

temporary, superficial support and then undermine the program at the village level. In India, Mathur argues, "the end result of all of this is that while pockets of development progress are seen at the level of the elite, little change takes place at the societal level."⁷

NATIONAL PLANNING, PROGRAMING, AND ORGANIZATION

The very nature of integrated rural development projects—demanding a wide variety of administrative, policy, financial, and technical inputs—increases pressure on national government planning and organizational machinery. Such programs are both technically and organizationally complex, requiring high levels of cooperation and coordination. Substantive contributions from a myriad of government agencies must be properly combined and sequenced in order to be mutually reinforcing. Public as well as private organizations provide critical inputs. Both government and private institutions affect price systems and the availability of capital. Marketing institutions, extension services, and research organizations influence the discovery, dispersion, and adaptation of new agricultural technologies; banks, credit unions, cooperatives, and other financial institutions control the flow of funds to both the project organization and the rural beneficiaries of the program. Transportation, transfer, and storage firms control the distribution of increased production resulting from agricultural projects. Clifton Wharton concludes from a decade's experience with the Green Revolution in Asia that

it is vitally important to expand the entire complex of services and industries required to achieve the higher production. Any government or agency which distributes the "miracle" seed but fails to provide the insecticide and fertilizer in the appropriate quantities when and where needed is courting political disaster. Unless these inputs are available and used, some local traditional varieties will out-yield the new ones.⁸

The organizational complexity of a single aspect of integrated rural development can be staggering. The Agrarian Reform Program of the Philippines, for example, established to improve land tenure, develop agricultural and physical infrastructure, strengthen local institutions, improve farm management, and deliver technical training to farmers, required that institutional arrangements among at least 16 major government agencies be coordinated with financial resources coming from at least another ten government or quasi-public financial institutions.

Among those rural development functions generally performed by national government ministries and agencies are (1) overall national, sectoral, and budgetary planning; (2) assessment of needs and requirements for rural development and preparation of ministry programs; (3) collection of taxes used to support rural activities and the allocation of central government financial resources to local projects; (4) negotiation, acquisition, and distribution of foreign aid to local programs; (5) identification, planning, and delivery of technical and functional services to rural areas (for example, importing technology, providing extension, health, education, and other social services) and construction of physical infrastructure, irrigation, and other agricultural facilities; (6) planning and programming agricultural production for various regions within the country and for specific commodities; (7) control over the organization and operation of rural development programs and delegation of authority to subordinate implementation units; (8) provision of technical, administrative, and supervisory personnel for training or participation in program implementation; and (9) transmission or settlement of claims or disputes in rural areas.⁹

If projects are to be implemented successfully under such complex organizational conditions, five major sets of inputs must come from the national government: strong administrative support from national ministries and their field offices; effective planning and programming procedures; a stable flow of national budgetary resources; organizational capacity to coordinate and implement programs; and decentralized administrative arrangements.

Administrative Support

Integrated development projects depend on a wide variety of government resources and require strong support from administrative agencies and ministries in the form of specialized services, personnel, equipment, and technical assistance. The commitment of administrative support, however, even to clearly defined, high-priority rural development programs, cannot merely be assumed. Indeed, ministries and autonomous agencies have often blocked implementation of rural development programs or have provided only passive support, thereby seriously delaying their progress. Problems in obtaining administrative support can arise at a variety of points in a program's life cycle: during initial decisions regarding its establishment; in translating broad development policies into operating programs; in obtaining resources, approvals, and general cooperation from operating ministries during program execution; and in evaluating overall performance.

Experience with the Kenya Special Rural Development Program (SRDP) is instructive, for after nearly two years of careful planning, the national bureaucracy delayed program implementation and attempted to prevent it from obtaining needed financial and administrative resources. The cautiousness of senior staff at ministry headquarters about using SRDP as a vehicle for innovation not only delayed implementation but also was reflected in the negative attitudes of field staff toward experiments that did not appeal to their own professional interests. "The longer term results," one observer notes, "were a lack of direction and punch which made it difficult to break bottlenecks at ministry headquarters, particularly over the release of funds and the supply of resources."¹⁰ Similarly, in Lesotho, an agricultural mechanization program (FARMECH) had to be carried out almost entirely by local government councils because national ministries would not provide administrative resources. The original plans of the Department of Local Government assumed that the Department of Agriculture and the Department of Cooperatives would support the project with financial and technical assistance, but, as one analyst notes,

neither of these supports materialized; it would appear that there was not sufficient unity of government policy for the intentions of the three departments to be coordinated before plans were drawn up or held consistent while they were implemented. Furthermore, the technical departments had no professional interest in local government.¹¹

Instead, personnel in the national ministries, who felt that the Department of Local Government was attempting to encroach on their functions, argued that farm mechanization was not feasible. The project proceeded slowly and "had no help at all from other departments until the signs of its success were unmistakable."¹²

National Planning and Programing

Because integrated rural development programs are both technically and organizationally complex and because their success depends so heavily on the political and administrative support of public and private institutions at the national, regional, and local levels, strong central planning and programing are essential. Most studies of rural development emphasize the importance of establishing or expanding national planning capacity, for without central direction and coordination, disparate inputs will not be integrated to achieve national goals. Uma Lele's evaluation of rural development programs in Africa notes that their

"multiple and, at times, conflicting objectives have rendered overall rural development strategy inconsistent and sometimes even self-defeating." The role of government planning, she concludes, must therefore be to reconcile "the needs for growth as well as for broadening participation and of finding a coherent rural development strategy which is politically feasible and economically sound and can be implemented administratively."¹³

Traditional forms of national macroeconomic planning have generally failed to influence policy implementation or to guide development toward the goals of growth-with-equity. The weaknesses of conventional planning in Kenya as described by the World Bank's Economic Mission, are characteristic of the process in most developing nations:

The emphasis on macro-economic planning has tended to be on the production of a published plan, at the expense of the plan as an implementable program of action. The private sector has been incorporated only peripherally; plans have had little project content; policy proposals are not always previously agreed upon; and plan programs have been frequently discarded during subsequent preparation of budgets.

Neither political leaders nor organized interest groups actively joined in plan formulation, and "even the major operating ministries have not always participated fully in the preparation of plans or monitored the implementation of their own programs."¹⁴

Experience with rural development in Africa suggests that national planning must provide centralized direction in order to coordinate a wide variety of public and private activities and to guide decisions concerning those activities toward achievement of national policy objectives. Yet the planning system must also admit a high level of decentralized analysis in order to account for local needs, constraints, values, and opportunities for rural transformation and to consider in decisions the knowledge and information concerning the rural social system that is often available only within rural regions.¹⁵

General agreement exists among evaluators of national development planning that its value lies more in the process than in the generation of a plan. Swerdlow, for instance, argues that planning involves "consciously developing a sequence of future actions to achieve specified goals" and as such should be a continuous process of "gathering, selecting and ordering information, of judging priorities and relationships and of initiating activities that lead to expected achievements."¹⁶ The application of analysis and forethought to problems of rural development by groups concerned with or affected by the problems would make the planning process a more effective instrument for gathering infor-

mation and guiding action. Conventional approaches to national planning are often ineffective in guiding rural development activities because they focus on national macroeconomic forces rather than on the microeconomic, social, cultural, and human dynamics that influence individual behavior and institutional change in rural areas. Weitz, analyzing Israel's experience with rural transformation, argues that "the planning method required to accomplish the institutional changes which form the essence of development . . . [must] be geared, first and foremost, toward people, their potentialities and their motivations."¹⁷ In the Israeli program, national planners considered the purposes of production in different types of agricultural systems, the characteristics of rural work schedules, sources of capital and income, the level of farmers' agricultural knowledge and skills, linkages between farm and market, as well as patterns of social interaction among rural people and government institutions.¹⁸

But macroeconomic planning cannot be effective unless it disaggregates analysis and injects it into more precise and meaningful subplans directly addressing rural policy problems. Swerdlow argues that planning must be capable of performing a hierarchy of analytical functions, including macro-planning that surveys major economic and social forces influencing national development; sector planning that determines the needs, constraints, and potentials of specific elements of the national economy; functional planning that attempts to deal with multisectoral, national problems such as employment expansion, urbanization, and manpower development; program planning concerned with designing and implementing specific sets of activities for ameliorating functional, sectoral, and national problems; and project planning concerned with the identification, design, appraisal, organization, and implementation of particular activities and investments for achieving program goals. Rural development requires planning and programing at each level and the integration of planning and implementation.¹⁹

Developing nations need additional planning capacity in order to implement rural development, but not just more planning for the sake of planning. They need planning that balances centralized control with decentralized participation, a process that focuses on local conditions, needs, and patterns of human behavior, combining appropriate and multiple levels of analysis, linked directly to implementation.

Budgetary Resources

A steady and reliable flow of national budget resources is one of the most important inputs for rural development. That financial support

will be provided by the national government once it commits itself to a policy of rural development is too often simply assumed. But programs are regularly beset, even when they have had strong political and administrative support, by a paucity of operating funds. The agrarian reform programs of the Philippines, for instance, traditionally given high political priority by national leaders, have suffered annual budgetary shortfalls for more than a decade. Between 1965 and 1971, the Philippine executive branch released less than a third of the amount appropriated by the legislature for agrarian reform, the percentage of the national budget devoted to agricultural development actually dropped by 50 percent in 1972, and inflation in the early 1970s steadily eroded the value of rural development allocations.²⁰

Even in countries where agriculture is the most important sector of the economy, contributing the most to national production, and where the population is overwhelmingly rural, budgetary investments in agriculture tend to be low. In Ethiopia, for instance, less than 7 percent of central government expenditures go to agriculture. In Nicaragua, basically a rural nation almost totally dependent on agricultural production, the sector's share of public funds has declined at a time when overall government capital and operating expenditures have been increasing. Officials and field personnel of the agricultural agencies have never been able to provide even minimal services owing to inadequate budgetary resources, and many agencies must allocate as much as three-fourths of their annual allocations for salaries and wages, dividing the small remainder between operating and capital expenditures.²¹

The differences between amounts budgeted for rural development and the funds actually released can be enormous. In the Dominican Republic, for example, the percentage of the budget allocations released to the Secretariat of Agriculture from 1966 to 1973 ranged from a low of 36 to a high of 96 percent, with over \$40 million withheld during an eight-year period.²² Most executing agencies in the Dominican Republic were hard pressed to perform even routine duties because of financial uncertainties. "Except for salaries, each budgetary allocation is obtained as a consequence of a lengthy justification process which results in project execution by fits and starts," one observer concludes. "Agency heads are forced to borrow from one project to support another. The budgetary resource flow process represents a significant constraint on development."²³

An effective rural development strategy must identify these constraints and take action to overcome them in the early stages of planning; otherwise, the projects will be hampered later by chronic shortages of financial resources. Among the most important budgetary problems facing developing nations are the lack of data and information on actual

budgetary allocations to the ministries and agencies that implement development policy; long delays in allotted budget funds reaching their provincial and local field offices because of inefficient disbursement systems; and their difficulties in obtaining non-personal-services allocations at appropriate times during the fiscal year. In most developing nations, moreover, the lack of flexibility in fiscal procedures makes it impossible for ministries and field agencies to use allocated resources for innovative, contingency, or unprogramed expenditures. Financial management is hampered, in addition, by the failure of many line agencies to submit requests at the proper time, in standard format, and with adequate supporting documents, leading either to serious delays in receiving disbursements or to the refusal of budget authorities to consider requests; and by overly complex budget procedures established by the central government for submitting requests, especially for capital and equipment expenditures. Fragmentation of budget authority and the ability of autonomous agencies, commissions, and boards to shelter their budgetary resources through special funds and direct appropriations work to the disadvantage of line agencies. Finally, the failure of budget authorities to release allocated funds to rural development ministries and field agencies in time to be spent by the end of the fiscal year is an informal means of cutting their spending power.

Planning, programing, and budgeting must be more closely linked to ensure a steady flow of funds to projects and programs. Some experiments in developing countries might provide a model for such action. The government of Nicaragua, for instance, is experimenting with sectoral planning units within the ministries to monitor and control budgetary resources. The unit within the Ministry of Agriculture is directly responsible for multiyear planning, program and project design, and collecting and analyzing information to assist field agencies in the preparation of budget requests. The budget division assists public agricultural institutions to prepare and analyze their budget proposals, trains agency officials and staff in proper financial procedures, and advises the minister on budget issues and on the allocation of resources from the National Rural Development Fund. The division is thus designed to play a major role in analyzing needed resources and ensuring disbursement to rural field units responsible for policy implementation.²¹

Decentralized Administrative Structure and Coordinative Capacity

Two other closely related national inputs are needed for effective implementation of integrated rural development: arrangements for

administering rural development programs at the subnational level, through delegation of authority to provincial, regional, or district governments or through a system of field offices of national ministries; and capacity for program coordination. Because integrated rural development requires a variety of inputs from diverse sources, mechanisms must be established to guide the activities of organizations toward national policy objectives. Yet, at the same time, complex organizational interaction makes central administration and coordination difficult. Thus functions must be delegated, both to increase their efficiency and to build the institutional capacity of regional, provincial, and local organizations. Uphoff and Esman, in an extensive analysis of local organization in rural development, concluded that rural programs in every country are the responsibility of a mixture of public and private institutions and that the complementarities among those organizations are as important to the success of rural development as the functions performed by each institution. "While there are isolated instances of local organizations taking initiative, mobilizing resources and accomplishing certain development objectives, in most countries considered, the cumulative effects of such efforts has been negligible," they report. "What count are *systems or networks* of organization, both vertically and horizontally, that make local development more than an enclave phenomenon."²⁵ The implications of these studies are that improving agricultural production and increasing the standards of living among the rural poor requires that central government and local resources be matched with those of private sector and political organizations; that improving service delivery and development activities depends on establishing and strengthening linkages among central, provincial, and local government and private organizations; and that linkages are established and maintained between and among organizations through continuous interaction and exchange of information and other resources.

