

FRS  
92-13

**P L A N N I N G**  
**F O R**  
**H U M A N**  
**S Y S T E M S**

---

ESSAYS IN HONOR OF  
RUSSELL L. ACKOFF

---

EDITED BY **J E A N - M A R C** CHOUKROUN  
& **R O B E R T A** M. SNOW

Copyright © 1992 by the Busch Center, the Wharton School of the University of Pennsylvania

All rights reserved

Printed in the United States of America

Permission is acknowledged to reprint previously published material:

From Albert O. Hirschman, *Essays in Trespassing: Economics to Politics and Beyond*. Copyright © 1981 by Cambridge University Press. Reprinted by permission.

From Björn Hettne, *Development Theory and the Three Worlds*. Copyright © 1990 by Longman Scientific and Technical. Reprinted by permission of Longman Group UK.

From Diana Crane, *Invisible Colleges*. Copyright © 1972 by the University of Chicago Press. Reprinted by permission.

Library of Congress Cataloging-in-Publication Data

Planning for human systems: essays in honor of Russell L. Ackoff /  
edited by Jean-Marc Choukroun and Roberta M. Snow.

p. cm.

Includes bibliographical references and index.

ISBN 0-8122-3128-7

1. Human capital—Planning. 2. System analysis. 3. Operations  
research. I. Ackoff, Russell Lincoln, 1919– . II. Choukroun,  
Jean-Marc. III. Snow, Roberta M., 1955– .

HD4904.7.P55 1992

658.4'03—dc20

91-45087

CIP

# Contents

Acknowledgments	ix
Introduction	xi
<b>Section I: Russell Ackoff and Anheuser-Busch: The Story of a Model Relationship</b>	<b>1</b>
1. Russell L. Ackoff and Anheuser-Busch: I. The Influence of the Man on the Organization <i>August A. Busch III</i>	3
2. Russell L. Ackoff and Anheuser-Busch: II. The Influence of the Organization on the Man <i>Leon Pritzker</i>	9
<b>Section II: Pragmatism and Progress: Foundations</b>	<b>19</b>
3. Analysis of Concepts <i>C. West Churchman</i>	21
4. The Apostle of Progress <i>Richard O. Mason</i>	31
5. A Present of the Future <i>Thomas A. Cowan</i>	49
6. OR, MS, Systems Science, and Russell Ackoff: The Development of Two Paradigms <i>Raúl Carvajal</i>	53
Appendix: Principal Publications of Russell L. Ackoff	70

<b>Section III: Systems Thinkers and Systems Applications</b>	<b>81</b>
7. Planning Concepts, Planning Contexts <i>John Friend</i>	84
8. OR in Organizations <i>Rolfe Tomlinson</i>	98
9. Andras Angyal and Systems Thinking <i>Eric Trist</i>	111
10. A Theory of Management <i>Erik Johnsen</i>	133
11. Educating for Reflection-in-Action <i>Donald A. Schon</i>	142
12. Performance Criteria as a Means of Social Integration <i>Jamshid Gharajedaghi and Ali Geranmayeh</i>	162
13. Some Comments on R. Ackoff's Concept of Interactive Planning <i>Aron Katsenelinboigen</i>	179
14. On Suicidal Rabbits: A Relativity of Systems <i>Stafford Beer</i>	194
15. Personal Computers and the Shifting Control of Information in Corporations <i>Paul Broholm</i>	205
16. Democratizing the Corporation: A Stakeholder Perspective <i>William M. Evan</i>	213
<b>Section IV: Decision Making and Problem Solving: Purposeful Action Within Systems</b>	<b>221</b>
17. Inequalities in Decision Theory <i>Peter C. Fishburn</i>	223
18. Priorities and Decisions in Hierarchic and Feedback Systems <i>Thomas L. Saaty</i>	237

19. Measuring Process Creativity <i>Elsa Vergara Finnel</i>	254
20. Innovation and Optimization <i>Britton Harris</i>	270
21. Is It the Right Problem? <i>K. Brian Haley</i>	282
22. How Management by Consensus Is Bringing the Kingdom Down <i>Ian I. Mitroff</i>	288
23. Innovation in Juvenile Justice <i>Thomas N. Gilmore and Burton Cohen</i>	295
<b>Section V: Planning for National Development</b>	<b>305</b>
24. The Elusive Interdisciplinarity of Development Planning <i>Ignacy Sachs</i>	307
25. National Development Planning in Turbulent Times: New Approaches and Criteria for Institutional Design <i>Francisco R. Sagasti</i>	320
26. Redesigning Western Foreign Policy <i>Michel Chevalier, Glen Taylor, and Fred Carden</i>	354
27. Power in the Design, Management, and Evaluation of Organizations <i>William E. Smith</i>	374
28. Toward Interactive Planning for International Development Projects <i>Paramjit S. Sachdeva</i>	393
29. Surutato: An Experience in Rural Participative Planning <i>Jaime Jimenez</i>	407
List of Contributors	417
Subject Index	419
Name Index	428

## Chapter 25

# **National Development Planning in Turbulent Times: New Approaches and Criteria for Institutional Design**

---

Francisco R. Sagasti

Politics has been defined as the art of the possible. . . . Planning should be the art and science of the impossible.

—Russell Ackoff

### **Introduction**

This chapter examines some of the recent developments in the fields of planning theory and practice, focusing on the need for new institutional approaches to deal with long-term development issues. It has been motivated by the realization that, despite more than three decades of development planning efforts, most planning exercises appear to be rather isolated from the main concerns of policy and decision makers in developing countries. Furthermore, as the crisis of the early 1980s took its toll on economic growth, as the international context for development cooperation deteriorated rapidly, as the pace of scientific and technological change accelerated, and as the result of three United Nations International Development Decades appear disappointing, the need to reexamine development objectives and to reassess the prospects for developing countries has become increasingly clear. As a consequence, the once remote ideas of long-term planning and of futures research have acquired a new sense of urgency.

The main characteristic of planning is its concern with the future. Planning is a process directed toward guiding social change and generating a sequence of socially desirable future events by taking action at present. Future situations are conditioned not only by the present

state of affairs or by a single event at some intermediate time between "now" and "then"; on the contrary, they are the result of a series of interrelated events and social processes that have taken place in the past, are happening at present, and will extend into the future. Moreover, note that the idea of socially desirable sequences of anticipated events is likely to change as the ever-shifting present transforms the future into the past. In addition, the process of imagining the future improves our understanding of the present and of the past; in this sense, the conception of future events and situations helps in actual decision-making tasks (Morin 1981).

In abstract terms, planning can be thought of as "anticipatory decision making." The generation of a sequence of socially desirable future events can be viewed as a process whereby decisions are made in advance and courses of action are selected in a series of interrelated situations that have not yet occurred but are envisioned to happen sometime in the future (Ackoff 1970, Sagasti 1973a and 1973b, Gharaledaghi and Ackoff 1986). This conceptualization highlights four important aspects of the planning process: first, its close relation to decision making, for anticipatory decisions may be considered the building blocks of planning; second, its orientation toward the future, for it seeks to shape events yet to come by taking anticipatory decisions at present; third, the transformation of anticipatory decisions that have the "putty-like" character of things to be done into actual decisions that have the "pottery-like" character of things done; and fourth, the continuous revision of anticipatory decisions which, as time advances, become actual decisions and slide rapidly into the realm of the past.

In this light a *plan* would consist of statements spelling out the anticipatory decisions, their interrelations, and the criteria employed in making them. A *planning methodology* would refer to the procedures followed in arriving at the commitments made in advance and to the ways in which actual decisions to be taken at present are derived from them. The total span of time covered in the planning process, i.e., how far it looks into the future, is the *planning horizon*. Finally, *national development planning* is the process concerned with guiding social change, with generating a sequence of desirable events and with making anticipatory decisions with reference to the future evolution of a country and with deriving present-day decisions from them.

There are many theories, ideologies, and perspectives on the process of development, but—with the exception of some extreme views that refuse to accept any social guidance but that provided by "market forces"—all of them consider a role for anticipatory decision making at some level of society. But even those extreme pro-market views

must take into account that government intervention is required in order to establish and operate markets for factors of production and for goods and services and that individual agents and firms make anticipatory decisions in response to market signals. For example, Polanyi (1944) has showed how purposeful government intervention was necessary to establish national markets for land and labor in nineteenth-century England, and even economists who argue against state intervention in general agree that government action is required for the market to function effectively (Bauer 1984).

In short, as Myrdal (1970, p. 709) has described it, the basic ideology of planning is "essentially rationalist in approach and interventionist in conclusions. It is committed to the belief that development can be brought about or accelerated by government intervention." Nevertheless, this point is by no means universally accepted at present. Disenchanted with the planning experience of the last thirty years, some analysts are proposing a radical reappraisal of the planning ideology. For example, referring mostly to the Latin American experience, Zuzunaga (1986) has argued that "planning was an effort at rationality . . . in a world that has been and will continue to be irrational. . . . All our interest in rational planning, or in any other type of rationality, is a gigantic deception."