One essential but frequently overlooked coordinating function of governments in developing nations is to obtain the cooperation of private organizations. Retailers, wholesalers, middlemen, moneylenders, credit institutions, equipment and farm supply distributors, and local merchants, all play important roles in both agricultural activities and rural politics. Their influence can either advance or obstruct government projects. The need for coordination varies, of course, depending on the importance of private functions in rural development and on a particular government's philosophy toward private enterprise. But Uphoff and Esman found that private organizations provide credit, play an important role in marketing agricultural goods, supply physical inputs and farm equipment, contribute heavily to capital formation through resource mobilization and investment, own and operate the major transport and storage facilities on which farmers depend for marketing their

crops, and control the distribution of commercial, professional, and technical services, all of which are vital to the success of rural development. The private sector also exerts substantial influence on policy-making and program implementation in rural areas both through legitimate and illegal activities. In Bangladesh, for instance, black markets reallocate inputs from government cooperatives and private organizations and are the most direct sources of bribery and corruption. In other countries, private firms and individuals lobby in the national policy councils, intervene in provincial and local government processes on their own behalf and in the interests of clients, and make formal and informal demands on government services and allocations through the market and personal networks of influence.²⁶

There are a number of channels for decentralized administration of rural development functions—through central government, a combination of central and local government institutions, or cooperative government-private organizational arrangements. Program evaluations, however, most often recommend decentralization of administrative functions through regional development authorities or through ministry field offices and provincial and local governments, with regional coordination by commissions or councils. Regions, as a base for decentralized administration and coordination, have several important advantages:²⁷

1. Regional decentralization allows rural development plans and programs to be tailored to the particular needs of heterogeneous areas within a single country. Since regions differ widely in economic conditions, sociocultural traditions, natural resource endowments, physical characteristics, and potential for development, regionalization of planning and administration permits consideration of unique areal characteristics;
2. Regions provide convenient units of analysis for disaggregating national development goals and targets for devising procedures and analytical techniques appropriate to each area's conditions and needs;
3. Decentralization of administrative functions to the regional level allows greater opportunity for participation in program planning and project implementation by local groups that will be affected by development activities;
4. Regional administrative units have potentially greater opportunities to test innovations and to experiment with new policies in specific areas without having to justify those activities for the country as a whole;
5. Regions provide a convenient geographical base for coordinating the activities of a wide variety of specialized ministerial programs and projects in an integrated manner;

6. Administrative regions provide logical units for collecting and analyzing data and information needed to plan and execute rural development programs;

7. A region is a suitable administrative area for monitoring, controlling, and evaluating the effects of development projects and programs;

8. Regional administrative jurisdictions can be effective channels of communications between central government agencies and local governments and for mobilizing local political support for national development activities; and

9. Regions provide a convenient administrative structure for allocating government investment and operating resources to decrease inequities and spur the development of economically lagging areas.

Although it is sometimes argued that rural development functions should be delegated directly to local governments, evidence indicates that attempts to decentralize national planning and administrative functions to local governments, encounter serious problems. Local and district governments in most developing nations are too weak to assume complex responsibilities. Nearly all developing countries lack trained manpower, available and willing to serve in local government positions. National ministry officials and provincial or state government administrators, in addition, are often reluctant to delegate real responsibility for planning and resource decision making to local officials, and the diffidence on the part of local leaders in exercising decentralized authority, in proposing plans and programs, or in seeking legitimate claims, often reinforces that reluctance. In many countries, moreover, local people simply do not trust the central government, and their skepticism concerning the authenticity of decentralized power and responsibility raises a barrier to cooperation. Attitudes of local officials often are not considered conducive to long-range planning and analysis; these attitudes include feelings of helplessness concerning their ability to solve local problems through deliberate action, an acceptance of "fate" rather than a belief in their ability to control their environment, and a disinterest in problems beyond those exerting immediate pressures or beyond the boundaries of their local jurisdiction. Moreover, the problem of the scarcity of information and reliable records at the local level with which to formulate plans and programs or to allocate resources is compounded by the limited manpower within central ministries to provide the technical assistance, guidance, or close supervision of local administrative units needed to make decentralization work. Political conflicts at the local level and squabbles among contending factions over the allocation of government funds often result in domination by local traditional elites who

may be insensitive to the needs of rural people and unsympathetic to central government policies.²⁸

In many developing nations, regional decentralization is preferable to local devolution, both as a long-range means of coordinating central government activities at the subnational level and as an intermediate step in building the institutional capacity of local governments. Regional administration is also complex, however, and experience with regional development reveals as many failures as successes. To be effective, regional development agencies must be supported by an expansion of regional information collection and analysis capabilities, strong political commitment from the national government, a large measure of autonomy and flexibility to respond to unique regional problems, and ensured allocations of budgetary resources. In addition, such agencies must have well-trained and highly motivated staffs capable of dealing with local officials and farmers and of coordinating the work of operating ministries within the region.

Ultimately, governments in developing nations must be able to balance centralization with decentralization in the administration of rural development programs. The linkages and interactions needed to implement integrated rural development strategies must be created and strengthened over time, as Uphoff and Esman argue, through increasing specialization, with public and private, national and local government organizations each permitted to perform those functions in which they have comparative advantages. "Decentralization is not an all-or-nothing proposition but rather a matter of *kinds and degrees*," they argue. "Put more generally, decentralization is best seen and implemented in terms of specific functions. Different rural development tasks are better handled at higher or at lower levels of decision-making, separately or in combination with other tasks."²⁹

National Policy Support

Experience with rural development programs and projects over the past decade also clearly demonstrates that a single program or even a portfolio of projects aimed at ameliorating problems of poverty and inequity alone will have little effect. Success depends on the ability of the national government to orient, clearly and deliberately, all of its major policies toward the goal of growth-with-equity, considering the impact of each policy on rural productivity, income distribution, and human welfare, and strengthening of the linkages between urban and rural sectors. National economic, social, technical, and financial policies must provide direct and continuous support for the goals of rural development in

order for individual programs and projects to bring about the structural change needed to attain those goals. The International Labour Office's studies of Colombia, Kenya, and the Philippines unequivocally show that a delicate balance must be struck in national policy making between the goals of growth in GNP and those of attaining greater equity in distributing the benefits of that growth.³⁰ Among national policies needed to support the new strategies of integrated rural development are the following:

1. Land reform measures that promote an equitable distribution of land ownership, with opportunities for rural workers to acquire enough land to support their families and to produce agricultural surpluses, while generally ensuring that individual land holdings are of an appropriate size to increase agricultural productivity;
2. Investment incentives to promote small and intermediate-size industry, crafts and cottage industries, labor-intensive manufacturing, and processing in rural areas in order to absorb labor, while at the same time assisting those large industries that produce the intermediate and capital goods forming the economic bases of most larger cities;
3. Noninflationary wage policies that encourage and protect labor-intensive industries while assuring an adequate level of income for individual workers to meet their basic consumption needs, to maintain the consumption levels of lower-income groups threatened by inflation, and to offer a reasonable opportunity for the lowest-income groups to raise their overall standards of living;
4. Price supports for essential agricultural commodities that provide incentives for individual farmers to increase agricultural output, to experiment with new methods and techniques, and to adapt improved practices and higher-yielding seed varieties without fear of catastrophic losses in income owing to drastic price fluctuations;
5. A progressive and equitable tax policy that allows reasonable levels of earned profits without concentrating wealth in the hands of a small minority of the population and encourages redistribution of wealth in order to provide opportunities for advancement among the poorest elements of society without discouraging entrepreneurship among middle-income groups. Nonessential imported luxuries should be taxed at higher rates, and lower rates should be levied on essential consumption and production goods. Tax policies should not distort production decisions in favor of capital-intensive methods;
6. A strong family planning policy that seeks to reduce birth rates below potential rates of growth in production; and,
7. A public works and social services investment policy that provides basic levels of health, educational, and other services appropriate for rural and urban populations and that ensures adequate physical

infrastructure to encourage and facilitate rural production. Public works programs should hire seasonally unemployed agricultural workers and encourage services and facilities to locate so as to build linkages between urban and rural centers and provide access to services and facilities to the largest possible number of rural people. Without a strong set of national supporting policies for achieving social and economic structural change, the vast investment of scarce national resources and of international assistance funds in integrated rural development programs cannot effectively achieve growth-with-equity.

INTERNATIONAL ECONOMIC POLICY AND FOREIGN ASSISTANCE

Finally, integrated rural development depends on international economic and trade policies and international financial and technical assistance that support rural growth.

International Economic and Trade Policy

Rural development is not entirely a national problem. Many factors reinforcing and perpetuating rural poverty stem from current patterns of international investment and trade, and the solution to national rural problems will be found in part by changing adverse international economic policies. Adverse terms of international trade and international economic policies frequently undermine domestic efforts to promote integrated rural development and to build an articulated spatial system linking together urban and rural places in a national economy.

Although detailed analysis is beyond the scope of this study, international economic and trade policies are important components of integrated rural development strategy. Among the actions that need to be evaluated by national governments are the following:

1. Establishing and maintaining an appropriate currency exchange rate that both dampens domestic inflation and makes exports of agricultural and small-scale rural industrial goods competitive in the world market;
2. Modifying import restrictions and tariff rates to protect vital labor-intensive industries serving domestic markets in their start-up period, while allowing export industries to obtain, at competitive prices, the necessary raw materials to produce exported finished products;

3. Creating a favorable foreign investment climate that encourages international corporations to participate in joint ventures with local firms on a mutual benefit basis and that, through labor-intensive production, expands jobs for local labor and managerial personnel, increases local technological and administrative capacity, and broadens local labor skills to produce goods and services for export and domestic markets;

4. Expanding export promotion programs to widen foreign markets for new domestic goods and commodities produced in rural areas and in small and intermediate-size towns; and

5. Avoiding import substitution policies that protect high cost, capital-intensive industries, which commonly intensify income disparities. Governments must promote those investments that make intensive use of rural labor.

International Assistance

Foreign aid, often a major source of financial and technical support for integrated rural development, is also a nationally managed input essential to successfully implementing strategy. How national governments use foreign assistance, and the willingness of donor agencies to be flexible and innovative in providing support, are critical issues in putting the new development strategies into operation. As the International Labour Office notes, "Foreign assistance from the purely quantitative point of view can be used either to assist in the structural change a country may have decided on, or to help a country to continue somewhat longer on an outworn traditional path."⁴¹ But unfortunately, traditional lending policies have served to reinforce, rather than change, the trends that have led developing nations to their current situations. Much of the international lending to developing countries is characterized by the same features that have marked aid to Kenya. As the ILO observes,

There has been a strong tendency to concentrate on clearly defined and fairly large projects with high "inaugurability," considerable central urban bias, limited concern for distributional and social effects, and preference for little or no local cost financing. Many donors have successfully tried to promote their own exporters and contractors, the consultant device sometimes being a means to this end. Little thought has been given to technological aspects, innovative features and, consequently, effects on employment.⁴²

International assistance, as a supporting input for integrated rural development, must be modified to promote and encourage national

governments to undertake policy reforms leading to structural changes in the economy. International assistance agencies following a more innovative and flexible approach could, for instance, provide large, short-term infusions of financial assistance ("ballooning" of aid) to countries undertaking major rural policy reforms that would mitigate the possible short-term adversities involved in change.³³ Aid could be used, as the ILO suggests for the Philippines, to help countries with severe current or potential food problems to build up "buffer stocks" of basic commodities and essential staples to prevent future crises and to relieve pressures on foreign exchange reserves during years with poor agricultural yields. The domestic funds saved by not having to import essential staples could be used to provide continuity in financing ongoing rural development reforms, especially in countries not self-sufficient in production and where budgetary stability is critical to the existence of fledgling rural projects and programs.³⁴ Donors must evaluate those procedures that operate against their own and the developing countries' growth-with-equity strategy. Again, the ILO argues that "just as it is necessary to narrow the gap between rhetoric and reality in terms of what governments say to their own people, so it is necessary to narrow the gap between what donor agencies say and what they do." This involves

the gradual elimination of the preferred "import content of projects only" policy of major donors; it involves willingness to engage in local cost financing, in program lending where possible, or at least in sector lending on a project bundle basis, among others; it also involves increased willingness to untie aid, to permit local consultants to engage in feasibility studies and to review the contract and tender procedures to force full consideration of alternative technology choices.³⁵

Since many of the programs and projects undertaken as part of an integrated rural development strategy are experimental, risky, and complex, they require soft loans and grants in their initial stages. Increased use of concessional lending by major assistance agencies would greatly encourage developing nations to undertake more innovative rural development projects and contribute to the relief of growing debt service burdens in the poorest Third World countries. Finally, if integrated rural development strategies are to succeed, international aid must be deliberately focused on those technical inputs and local support components that can effectively increase agricultural productivity, distribute income and wealth more evenly, and build the spatial structure in developing nations.

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7

URBANIZATION AND RURAL DEVELOPMENT: TRANSFORMING SPATIAL STRUCTURES IN DEVELOPING NATIONS

Growth-with-equity policy calls for drastically different approaches to development than those pursued in the past. The integration of urban and rural development, an essential spatial dimension of equitable growth planning, can only be attained in countries with resource scarcities if they use and build on existing spatial structures, organizational arrangements, behavioral patterns, economic and social institutions, and culturally embedded methods and practices, transforming them into more productive instruments of growth and change. This chapter attempts to delineate one approach to transformational development: It outlines a conceptual framework for integrated spatial development planning, identifies major urban services and facilities needed at various levels of an articulated hierarchy of human settlements, and describes the linkages that result from or promote interaction among communities and that generate transformation toward a cohesive and productive spatio-temporal system. Finally it describes the policy and program implications of a transformational approach to development, an approach that seeks to identify and use existing, culturally embedded resources, institutions, and human capabilities, combining them with appropriate modern technologies and organizational arrangements to bring about planned change in pursuit of development goals.

SPATIAL LINKAGES AND TRANSFORMATION

Integrating communities and their productive activities into a national economy is a major objective of transformation strategy. Neither the goals of increased productivity and income expansion nor those of

greater equity in income distribution can be attained without increasing interaction among villages, market towns, intermediate cities, and metropolitan areas in developing nations without integrating urban and rural functions into a national spatial system. Integration promotes transformation at every level of the spatial hierarchy and at every stage of a nation's development. Dalton observes in peasant village societies, for example, that "modernization consists of displacing local dependence with external dependence on markets, and by so doing integrating the village community into the region, the nation, and through foreign trade transactions, the rest of the world."¹ Expanding the networks of mutually dependent organizations and communities generates "new common cultural identity—shared values and attitudes—as well as new equipment and diversified lines of production."² Integration of subsistence communities into the national economy increases incentives and opportunities for the commercialization of agriculture and for more widespread distribution of services and facilities needed in rural areas. Integration is also essential to national development, for commerce and trade cannot be extended without linking local or peripheral markets to major metropolitan centers. Increased linkage contributes to national development by putting scarce resources to more productive use and by distributing more widely the factors of production. "This involves something quite different from 'enclave development,'" Uphoff and Ilchman contend, "where a new activity, productive within its narrow boundaries, is introduced, though with few linkages to the rest of the community."³

Transformation of communities and productive activities—the evolution of subsistence into commercial farming, of simple handicrafts into more specialized processing and manufacturing, of scattered and isolated economic activities into concentrated nodes of production integrated into a national system of exchange—requires a well-articulated spatial structure. Settlements of various sizes, specializing in different economic and social functions, must be linked to each other through a network of physical, economic, technological, social, and administrative interaction. The linkages—patterns of transaction among groups and organizations located in spatially dispersed communities with sufficient threshold sizes of population to support their own specialized activities—are the primary means of expanding the system of exchange and transforming underdeveloped societies.

Even a cursory examination of developing nations where elements of such a spatial system have emerged provides insights into the types of linkages essential for transformation and the patterns of change they set in motion. Two fundamental observations seem valid for all developing countries with elements of spatial articulation. First, increase in the number and diversity of linkages and the growth or transformation of

development centers—from villages to market towns, market towns to small cities, small cities to intermediate urban areas—are inextricably related. In some cases new linkages—extension of road networks, river transport, or rail connections—promote growth and diversification in existing settlements or generate new central places, whereas in others the appearance of new productive activities promotes increased linkage between individual settlements and the rest of the spatial system. That is, some linkages promote accelerated growth of villages, market towns, and intermediate cities, and others result from nodal growth. To distinguish particular cause and effect relationships, however, is often extremely difficult because nodal and linkage growth may take place simultaneously or because a complex set of changes may occur in rapid succession.

Second, the variety of linkages that integrate urban and rural areas into an articulated spatial system are themselves inextricably linked. Creation of one new linkage may produce a “cascade effect” making other activities and linkages possible, and promoting the growth of existing or new central places. Once a new set of linkages is introduced into a rural market system it can trigger a set of “circular and cumulative changes” toward further growth and change. Simply improving transportation between villages leads to reorganization and expansion of existing periodic markets. Displacement of weak or unsuccessful markets and redistribution of commerce can create entirely new markets and increase the demands on the transport system.⁴ New urban-rural physical linkages can change the flow of economic resources, the spatial pattern of social and economic interaction, and the movement of people. Closer interaction among villages, market towns, intermediate cities, and major metropolitan areas makes it less expensive and more convenient to integrate technology at each level of the spatial hierarchy and to distribute more widely services that fundamentally transform organizational and political relationships.

A complex set of linkages transforms and integrates urban and rural areas in developing nations. Physical, economic, technological, and social linkages and population movement, service delivery, and political, administrative, and organizational patterns play potentially important roles in the transformation of poorly articulated spatial systems (see Table 3).

Physical Linkages

The spatial integration of communities results mainly from physical linkages—resource interdependences and man-made transportation

TABLE 3
Major Linkages in Spatial Development

Type	Elements
Physical linkages	Road networks River and water transport networks Railroad networks Ecological interdependences
Economic linkages	Market patterns Raw materials and intermediate goods flows Capital flows Production linkages—backward, forward, and lateral Consumption and shopping patterns Income flows Sectoral and interregional commodity flows “Cross linkages”
Population movement linkages	Migration—temporary and permanent Journey to work
Technological linkages	Technology interdependences Irrigation systems Telecommunications systems
Social interaction linkages	Visiting patterns Kinship patterns Rites, rituals, and religious activities Social group interaction
Service delivery linkages	Energy flows and networks Credit and financial networks Education, training, and extension linkages Health service delivery systems Professional, commercial, and technical service patterns Transport service systems
Political, administrative, and organizational linkages	Structural relationships Government budgetary flows Organizational interdependences Authority-approval-supervision patterns Interjurisdictional transaction patterns Informal political decision chains

Source: Compiled by the authors.

networks. Human ecological relationships in most peasant societies provide basic opportunities for social interaction and economic exchange. Biophysical links—ecological relationships among land forms, soils, minerals, water, vegetation, and wildlife—limit possible and feasible developmental changes and create opportunities for new productive activities. Natural resource linkages integrate urban and rural communities within a region and determine the comparative physical advantages of each community.

Transportation networks—roads, rivers, water channels, and rail systems—are among the most important linkages for integrating spatial systems. They reduce travel time, lower shipping costs, widen marketing, commuting, and migration opportunities, allow greater access to nonagricultural employment, improve communications, and extend areas of service delivery. Nations investing heavily in road networks have achieved substantial gains in agricultural production and capacity. A USAID survey of Nicaragua, for instance, found that creation of farm-to-market road networks during the 1960s “has pulled together in one national market what a decade ago were dozens of small autonomous economic regions.” Access roads “have been particularly significant in bringing national markets up to the farm gate of a significant number of remote and marginal small producers.”⁵ Development of an all-weather road system in Ethiopia during the late 1950s and early 1960s reduced truck travel time between Addis Ababa and the town of Assab, located 561 kilometers from the capital, from 15 to a little more than two days, cut the travel time between the capital and the town of Jimma (335 kilometers) from two weeks to seven hours, and from the town of Debre Marcos (305 kilometers) from eight weeks to nine hours. Improved road linkages between the metropolis and outlying towns brought agricultural goods from rural areas within easy reach of major national markets and distribution points at Addis Ababa. They reduced road freight costs, which in turn lowered the total costs of goods at market, and led to expansion of Assab as Ethiopia’s main port and to the location of major industrial activities in other inland towns.⁶

In many parts of East Africa, farm-to-market roads have promoted new markets, increased interaction among villages, linked agricultural production areas to crop collection and distribution centers, and made new crops economically viable.⁷ Communities in Latin America without strong physical linkages to the rest of the spatial system are plagued with low social mobility, localized agriculture, and a predominance of handicraft industries; they consume nearly all of their own agricultural products and engage only sporadically in outside trade. Building transport linkages broadens the radius of trade and increases productive capacity.

Where networks have been created in Latin America, particularly in Colombia and Brazil, well-integrated regions have grown into diversified economies.⁸

Economic Linkages

A related set of economic linkages is also needed to promote spatial integration. Most important are market networks, commodity, raw material, and intermediate goods flows among central places, capital and income flows, consumption and shopping patterns, and forward, backward, and lateral production links among commercial and manufacturing activities within urban centers and among them. Broadening market linkages, as Johnson, Skinner, and others have argued, is a primary force in commercializing agriculture, diversifying production, and expanding the spatial system of exchange. Skinner notes in his classic study of market towns in China, that they were "the starting point for the upward flow of agricultural products and craft items into higher reaches of the marketing system, and also the downward flow of imported items destined for peasant consumption."⁹ Since the market town is the main channel by which rural people obtain basic goods and services in return for their agricultural products, the impact of vertical coordination of marketing systems can have widespread effects, providing substantial benefits to the farmer. Vertical coordination of food marketing systems in Latin America has increased farmers' bargaining powers by improving price information and increasing market competitiveness, and it has reduced transaction and physical distribution costs by standardizing marketing procedures and allowing farmers to use more efficient means of transportation to ship their goods. In addition, vertical linkages have reduced losses and improved quality by establishing incentives to standardize grading, processing, and packaging.¹⁰

The combination of transport and market linkages encourages the growth of nested and integrated markets, expanding patterns of exchange for basic commodities and ensuring broader geographical access to goods and services. The emergence of an intermediate city relatively well connected to a system of rural market centers and to a larger metropolitan area generates a marketing pattern such as that described in Chapter 3 for the Chonburi region of Thailand. Chonburi town, an intermediate city serving as a central place with a wide variety of secondary and tertiary economic activities, links rural areas in its region both with each other and with the larger national economy. Areas lacking both market towns and transport connections remain relatively isolated from trade and access to services, whereas those within the transport and

market networks linked to Chonburi town have access both to its services and markets in Bangkok and to other regions in Thailand and abroad.

The extension of market linkages also creates incentives for other types of interaction. The growth of one such intermediate city in Korea, for instance, strongly linked urban markets with previously underdeveloped rural hinterlands and encouraged growth of manufacturing and commercial services within the cities. Backward and forward production linkages increased demand for construction and crafts, generated substantial employment for semiskilled laborers and craftsmen, widened the market area for rural products, and attracted part-time workers from surrounding villages by providing off-farm employment.¹¹ The growth of Taegu, during the 1960s, forged a complex set of new economic ties between the city, smaller market centers, and with the larger cities of Seoul and Pusan. As Taegu became more specialized in textile manufacturing, for example, it provided employment for rural migrants, generated related industries, raised incomes within the city, and created demand for vegetables, meats, and other agricultural products. Gradually, agricultural resources were used more productively, generating higher incomes per unit of land. New urban-rural production linkages were established, initiating a "cascade effect" of investment in industries, services, and commercial activities. Once the intermediate city began to grow, the demand for farm implements and machinery increased rapidly. Urbanization and decentralization of industry accelerated rural modernization—"and modernization of the surrounding rural sector contributes to the industrial and commercial growth of the city, by providing a market . . . for more consumption goods wanted by farmers," one analyst contends, and "with better roads, people go to town more often even though they would seldom go to Seoul."¹²

The flow of commodities and manufactured goods is strongly influenced by the degree of spatial articulation within developing countries. Intermediate cities in particular serve as redistribution centers. Chonburi town in Thailand, for instance, serves its region as a channel of commodity flow and a redistribution center for sugar and tapioca, fish and fish products, rice, poultry, and fruits produced in the rural hinterlands for shipment to Bangkok. Vegetable market networks through Chonburi serve the needs of both local producers and consumers; middlemen in Chonburi sell vegetables grown in Chonburi to Bangkok and Chachoengsao and buy other vegetables to be consumed in Chonburi.¹³

In well-articulated spatial systems, moreover, strong linkages develop between inward and outward flows of goods and commodities, through organizations responsible for both export and import functions.¹⁴ Yet, in most developing nations, the lack of spatial articulation obstructs the evolution of such linkages, which are unlikely to emerge

spontaneously without central places large enough to support organizations capable of managing multiple functions.

Population Movement Linkages

Short-term and permanent migration is a ubiquitous characteristic of development and an important form of urban-rural linkage. Temporary migration and journey-to-work, more strongly than other forms of spatial interaction, depend on transportation and communication linkages between urban and rural areas, and on the location of industrial activities in intermediate cities and smaller towns. More permanent migration depends on a wider range of economic and social determinants, including the availability of jobs in towns and cities; wage, public service, and educational opportunity differentials between cities and villages; and the distance, cost, and convenience of moving. Rural people, given potential job opportunities and convenient means of travel, are more likely to migrate to a city where they have friends or kin.¹⁵

Studies of tropical Africa indicate that where they exist, province towns and intermediate cities attract migrants who either move to them instead of going to the primate city or use them as temporary way stations before moving to the metropolis. Although much of the migration in Africa is "rural-urban-rural," with frequent return trips to the village, the emergence of small towns or intermediate cities can drastically alter movements if they provide work, education, or increased access to public services and amenities.¹⁶ In Africa, population movements are less a function of distance than of spatial articulation, with smaller towns having "quite restricted ranges, while the larger urban places exert their influence over much wider areas."¹⁷

Although little is yet known about the effects of decentralized urbanization on population movements in developing countries, scattered evidence suggests that the creation of market towns and intermediate cities can have a significant influence on both migration and journey-to-work. Where villages are widely scattered and central places have not emerged, journey-to-work patterns tend to lack nodality; people move short distances from their homes to fields or from their homes to small shops and processing plants. Some commute to special facilities and activities such as military reservations, larger plantations, or commercial farms and to nearby cities. The concentration of economic activities in market towns and small cities, however, generates a greater volume of journey-to-work traffic and significantly increases nodality. The development of a nodal journey-to-work pattern in turn influences a

number of other linkages including capital, commodity, income, and market flows.

Emergence of diversified market towns and small cities can also alter the flow of migration from rural areas to major metropolises and create a pattern of step-wise migration. Growth of towns in rural Pakistan, which experienced rapid agricultural commercialization during the 1960s as a result of the Green Revolution, stemmed the tide of people pouring into the primate city and redirected many of the migrants toward smaller central places. Between 1951 and 1972 small town populations increased by 3.6 million whereas large cities grew by 5.4 million; by the early 1970s towns grew faster than major urban places. Small landowners, whose land value increased rapidly during the Green Revolution but who could not compete with owners of middle-size and large farms, sold their land, moved to the towns, and sought opportunities for investment. As town migration increased, it set in motion a set of multiplier effects; it expanded demand for goods and services, generated new investment and economic diversification, widened the range of social and economic activities, and provided greater job opportunities in the towns, thereby increasing further the immigration of rural people, mostly landless laborers. The initial impetus for more stable town growth in the regions of rising agricultural productivity was expansion of small-scale engineering industries that provided technical inputs, agricultural supplies, farm implements, pumps, engines, and strainers required for the cultivation of high-yielding crop varieties.¹⁸

Technological Linkages

Developing nations need a variety of technologies, appropriate to different social, economic, technical, and administrative capacities of communities of different sizes and stages of development. Technology—equipment, procedures, and methods of production—must also be integrated spatially and functionally, since no single technological innovation will promote social and economic transformation in developing nations unless it is appropriate to local needs and conditions and linked to both higher and lower levels of technology and related inputs.

The Green Revolution demonstrated that a spatially linked network of technologies is needed to make the introduction of new high-yield seed varieties successful, with technical inputs coming from both urban centers and rural areas. The components, equipment, and skilled manpower needed to test new seeds, construct irrigation systems, and oper-

ate new equipment are likely to be drawn, in most countries, from urban areas. Fertilizer, needed in large amounts to achieve desired results with Green Revolution hybrids, must be manufactured using chemicals and petroleum products imported through large cities; its distribution to farmers depends on the existence of transportation networks between urban and rural areas and within rural regions and on the extension of urban services and facilities to fertilizer production sites.¹⁹

The spatial implications of technological linkages are frequently overlooked in development planning, but their importance is vividly demonstrated by the introduction of mechanized agricultural technology in Asia. Production of agricultural machinery in Taiwan, India, and Pakistan is divided among rural blacksmiths and carpenters, urban workshops located in market towns and small cities, and capital-intensive firms located in larger urban areas. In India and Pakistan, village artisans working with crude hand tools and basic materials available locally do most of the repair work on farm equipment, except for tractors and power tillers; urban workshops are more specialized in repair services and can produce more sophisticated components for mechanized farm equipment using power tools. Tractors and tillers are usually manufactured by only a few large firms located in the primate cities and working in collaboration with major international corporations. Linkages among these organizations at the three levels in the spatial system are crucial, for, as Johnson and Kilby note, "the success of the farm equipment industry in providing effective inputs for agriculture is largely determined by the extent of interconnections that exist among the three sectors."²⁰ Spatial linkages are critical to agricultural technology industries in these countries.