### **A Brief Background to National Development Planning**

The roots of the current approaches to development planning extend back at least into the late 1940s and early 1950s. The work of Mannheim (1940 and 1953) on freedom and planning, the Eastern European and Soviet experiences with central planning (Kantorovich 1965, Marczewski 1958, Lange 1949), the French indicative planning approach (Perroux 1961, Bauchet 1967, Meynaud 1963, Caire 1967), and the work of economists like Clark (1951), Kuznets (1941), and Lange (1961) set the stage for subsequent efforts. Development planning as a distinct area of concern was clearly formulated in the 1950s with the publication of a United Nations (1951) report on measures to promote economic development and with the work of leading economists such as Myrdal (1957), Prebisch (1953), and Hirschman (1958).

Since the early 1960s development planning has become an accepted practice in most developing countries (South Magazine 1985). What may be called the "conventional approach" to planning envisages the establishment of a central government planning agency; the formulation and implementation of global short-term (1-2 years),



medium-term (2–5 years) and long-term (more than 5 years) plans; the disaggregation of the global plans into sectorial components according to the ministerial structure of the government; and the introduction of a geographical dimension by assigning responsibilities for projects to regional authorities. Implementation is supposed to take place by linking short-term global, sectorial, and regional plans to the budgetary process; by associating medium-term plans with the evaluation of investment projects; and by ensuring the commitment of political authorities to the development objectives specified in the long-term plans. Finally, plans are supposed to be revised periodically—usually on a yearly basis—updating them to incorporate new information.

Although this characterization of the conventional approach to planning is sketchy, it captures the main features of the proposals put forward by the leading figures in development planning during the 1960s, including Tinbergen (1964 and 1967), Lewis (1968), ILPES (1966), and Waterson (1965).

With financial and technical support from the United Nations, international development banks, bilateral development assistance agencies, and national governments, as well as from academic centers both in developed and developing countries, this concept of development planning was widely disseminated throughout the Third World during the late 1950s and early 1960s. Most developing countries established planning agencies and began to prepare plans earnestly, often as a result of requests from international funding agencies.

However, even as early as the late 1960s and early 1970s, there emerged some doubts about the effectiveness of the conventional approach to development planning. For example, Gross (1967) edited a volume in which he emphasized the need for “activating” national plans by transforming them into an integral part of a social learning process, and criticized the practice of planning that was directed at the elaboration of unattainable pies in the sky. Around the same time, the Organization of American States (1969) attributed the failure of planning in Latin America to the “conventional view of planning which emphasizes the plan as a collection of documents.”

In addition, other authors were pointing out the limitations of development planning from some specific point of view. Pajetska and Sachs (1970) focused on the shortcomings of the process of implementation, particularly in the industrial sector; Hirschman (1967) criticized the emphasis on comprehensive planning and favored sector-specific plans linked to investment programs; Kornai (1970) advocated a move away from “fatalistic planning” and “planning as a special case of conventional decision theory” and into a more realistic

"process of cognition and compromise"; and Griffin and Enos (1970) sought to provide a catalogue of practical tools and methods for development planners.

Probably one of the best early reviews of the theory and experience of development planning is found in the two volumes edited by Faber and Seers (1972). They observed the need for a shift away from an emphasis on the preparation of plans and on economic growth toward the execution of plans and the consideration of social objectives. They also indicated that the conventional approach to planning assumed the existence of political stability, economic certainties, political will, and administrative capabilities to carry out the plans. Needless to say, these assumptions seldom obtained in most developing countries.

During the 1970s Latin America was probably the developing region where the theory and practice of planning was most thoroughly scrutinized. Cibotti and Bardecci (1972) examined the ineffectiveness of planning organizations in Latin American countries and studied the different rationalities of planners, politicians, and bureaucrats. Cardoso (1972) dealt with the Brazilian experience and focused on the political realities that constrained the practice of development planning, an issue that Killick (1976) examined in a broader context. Solari and coworkers (1976) offered a thorough review of planning in Latin America by examining the different schools of thought that emerged, following their evolution, and contrasting the theoretical contributions with the achievements in practice. In a more radical vein, Zuzunaga (1977) dismissed all development planning efforts, stating that "planning is not useful for change" and that social advance "never takes place as a result of previous planning."

An interesting concept introduced during the 1970s was the idea of a "unified approach" to development and planning. The United Nations' (1971) International Development Strategy for the Second Development Decade called for a comprehensive and integrated view of development and emphasized social considerations that went beyond traditional economic concerns. This had important implications for planning, and the large number of studies and reports produced as a result of the new line of work sponsored by the United Nations introduced new ideas such as that of "development styles." One of the key issues that these efforts highlighted was the fact that the state is not a monolithic entity capable of choosing and following a single well-defined course of action, and that competing interest groups, political pressures, and international constraints intrude upon the process of development planning.

However, Solari and coworkers (1976) argued that such a unified approach to development and planning would first require a "unified social theory" and a "unified theory of development," two clearly unattainable intellectual utopias. Wolfe (1980 and 1982) reviewed the attempts to develop a unified approach, pointing out that those efforts left "something intact in the aspiration for rationally planned action" but that it is now necessary to transcend the "image of the State as a rational, coherent and benevolent entity," replacing it by a "more realistic frame of reference for policy-oriented interpretation of what the State does or evades doing, why, and how."

Two additional reviews of the national development planning experience have reiterated the shortcomings of the conventional approach to planning and have added a few others. After examining more than 500 projects oriented toward improving planning capabilities in developing countries, the United Nations Development Program (1979) concluded that "the strengthening of a self-reliant planning capacity is a process that requires much longer than was supposed until now." Mendez (1980) examined twenty years of development planning in Latin America identifying several different planning styles and emphasizing once more the need to move away from the concept of planning as aimed at producing "plans," and toward visualizing "planning as a process."

A further in-depth analysis of the past experience and future perspectives on planning in Latin America by Garcia D'Acuna (1982) revealed the serious problems that the concepts and practice of development planning are experiencing in the 1980s:

The analysis of the Latin American experience leads us to conclude that while there were periods and instances in which planning played a significant role in orienting the development process in Latin America, it definitely did not manage to insert itself in the real process of decision making and of shaping economic policy. As a result, this led to the stagnation of the idea of planning, to skepticism regarding the possible contributions of planners and to a growing institutional disintegration. (p. 26)

Similar views have been advanced in the early 1980s by De Mattos (1981), Giordani and colleagues (1981), and Hodara (1983).

Finally, in his review of the planning experience of developing countries, Aggarwala (1983 and 1985) identifies three approaches to planning: comprehensive, as practiced by the centrally planned economies of Eastern Europe and some developing countries; indicative, as practiced by several Southern Asian and francophone African countries; and ritual, as practiced by several Latin American and

African countries. He concludes that the experience acquired during the last three decades indicates the importance of transcending the ritual approach to planning and of the "need to reorient efforts from the comprehensive planning of production to the planning of strategic policies." This involves striking a balance between analytical techniques and qualitative judgments, establishing and managing price and incentive systems, and harmonizing the requirements for widespread consultation with flexibility and rapid response capacity; in short, the need to adopt a "learning systems" approach to the planning process.

Thus, in spite of its shortcomings and problems of the last three decades, the idea of development planning during the 1980s is still generally accepted, as a review of national development plans in more than seventy Third-World countries clearly shows (South Magazine 1986). The belief in the possibility of rational intervention to guide national development remains in full force, although it has become clear that many changes are necessary in the conventional approach to development planning.

### **A Dilemma of Development Planning**

The evolution of national development planning theory and practice has been accompanied by the emergence of several concerns that can be expressed in the form of "fundamental dilemmas." For example, issues such as "comprehensive versus sectorial planning" (Hirschman 1958) and "central planning versus market order" (Bauer 1984) have caught the attention of planning practitioners and theoreticians at different times. Even though it is clear that in reality these dilemmas do not present mutually exclusive choices, they have served as useful conceptual tools to focus the debate, to organize discussions, and to clarify the options faced in national development planning.

From this perspective, among the many persistent concerns that have remained on the agenda of development planning, this chapter focuses on two that merit special attention, both because planners and politicians refer frequently to them and because of their profound implications for the planning process. On the one hand, there is the preoccupation with the implementation of development plans, with influencing actual decision making and with having an impact on the "real world" of power struggles and political choices. On the other hand, there is the preoccupation with the ongoing problems, with generating long-term visions and ideals, with a desired outcome whose attainment is seen as being distant in time, with providing an overall direction to the development process, and with searching for new

paths and ideas to transcend the limitations that characterize Third-World countries.