Many urban workshops are established by progressive village artisans or rural blacksmiths who migrate there to become apprentices, later going into business for themselves. Large urban manufacturers depend on both the small town urban workshops and the village artisans to service their equipment, make new parts, and repair components, since the firms cannot establish their own repair services in each village and be competitive with local artisans. Because of the high level of investment required for large firms to produce standardized parts, the major manufacturers of farm equipment must subcontract the work to urban workshops, which make interchangeable components to the specifications of the contracting companies.²¹

Spatial and organizational linkages are even more crucial to capital-intensive industrial technologies. To have an impact on development, capital technologies must be introduced into industries with strong backward and forward production linkages and in countries where there are strong connections between government scientific pro-

grams and private sector activities. As Parent points out, each branch of a major industry "produces linkage effects which spread to other apparently quite unconnected industries," and the impact of the new technology in a leading industry will then depend on

several factors including the importance of the originating industry in total industrial production, the number of its direct connections with other industries, and the number of industries affected which are really operating in the country. If the supporting industries are missing, attempts to establish leading industries will fail.²²

Similarly, if elements of the spatial structure which allow industry to disperse geographically are missing, technological linkages, and channels of innovation will not develop to promote widespread growth.

Social Linkages

Market towns and intermediate cities do more than generate physical and economic activities; they are the focal points for a wide variety of social linkages among development centers and between those centers and their rural hinterlands. Market centers perform many social roles in rural areas; indeed, in many African countries, economic exchange functions grew out of traditional social gatherings and rituals. The types and frequency of economic activities were closely linked to social events.²³ Traditional African markets provided an important locus of social interaction; "the marketplace would be used for games and dances, and the market itself was certainly not viewed by the people as simply an economic event."²⁴ In Africa, markets remain meeting places for sports and competitions; in Asia and Latin America they contain a variety of social facilities—restaurants, bars, baths, churches, temples, and cinemas—attracting people from the villages not only to exchange goods and services but also to engage in recreation and to meet friends, acquaintances, and kin.

The growth of market towns in China, as in other Asian countries, had a profound effect on rural social interaction. Skinner observes that they provided a spatial focus for social interaction within a diffuse trading area. Because people made regular visits to the market throughout their lifetime, even the poorest farmers came to know almost every other adult in the marketing area; marriage arrangements were most often made from within the trading boundaries; credit and lending decisions were based on people's reputations formed through frequent market transactions; and the acceptance of common criteria of exchange, such as standard weights and measures, evolved from the need to maintain

social harmony among disparate villages and groups within a trading area.²⁵ With market expansion and increasing commercialization of agriculture, periodic markets evolve into permanent places of exchange, daily markets displace smaller, infrequent exchange points, and diffusing social linkages promote increasing social and spatial integration. Widening market areas extend the spatial range of social interaction, of even such traditional linkages as marriage arrangements, steadily integrating smaller clans, communities, and villages, promoting new kinship ties and visiting patterns, and transforming social group and organizational relations.²⁶

As daily markets displace periodic markets, and as smaller marketplaces disappear from the spatial system, farmers are forced to interact with villagers from a larger area. Skinner observes that although cultural lag allowed many traditional social linkages to survive in China, the displacement of periodic markets eventually forced new patterns of social activities to emerge and

inevitably the social horizons of the peasant—now in the process of becoming a farmer—are extended toward the limits of the larger trading area. The range of his acquaintances expands to include initially townspeople and eventually residents of villages elsewhere in the trading system. The marriage area of his village is likely to grow accordingly.²⁷

As the area of social interaction increased, causing a breakdown of face-to-face coordination, new social and organization arrangements evolved—not the least of which was the proliferation of middlemen and brokers to perform an increasing number of functions—for maintaining harmony, interaction among a larger number of people, and performance of a greater number of social and economic activities. “Intimate knowledge of, and effective concert within, a system embodying 50–75 villages is simply infeasible”; Skinner argues, “and in time the cooperation which has been embedded in the natural system centered on the standard market becomes pointless or at best anomalous.”²⁸ Thus, social linkages forge ties between market towns and intermediate cities, and the emergence of these two types of centers, in turn, fundamentally alters social interaction patterns. The relative diversity of activities in intermediate cities, for instance, is an attraction to rural people in deciding where to shop and market, even when smaller towns are closer to their homes. The recreational and social opportunities afforded by middle-size cities are often the primary reasons for extended shopping trips. “When Taiwanese peasants decide where to go to do their shopping they are not necessarily guided by the factors that go into making up the ‘rational economic man’ so beloved by economists and classic central place theorists,” argues one anthropologist:

With time on their hands, money in their pockets, and busses, motorcycles, and bicycles readily available, they are apt to ignore time and distance factors and pay attention to entertainment value. There is no question about the fact that central towns with their gaudy streets, bustling crowds, blaring moviehouse sound-tracks and the even chance they afford to witness a funeral, a fight, or the girls in the teahouse, are eminently more appealing to the Taiwanese than the dusty streets, tawdry shops and sleeping dogs that typify standard towns.²⁹

Social linkages change most drastically with the emergence of intermediate cities. Traditional family and kin relationships change as younger people are attracted to middle cities to seek employment and education; younger people living in larger urban areas tend to marry at a later age, to have smaller families, to maintain conjugal rather than extended families, and to achieve higher levels of education and training than their rural counterparts. They are exposed to a wider spectrum of ideas, social behavior, attitudes, modern techniques, and diverse living styles.

Middle-range cities, more socially heterogeneous than either villages or market towns, mix new and more diverse social activities with traditional practices and behavior, and provide yet another impetus to social transformation. Evidence from the study of middle cities in India suggests that new social patterns and linkages blend in transforming trade relationships. Competition for capital is greater in intermediate cities than in rural market towns because access to credit is based more on objective criteria than personal obligation. Market relationships, even in bazaar sectors in intermediate cities, tend to be unlike their rural counterparts, characterized by fixed prices, stable client-patron relationships, and frequent use of credit as a substitute for cash or in-kind bartering. The network of social linkages established in middle cities affords greater opportunities for social and economic interaction with other intermediate cities and with larger metropolitan areas.³⁰

Service Delivery Linkages

Increasing the physical, economic, and technological linkages among central places is critical to expanding service delivery networks in developing nations. Urban centers and rural areas must be closely linked in order to distribute social and commercial services more widely and to increase the access of rural populations to urban amenities. Nearly all services require the support of a minimum number of people concentrated in a limited geographical area, a "threshold population" of sufficient size and density to attract enough customers to earn profits for

suppliers of commercial and professional services and to allow public services to reach the largest number of people at the lowest cost. Threshold levels for services vary widely; and because each service has a specific threshold, the types, degree of specialization, and delivery range of services found in any given community depend on the size and density of its population, its occupational profile, income distribution, transportation access, and economic diversification. All other things being equal, the "hierarchy" of services in a region is closely correlated to the hierarchy of central places. Larger population size and higher density create economies of scale that allow services to be offered at lower cost.

Services also have different "ranges of influence," the distance over which they can be extended or that people will travel to purchase or use them. The larger the area of influence and the more densely concentrated the users within that area, the more efficiently services can be provided, especially those requiring physical facilities or infrastructure for delivery such as water, sanitation, energy, and health. The World Bank points out that per capita costs of supplying water and sanitation services increases substantially with smaller communities: "sector characteristics change markedly as one progresses from large urban centers, through medium sized cities, small towns and villages, to the dispersed population. The administrative structure becomes more diffuse, income levels decline, and per capita costs for equivalent levels of service tend to increase."³¹ In areas with widely scattered populations and small central places, there exists less institutional, financial, and technological capability to deliver services efficiently.

Most developing countries require a hierarchy of services with a range of components appropriate to the needs and support capacity of different levels in the spatial system. Public health services, for instance, can usually be efficiently provided to widely scattered villages and hamlets only in the form of small clinics staffed by a nurse or paramedic that offer basic preventive treatment, first aid, maternity care, and perhaps family planning information. Small hospitals with basic treatment and diagnostic facilities and with either a visiting or part-time physician, a nurse or paramedic, require a larger service area and usually are found only in large market towns or small cities. A full-services general hospital with a small staff of doctors and more extensive diagnostic and treatment equipment is most often found in intermediate cities or regional centers. Diversified, specialized medical centers with a staff of full-time physicians and technicians, containing more sophisticated diagnostic and treatment equipment, can usually only be supported by major metropolitan areas.

The creation of an articulated spatial system also allows informal social services networks to emerge. Middle-size cities, in addition to sup-

porting a wide diversity of formal social, commercial, and professional services, for instance, act as informal educational service and training centers for their rural hinterlands. A study of Chonburi, a major regional center in Thailand, concisely describes this role:

Chonburi is the central place for repair work and many young people prefer to be trained and to work in these industries. Most young people who want to have a vocation find semi-skilled and skilled training a rewarding experience. Young men join the mechanical-repair and welding shops while young women learn to sew. Most of those young people start as apprentices and improve their skills as they work. Repair services and personal service industries can develop in a town and often not in a village. The needs for such services in the village are often not large enough to make the establishment of the services worthwhile. Young people migrate to town, are trained, and subsequently have a vocation. Most of the skilled and semi-skilled workers remain there and do not return to the village. The quality of town labor force is better than that in the village as a consequence. Through training, many of the workers have moved up the social scale and belong to the middle class level instead of the lower level.³²

In areas where central places are not large enough to support basic nonagricultural activities, social services can often be delivered only by linking them together in a "package." Family planning in India, for instance, must be linked to general rural health services. Family planning information and birth control devices are provided by auxiliary nurse-midwives who work with traditional midwives to improve maternity care, child immunization services, and nutrition programs.³³ In other countries, service delivery linkages are established between towns and rural areas by sending government administrative teams to the hinterland. In Chonburi province, because rural people dislike going to district offices, visiting teams of officials accompany the province governor to different communities twice a month, extending province service to the villagers, assessing needs, and hearing complaints. The visiting teams provide health and veterinary services and advice on agricultural production, issue marriage licenses, and help settle land disputes. The team locates in a tent where people may come all day, and a small group of officers often visits a sample of households to seek suggestions, hear complaints, and provide advice.³⁴

Political, Administrative, and Organizational Linkages

Finally, spatial systems are integrated and transformed through a set of political and administrative linkages reflected in formal govern-

ment structural relationships, flows of public budget resources, administrative authority, supervision and approval patterns, transactions among government jurisdictions, informal political influence and decision chains, and interdependences among spatially dispersed specialized organizations.

Linkages among central places evolve because, in nearly every developing nation, government functions, services, and resources are fragmented among organizations and jurisdictions. In the Philippines, for instance, municipalities provide such services as police protection, public utilities, market facilities, sanitation, basic health, and primary education to rural areas, barrios, and villages. Cities perform similar functions in addition to maintaining secondary schools, hospitals, parks, and city streets and roads. Provinces provide areawide services such as provincial road networks, jails, demonstration farms, and central motor pools. The national government constructs highways, airports, irrigation systems, ports, harbors, and electric power grids and provides, in cooperation with local and provincial governments, welfare, agro-industrial and community development, some education and health services, and a wide variety of social assistance programs. Thus linkages among government organizations not only extend services, facilities, and budget resources throughout the spatial system but also act as channels for obtaining political support and authority to undertake activities essential to integrated development. As Uphoff and Esman conclude from their review of 18 case studies of rural development in Asia,

organization for rural development must be seen as a system of institutions performing various functions in the rural sector . . . and effectiveness of linkages between and among institutions, horizontally with other organizations at the same level and especially vertically between local organizations and structures at the center of government which set policy and allocate resources, [is] essential to the success of rural development.³⁵

As urban centers grow and new central places emerge, political and administrative linkages change and functions are transformed within each center. The number of social functions performed by government tends to increase as communities grow. A variety of health, education, security, welfare, and other services that are provided by government in cities and metropolitan areas can be offered in rural areas and villages by extended families and friends. Whang found that as the intermediate city of Taegu in Korea grew and became more industrialized, city government took on more functions, expanded its budget 15-fold in ten years, enacted a substantially larger number of regulations and laws, and generally was transformed from a passive maintenance organization to an active governmental unit intervening more directly in social and

economic affairs of the city in order to guide the direction and pace of development.

As it grew, Taegu established new and more extensive linkages with other jurisdictions and with the central government in Seoul. Cooperative and coordinative ties were established with national ministries "because development programs require close coordination among different levels of government as well as between the city and neighboring counties and cities."³⁶ Studies of the growth of African middle cities indicate that, as they grow in size and diversity, a complex set of political patterns change. In her study of the growth of Lagos, Nigeria, from a town of 100,000 people to a metropolis of over a million, Baker notes that during a 50-year period, "each stage is distinguished by transformation of some or all of the political variables," affecting patterns of political behavior and formal government structure. Political participation increased, political interests became more diverse, a larger number of social and economic groups were included in decision making, control shifted from national factions to resident groups, and politics generally became more localized.³⁷

As political and administrative linkages are strengthened between urban and rural areas and among central places, the spatial system not only becomes more integrated, but in most developing countries, each center attains increased political autonomy while becoming more interdependent with others in a national political and economic system. The degree of transformation promoted by increased linkage depends, however, on the ability of developing nations to build a system of development centers that can be integrated into a national space economy.

BUILDING DEVELOPMENT CENTERS: LOCATION OF URBAN SERVICES AND FACILITIES

The failure of developing countries to achieve growth with equity, it has been argued, can be attributed largely to their poorly articulated spatial systems. Development is handicapped both by the lack of market towns and intermediate cities and by a spatial distribution of existing centers that is not conducive to creating an integrated system of production and exchange. Service centers are the smallest places in developing nations at which urban services and facilities can be located for efficient and effective delivery to rural areas. Villages, hamlets, and farmsteads do not provide large enough markets for most services and facilities.³⁸ Market towns and small cities are the most critical settlements in a well-articulated spatial system for linking rural and urban functions. Market towns perform functions essential to the commercialization of agricul-

ture and to the dispersion of urban services and facilities. Where they have been fully developed, they provide institutions for the collection, exchange, and distribution of agricultural products and contain storage, basic processing, and transportation facilities to ship products to larger urban markets. They are the locations of basic financial and brokerage functions, of specialized craftsmen who require a threshold population larger than that of a single village, of nonagricultural work opportunities for surplus rural labor, and of basic nonformal and formal education and apprenticeship training.³⁹ They facilitate social, cultural, and administrative interaction among groups and villages within their areas of influence and with larger cities and the metropolis. The performance of such basic functions and the provision of these services is essential to the promotion of development in economically lagging rural regions. Without a strong set of market towns, integrated urban-rural development simply will not occur.

Finally, metropolitan areas have made indisputable contributions to the development of Third World nations. As major investment, social, educational, administrative, and cultural centers, they are the "engines of development" in most countries. But to distribute more equitably the benefits of urban development, regional equivalents of the primate city—intermediate cities and regional centers—are needed throughout a country, especially in remote rural regions, in what Johnson has called the "great unserved interstices."⁴⁰ Intermediate cities can function as regional industrial and commercial centers, "way stations," or absorption points for rural-to-urban migrants, and locations for decentralized transportation, marketing, service, and governance functions. The intermediate city can also play a critical "brokerage role" between rural areas and small cities within its influence area and the metropolitan center. It can be a regional focal point for mixing rural and urban functions and for transforming the less productive, traditional institutions, practices, and activities within rural areas.

The Village Service Center

Villages that already have some basic combination of services and facilities often attract larger populations and begin to provide functions for other villages. New government investments should be located in those communities that already have some capacity to serve rural hinterlands. These points, village service centers, should be easily accessible from surrounding rural areas and located where they can extend critical services and technical, political, and administrative inputs to agricultural programs. Johnson contends that they should be within five to 20 miles

of the population to be served⁴¹; Friedmann and Douglass would establish them as “agropolitan district towns” with a commuting radius of between five and ten kilometers, not more than one hour’s travel time by bicycle from their furthest boundaries.⁴²

Village service centers should (1) be small central places providing isolated farms, small hamlets, and villages with basic services and facilities as well as household and agricultural goods, (2) contain facilities that provide services needed to stimulate nonagricultural small-scale industries and increase agricultural productivity, (3) provide basic social services facilities and amenities that raise the quality of life within surrounding rural areas, (4) contain cooperative organizations required to expand popular participation in development programs through a mixture of “bottom up” and “top down” planning, and (5) provide a small node of physical, social, and economic activities that link rural areas and villages to market towns and small cities.

The following types of services and facilities should be located in village service centers: *Facilities*: small-scale storage; a community center; a cooperative supply outlet; a maternity-health clinic; a primary school/vocational education facility; a police post; farm-market roads; irrigation canals and ditches; potable water pumps, wells, and storage tanks; rural electrification; a primary processing, grading, weighing and packing facility; agricultural demonstration plots; a village-hamlet government office; a periodic market facility; an all-weather access route; a government supply dump; and a local transportation stop; and *Services*: an extension service; a welfare and home economy service; a government credit office; a paramedical health service; maintenance of roads and physical facilities; municipal administrative services; a postal and telegraph service; and a local bus and truck transportation service.

Such services and facilities can improve communications between rural areas and the village center, provide a daily market for surplus primary produce, an outlet for commonly required farm inputs, and storage facilities for agricultural products, improve agricultural productivity, and upgrade rural administrative capacity.

The Market Town: Small City

Market towns are crucial for transforming economically lagging rural regions because rural economies can only be stimulated by the increasing commercialization of agriculture, which in turn requires that every farm have “access to markets where farm produce can be sold for cash without the danger of monopsonistic exploitation and where there are enough sellers of farm supplies to prevent monopoly. . . . What is

essential, therefore, is a unified market town where appropriate facilities are congregated."⁴³ Historically, in most of the developed world, rural investments have clustered around markets. But if markets are to serve as growth points in developing nations, they must perform a wide range of functions and offer a variety of services and commodities. They should be permanent and regulated, so that both farmers and traders can escape the abuses of traditional village monopolists. Markets can be created by stimulating clusters of investment that are related to rural and agricultural needs. A diversified set of enterprises must be encouraged so that the benefits from association and proximity can provide economies of scale that allow them to thrive and to attract related investments. As the number of trading, manufacturing, and service industries grow in one center, there is a strong probability both that total demand for all services and products will grow and that the market's service area will expand.

A critical problem in stimulating market town development is to identify entrepreneurs who can take advantage of the potential for growth and rapidly establish key enterprises. Several types of entrepreneurs have emerged where such centers have been established. In some countries local, private investors provided capital to establish new ventures; in others, such as Puerto Rico, foreign capital has been the main source of investment, whereas Israel established collective cooperative institutions and Yugoslavia allocated government investment funds to communes. Where permitted by government, some combination of public and private investment capital is required to set the development process in motion. Regardless of the method used, however, growth of market towns and small cities can be stimulated by the spatial coordination of public capital projects and by the concentration of service and facilities in established or emerging market points.

The services and facilities that should be located in market towns and small cities include the following: *Facilities*: permanent market structures; district and municipal government offices; a development bank branch; a district cooperative office; a district office of marketing board; a small hospital and diversified clinic; primary and secondary schools; vocational training schools; all-weather and arterial roads; paved streets; electricity, piped water, and sewerage systems; a transportation depot; an extension center; an experimental farm; an airstrip; a rural development project operations office; a warehousing and food processing facility; a police station; a post, telegraph, and telephone office; a cooperative supply outlet and administration office; an equipment repair and maintenance facility; a government supply dump/warehouse; and a fire station; and *Services*: an agricultural marketing service; an agricultural extension and information service; a welfare and

home economy service; a public transportation service; public safety and security services; a public health service; a credit and government lending service; a full-time municipal administrative service; a district administrative office; a postal and telegraph service; and full-time maintenance of roads and physical facilities.

Intervention at the market town-small city level should aim to expand and facilitate marketing and to increase agricultural productivity in the hinterlands. Physical facilities must be constructed for a permanent marketplace, supported by storage, grading, and processing facilities, as well as the necessary financial, commercial, and business services. The market center should be made a district transportation hub to link it with village service centers and to intermediate cities and metropolitan areas.

Intermediate City: Regional Center

Although remarkably little is known about intermediate cities in developing nations, middle-size cities perform critical roles in the transformation and development of regional economies and spatial structures. Intermediate cities are socially and economically heterogeneous, mixing traditional and modern behavior, institutions, and practices and accommodating both modern and bazaar economies. Usually situated at the hub of regional transportation routes, intermediate cities are often way stations or absorption points for rural-to-urban migrants. Although they lack social homogeneity, the middle-size cities have "a degree of 'openness' as well as mechanisms for the assimilation of outsiders into the economic structure of the city,"⁴⁴ and their very heterogeneity serves to integrate a variety of social groups, clans, and tribes as well as village and town services with metropolitan activities and national functions. Indeed, many intermediate cities manifest both rural and urban physical characteristics. Taegu, the Korean middle city of more than a million people, with a diversity of industry and a growing economy, can still be described by visitors in terms of its rural atmosphere. "A city big in population only, it lacks most of the modern facilities that Seoul and Pusan enjoy," writes one observer. "Its small downtown shopping area is cluttered with small stores. There are no large tourist hotels, no big office buildings, and beyond the core areas of the city, Taegu still looks rural, and this strong rural atmosphere pervades the whole city."⁴⁵

To build middle-size cities and regional centers, facilities and services must capitalize on the openness and heterogeneity of these places, creating a mixed urban-rural economy that can promote higher levels of rural productivity, coordinate national, regional, and local administra-

tive functions, diversify commercial and industrial activities, and absorb many of the functions concentrated in the primate city. Intermediate cities can be built into raw material and agricultural commodity processing and distribution centers, urban industrial areas that perform a wide range of financial, service, commercial, educational, and administrative functions. This type of change may be facilitated by developing within them industrial estates, specialized trade schools, energy and power stations, communications services, warehousing and storage facilities, and a regional appropriate technology research center. Other public services and facilities required to build the productive capacity of intermediate cities include such facilities as regional permanent and complementary markets; national government regional offices; provincial government offices; municipal government offices; national financial institutions; full-service hospitals; a regional university; primary and secondary schools; specialized trade schools; an arterial highway; an airfield; a major transportation junction; paved streets; electricity, piped water, and sewerage systems; an electric generation station and regional grid; an industrial estate; a regional development headquarters office; a regional post, telegraph, and telephone operations office; a fire and public safety facility; a warehousing and storage facility; industrial raw material processing and food manufacture; low-cost public housing; a government supply distribution center; a regional agricultural experiment station; major repair and maintenance facilities; a regional appropriate technology research center; public recreational facilities; and such services as a public city and intercity transportation service; a public safety and security service; a public health service; a professional city administrative service; a provincial administrative service; urban social welfare services; public libraries; national government regional services; a postal and telegraph service; and professional maintenance of roads and physical facilities. With these services and facilities, intermediate cities can become vital spatial nodes for integrating smaller with larger central places and meshing the major linkages that build an articulated spatial system within a national economy.

TRANSFORMATIONAL DEVELOPMENT: AN APPROACH TO SPATIAL INTEGRATION STRATEGY

To make integrated urban-rural development strategy work will require the concerted efforts of both developing nations and international assistance agencies and, within developing nations, a wide variety of public and private organizations, to build the comparative advantages

and productive capacity of economically lagging regions. Integrated urban-rural development, in most countries, requires regional planning, since central governments cannot adequately plan, supervise, and coordinate development activities from the national capital, and local governments are often too weak to provide the essential resources for areawide development. But unlike development strategies that attempt to substitute modern organizations, technologies, methods of production, attitudes, and social relationships for "traditional" institutions and practices, transformational development seeks to increase incrementally the productivity of indigenous institutions and practices, reinforcing and building on those appropriate to local conditions and needs and adaptive to changing circumstances, gradually displacing those that are not. The concept of development as transformation involves eight basic principles: (1) building on existing culturally embedded resources, institutions, and practices; (2) involving local people, who will be affected by transformation and change, in the processes of development planning and implementation; (3) adapting modern technologies, services, and facilities to local conditions; (4) promoting specialization in production and exchange activities based on existing spatial comparative advantages; (5) using appropriate, low-cost, culturally acceptable methods of change to generate "demonstration effects" that lead to widespread adoption of those methods that prove successful; (6) planning for displacement of unproductive and unadaptable traditional institutions and practices as change occurs; (7) establishing, through planning based on "strategic intervention," the preconditions for transformation and change in social, technical, political, economic, and administrative structures and processes and in elements of the spatial structure; and (8) creating a planning process that is flexible, incremental, and adaptive and that provides for experimentation and adjustment as transformation takes place.

Building on Existing Resources

Development planning rarely begins with a clean slate; in every developing nation, existing problems and circumstances, which often evolved over centuries, establish the environment for change. Although it is almost a cliché to argue that development planning should be based on a thorough understanding of existing conditions and emerging needs, this basic principle is often lost in the urgency to activate development plans and policies.

One of the recurrent lessons of development experience, however, is that the most pervasive changes can be attained by transforming

existing resources. Indigenous social and economic systems survive because they perform useful or necessary functions. They are usually adaptive mechanisms that are suited to cultural peculiarities and that satisfy the needs of those who maintain them. Understanding their operations is crucial to designing plans and programs for promoting change. The use of existing resources and culturally embedded traditions, moreover, can be more effective and less costly than attempting wholesale substitution of “modern” but alien institutions and practices.

The transformation of shifting cultivation as an agricultural system provides an appropriate illustration. Those schooled in the Western tradition of resource use have been, in the past, almost unanimous in their a priori condemnation of traditional agricultural technologies—especially of shifting cultivation in tropical highlands—as primitive, wasteful, destructive, and unproductive. But, under normal conditions, traditional agricultural systems are not axiomatically ruinous or maladapted. They exist and continue to survive for good reason. But to be made more productive, shifting cultivation must be transformed into a culturally acceptable system that both satisfies family nutritional requirements and generates marketable surpluses to meet the growing food needs of urban and rural markets. Experiments with shifting cultivators indicate that this form of agricultural technology can indeed be transformed to more productive uses; in various parts of the humid tropics, integration of food production with forestry, the gradual introduction of perennial cash crops such as cocoa, oil palm, or rubber, combined with a corresponding de-emphasis on annual crops in shifting fields and the introduction of livestock and pasture animals into shifting cultivation areas, all helped transform low-productivity subsistence agriculture into incrementally more productive farming.⁴⁶ In Latin America, the introduction of better varietal selections and more effective cultivation techniques to areas where perennial crops and pasture grasses were traditionally cultivated, produced similar results.⁴⁷ “All [of these alternatives] are compatible with existing systems of shifting cultivation, Greenland argues, “and introduction of any one or more of these into the system should lead to immediate although not always dramatic improvement in production.”⁴⁸ But in the case of shifting cultivation, there are even more convincing arguments for a transformational approach to development. Experience with the Green Revolution demonstrates that its impact on small farmers living at or near subsistence levels is relatively small; shifting cultivators cannot hope to attain access to the modern technology required by high-yielding seed varieties, nor is it adapted to their needs. Indeed, as Greenland argues, “for the great majority of farmers in the less developed parts of the tropics and subtropics, who farm poor soil unsuited to intensive mechanized agriculture, transfer of

technology is not possible. For their development they require not the transfer of technology, but the devising of new technology." But even design of new technologies, ostensibly suited to the problems of subsistence cultivators, must be preceded by the attempt "to analyze carefully those factors that make [shifting cultivation] stable and those factors that often make the shifting cultivator adhere to it when offered alternatives."⁴⁹

Scattered evidence from rural development experiments supports the contention that change is more likely to be adopted when it is based on traditional institutions and practices. Fishing village projects in Ghana and vegetable production schemes in Gambia, mobilizing traditional communal labor and incorporating the customary roles of women in agricultural decision making, gradually increased productivity and income.⁵⁰ Agricultural projects designed to use traditional power structures in Bolivia succeeded by adopting "a variant on the traditional sharecropping method in which the patron puts up all cash costs and then splits the crop with the farmer."⁵¹ Social and commercial services can similarly be upgraded in areas where alien institutions and facilities would likely fail. Capital accumulation was promoted among Tiv tribes in Nigeria, for instance, through the use of *bams*, farmers' associations based on interfamily borrowing of food or money in time of need. Because the Tiv resisted both government credit schemes and commercial lending, it was necessary, in the 1950s, for tribal chiefs to form savings and lending groups based on traditional practices. Traditionally, women accumulated yams, as savings to be used in times of emergency, when they loaned them to their extended families and then to other families. When it became necessary to accumulate capital for farm equipment and fertilizers to improve agricultural productivity, Tiv leaders found that traditional systems would not generate sufficient savings and that they could only introduce more modern savings and lending functions by forming them around the traditional yam-borrowing-and-lending groups, transforming them over time into more diversified farmers' associations.