Putting these two sets of concerns together, it is possible to identify what may be considered as another "fundamental dilemma" that has emerged in the practice of planning. By paraphrasing statements that are often made by persons in authority in Third-World countries, this dilemma can be stated rather simply: *the more "relevant" or "practical" planning becomes, the farther it moves away from the central long-term issues and concerns that are crucial for the future development of a country.*

In order to avoid the "ivory-tower syndrome," i.e., the perceived isolation of the planning agencies from the centers of power—which are usually associated with day-to-day actual decision making—the heads of planning agencies have frequently sought to link their activities as closely as possible to the process of decision making at operational ministries and government agencies. This has inevitably led to power struggles over issues such as the responsibility for the allocation of financial resources through the national budget, in which the planning agency is usually pitted against the ministries of economics and finance; the responsibility for evaluating and approving investment projects, in which the planning agency confronts most government departments and public enterprises; and over responsibility for the evaluation of the performance of regional and sectorial government agencies, organizations, and departments, in which the planning agency faces virtually all the rest of the government apparatus. Additional conflicts are likely to emerge when the planning agency also plays the role of "technical secretariat" of the president or the prime minister, for this places it squarely at the center of short- and medium-term political controversies and political judgements.

It is seldom the case that a central planning agency preoccupied with these short-term immediate political concerns can at the same time deal with long-term issues in an appropriate way. Even if it does so, its credibility, impartiality, and technical competence are likely to be questioned as a result of the power struggles over short-term practical issues. The consequence has been either giving up the quest for relevance to actual decision making and taking refuge in the preparation of medium- and long-term plans for their own sake, or a concentration on providing technical support for short-term political decisions and the abandonment of any serious attempt at examining medium- and long-term development issues. This leads to a confusion of roles for the planning agencies, many of which have tended to move back and forth between these two positions. This creates a kind of "institutional schizophrenia," a disease to which planning agencies in developing countries are particularly prone.

When development planning gives priority to short-term and urgent issues, the institutional modality for the planning agency has generally been that of an operational ministry, with jurisdiction over the formulation and control of the national budget. A national planning commission—whose task is to coordinate and mediate between the conflicting demands for resources made by government agencies—usually complements the activities of the planning ministry. Long-term issues are left either to marginal government agencies—the National Research Council, for example—or to universities, independent research institutes, or even international organizations. On the other hand, when development planning leaves the short-term political arena to the operating ministries, in particular to the ministries of economics and finance, the planning agency usually adopts the form of an independent institute—attached nominally to the president's or prime minister's office—whose task is to prepare short-, medium-, and long-term development plans (even though these plans are likely to be ignored by other government agencies), to provide technical support to the president or prime minister, and possibly to explore a few multisectorial medium- and long-term issues such as population growth, employment demands, economic integration, and regional development.

In some cases the planning agency has oscillated between the horns of this dilemma: at some moment in time it may have focused on issues of great importance for the future of the country, played a leading role in the exploration of development options and strategies, and prepared technically sound plans, while at others it may have influenced short-term resource allocations, designed policies and measures to deal with emergencies, and placed itself at the center of power struggles.

Several authors have stated this dilemma of development planning in different ways. In their review of the Latin American planning experience, Solari and coworkers (1976) distinguish two main lines of thought that dominated the planning scene in the early 1970s: a global, integral, and long-term conception of planning that emphasized major social changes and a set of short-term concerns that focused on economic growth and income improvements. Similarly, Bryant and White (1982, pp. 233–34) indicate that “the tensions between the technician planner and the political decision maker grow out of the different mandates that each has and the different information with which each deals, and that sometimes they grow out of differences between short-term and long-term consequences.” Moreover, they point out that:

The tension between planners and politicians goes to the heart of the dilemma about the nature of the political process and how to make decisions in the best interests of citizens. . . . Because politicians respond to short-term issues of necessity, public policy is further skewed away from dealing with broad public interests. This is the void into which planners have willingly stepped, on the claim that their insulation from political whims and their professional expertise enable them to better interpret public mandates.

According to Mendez (1985, p. 193), in Latin America this dilemma of development planning has usually been resolved in favor of approaches to address immediate problems and, since the early 1980s, in favor of short-term measures to deal with the worst economic crisis of the last fifty years: "The task of [alleviating the diverse aspects of the immediate crisis] is absorbing government efforts and does not allow breathing room to think about major statements regarding the future. Perhaps there has never been such an acute feeling of immediatism in the Latin America region." Pena-Parra (1984) states that some planning agencies in Latin America have tried to deal both with short-term urgent concerns and long-term important issues but that the result has been a preference to address those that appear closer in time.

Finally, Sachs (1983, p. 14) has focused sharply on the way this dilemma affects development planners: "the planner ought to take a global and fairly long-term view of the planning process, but his usefulness will be evaluated by his capacity to influence a myriad of locally and time-bound decisions."

In order to avoid what has been characterized as one of the fundamental dilemmas of development planning—choosing between the urgent short-term issues and the important long-term ones—it is necessary to adopt an integrative perspective of the different time dimensions involved in the planning process, to develop planning approaches and methods appropriate to this new perspective, and to suggest operational criteria for organizing planning efforts in this new light.

The main conceptual adjustment required is to view the long-term as an integral component of the process of actual and anticipatory decision making with a short-term horizon, while simultaneously accepting that the accumulation of actual and anticipatory decisions made with a short-term horizon generates constraints and opportunities that condition long-term options.

However, before exploring further these ideas on new approaches to planning, it is useful to examine the changed context for development efforts in the 1980s, as well as the demands that this new context

imposes on planners and planning agencies. This new context requires major changes and adjustments in the conception and practice of the development and may also suggest the need for exploring new options for the institutionalization of planning activities.

### **The Changing Context for National Development Planning and Its Consequences**

Most of the concepts, approaches, methodologies, and procedures for development planning, at least those of the conventional kind, were generated and began to be applied during the three decades following World War II, a period of unprecedented world economic growth and relative peace during which the United States economy loomed as the dominant and guiding force. In such an expansive economic context, many of the distributional problems and conflicts that emerged were rapidly accommodated and defused by the political powers at the national and international levels. In a sense, the world socioeconomic context approached what Emery and Trist (1965) have called a "clustered" environment, in which all kinds of social entities could pursue their own objectives and development paths without impinging on those of others.

However, as the 1970s unfolded, the international context for development began to change at a rapid pace—witness the two oil price shocks, the emergence of Japan as an economic powerhouse, the pressures for the New International Economic Order, the end of the Vietnam War, the culmination of the processes of political decolonization, the disenchantment with development assistance, and the emergence of new technologies such as microelectronics and informatics, among many other events. To use the concepts of Emery and Trist (1965), there has been a transition toward a "disturbed-reactive" environment in which it is impossible to ignore other social actors on the scene, and even toward a "turbulent" environment in which the very ground on which the actors stand is shifting. The newly emerging international environment is forcing a reappraisal of development objectives and strategies, and is also having a major impact on the nature of the planning process.

When facing a new and uncertain situation, the natural reaction is to take refuge in familiar concepts and accepted ways. The field of planning is no exception to this general rule, and some planners have argued that the reason why development planning did not live up to expectations is not because the concepts and approaches were wrong but rather because they were not fully applied, because they were not given enough support and a fair chance to succeed. Therefore, some



voices are arguing for a "return to basics" in development planning where the conventional views are being reinstated, but this time, fully backed by the "political will," the "appropriate information," and the "adequate administrative and managerial capabilities."

A review of world trends indicates that the thirteen years that remain in this century will be quite different from the three decades after World War II (Sagasti and Garland 1985, Sagasti 1986). Economic trends that are expected to prevail during the next several years can be characterized by slower economic growth and a slow-down in the expansion of international trade, a continued decline in commodity prices, and deterioration of terms of trade for developing countries, increased foreign indebtedness, and changes in the structure of developing countries' debt, a restructuring of world industry in directions that are not at all clear yet, and continued experimentation with economic policies whose effectiveness is in doubt in an uncertain economic climate.

Social trends indicate that population growth will continue in most developing regions, associated with rural-urban migration and with the explosive growth of Third-World cities—twenty-one are expected to have more than 10 million inhabitants by the year 2000. The employment prospects appear rather dim for most of the new entrants into the labor force, and in many developing regions, the combined unemployment and underemployment rates exceed 50%. In addition, there are other social demands, such as food, housing, education, sanitation, health services, transport, and environmental protection, which will continue to grow and outstrip the capacity of most developing countries to satisfy them.

In the cultural sphere, the tensions between homogenizing pressures brought about by the mass media and the desire to assert a cultural identity will continue and even grow; in the political sphere it is likely that East/West tensions will continue, that cooperation with developing countries will remain as a relatively minor concern for the industrializing countries, and that political instability will continue to thwart long-term thinking and efforts in the developing countries.

In the fields of science and technology, the developments and advances are too numerous and pervasive to mention. It may be appropriate only to say that the very process of knowledge generation through the conduct of scientific research is undergoing profound changes and that many of the new advanced fields are virtually out of the reach of most developing countries. The emergence of new technologies—microelectronics, computers, telematics, robotics, space manufacturing, composite materials, fiber optics, biotechnology, and photovoltaic energy, among many others—is changing the shape of

world industry, altering comparative advantages, and creating a most difficult challenge for all but a handful of developing countries (see Drucker 1986, Castells 1986, Perez 1984).