Local Participation

Building on existing resources, institutions, and practices requires involving local people, who will be affected by transformation and change in development planning and implementation. The traditional wisdom, experience, and insights of local people are essential in identifying the scope and dimensions of local needs, the most effective channels of change, and the types of change that they will support. Only by

incorporating local people in the process of planning and implementation can decisions be tailored to specific needs and can latent talents and skills be developed. As Johnson argues, "many poor countries . . . are poor because they have failed to release the full creative potentials of their great masses."⁵² Similarly, Friedmann and Douglass contend that integrated spatial planning aimed at adapting urban elements to rural settings requires

a system of governance and planning that is ecologically specific and gives substantial control over development priorities and program implementation to district populations . . . to enable them to take advantage of ecological opportunities where they exist . . . to harness the richly personal, embodied learning of local inhabitants to the . . . knowledge of specialists, and . . . to encourage a growing sense of identification of local people with the enlarged communal space of the metropolis.⁵³

Strengthening Comparative Advantages

Transformational development also implies building the productive capacities of organizations and settlements on the basis of their comparative advantages—those functions they can perform most effectively and efficiently compared with other organizations and places. This requires assessing the advantages and deficiencies of major elements of the spatial hierarchy to determine their potential roles, the extent and nature of their linkages to other elements of the spatial system, and their complementarities. Since the "middle levels" of the spatial hierarchy are missing or poorly articulated in most developing countries, existing spatial elements must be structurally transformed.

A fundamental obstacle to investment in many rural areas is the lack of information on local conditions, which makes evaluation of location decisions difficult, increasing uncertainty and risk. The ability of public and private decision makers to act to meet the needs of a region in its existing state of development, moreover, depends on *their ability* to perceive correctly current problems and opportunities. Most developing regions lack organizations that collect, aggregate, and analyze data on regional social, economic, and technological trends. In some cases, a regional development agency can compile information already collected by other agencies and firms as the basis for analysis or generate new data. A basic inventory would include information on the level of regional income, industry, and occupation mix, wage rates, local earning rates, and contribution of regional factors of production to regional income. Sources of regional income, location of income-producing

activities, and analysis of resource inflows and outflows are required to evaluate entrepreneurial opportunities and lagging sectors. Data concerning the volume and productivity of regional economic activity, levels of capital investment in social overhead and directly productive activities, rates of return on major capital investments, and productivity of regional economic activities would also be helpful.

Successful planning for integrated urban-rural development must be tailored to the needs and constraints of individual communities. A fundamental weakness of centralized national planning is its insensitivity to uniquely local problems and opportunities. Regions in developing nations often differ drastically in their resource bases, comparative advantages, levels of development, and potential for future growth, as do communities within regions. Not all regions or communities suffer the same deficiencies or require the same services and facilities to promote productive investment. The requirements for building intermediate cities differ from those for market towns and village service centers. Decisions concerning allocation of investment and location of urban services and facilities should be based on a careful analysis of rural hinterlands within the region and of existing development centers (see Table 4).

1. Analysis of rural resources and activities: Analysis of rural areas must take into consideration physical characteristics, land and resource-use patterns, agricultural cropping patterns, and the volume, diversity, and productivity of agricultural activities. Population distribution and human settlement patterns can indicate the most efficient service delivery linkages and locations for major public facilities and programs. Existing services and facilities, and the location of nonagricultural commercial and manufacturing activities, must be inventoried and analyzed. Patterns and characteristics of subsistence agricultural systems are critical for determining where extension, technical inputs, and informal education programs should be directed. Appropriate methodologies for analyzing rural resources and activities include descriptive statistics, aerial photography, descriptive and special mapping, and location analysis.

2. Analysis of development centers: Equally important for integrated urban-rural development planning is an analysis of existing components and central places. The location of villages, market towns, small and middle-size cities, and intermediate centers; the size, composition, density, and distribution of their populations, their labor-force characteristics; and the location and distribution of public services and facilities, all must be considered. The location, concentration, and dispersion of major social and economic activities must be an integral part

TABLE 4
Methodologies and Information Appropriate for
Integrated Spatial Development Planning

Types of Analysis	Elements of Analysis	Alternative Methodologies	Types of Information
Analysis of rural resources and activities	<ol style="list-style-type: none"> 1. Physical characteristics, land and resource use 2. Cropping patterns 3. Volume and diversity of agricultural productivity 4. Population distribution and human settlement patterns 5. Services and facilities distribution 6. Nonagricultural commercial and manufacturing activities 7. Subsistence systems' characteristics and patterns 	<p>Aerial photography and mapping analysis</p> <p>Special mapping</p> <p>Descriptive statistics</p> <p>Location analysis</p> <p>Descriptive mapping</p>	<p>Land tenure information</p> <p>Soil and water resources</p> <p>Mineral, forestry, and fisheries resources</p> <p>Location and types of rural roads</p> <p>Livestock resources</p> <p>Types, location, and uses of water resources</p> <p>Population census</p> <p>Types and location of agro-industries</p> <p>Climate and weather conditions</p> <p>Size and distribution of farms and land holdings</p> <p>Crop yields</p> <p>Value of marketed crops</p> <p>Types and location of agricultural processing activities</p> <p>Types and location of storage facilities</p> <p>Types and locations of marketing facilities</p> <p>Size and distribution of farm income</p>

Analysis of development centers	<ol style="list-style-type: none"> 1. Location of market centers, towns, small and middle cities 2. Size, composition, density, and distribution of population 3. Location, concentration, and dispersion of major social and economic activities 4. Changes in size and concentration of activities over time 5. Labor force characteristics 6. Location and distribution of public services and facilities 	<p>Descriptive statistics Scalogram analysis Guttman scale analysis Coefficients of concentration Coefficients of deviation Location quotients Coefficients of localization Localization curves and ratios Indexes of segregation Indexes of dissimilarity Shift-share analysis Gap analysis Special and descriptive mapping Factor analysis</p>	<p>Population size and density Population characteristics Land areas and land uses Distance to major metropolitan centers Type, size, location of public facilities and services Types and location of utilities Characteristics of transport services and facilities Size, location, and characteristics of commercial establishments Health facilities and services characteristics Recreational facilities Governmental services and facilities characteristics Type and location of social organizations Employment sources Characteristics of educational institutions Professional services Manufacturing and processing industry characteristics Size, location, and volume of business for personal services establishments Educational levels of the population</p>
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TABLE 4 (continued)

Types of Analysis	Elements of Analysis	Alternative Methodologies	Types of Information	
Analysis of regional spatial linkages	1. Physical linkages	Trade area analysis	Number, size, location, and quality of road and rail lines	
	a. Road networks	Input-output analysis		
	b. River and water transport channels	Environmental impact analysis		Soil conditions, water and air pollution levels
	c. Rail networks	Regional balance-of-payments analysis		Shipping times to major central places
	d. Ecological interdependences	Correlation	Transport service costs	
	2. Economic linkages	Factor analysis	Types, sources, and locations of raw material supplies	
	a. Market patterns	Linear programming	Size, type, and location of regional industries	
	b. Raw materials and intermediate goods flows	Network analysis	Retail sales trends	
	c. Capital flows	Activity analysis	Residential location of employed workers	
	d. Production linkages—backward, forward, and lateral	Differential migration analysis	Employment commuting distances	
		Inflow-outflow analysis	Value-added in manufacturing by location and industry	
	e. Consumption and shopping patterns	Origin-destination studies	Consumer characteristics	
	f. Income flows	Gravity and potential models	Size, types, and location of regional shopping facilities	
	g. Sectoral and interregional commodity flows	Survey research	Regional income size and distribution	
	h. "Cross-linkages"	Key informant analysis	Types, sizes, and locations of communications media	
	3. Population movement linkages	Case studies	Time deposits and other savings	
	a. Migration—temporary and permanent	Descriptive and special mapping	Volume and distribution of investment, by location and activity	
	b. Journey-to-work	Transaction analysis		
	4. Technological linkages	Descriptive statistics		
	a. Technology interdependences	Simple and multiple regression		

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|---|--|
| <ul style="list-style-type: none"> b. Irrigation systems c. Telecommunications | <ul style="list-style-type: none"> Changes in natality, morbidity, and mortality rates |
| <ul style="list-style-type: none"> 5. Social interaction linkages <ul style="list-style-type: none"> a. Visiting patterns h. Kinship patterns c. Rites, rituals, and religious activity d. Social group interaction | <ul style="list-style-type: none"> Family and kinship patterns Work structure and organization data Types and locations of religious groups |
| <ul style="list-style-type: none"> 6. Service delivery linkages <ul style="list-style-type: none"> a. Energy flows and networks b. Credit and financial institutions c. Education, training, extension links d. Health service delivery systems e. Professional, technical commercial service patterns f. Transport service systems | <ul style="list-style-type: none"> Types and location of social and professional groups Energy use and distribution Volume and distribution of credit and loans Structure of governments within region Types, location, and distribution of formal government responsibilities |
| <ul style="list-style-type: none"> 7. Political, administrative, and organizational linkages <ul style="list-style-type: none"> a. Structural relationships b. Government budget flows c. Organizational interdependences d. Authority-approval-supervision patterns e. Inter-jurisdictional transaction patterns f. Informal political decision chains | <ul style="list-style-type: none"> Type and distribution of government offices and facilities Intergovernmental financial transfers Types, sources, and distribution of government revenues Allocation of national provincial and local budget resources Licencing and regulatory powers Types, location, and responsibilities of autonomous authorities within the region Types, location, and functions of quasi-public organizations |

Source: Compiled by the authors.

of central place studies. A wide variety of methodologies are available, ranging from descriptive statistics through indicators of concentration and dispersion—coefficients of concentration, localization and deviation, location quotients and localization curves, indexes of segregation and dissimilarity—as well as scalogram, Guttman scale, gap, shift-share, and factor analysis.⁵⁴ From these studies, it should be possible to evaluate the comparative advantages of central places and rural areas in order to make decisions concerning the location of public facilities and services and private production investments.

3. Analysis of linkages: Concentration of investment is crucial to building economies of scale and creating the types of central places required to integrate regional spatial systems. Concentration of services and facilities in central places, as noted earlier, can generate a number of economic advantages for both individual private entrepreneurs and for the regional economy as a whole: economies of proximity, agglomeration, and specialization and division of labor; opportunities to exploit forward and backward production linkages; reductions in transfer and shipping costs; and widening rural market areas. In addition, larger scale encourages economic diversification to cushion the regional economy against decline in specialized activities, allows development of more diversified organizations and attracts skilled labor. Central places have distinct advantages in their ability to attract capital and entrepreneurial talent. Analysis of existing regional spatial linkages can identify those with the greatest potential for integrating settlements and transforming underproductive institutions and practices. Three types of methodologies are available to analyze spatial linkages: (1) descriptive methods include special and descriptive mapping, descriptive statistics, key informant analysis, and case studies; (2) regional economic analysis could include trade area, input-output, balance of payments, network, migration, and origin and destination studies; and (3) multivariate statistical techniques include correlation, regression, and factor analysis.

Adopting Low-Cost Methods Appropriate to Local Conditions

Much of the transformation needed to increase the productivity of settlements in developing countries can be achieved with analytical methods and technologies that are low in cost, adaptable to local conditions, and generate “demonstration effects.”

Spatial analysis methodologies, for instance, must be appropriate to the regions and countries under study—to data availability, skill levels of local planners, and the level of comprehension of local policy makers. Developing nations, and especially their rural regions, have notoriously

poor data collection systems. In few countries are national census statistics disaggregated to the local level or collected for the whole range of human settlements; demographic, economic, and physical data are often not available for any settlements below the province level. If they are collected, it is usually on a sample basis, making it difficult or impossible to attribute characteristics to individual settlements. Some of the census data are reported at different units—or the unit boundaries change—from one census to another, and reliable time series are scarce in most areas, making temporal comparisons difficult.

The results of analyses, moreover, must be understandable to rural policy makers and to national ministry officials responsible for allocation of investments, people not likely to be experts in spatial planning and not particularly interested in methodological techniques or abstract theories. Methods must also be relatively easy to apply and not require sophisticated equipment or computers, which are not likely to be found in most rural regions. If spatial analysis and locational considerations are to become part of decision making in rural regions, where trained manpower and the comprehension of analytical techniques by rural politicians and private investors are limited, they should involve relatively simple and easily learned operations of a type that can be applied manually or with simple equipment such as desk calculators and that can be presented clearly and concisely. For these reasons, spatial analysis methodologies should initially emphasize descriptive statistics, scalograms, location quotients, and other ratio measures, maps, charts, and similar techniques that are easy to prepare and understand.⁵⁵

Similarly, the technology and design schemes for building the productive capacity of market towns and middle-size cities must also be appropriate, low cost, and labor intensive, so that they are easily adapted and generate income-earning opportunities for local people. The creation of the town of Djoliba, formerly a village located some 45 kilometers from Bamako, the primate city of Mali, is a good example of one attempt both to build a market center as a "countermagnet to the capital" and to use low-cost, locally appropriate techniques. The experience with that project can be of use to other countries.⁵⁶ The joint effort of the government of Mali and international agencies used a form of transformational development to strengthen an incipient growth center. Several important characteristics pointed to Djoliba's potential as a market town: It lay at the center of a productive agricultural area and was the natural market for a dozen surrounding villages; the community owned 4,000 hectares of land, which produced a modest surplus and satisfied subsistence needs; a small school and a dispensary served the population within walking and cycling distance; and small-scale industry—net menders, weavers, and blacksmiths—already existed. Of cultural im-

portance was the village's prestige as the homesite of the ancient Kieta dynasty; and, probably the most important factor, the village's 1,600 residents were "extremely enthusiastic about participation in the proposed project."

The decision to tailor project design specifically to Djoliba's social and cultural conditions played a large part in successfully establishing it as a regional market center. At an early stage, it was decided that the pattern of life in the community should be preserved as much as possible, making provision for gradual change and improvement. To the mosque, market grove, school, and meeting place were added a youth center, medical facility, permanent market, and enlarged school. Neighborhood housing units were built through self-help programs, and planning was based on traditional physical design. Within each neighborhood, the traditional compound and space for kitchen gardens and cottage industries were retained. Although it was austere, residents quickly realized that such housing was superior to anything they could obtain as migrants in the capital city and that in Djoliba each family would own its dwelling and land. The educational program was crucial to the concept of developing a market town and growth center, for technical skills that could promote and accommodate Djoliba's growth were essential. A small industries training center was established to provide instruction in the practical skills needed in a growing agricultural town and to build on traditional crafts, carpentry, mechanics, and electricity. The primary school was expanded, but as soon as rural families learned of the better educational opportunities in Djoliba, the school was swamped with out-of-town children, and it had to be expanded again. Agro-industrial and processing industries were also established. In consultation with local farmers, a new high-protein species of bean was introduced, and traditional crops were upgraded; chicken raising formed the basis for a new meat and egg industry. Local farmers started a wild-nut and groundnut oil-pressing industry—an important source of alternative employment for farm laborers—and two mills to process millet and maize were constructed. Wastes from oil crushing were combined with milling by-products to produce concentrated livestock feed. Transport links with both the hinterland and the capital city were improved and surplus agricultural products could then be moved speedily to markets in Bamako. Local and traveling vendors showed enough interest in Djoliba's market to construct permanent vending stalls and other facilities, an indication of local people's confidence in the market center's future commercial role.

The type of actions taken in Djoliba could be replicated in nearly any developing nation. But to do so requires recognition of some of the critical factors that contributed to the project's success: (1) community

design and agro-industry developments were culture- and site-specific, suited to local needs and conditions, (2) villagers played a large role in planning, (3) investments were additive and sequential and did not overburden existing facilities, (4) traditional skills were used as the base for expanding industry and training programs, (5) education was adapted to development needs, (6) welfare was upgraded beyond standards available to migrants in the primate city, and (7) land ownership and housing were guaranteed to occupants.

Planning for Displacement and Change

As spatial structure, traditional institutions and indigenous practices undergo change, the least productive and adaptive are eventually displaced, their roles and functions assumed by more appropriate successors. Examples of transformational displacement in developing nations are numerous and commonplace—day laborers and bullock ploughmen are replaced by mechanized tractors and tillers, ferrymen operating small barges at river crossings are rendered jobless by the construction of a bridge, charcoal makers are ousted from their livelihood by rural electrification, periodic markets disappear as new transport linkages between rural areas and larger towns increase access to more diversified daily markets, the economic base of whole cities deteriorates as new industrial technologies or competitive markets for their goods or services emerge. Displacement is an inevitable concomitant of transformation and development. Although planning must attempt to mitigate the adverse impacts of displacement, the lessons of culture history document the frustrations of attempting to preserve artificially unadaptive institutions. In the historical sweep of change, whole cultures have emerged, been absorbed, and disappeared, whereas others have adapted and survived relatively intact. The fundamental role of development planning is to facilitate and promote processes of productive change, while attempting to anticipate and mitigate the adversities and traumas of transformation.

Strategic Intervention

Yet governments can never be omnipotent in planning for development; rarely if ever is it possible to anticipate change or to control it completely; indeed, there are only limited actions that governments can take to promote economic growth, and these are confined, as Friedmann points out, to (1) discovering and capturing new markets for old prod-

ucts, (2) introducing new ways to produce old products, (3) producing new or improved products and services, (4) establishing new types of organizations for production, (5) building local physical infrastructure for production activities, (6) creating local savings and investment opportunities, (7) developing human resources, labor supplies, and skills, (8) developing local natural resources and improving locational advantage, and (9) developing institutions and services to provide more or better information and knowledge useful in planning and production.⁵⁷

Few governments in developing nations, however, have the resources to undertake even these activities and must depend on the combined investment of public and private organizations and international corporations. At best, deliberate government intervention can usually only establish the essential preconditions for change and attempt to manipulate strategic factors that obstruct development or set in motion chains of activities that are likely to accelerate transformation. Among the most important preconditions that can be established by government agencies are providing social overhead capital and physical infrastructure required for productive investment by public and private organizations, ensuring that at least minimum levels of health, education, and other social services are available to a majority of the population, removing obstacles to increased productivity and exchange in economically lagging regions and among disadvantaged population groups, and ensuring through legal means equitable and widespread access to resources, factors of production, and opportunities for individual advancement. Beyond providing these preconditions, governments can plan their own resource allocations and investment to encourage the growth of strategic points in the spatial hierarchy—village service centers, market towns, intermediate cities, and metropolitan areas—and to strengthen the linkages among them.

National and regional development agencies can assist provincial, district, and local governments and private firms to locate services and facilities to build central places and strengthen linkages among them, by (1) helping to identify specific sites for establishing new plants or expanding existing enterprises to take maximum advantage of economies of agglomeration, scale, and proximity to supplementary and complementary economic and social activities; (2) analyzing social overhead expenditures, public services, and facilities needed to sustain proposed development projects and new private ventures and to adapt technological innovations to regional and local conditions; (3) identifying and analyzing backward, forward, and lateral linkages of existing economic activities and delineating opportunities for new investment in the production of goods currently imported to the region; (4) monitoring the investment activities of local, provincial, and national government agen-

cies that construct infrastructure and develop utility, transportation, and service facilities in the region; analyzing the impact of that infrastructure on regional and local comparative advantages and on production, marketing, and transport costs for important sectors of the regional economy; and (5) identifying major public and private capital investments that would yield high, immediate multiplier effects for the region's major economic activities and settlements and recommending their inclusion in national and regional investment plans.

Social, economic, and technological changes have been the most apparent factors promoting regional development. Changes in transportation, technological, service delivery, and economic linkages, it was noted earlier, vitally affect the locational advantages of villages, market centers, small cities, and intermediate centers. Changes in agricultural, mining, and manufacturing production techniques have been significant in creating comparative advantages in some communities and destroying those of others. The ability of regional decision makers to perceive opportunities and adopt technological innovation is a critical factor contributing to regional development. National and regional planning agencies can play an important role in helping establish an environment for innovation, transformation, and entrepreneurship by acting as an intermediary and channel of communication between organizations within rural regions and those outside—national ministries, private firms, financial institutions, universities, research groups, and individual entrepreneurs—with resources that could be invested in regional activities. As an intermediary and promoter of innovation and entrepreneurship, the regional development agency can do the following:

1. Transfer information concerning innovations in production technology, marketing, transportation, organization, and processing techniques to public and private organizations within the region;
2. Identify public and private sources of capital for new ventures—by monitoring new national development programs, changes in interest rates, new sources of government grants and loans to industry, and by active participation in the creation of cooperatives, and assist potential entrepreneurs in finding new sources of capital;
3. Promote regional agricultural goods and manufactured products in markets outside the region—by assisting local entrepreneurs to pool resources for promotion, advertising, and marketing in intermediate cities and metropolitan areas, the development agency can help widen the market for locally produced products and commodities; and
4. Organize programs for improving the skills of regional entrepreneurs and public administrators by contracting for and conducting training, by conducting workshops and seminars through which success-

ful entrepreneurs disseminate their experience to others, and by mobilizing teams of experts and practitioners within the region to evaluate potential projects and existing business and government operations.

Flexible and Adaptable Planning Procedures

Because the very purpose of development planning is to trigger a set of interrelated actions, which, through multiplier and "cascade" effects, generate productive change, the planning process itself must be change oriented—flexible, incremental, and adaptive—fostering experimentation and adjusting policies and programs to the consequences and outcomes of transformation.

THE ROLE OF INTERNATIONAL ASSISTANCE IN INTEGRATED URBAN-RURAL DEVELOPMENT

Developing nations will need the financial and technical assistance of bilateral and multilateral aid agencies to implement integrated spatial strategies. Much of what needs to be done in developing countries can be accomplished through existing assistance programs, but their focus and direction must be reoriented. A spatial framework is needed for designing, implementing, and evaluating development projects, for coordinating assistance programs, and for formulating future development policy. All of the bilateral assistance agencies and development banks are now providing technical, financial, and some of the administrative inputs for increasing agricultural productivity and alleviating the worst aspects of urban and rural poverty. What is lacking is a spatial strategy, the recognition that the key to creating self-sustaining national economies lies in building articulated spatial systems in developing nations.

That all aspects of the spatial structure—urban centers of every size and the rural hinterlands surrounding them—are crucial for creating integrated systems of production and exchange, seems to have been barely recognized in the past operations of development assistance agencies. Major aid organizations—the World Bank, the U.S. Agency for International Development, and the United Nations Development System,—all have programs that seek to overcome physical, social, and economic problems in Third World cities and all are committed to reducing rural poverty. Yet none has an operational strategy for integrating urban and rural development. None concentrates its assistance on building productive capacity in rural settlements and on strengthening

spatial linkages. None overtly attempts, through integration of urban services and facilities in rural development projects, to promote the kind of articulated spatial system required to relieve the high levels of Third World poverty. Without such a spatial framework, programs of international assistance can, at best, only continue to respond to periodic crises and attempt to relieve major bottlenecks, with no assurance that fragmented and dispersed projects will transform developing societies into productive economic and spatial systems.

Reorientation of international assistance programs is an essential adjunct to changes in national policies and should consist of a number of specific actions: First, aid agencies, in addition to formulating an overall spatial development framework for the allocation of their own resources, should establish, within country or field missions, coordinating committees to work closely with national ministries in reviewing the spatial implications of potential projects and investments. Each project should be examined in detail to determine its contribution to building development centers and strengthening spatial linkages. Spatial implications should rank equally with financial and technical feasibility criteria in appraising and approving proposed projects. Location factors must be given increased importance in light of their multiplier and spill-over effects. Second, assistance organizations, again in cooperation with national governments, should undertake a detailed analysis of spatial conditions in each recipient country, assessing spatial deficiencies and needs as the basis for identifying projects and programs that will increase spatial articulation and promote the growth of intermediate elements in the spatial hierarchy. Once base-line data have been compiled, moreover, regions that are shown to be least productive, the most poverty-stricken, and the least developed spatially should be assigned priority for reallocation of investment in urban services and facilities that will build the productive capacity and increase the growth potential of village service centers and market towns.

Fourth, a small number of intensive pilot projects should be sponsored by assistance agencies in selected developing countries to test alternative strategies for locating urban services and facilities in support of rural development. Regions with the greatest potential of benefiting from integrated urban-rural development should be chosen first and the pilot projects evaluated in terms of their potential for wider replication and use in less advantageous regions.

Fifth, additional research is urgently needed on various components of spatial systems in developing countries. Although much is known about some types of marketing systems in developing nations, relatively little research has been done on the nature, characteristics, and potentials of market towns. In-depth studies and comparative analyses of inter-

mediate cities in the Third World are virtually nonexistent. But the few that have been done indicate the crucial role they play in social and economic transformation and in the modernization of rural areas. Nor is much known about the dynamics of spatial linkage and its effects in promoting physical, social, economic, and technological change. Research in these areas should proceed simultaneously with pilot projects, and the two should be mutually reinforcing.

Ultimately, the task of developing countries and international assistance agencies, as Johnson contends, "is to visualize a process of transformation that will widen the occupational opportunities for millions of village born young people, increase total employment, and give greater scope for the adventurous and ambitious without overpopulating the already exploding large cities."⁵⁸ That vision can only be realized through the concerted efforts of Third World countries and aid organizations to integrate urban and rural development. The accumulation and dissemination of knowledge and experience gained from experiments with integrated spatial development and the incorporation of that experience in policy formulation and in project identification, design, and appraisal can constitute a starting point for reorienting assistance programs and development plans toward building integrated spatial systems and productive and self-sustaining economies in developing nations.

NOTES

1. George Dalton, "Introduction," in *Economic Development and Social Change: The Modernization of Village Communities*, ed. G. Dalton (Garden City, N.Y.: Natural History Press, 1971), pp. 1-35, quote at p. 28.

2. *Ibid.*, p. 34.

3. See N.T. Uphoff and W. F. Ilchman, "Development in the Perspective of Political Economy," in *The Political Economy of Development*, ed. N. Uphoff and W. F. Ilchman (Berkeley and Los Angeles: University of California Press, 1972), pp. 75-121; quote at p. 93.

4. See R. Symanski and R. J. Bromley, "Market Development and the Ecological Complex," *Professional Geographer* 26, no. 4 (November 1974): 382-88.

5. U.S. Agency for International Development, *Nicaragua-Rural Development Sector Loan* (Washington, D.C.: USAID, 1975) Capital Assistance Paper AID-DI/CP-2091, p. 138.

6. J. Baker, "Developments in Ethiopia's Road System," *Geography* 59, no. 263, part 2 (April 1974): 150-54.

7. Charles M. Good, *Rural Markets and Trade in East Africa* (Chicago: University of Chicago Department of Geography, 1970), Research Paper no. 128, pp. 193-95.

8. Wilfred Owen, "Transport and Technology," in *Transport Investment and Economic Development*, ed. G. Fromm (Washington, D.C.: Brookings Institution, 1965), pp. 69-88.

9. G. W. Skinner, "Marketing and Social Structure in Rural China," part 1, *Journal of Asian Studies* 24, no. 1 (November 1964): 3-43.

10. See H. M. Riley and K. M. Harrison, "Vertical Coordination of Food Systems

Servicing Large Urban Centers in Latin America," paper prepared for the UN Food and Agriculture Organization's Conference on the Development of Food Marketing Systems for the Large Urban Areas in Latin America (Rome: FAO, 1973), mimeo., pp. 2-6.

11. Yunshik Chang, "Population Growth and Labor Force Participation," in *A City in Transition: Urbanization in Taegu, Korea*, ed. M. G. Lee and H. R. Barringer (Seoul: Hollym, 1971), pp. 44-85.

12. Jin-Hwan Park, "The Growth of Taegu and Its Effects on Regional Agricultural Development," in Lee and Barringer, op. cit., pp. 123-53; quote at p. 152.

13. Naphat Sirisamphan, "Production Areas and Market Network Systems," in Amara Ponsapich, James Hafner, Suriya Veerawong, and Naphat Sirisamphan, *Institutional and Human Resource Development in the Chonburi Region* (Bangkok: Chulalongkorn University Social Service Research Institute, 1974), p. 263.

14. M. Cohen and H. Brookfield, "Urban and Regional Subsystems in Peninsular Malaysia," Phase I, draft report (Washington, D.C.: International Bank for Reconstruction and Development, 1974), mimeo., p. 104.

15. For a concise review of migration studies, see Pamela Brigg, "Some Economic Interpretations of Case Studies of Urban Migration in Developing Countries" (Washington, D.C.: IBRD, 1973), Staff Working Paper no. 151.

16. See J. B. Riddell and M. E. Harvey, "The Urban System in the Migration Process: An Evaluation Process: An Evaluation of Step-Wise Migration in Sierra Leone," *Economic Geography* 48, no. 3 (July 1974): 270-83.

17. *Ibid.*, p. 283.

18. See Shavid Javid Burki, "Development of Towns: The Pakistan Experience," *Asian Survey* 14, no. 8 (August 1974): 751-62.

19. Y. Hayami, "Conditions for the Diffusion of Agricultural Technology: An Asian Perspective," *Journal of Economic History* 34, no. 1 (March 1974): 131-48.