This emerging international context, which is likely to dominate the scene until the end of the century, requires innovative thinking and new approaches to development. It also imposes the need for a serious evaluation and reappraisal of development planning theory and practice: social values and objectives acquire greater importance; flexible time horizons and a long-term perspective become essential; contextual factors play an increasingly larger role; and new institutional arrangements must be brought into place. The conventional approach to planning, with its rigid time frames, its breakdown of planning tasks into sectors and regions, and its centralized and technocratic perspective on plan formulation and implementation is most unlikely to be effective in an increasingly turbulent environment. Indeed, as many critics have emphasized, this approach has not worked even in the relatively more calm and stable context of the 1960s and early 1970s.

Furthermore, as the environmental complexity becomes more visible in the 1980s and as rapid change becomes the norm, it is not possible to ignore several issues that challenge the conventional approach to planning. For example, the vastly increased amount of information on almost every aspect of social life—brought about by the advances in microelectronics, telecommunications and computers—is generating an “information onslaught” (Kerr et al. 1984) that requires new approaches in order to obtain access and processing information for development planning (Sagasti 1983). Moreover, conflicts of rationalities at different levels can no longer be ignored or easily accommodated in an increasingly interdependent world: what is rational at the level of individual behavior may be counterproductive at the level of a social group, and what is rational for a social group may undermine the objectives at the community, national, and international levels.

In a similar vein, the increased interactions among social groups have led to the interpenetration of the different spheres of human action and to the blurring of boundaries for decision making. For example, the emergence of new actors such as nongovernmental organizations, grass-roots groups, nonprofit research centers, and voluntary organizations is challenging the traditional division between the “public” and “private” spheres of action and competence; the formulation of policies and the performance of government functions are often assumed by these new entities and by the private sector, while public and government institutions intervene in activities that

once belonged to the realm of private initiative. This is closely related to growing demands for "participation" at all levels of society and to the more complex nature of the process of government policy design and implementation. (See, for example, Bennis and colleagues [1985] for an analysis of these increased social interactions from the perspective of planning for change.)

### **Exploring New Directions**

The new context for development is likely to sharpen what has been characterized as one of the fundamental dilemmas of planning agencies: emphasizing either the provision of responses to short-term critical problems or the generation of new visions and options for the future. The economic crisis of the early 1980s and the less favorable economic environment that can be anticipated during the coming years, the increases in social demands of all types, the political instability that is likely to afflict most developing countries, the cultural tensions that are now becoming more visible, and the challenges imposed by scientific and technological advances are making it necessary to move beyond the conventional approach to planning and to explore new ways of organizing the process of making and putting together actual and anticipatory decisions. This requires a reaffirmation of the belief that purposeful and rational human intervention has a place in the process of development and implies rejecting the views of those who argue that the inherent "irrationality" of human beings precludes any kind of planned or guided social change.

However, to avoid its being just an act of faith, this reaffirmation requires that the limitations of the conventional approach to planning must be recognized and that the characteristics of the new context for development be fully acknowledged. Development planning should not be viewed as a centralized and technocratic exercise but rather as a loose cooperative learning process that involves a multiplicity of actors throughout the whole fabric of society, that seeks to attain increasing levels of shared perceptions on objectives and goals, and that aims at agreeing on specific anticipatory and actual decisions on the basis of temporary consensus. Moreover, in this social learning process it will be impossible to eliminate all inconsistencies and to attain perfect rationality; it will be enough to agree on lines of action that provide a reasonably coherent framework for action.

This requires an exploration of new directions for development planning. Some of these directions may involve adapting existing ideas to the new context, while others will require creative efforts whose outcome cannot be anticipated yet. As an initial step, it is possible to

identify the need for enlarging the scope of development planning decisions, the redefinition of the concept of time horizons, and the need to disperse planning capabilities throughout society.

The first requirement of a new approach is to *enlarge the scope of the anticipatory decisions involved in the planning process*. It is necessary to go well beyond the traditional concern of planners with economic issues and to cover as many aspects of the development process as possible. This implies adopting a synthetic perspective that seeks to provide an integrated and coherent picture of development prospects, options, strategies, and possible actions. The idea is to make sense out of apparent chaos in an increasingly turbulent environment in order to identify preferred sequences of future events and to derive actual and anticipatory decisions from them.

Table 25.1, adapted from Sagasti (1973b), presents five categories of anticipatory decisions that would enlarge considerably the scope of the conventional approach to national development planning: first, decisions that will define long-term ideals and the desired future for the country; second, decisions regarding the patterns of interaction with the increasingly turbulent international environment; third, decisions about the institutional structure and fabric of the country; fourth, decisions regarding the activities to be performed and the priorities attached to them; and fifth, decisions about the allocations of all types of resources. These five anticipatory decision categories are the domain of stylistic, contextual, institutional, activity, and resource planning. The interactions among these categories of decisions can be summarized by saying that *resources* are allocated to *activities* through *institutions* taking into account the *context* in order to approach the *desired future*.

The conventional approach to development planning focuses exclusively on the anticipatory decisions about economic and social activities to be given priority and on the allocation of all types of resources; that is, it only covers the categories of resource and activity planning. Consequently, it is necessary to develop, test, and disseminate methodologies and procedures for stylistic, contextual, and institutional planning.

An approach to development planning that incorporates the explicit identification of long-term ideals and the aspirations of various social groups in the country, that deals with the interactions with an increasingly turbulent international environment, and that also involves the design of institutions—in addition to the conventional concerns with activities and resources—would be more likely to avoid the dilemma between the urgent and the important and would also be more effective in a changing international context. The concept of

"interactive planning" put forward by Ackoff (1981 and 1982), the ideas proposed by Sachs (1980), as well as the work carried out at GRADE (see Arregui and Sagasti 1987, Sagasti and Garland 1985, Herzka 1987, Sagasti and Felices 1986, and GRADE 1984) begin to offer specific methods and procedures for dealing with stylistic, contextual, and institutional planning.

The second requirement of a new approach to planning is to acknowledge the provisional nature of development plans as a collection of ephemeral anticipatory decisions, and the need to adjust them continuously to the changing circumstances (Beer 1972, 1974a, and 1974b). This involves nothing less than a *redefinition of the concept of "planning horizon,"* breaking down the conventional and rigid framework of short-, medium-, and long-term time spans. For example, "short-term" can be redefined as the period of time during which the inertia of historical processes in a given system limits its future evolution; "long-term" would be a time horizon in which historical forces and the inertia of a system do not limit significantly the range of possible future states; while in "medium-term" the inertia of historical process conditions the evolution of the system, but only up to a certain point.

Applied to development planning, these concepts would indicate that the "short-term" in issues like population growth may be a decade, while the "long-term" in issues like commodity prices may be a few months. Furthermore, each set of development issues will have its own different set of time horizons, and rather than forcing them into the procrustean bed of rigid time frames which characterize the conventional approach, the idea would be to deal with each development issue or problem on its own time-horizon terms, coordinating and interrelating their different rhythms as they evolve in time. The flexibility of time horizons that would characterize the planning would show clearly that many urgent short-term problems have profound long-term implications, and that the solution to these urgent short-term problems require making long-term anticipatory decisions.

The third requirement of a new approach to development planning involves building a broad and solid social support base to transcend the mostly technocratic character of the conventional approach. It is essential to *disperse and disseminate planning capabilities throughout society,* providing access to information, methodologies, and training to all social groups and individuals who are interested in exploring alternative development options and strategies. Development planning would thus become a social learning exercise in which the perspectives and rationalities of different actors could be contrasted and areas of partial and temporary agreement could be identified (see

TABLE 25.1. Characteristics of the Different Categories of Planning Decision.

	<i>Stylistic</i>	<i>Contextual</i>
<i>Conditioning Influences</i>	Value systems and preferences (stylistic constraints); long-term possibilities.	International setting; sociotechnical environmental constraints; interdependencies with other systems.
<i>Emphasis</i>	Alternative futures; desired images; identification of values and aspirations.	Insertion in international setting; convergence of different policies and plans; attaining overall coherence in plans and policies.
<i>Type of Process</i>	Exploratory; consultative; participatory; multiple-loop.	Monitoring; coordinating; negotiating.
<i>Procedures Used</i>	Establishing ideal standards; proposing broad directions; establishing dialogue with interest groups; involving "stakeholders."	Making explicit relevant implicit policies; resolving contradictions; use of indirect instruments for implementing plans and policies.
<i>Dominant Time Horizon</i>	Long-term.	Long/medium-term.

Source: Adapted from Sagasti (1973b).

<i>Institutional</i>	<i>Activity</i>	<i>Resource</i>
Institutional constraints and possibilities for development; organizational ecology.	Existing and potential capabilities; dynamics of processes.	Availability of resources; possibilities for directing resource allocations.
Defining entitlement claims and payment systems; establishing appropriate organizational structures (channels and clusters).	Defining areas for concentration of activities; evaluation of past performance.	Influencing or controlling resource allocation.
Structuring and texturing (setting the organizational fabric); legislative and regulative.	Diagnosing; target-setting; balancing; learning.	Allocative and distributives; experimental.
Institution building and renewal (creation and modification of institutions); defining performance measures; setting the "rules of the game"; establishing incentives, rewards and penalties.	Establishing objectives; defining orientation; setting operational procedures.	Acquiring and distributing resources; establishing priorities for resource allocation; defining specific aims and goals; generating data bases.
Medium-term.	Medium/short-term.	Short-term.

Dunn 1971, Michael 1973, Linstone 1972, Friedmann 1973, Emery and Trist 1973, Castells 1986).

Taken together, these three characteristics of a new approach to development planning would lead to a much richer planning process. Enlarging the scope of anticipatory decisions, making time horizons flexible, and dispersing planning capabilities through society would considerably improve social capabilities for dealing with an increasingly turbulent and uncertain environment, for transcending the limitations of the conventional approach to planning, and for avoiding the dilemma of planning agencies that perceive they have to choose between paying attention either to the "important" or to the "urgent."

### **Some Institutional Implications**

The preceding sections have pointed out some of the problems that development planning is facing during the 1980s and will face in the next decade, and have also put forward some general suggestions that could overcome the limitations of the conventional approach to planning. It would also be interesting to explore the institutional implications of these ideas and to discuss the new organizational structure they would require for the planning process.

Perhaps the best way of addressing these issues is to derive a few implications to guide the design of organizational structures for the national development planning process. Although these implications would need reinterpretation within the specific context of each developing country, they provide guidelines for those interested in exploring further the consequences of adopting new approaches to national development planning.

The first three implications can be derived from the new directions for the planning process identified in the preceding section. In the first place, the institutional design for national development planning must be *flexible and encompassing enough to accommodate the enlarged set of anticipatory decisions* involved in the new approach. Dealing with anticipatory decisions that range from the desired future image for the country to the pattern of interactions with the international context and to the allocation of resources of all types requires a rather unconventional organizational setting.

In the second place, the institutional design *must be capable of dealing with each development problem and issue in its own time dimension and of achieving intertemporal coordination among these different time horizons*. This implies abandoning the organization of planning activities along rigid short-, medium-, and long-term time frames and structuring



tasks around clusters of development problems or issues while preserving their inherent temporal complexity.

Third, *the institutional design for development planning must be open and capable of incorporating the contributions made by the widest possible variety of social groups and individuals involved in the development process.* This implies abandoning the technocratic and exclusive character of development planning agencies, designing procedures to ensure the participation of all interested parties, and enabling the largest possible number of government agencies, nongovernmental organizations, grass-roots movements, and professional associations, among other social groups, to become actively involved in the process of development planning (Wolfe 1982). Wider participation and dispersing planning capabilities are likely to highlight real conflicts of interest, and the institutional design must include conflict management mechanisms and procedures. As Del Valle (1986) has put it, planning must become a "process of social organization."

There are also other consequences for organizational design that can be derived from the changed context for development planning. For example, the planning organization *must be capable of processing a vast amount of information on the external environment and internal situation of the country*, which requires the development of synthesis and integration capabilities within the set of planning entities. In addition, the institutional design *must be resilient and able to cope with rapid changes and instabilities*, which requires an organizational structure that can monitor continuously external and internal changes affecting the development process. Finally, the institutional design *must have a high response capacity to restructure and recompose itself as the need arises*, which requires the possibility of discontinuing organizational units, creating new ones, and severing and forging links between the different components of the institutional structure for development planning.

At this stage, it is necessary to examine briefly the notion of who should apply these institutional design principles in a given context. The turbulent nature of the contemporary social environment and the requirement that planning capabilities be dispersed precludes the possibility of postulating a "central designer" who would put forward an institutional framework and oversee its implementation. While the initial impulse to structure the network of planning organizations will, more often than not, come from some government unit or group, it is essential that the initiatives, points of view, and concerns of a large variety of social actors be explicitly taken into account and incorporated into the institutional design and implementation process.

In consequence, there would be a dialectical interaction between the planning group that postulates the initial institutional design

and the various agents at all levels of society that have a stake in the planning process. If the tensions and conflicts that usually accompany such intense interactions do not lead to destructive confrontations and power struggles, an overall institutional framework will gradually emerge and provide the basis for a participative planning process. The "central designer" would thus be complemented—or even replaced—by a "synthesist" capable of articulating individual initiatives into coherent (but not necessarily totally consistent) lines of action supported by a series of provisional consensus.

The conventional approach has emphasized the role played by a central planning agency within the sphere of action of government organizations but without attempting actively to involve the productive sector (with the possible exception of public enterprises), academic institutions, professional associations, local grass-roots organizations, labor unions, peasant communities, and other similar entities that should take part in the process of development planning.

The picture that begins to emerge of the new institutional design for development planning is quite different from what has been the conventional practice. An organizational structure that is flexible, open, broad, issue-oriented, and organized as an evolving network contrasts sharply with the image of a "National Development Planning Agency" organized centrally either as an operating ministry or as an independent institute. The experience of Latin America (Cibotti and Bardecci 1972, Solari et al. 1976, Mendez 1980, Wolfe 1982, De Mattos 1981, White 1987), of Africa and Asia (Myrdal 1970, Bryant and White 1982), and of developing countries in general (Aggarwala 1983 and 1985) indicates that major changes will be required to adapt existing organizational structures to the new institutional needs.

### **Toward an Evolving Institutional Network for National Development Planning**

The institutional design required for a new approach to development planning is that of an "evolving network" that should be flexible, open and capable of restructuring itself over time. The planning units that compose the network would not conform a hierarchical organization, and each would relate to the structure of political authority and power in a variety of ways that are also likely to change over time. Some of the components of such a network can be readily identified in a general way, even though it is clear that many more could be incorporated into the design for a specific country.

First, there is a *social intelligence unit* (Emery 1977, Dror 1980, De-dijer 1982), or *technoeconomic intelligence unit* (Sagasti 1983), a small

group of highly qualified professionals with interdisciplinary training and broad experience in development problems. Working at the highest levels of government, this future-oriented intelligence unit would identify the key issues to be dealt with in national development planning; acquire, select, and process information about them; and suggest priorities for the work of the other units that conform to the planning network. The social or technoeconomic intelligence unit would be mostly concerned with anticipatory decisions that refer to issues of permanent interest for the developing country and to the evolution of the international context; would be involved in the generation of development options and strategies for the country; would report directly to the president or the prime minister; would not supervise directly any of the other planning units; and would not be involved in operational activities such as resource allocation. Its main instrument to influence actual and anticipatory decision making would be the provision of timely and accurate information and opinion.

Second, *specialized planning units* would be located throughout the government and would be concerned with anticipatory decisions within the purview of their specific government agency. These units would deal mostly with issues that have short- and medium-term consequences and would focus on institutional, activity, and resource planning. The specialized planning units would operate in the manner of Ackoff's (1982) "responsive decision systems" in which the planning function is fully integrated into the structure and functioning of the system itself. Bromley (1983) has described how these specialized units could function within the framework of an interactive and decentralized structure for development planning, while Kornai (1970) anticipated the need for these specialized planning units within the context of what he called "planning as a process of cognition and compromise." Of particular importance would be the planning units in the ministries of economics, planning, and finance, where the key decisions regarding resource allocation priorities and the national budget are usually decided. While these units have an intersectoral mandate, other planning units in government agencies, ministries, public enterprises, and regional or local governments have a more focused and specific mandate.

Third, *temporary issue-oriented task forces and commissions* would focus on a certain problem, usually with medium- and long-term implications. These task forces or commissions would seek to obtain the largest possible variety of inputs from all concerned parties, identify options and possible strategies, highlight areas of consensus and of conflict, and interact actively with government organizations, with

other components of the planning network, with the mass media, and with the public at large. They would be established for a limited period of time, with a clear mandate and terms of reference and would have no operational function at all. However, it is clear that in some instances the mandate of these task forces and commissions is likely to enter into conflict with those of other planning units, and that this should be viewed as a possible source of creative tension rather than a problem to be avoided at all cost. There are many approaches and methods for organizing the work of such temporary units. Among them, the "search conference" technique and the procedures associated with it provide a useful tool for structuring the work of issue-oriented temporary task forces and commissions (Emery 1982).

In some countries there is a long tradition of presidential or royal commissions, of parliamentary committees that hold hearings and produce reports, and of specially appointed panels of experts to conduct specific inquiries. For example, the Royal Commission on the Economic Union and Development Prospects for Canada (1984), chaired by Donald S. MacDonald, provides a clear instance of a temporary organization whose task was to explore alternative futures and to build a consensus around a common vision. Moreover, as the book edited by Drache and Cameron (1985) shows, even before the official report was published, a spirited public debate followed the Royal Commission's interpretation of a supposed consensus view on the future of Canada. Other temporary commissions have been created recently in many developed and developing countries, particularly to deal with long-term issues. For example, Barney (1985) presents a list of more than twenty "Year 2000" commissions established during the last decade in developed and developing countries.