20. B. F. Johnson and P. Kilby, *Agricultural Strategies, Rural-Urban Interaction and the Expansion of Income Opportunities* (Paris: Organization for Economic Cooperation and Development, 1973), mimeo., p. 80.

21. *Ibid.*, pp. 78 ff.

22. Jean Parent, "The Problem of Transferring Technology from Branch to Branch and the Multiplier," in OECD, *Choice and Adaptation of Technology in Developing Countries* (Paris: OECD, 1974), p. 208.

23. See R. J. Bromley, R. Symanski, and C. M. Good, "The Rationale of Periodic Markets," *Annals of the Association of American Geographers* 65, no. 4 (December 1975): 530-37.

24. D. R. F. Taylor, "The Role of the Smaller Urban Place in Development: The Case of Kenya," in *Urbanization, National Development, and Regional Planning in Africa*, ed. S. El-Shakhs and R. Obudho (New York: Praeger, 1974), pp. 143-60; quote at p. 418.

25. See Skinner, op. cit., pp. 38-39.

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27. G. William Skinner, "Marketing and Social Structure in Rural China," part II, *Journal of Asian Studies* 24, no. 2 (February 1965): 195-228; quote at p. 221.

28. *Ibid.*

29. Lawrence W. Crissman, "Marketing on the Changua Plain, Taiwan," in *Economic Organization in Chinese Society*, ed. W. E. Willmot (Stanford: Stanford University Press, 1972), pp. 215-59; quote at p. 243.

30. See Leighton W. Hazelhurst, "The Middle Range City in India," *Asian Survey* 8, no. 7 (July 1968): 539-52.

31. International Bank for Reconstruction and Development, *Village Water Supply* (Washington, D.C.: IBRD, 1976), p. 29.

32. Naphat Sirisamphan, op. cit., p. 142.
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34. Amara Pongsapich, "Introduction," in Pongsapich, Hafner, Veerawong, and Sirisamphan, op. cit., pp. 1-20.
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38. Johnson, op. cit., p. 171.
39. Ibid., p. 192-93.
40. Ibid., p. 153.
41. Ibid., p. 238.
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43. Johnson, op. cit., p. 228.
44. Hazelhurst, op. cit. p. 540.
45. C. I. Eugene Kim, "Political Behavior of the Citizenry," in Lee and Barringer, op. cit., p. 227.
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49. Ibid., p. 841.
50. Development Alternatives Inc., *Strategies for Small Farmer Development: An Empirical Study of Rural Development Projects*, vol. 2 (Washington, D.C.: DAI, 1975), pp. 8-32, C31-36.
51. Ibid., pp. 9-21.
52. E. A. J. Johnson, *The Organization of Space in Developing Countries* (Cambridge: Harvard University Press, 1970), p. 414.
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54. See Walter Isard, *Methods of Regional Analysis: An Introduction to Regional Science* (Cambridge: MIT Press, 1960); and Edgar M. Hoover, *An Introduction to Regional Economics* (New York: Knopf, 1971), for a discussion of these techniques.
55. See Dennis A. Rondinelli, "Bicol River Basin Urban Functions in Rural Development Pilot Project—The Philippines: Review of Functional and Spatial Analysis," Third Quarterly Report (Washington, D.C.: Office of Urban Development, USAID, 1977), pp. 6-20.
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INDEX

- Adelman, Irma, 3
administrative capacity, 34-35, 115-28, 143-44
administrative linkages (*see*, linkages)
Agency for International Development, U.S. (AID or USAID), 4, 29-31, 79, 118, 127, 134, 139, 163, 196; rural development policy, 29-31; Working Group on the Rural Poor, 29-30
agricultural production, 2, 163-64
agricultural research and experimentation units, 129-31
Algeria, 13
Asian Development Bank (ADB), 118
Asian Development Institute (ADI), United Nations, 79
- Baker, Pauline H., 175
Bangladesh, 4, 124, 150
Belshaw, Deryke, 122
Berry, Brian J. L., 15
Bolivia, 42, 100, 102, 127, 131, 134, 183
Brazil, 8, 9-11, 19, 51, 164
Brookfield, H., 73
Brutzkus, E., 64, 65
budgeting, role in rural development, 146-18
- Cameroon, 92, 94, 116
Carvalho, M., 56
Chambers, Robert, 122
Chan, G. L., 103
Chesterfield, R., 92
China, People's Republic of, 12-13, 54, 95, 101, 140, 164, 169-70
China, Republic of (*see*, Taiwan)
Chonburi, Thailand, 69-71, 164-65, 173
cities (*see*, intermediate-size cities, market towns, metropolitan areas, primate cities, small towns and cities)
city size distribution, 41-42
Cohen, M., 73
Columbia, 66, 98, 130, 134, 153, 164
Comilla Rural Development Project, 124
commercial services, as element of rural development, 131-32
cooperatives, 97-99
coordination, administrative, 148-52, 173-75; price, 164-65
Cornell (University) Rural Development Committee, 125
Cowan, L. Gray, 140
credit, 98-99; accessibility to, 87-88; agricultural, 87-89; and financial institutions, 89-90; industrial, 108-11; programs for extending, 88-89
Cuba, 42
- Dalton, George, 160
Darkoh, M. B. K., 52
Davis, Kingsley, 18
decentralization, administrative, 148-52; spatial (*see*, regional development, spatial planning, urbanization)
Djoliba, Mali, 191-93
Dominican Republic, 147
Dorner, Peter, 99
Dotson, Arch T., 49
Douglass, Michael, 177, 184
- Eckholm, E. P., 102
ecosystems, human, 32
Ecuador, 98, 134, 135
education, functional literacy, 95; non-formal, 94-97; participant training, 94-96; vocational, 95-96; women's, 96
Egypt, 121
electrification, rural, 101-5
Elliott, Charles, 5
El Salvador, 11, 12
energy, rural (*see* also electrification, rural): bio-gas, 103; solar, 103; water power, 102-3; wind power, 102
Esman, Milton, 149, 152, 174
Ethiopia, 84-85, 96, 116, 118, 119, 147, 163; Wolamo Agricultural Development Project (WADU), 119
extension services, 91-94
- family planning programs, 173
farm management assistance, 87-88, 130

- financial institutions: credit practices of, 89-91; importance of, in rural development, 89-91; improving operations of, 90-91, 110-11
- First Development Decade, United Nations, 1
- Ford Foundation, 22
- foreign aid (international assistance): and national development policy, 155-56, 196-98; role in rural development, 21-30
- Freire, P., 92
- Friedmann, John R., 42, 177, 184, 193
- Gambia, 183
- Gandhi, M., 50
- Ghana, 58, 67-69, 72-73, 74-75, 183
- Green, K. H., 13
- "Green Revolution," 142, 167-68, 182
- Greenland, D. J., 182
- "growth pole" strategy, 13, 51
- Harris, B., 66
- health services and facilities, 128-29, 172-73
- Hirschman, Albert O., 15
- Horvitz, P. M., 89, 90
- Hoselitz, Bert F., 17
- housing, rural, 131
- Ichman, W. F., 160
- India, 4, 11, 41, 50, 56, 67, 68, 72, 74, 101, 108, 109-10, 140, 141, 168, 173; spatial development in, 55-56, 59
- Indonesia, 4, 95, 100
- industry, rural, 57, 59, 107-11, 152-53, 192-93
- infrastructure, 133-36
- Inter-American Development Bank, 135
- intermediate-size cities, 21, 54-55, 57, 67-71, 161, 164-65, 170-71, 172-173, 176; as development centers, 179-80; role in national development, 67-71
- International Bank for Reconstruction and Development (IBRD), 4, 7, 21-28, 42-47, 79, 88, 103, 104, 115, 118, 139, 145, 196
- International Labour Office (ILO), United Nations, 57, 153, 155-56
- Iran, 4, 86, 98
- Israel, 120, 146, 178
- Jackson, D., 106
- Japan, 48, 108, 109, 110
- Johnson, B. F., 168
- Johnson, E. A. J., 16, 19, 52-55, 57, 59, 136, 164, 176, 184, 198
- journey-to-work patterns (*see*, linkages, population movement)
- Kanesalingham, V., 141
- Kenya, 11, 12, 47, 55-56, 72, 95, 122-23, 128, 133, 144, 153; spatial system in, 55-56; Special Rural Development Program (SRDP), 90, 122-23, 144
- Khan, A. U., 106
- Khan, Ayub, 141
- Kilby, Peter, 168
- Korea, Republic of, 90, 91, 102, 108, 109, 110, 165
- Lampard, E., 17
- land reform, 99-101, 153
- land resettlement, 99-101
- land tenure, 89-90, 99, 100-1
- Lehr, D. J., 89, 90
- Lele, Uma, 85, 86, 93, 96, 116, 118, 119, 120, 144-45, 166
- Lesotho, 144
- linkages, administrative, 149-50, 173-75; analysis of, 190; economic, 164-66; physical, 161-64; political, 173-75; population movement, 166-67; service delivery, 171-73; social, 169-71; technological, 167-69
- local government, 125-28, 149-52
- location criteria, for services and facilities, 11-12, 19-21, 176-80, 184, 185-90
- Mabogunje, A. L., 46
- MacPherson, G., 106
- maintenance and repair services, 132-33
- Malawi, 96, 116, 123
- Malaysia, 57, 72, 73, 75-76, 100, 140
- Mali, 96, 97, 191-93
- Manila, Philippines, 67
- market towns, 32, 53-56, 57, 58-60, 71-73, 165, 166-67, 169-70, 175-76; as development centers, 177-79; role in national development of, 71-73
- marketing, rural, 82, 84-87, 164-65,

- marketing, rural (cont'd)*
 169-71; linkages, 164-65; periodic, 169-71; price information, 151; problems of, 82, 84-85
- Mathur, Kuldeep, 141-42
- McKinnon, R., 89-90
- Mera, Koichi, 48
- Merriam, M. F., 101, 103
- metropolitan centers (*see also*, primate city), 14-17, 43, 46-49, 57, 64-67, 175-76
- Mexico, 42, 104, 130, 134, 135; Puebla Project, 130
- middlemen (brokers or traders), 54, 70-71, 84, 87
- migration (*see also* linkages, population movement) 18-19, 166-67
- Mitra, A., 50
- moneylenders, 87
- Morris, Cynthia Taft, 3
- Myrdal, Gunnar, 15
- Nehru, J., 50
- Nelson, M., 84, 134
- Nepal, 8-11, 19
- Nicaragua, 134, 147, 148, 163
- Niger, 95
- Nigeria, 71, 102, 175, 183
- Onokerhoraye, A. G., 71
- Owens, Edgar, 22
- Pakistan, 4, 101, 140, 141, 167, 168
- Paraguay, 127
- Parent, Jean, 169
- participation, popular, 33, 123-25, 183-84
- Pearson Commission (Commission on International Development), 21
- Perlman, Janice, 6
- Philippines, 11, 57, 67; 91, 132, 142, 147, 156, 174
- physical linkages (*see*, linkages)
- planning for rural development, 116-18, 120-23, 142-47, 193, 196; central government or national, 144-46; decentralized spatial (*see*, regional development, spatial planning)
- political commitment, 139-42
- political linkages (*see*, linkages)
- poverty in developing countries, 3-6
- price supports, agricultural, 153
- primate cities, 14-17, 46-48, 57, 64-67, 175; adversities of, 48-50, 57; roles of, in national development, 64-67
- projects, implementation of, 115-25; location of, 11; management, 118-19; organization of, 116-18; training for management of, 119-20
- Puerto Rico, 178
- regional development, 8-11, 12-13, 121, 150-52; and decentralization, 13, 150-52; in Egypt, 120; in People's Republic of China, 12-13
- Rio de Janeiro, Brazil, 6, 9, 10
- roads, rural, 133-36
- Rokach, A., 120
- Ruddle, K., 92
- rural development programs, implementation of, 79-82; local support for, 81-82; national policy for, 81, 139-56; organization of, 115-25
- São Paulo, Brazil, 9, 10
- Schumacher, E. F., 105
- service delivery linkages (*see* linkages, social services)
- Shaw, Robert, 22
- Shell Oil Company, 135
- shifting cultivation, 182-83
- sites and services projects (*see*, housing, rural)
- Skinner, G. W., 164, 167, 170
- small towns and cities, 10, 12, 49-51, 54, 55, 160-61, 166-67
- social interaction linkages (*see*, linkages, social)
- social services, in rural development, 20-21, 28-30, 67-68, 72-73, 153-54
- Sovani, N. V., 41
- spatial hierarchy, 29-30, 63-77, 82, 159-61
- spatial planning, 14-17, 39-60, 183-84, 197-98; for balanced development, 52-59, 197; methods of analysis for, 185-91, 194-96; role in development policy of, 14-17
- Special Rural Development Program (*see*, Kenya)
- Sri Lanka, 41, 98, 100, 141
- subsistence systems, agricultural, 34; characteristics of, in developing countries, 33-34

- Swerdlow, Irving, 145-46
- Taegu, Korea, 165, 174-75, 179
- Taiwan (Republic of China), 90, 91, 140, 168, 170-71
- Tanzania, 12, 13, 92, 95, 106, 128
- tax policy, 153
- technological linkages (*see*, linkages)
- technology: appropriate, 92-93, 105-6, 167-69; intermediate, 105-6; village, 105-6, 191-93
- Teclé, T., 85
- Thailand, 11-12, 67, 68, 69, 71, 72, 164-65, 173
- Thompson, C. S., 86
- threshold size, 171-72
- Tiv tribe, 102, 183
- trade policy, international, 154-55
- transformational development: concept of, 159-60; elements of, 180-96
- transportation (*see also*, roads, rural), 163-64
- ujaama* village program (*see*, Tanzania)
- unbalanced development, effects of, 3-7, 39-10
- unemployment, in developing countries, 2
- United Nations, 2, 28-29, 196
- Uphoff, Norman T., 149, 152, 160, 174
- urban poor (*see also*, poverty), 6
- urbanization, 6-8, 17-19, 40-43, 51-59; balanced, 18-19, 51-59; centralized vs. decentralized, 17-19, 46-51; and GNP levels, 7; theories of, 40-43
- Venezuela, 51, 92, 95, 96, 97, 98
- villages, 49-50, 55-56, 71-76, 168, 169-70, 173, 176-77, 191-93; role of, in development, 49-50, 55, 71-76, 191-93; as service centers, 73-74, 75, 173, 176-77
- Weitz, Raanan, 120, 146
- Whang, In-joung, 174
- Wharton, Clifton, 142
- World Bank (*see*, International Bank for Reconstruction and Development)
- Yugoslavia, 188

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222

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