Fourth, *coordination committees to link planning units with all types of nongovernmental organizations* would have their own interests and mandates but could contribute with information, opinions, requests, and ideas to the planning process. The nongovernmental organizations may include grass-roots movements, associations of consumers, neighborhood organizations, cooperatives, religious groups, trade and professional associations, and similar entities, all of which should engage in planning activities and transmit their views through the coordination committees.

There are many examples of such organizations in developing countries, from the Sarvodaya movement in Sri Lanka and community kitchens in Santiago de Chile to associations of professionals in Peru, Brazil, and Kenya. In particular, the reports presented in the *IFDA Dossier*, published by the International Foundation for Development Alternatives at Nyon, Switzerland, contain a wealth of infor-

mation on experiences of this type and, as Jenny (1981) has shown, with innovative institutional designs it should be possible to consider the initiatives of these "Third System" organizations as an integral part of the development planning process. Godard and coworkers (1985) have developed the idea of an "analysis grid for local development" as a framework to interpret a large number of experiences that deal with the mobilization of local resources and people for decentralized planning. Another example, although along more conventional lines, is provided by the National Planning Institute in Peru, which in early 1986 created several "Consultative Committees" to discuss long-term development objectives, the medium-term development plan, and the short-term financial and economic plans. Each of these committees involves representatives from trade unions, business associations, government agencies, the armed forces, and the intellectual community.

Fifth, *research and academic institutions* would be engaged in the description, study, and analysis of the situation in the country. These would include independent social science research centers, university departments and research institutes, government agencies in charge of natural resources surveys, statistical offices of ministries and other government departments, and technology research and development units in private and public enterprises. These institutions should be linked to the social or technoeconomic intelligence unit and to the various specialized planning units in order to channel the information and the results of their studies to facilitate and strengthen anticipatory decision making throughout the planning network. This amounts to providing a mechanism for mobilizing the contributions that the intellectual community can make to the process of development.

Research and academic institutions usually cover a wide spectrum of issues and concerns that range from short-term analysis of labor-management conflicts and assessments of the natural resources to anthropological surveys of rural areas and the compilation of macroeconomic statistics and projections, for example. It would be necessary to structure the ways in which they could provide inputs into the planning network in order to keep the development planning process and the anticipatory decisions it involves as close as possible to the reality of the country. Considering the instability of many government agencies, in order to ensure the continuity of planning efforts it may even be appropriate to replicate in an embryonic form some of the planning capabilities (such as approaches, methods, procedures, and information) in a nongovernmental research center, so that they could be transferred back to a government agency if the need arises.

Finally, an *international support network* is needed for all types of

institutions including planning agencies in other countries, international organizations, international data bases, multilateral and bilateral funding agencies, and academic and professional associations. This is particularly important for the social or technoeconomic intelligence unit, which must monitor continuously the evolution of the international environment to assess its impact on the development prospects of the country and to suggest the anticipatory decisions to deal with them.

The evolving planning network envisaged here would be a loose confederation of the various components outlined in this section. They would use a variety of technological and methodological tools to function as a planning system: from microcomputers, advanced telecommunications and computer conferences (Beer 1974a and 1974b, Flores 1982, Barney 1985), to idealized designs (Ackoff 1974 and 1981), mathematical models (Sachs 1980, Sagasti 1976), formalized procedures for assessing the viability of a plan (Matus 1983) and search conferences (Emery 1982), complemented by opinion polls, statistical surveys, and the extensive use of mass media (GRADE 1984).

The large variety of components of the development planning network and the rich set of interconnections between them would allow tackling short-, medium-, and long-term issues at the same time, while also generating responses to a rapidly changing international environment. The dispersion of planning capabilities throughout the government apparatus, and ultimately throughout society, would empower people at all levels of society to address urgent problems in a concerted way; the linkages with academic institutions, with nongovernmental organizations, and with the public in general would allow society as a whole to confront the important and critical national development issues in a sustained manner.

## **Conclusion**

This chapter has sought to explore possible new approaches to development planning that would transcend the limitations of the conventional approach, that would adapt better to the turbulent international environment of the 1990s, and that will overcome what was characterized as the dilemma of devoting planning energies either to short-term urgent problems or to long-term important issues.

It is clear that the new approach outlined here and the institutional design derived from it require additional work and elaboration. However, it provides a starting point and suggests new avenues for

research; in particular, it is possible that many of the functions and components of the new approach to development planning put forward in this essay are already taking shape in many developing countries. A systematic survey of such unconventional planning efforts may prove a fruitful source of ideas and of inspiration.

Finally, as in all processes of social innovation and institutional renewal, the new approach to development planning outlined here requires new mindsets and attitudes on the part of politicians, technocrats, entrepreneurs, managers, professionals, researchers, workers, students, and people from all walks of life that are likely to elicit opposition from those who are not prepared to discard the habits of thought associated with the conventional planning approach or from those who reject any kind of planning effort. While accepting that planning is—by itself—no guarantee for national development, it is essential to reaffirm the belief that a process of social learning, of anticipatory decision making at all levels, and of defining lines of action through partial and temporary consensus can and will take place, thus empowering human beings to influence purposefully the direction of social evolution.

However, it is also necessary to acknowledge that the turbulent years ahead—with their increased social tensions and accelerated pace of change—will strain individual and social response capabilities to the limit. Moreover, in this turbulent context the relations between planning, democracy, and freedom—so well examined by Karl Mannheim (1940 and 1953) half a century ago at another time of crisis—require a fresh reinterpretation and restatement. It could be said, in fact, that democracy is a process of participative planning.

This essay has focused on conceptual changes and institutional structures for national development planning, but in the final analysis, planning systems are designed and put into practice by people. In these uncertain times, planners in developing countries face a particularly difficult task: they must be able to filter out the noise and interpret the conflicting signals accompanying human actions on a social ground that is continuously shifting; they must be able to structure conceptual patterns to make sense out of apparently chaotic situations; and they must be able to identify positive directions for social change and devise ways of moving toward them. This calls for new attitudes and skills; development planning in the turbulent 1980s and 1990s requires the type of person whom Eric Trist (1976) has described so well: "We need flexible, resourceful, resilient people who can tolerate a lot of surprise and ambiguity emotionally while continuing to work on complex issues intellectually."

### Acknowledgments

This essay is based on a report prepared at the request of the Population Division of UNESCO and subsequently presented at a meeting on "The Art and Science of Systems Practice" organized by Russell Ackoff at The International Institute for Applied Systems Analysis (IIASA) in Vienna. The work carried out at the "Grupo de Analisis para el Desarrollo" (GRADE) as part of a research program that explores long-term development options and strategies for Peru has provided the background material for the essay. The GRADE research program has received support from the Canadian International Development Agency (CIDA), the Ford Foundation, the Peruvian Foundation for the Development of the Public Sector (FUNDESARROLLO), the United States Agency for International Development (AID), The Tinker Foundation, the Peruvian Central Bank, the National Planning Institute in Peru, the United Nations Development Programme (UNDP), the United Nations Center for Science and Technology for Development, and from IBM del Peru and other private organizations. The essay was revised during my stay as visiting professor at the Social Systems Sciences Department of The Wharton School of the University of Pennsylvania.

I am grateful to Vally Kovary for the extensive review of the literature she prepared as an input to this essay during her stay at GRADE in 1985, and to Cecilia Cook for further bibliographic assistance. Jane King of UNESCO's Population Division provided me with the opportunity to organize my ideas on a rather difficult subject that has interested me for a long time. Russell Ackoff and Eric Trist, both of them emeritus professors in the Social Systems Science Department at The Wharton School, gave me comments on an earlier version of the essay. I am particularly grateful to Hasan Ozbekhan for his thoughtful criticism of the ideas presented here and for his many suggestions. Finally, my colleagues at GRADE and my students at The Wharton School have provided a most lively and stimulating environment in which to develop and test ideas on national development planning.

### References

The following bibliography contains the main books, monographs, and papers reviewed during the preparation of this chapter. Not all the material consulted has been included here, and the text does not refer to all the items included in the bibliography. I am grateful to Vally Kovary and Cecilia Cook who helped with the literature review and prepared notes on the various texts and documents reviewed.



- Acerro, L., S. Cole, and H. Rush (eds.). (1978). "Conference Report: Issues and Analysis of Long Term Development," Science Policy Research Unit, University of Sussex.
- Ackoff, R. (1970). *A Concept of Corporate Planning*. New York: Wiley.
- . (1974). *Redesigning the Future*. New York: Wiley.
- . (1977). "National Development Planning Revisited." *Operations Research* 25(2, March–April): 207–18.
- . (1981). *Creating the Corporate Future*. New York: Wiley.
- . (1982). "Beyond Prediction and Preparation," S<sup>3</sup> Working Papers, Social Systems Science Department, The Wharton School, University of Pennsylvania.
- Aggarwala, R. (1983). "Planning in Developing Countries: Lessons from Experience." Washington D.C.: World Bank Staff Working Papers, No. 576.
- . (1985). "La Planificación en los Países en Desarrollo." *Finanzas y Desarrollo* (March).
- Alford, R., and R. Friedland. (1985). *Powers of Theory: Capitalism, the State and Democracy*. Cambridge: Cambridge University Press.
- Arregui, P. M., and F. Sagasti. (1987). "Futuros deseados para el Perú," Documento de Trabajo, Lima, GRADE.
- Baran, P. (1986). *El Socialismo: Única Salida*. Mexico City: Editorial Nuevo Tiempo.
- Barney, G. (1985). "Global Issues and Methodology: An Introduction." Arlington, Va.: Global Studies Center.
- Bauchet, P. (1967). *La Planification Française: Vingt ans d'expérience*. Paris: Éditions du Seuil.
- Bauer, P. (1984). *Reality and Rhetoric: Studies in the Economics of Development*. Cambridge: Harvard University Press.
- Beer, S. (1966). *Decision and Control*. New York: Wiley.
- . (1972). *Brain of the Firm*. New York: McGraw-Hill.
- . (1974a). *Designing Freedom*. New York: Wiley.
- . (1974b). "Cybernetics of National Development, Evolved from Work in Chile," The Zaheer Lecture, New Delhi, Zaheer Science Foundation.
- Bennis, W., K. D. Benne, and R. Chin (eds.). (1985). *The Planning of Change*. New York: Holt Rinehart and Winston.
- Bettelheim, C. (1965). *Planificación y Crecimiento Acelerado*. Mexico City: Fondo de Cultura Económica.
- Blair, C. P. (1980). "Economic Development Policy in Mexico: A New Penchant for Planning." *Technical Papers Series*, No. 26. Office for Public Sector Studies, Institute of Latin American Studies (ILAS), University of Texas at Austin.
- Blancas Espejo, J. A., J. Flores Diaz, and M. Roman Enriquez. (1981). "La Planificación Prospectiva." *Cuadernos de la Sociedad Venezolana de Planificación* 153–155.
- Boguslaw, R. (1965). *The New Utopians: A Study in Systems Design and Social Change*. Englewood Cliffs, N.J.: Prentice-Hall.
- Branch, M. (1983). *Comprehensive Planning: General Theory and Principles*. Pacific Palisades: Palisades Publishers.
- Bromley, R. (1983). "La Planificación del Desarrollo en Condiciones Adversas." *Revista Interamericana de Planificación* 17(66, June): 7–19.
- Bryant, C., and L. G. White. (1982). *Management Development in the Third World*. Boulder: Westview Press.

- Burchell, R. W., and G. Sternlieb. (1978). *Planning Theory in the 1980s: A Search for Future Directions*. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University.
- Caire, G. (1967). *La Planificación*. Paris: Éditions Cujas.
- Cardoso, F. H. (1972). *Estado y Sociedad en America Latina*. Buenos Aires: Ediciones Nueva Vision.
- Cartwright, T. (1981). "The Science and Art of Long-Range Planning." *Contact: Journal of Environmental Affairs* 13(1): 23-36.
- Castells, M. (1986). "High Technology, World Development and Structural Transformations: The Trends and the Debate." *Alternatives* 10(3, July): 297-344.
- Churchman, C. W. (1979). *The Systems Approach*. New York: Dell.
- Cibotti, R., and O. J. Bardeci. (1972). "Un Enfoque Crítico de la Planificación en America Latina." In Avramovic et al. (eds.): *Transformación y Desarrollo: La Gran Tarea de America Latina*. Mexico City: Fondo de Cultura Económica.
- Clark, C. (1938). *National Income and Outlay*. London: Methuen.
- . (1951). *The Conditions of Economic Progress*. London: Macmillan.
- Comision Economica para America Latina (CEPAL). (1969). *America Latina: El Pensamiento de la CEPAL*. Santiago de Chile: Editorial Universitaria, Coleccion Tiempo Latinoamericano.
- . (1985). "Crisis y Desarrollo: Presente y Futuro de America Latina y el Caribe," vol. 3. Desafios y Opciones Para el Desarrollo Futuro, Santiago de Chile, Doc. No. LC/L.332 (Sem.22/L.3) Add.2, 11 de abril.
- Cowan, T. (1981). "The Planner and His Adversary: A Dialogue," S<sup>3</sup> Papers, Social Systems Science Department, The Wharton School, University of Pennsylvania.
- Das Gupta, A. K. (1964). "Economic Planning in India." In Ignacy Sachs (ed.): *Planning and Economic Development*. Warsaw: Polish Scientific Publishers.
- De Mattos, C. A. (1981). "Planes versus Planificación en la Experiencia Latinoamericana," *Revista Interamericana de Planificación* 15(59, September): 54-75.
- Del Valle, A. (1986). *Planning as a Process of Organization*, Programa de Investigaciones en Energia, Universidad de Chile, Santiago de Chile.
- Dedijer, S. (1982). "Intelligence for Development," Department of Business Administration, Lund University, Sweden, April.
- Drache, D., and D. Cameron. (1985). *The Other MacDonald Report*. Toronto: James Lorimer and Company.
- Dror, Y. (1980). "Comprehensive Strategic Intelligence for Rulers," paper presented at the meeting on "The Knowledge Industry and the Process of Development," organized by the Development Centre of the Organisation for Economic Cooperation and Development (OECD).
- Drucker, P. (1986). "The Changed World Economy." *Foreign Affairs* 64(4, Spring).
- Dunn, E. S. (1971). *Economic and Social Development: A Process of Social Learning*. Baltimore: The Johns Hopkins Press.
- Emery, F. (1976). "Adaptive Systems for our Future Governance." *National Labour Institute Bulletin* (New Delhi) 2(4, April).
- . (1977). *Futures We Are In*. Leiden: Stenfert Kroese.
- Emery, F., and E. Trist. (1965). "The Causal Texture of Organizational Environments." *Human Relations* 18: 21-32.

- . (1973). *Towards a Social Ecology*. London: Plenum Press.
- Emery, M. (1982). *Searching: for New Directions, in New Ways, for New Times*. Toronto: Ontario Quality of Working Life Center, Ministry of Labour, Ontario, Canada.
- Faber, M., and D. Seers. (1972). *The Crisis in Planning*, vols. 1 and 2. London: Chatto and Windus.
- Faludi, A. (1973). *A Reader in Planning Theory*. Oxford: Pergamon Press.
- Fedorenko, N. (ed.). (1976). *Desarrollo Económico y Planificación Perspectiva*. Moscow: Editorial Progreso.
- Flores, C. F. (1982). *Management and Communication in the Office of the Future*. Berkeley: Logonet Inc.
- Friedmann, J. (1973). *Retracking America: A Theory of Transactive Planning*. New York: Doubleday.
- Friedmann, J., and C. Weaver. (1979). *Territory and Function: The Evolution of Regional Planning*. Berkeley: University of California Press.
- Friend, J. K., and N. Jessop. (1969). *Local Government and Strategic Choice*. London: Tavistock Publications.
- García D'Acuna, E. (1982). "Pasado y Futuro de la Planificación en América Latina." *Pensamiento Iberoamericano*, 2 (July–December).
- Gharajedaghi, J., and R. Ackoff. (1986). *A Prologue to National Development Planning*. New York: Greenwood Press.
- Giordani, J., C. Matus, M. Testa, and L. Yero. (1981). "La Planificación Posible en la Prospectiva Sociopolítica de América Latina." *Cuadernos de la Sociedad Venezolana de Planificación* Nos. 153–155.
- Godard, O., J. P. Ceron, K. Vinaver, and S. Passaris. (1985). "Endogenous Development and Differentiation of Development Spaces: An Analysis Grid for Local Development." *Ecodevelopment News* (Paris) 35.
- Griffin, K., and J. Enos. (1970). *Planning Development*. London: Addison-Wesley.
- Gross, B. (ed.). (1967). *Action Under Planning: The Guidance of Economic Development*. New York: McGraw-Hill.
- . (1968). *Organizations and Their Managing*. New York: The Free Press.
- Grupo de Análisis para el Desarrollo (GRADE). (1984). "Long-Term Development Strategies and Options for Peruvian Development: A Programme of Studies and Research," Lima.
- Herzka, C. (1987). "Condicionantes externas del desarrollo Peruano." Documento de trabajo, Lima, GRADE.
- Hirschman, A. (1958). *The Strategy of Economic Development*. New Haven: Yale University Press.
- . (1971). *A Bias for Hope: Essays on Development and Latin America*. New Haven: Yale University Press.
- Hodara, J. (1983). "La planeación económica observada por un sociólogo." *El Trimestre Económico* 50(199, July–September): 1425–36.
- Horowitz, I. L. (1978). "Social Planning and Social Science: Historical Continuities and Comparative Discontinuities." In Burchell and Sternlieb (eds.): *Planning Theory in the 1980's*. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University.
- Instituto Latinoamericano de Planificación Económica y Social (ILPES). (1966). *Discusiones sobre Planificación*. Mexico City: Siglo XXI.
- . (1974). *Experiencias y Problemas de la Planificación en América Latina*. Mexico City: Siglo XXI Editores.

- Jantsch, E. (ed.). (1968). *Perspectives on Planning*. Paris: Organization for Economic Cooperation and Development (OECD).
- Jenny, B. A. (1981). "Planning in the Third World: Issues of the 1980s." *TIMS Studies in the Management Sciences* 17: 395-408.
- Jensen, A. (1974). "Adaptation to Change," Institute of Mathematics, Statistics and Operations Research, Technical University of Denmark, Copenhagen.
- Kalecki, M. (1963). "Bosquejo de un Método Para Elaborar un Plan Perspectivo." In J. Benard et al. (eds.): *Programación del Desarrollo Económico*. Mexico City: Fondo de Cultura Económica.
- Kantorovich, L. (1965). *The Best Use of Economic Resources*. Cambridge: Harvard University Press.
- Kerr, D., K. Braithwaite, N. Metropolis, D. Sharp, and G.-C. Rota, (eds.). (1984). *Science, Computers and the Information Onslaught*. New York: Academic Press.
- Killick, T. (1976). "The Possibilities of Development Planning." *Oxford Economic Papers* (June): 7-28.
- Kohler, H. (1966). *Welfare and Planning*. New York: Wiley.
- Kornai, J. (1970). "A General Descriptive Model of Planning Processes." *Economics of Planning* (Norway) 10(1-2): 1-19.
- Kothari, R. (1974). *Footsteps into the Future*. New York: Institute for World Order.
- Kuznets, S. (1941). *National Income and Its Composition 1919-1938*. New York: National Bureau of Economic Research.
- Lange, O. (1949). "The Practice of Economic Planning and the Optimum Allocation of Resources." *Econometrica* (Suppl. July): 166ff.
- . (1961). *Economic Development, Planning and International Cooperation*. Cairo: Central Bank of Egypt Printing Press.
- . (1970). *Ensayos Sobre Planificación Económica*. Barcelona: Editorial Ariel.
- Legna, C. (1981). "La Planificación posible en América Latina: Un análisis sistemático." *Cuadernos de la Sociedad Venezolana de Planificación*, nos. 153-55.
- Lewis, A. (1968). *Teoría de la Planificación Económica*. Mexico City: Fondo de Cultura Económica.
- Linstone, H. A. (1972). "The Nation-State—Magister Ludi? Reflections on the Role of Planning." Paper prepared for the Third World Future Research Conference, Bucharest, September 3-10, Systems Science Institute, Portland State University.
- Marczewski, J. (1958). *Planification et croissance économique des démocraties populaires*. Paris: Presses Universitaires de France.
- Manheim, K. (1940). *Man and Society*. London: Routledge and Kegan Paul.
- . (1953). *Essays on Sociology and Social Psychology*. London: Routledge and Kegan Paul.
- Matus, C. (1976). *Planificación de Situaciones*. Caracas: CFNDES, Libros Alfar.
- . (1983). "Planeación Normativa y Planeación Situacional." *El Trimestre Económico* 50(199, July-September): 1721-82.
- Mendez, J. (1980). "El Estado de la Planificación en América Latina y el Caribe." *Cuadernos de la Sociedad Venezolana de Planificación*, Nos. 153-55.
- . (1985). "Las Estrategias de Desarrollo en América Latina." In F. Cepeda Ulloa et al. (eds.): *Democracia y Desarrollo en América Latina*. Buenos Aires: Grupo Editor Latinoamericano.

- Meynaud, J. (1963). *Planification et Politique*. Lausanne: Études de Science Politique.
- Michael, D. (1973). *On Learning to Plan and Planning to Learn*. San Francisco: Jossey Bass.
- Monti, A. (1967). *El Acuerdo Social*. Buenos Aires: Ediciones de Política Económica.
- . (1972). *Proyecto Nacional: Razón y Diseño*. Buenos Aires: Paidós.
- Morehouse, W. (1985). "Social Intelligence and Advanced Technology Alert Systems." Paper presented at the International Workshop on Advanced Technology Alert Systems, United Nations Center for Science and Technology for Development, West Berlin, 15–20 December.
- Morin, E. (1981). *Pour sortir du vingtième siècle*. Paris: Fernand Nathan.
- Motta, P. R. (1976). "The Incompatibility of Good Planning and Bad Management: Implementation Problems in Development Administration." Technical Papers Series No. 3, Office for Public Sector Studies, Institute of Latin American Studies (ILAS), University of Texas at Austin.
- Myrdal, G. (1957). *Economic Theory and Underdeveloped Regions*. London: Duckworth.
- . (1970). *An Approach to the Asian Drama: Methodological and Theoretical*. New York: Vintage Books.
- Organization of American States. (1969). *Status of Planning in Latin America*. Washington, D.C.: Inter-American Economic and Social Council.
- Ozbekhan, H. (1971). "Planning and Human Action." In Paul Weiss (ed.): *Hierarchically Organized Systems in Theory and Practice*. New York: Hafner Publishing Company.
- Pajestka, J., and I. Sachs. (1967). "Three Papers on Planning and Plan Implementation." Warsaw: The Advanced Course in National Economic Planning, Teaching Materials, Vol. 30.
- Peatty, L. R. (1968). "Reflections on Advocacy Planning." *Journal of American Institute of Planners* 34(2, March).
- Pena-Parra, I. (1984). *El Pensamiento Económico Latinoamericano*. Bogota: Plaza y Janes.
- Perez, C. (1984). "Microelectronics, Long-Waves and World Structural Change: New Perspectives for Developing Countries." Science Policy Research Unit, University of Sussex.
- Perroux, F. (1961). *L'Économie du XXème Siècle*. Paris: Presses Universitaires de France.
- Polanyi, K. (1944). *The Great Transformation: The Political and Economic Origins of our Time*. Boston: Beacon Press.
- Prebisch, R. (1953). *Problemas Teóricos y Prácticos del Crecimiento Económico*. United Nations Economic Commission for Latin America, New York and Santiago de Chile.
- . (1981). *Capitalismo Periférico: Crisis y Transformación*. Mexico City: Fondo de Cultura Económica.
- Rweyemamu, J. F., J. Loxley, J. Wicken, C. Nyirabu, et al. (1972). *Towards Socialist Planning*. Dar es Salaam: Tanzania Publishing House.
- Rosenberg, N., and L. E. Birdzell, Jr. (1986). *How the West Grew Rich: The Economic Transformation of the Industrial World*. New York: Basic Books.
- Royal Commission on the Economic Union and Development Prospects for Canada (Donald S. MacDonald, Chairman). (1984). *A Commission on Canada's Future: Challenges and Choices*. Ottawa: Ministry of Supply and Services.

- Sachdeva, P. S. (1984). "Development Planning—An Adaptive Approach." *Long Range Planning* 17.
- Sachs, I., and J. Pajetzka. (1970). *Three Essays on Planning and Plan Implementation*. Warsaw: Institute of Developing Economies.
- . (1977). *Pour une économie politique du développement*. Paris: Flammarion.
- . (1983). "The Elusive Interdisciplinarity of Development Planning." Document de Travail 83/10, Centre International de Recherche sur l'Environnement et le Développement (CIRED), Paris.
- Sachs, W. (1980). *Diseño de un Futuro para el Futuro*. Mexico City: Fundación Javier Barros Sierra.
- Sagasti, F. (1973a). "A Conceptual 'Systems' Framework for the Study of Planning Theory." *Technological Forecasting and Social Change* 5: 379–93.
- . (1973b). "Towards a New Approach for Scientific and Technological Planning." *Social Sciences Information* 12(2, April): 67–96.
- . (1976). "Thoughts on the Use and Abuse of OR/MS in Development Planning and Management." *Operational Research Quarterly* 27(4): 937–48.
- . (1983). "Technoeconomic Intelligence for Development." *IFDA Dossier* 35(May/June): 17–26.
- . (1986). "Perspectivas Futuras de la Ciencia y la Tecnología en América Latina." Lima, GRADE, July.
- Sagasti, F., and E. Felices. (1986). "Hacia un Fondo de Apoyo a la Gestión Pública." Lima, GRADE, November.
- Sagasti, F., and G. Garland. (1985). "Crisis, Knowledge, and Development: A Review of Long-term Perspectives on Science and Technology for Development." Lima, GRADE, January.
- Sen, A. (1983). "Development: Which Way Now?" *The Economic Journal* 93(March): 745–62.
- Sheahan, J. (1977). "Aspects of Planning and Development in Colombia." *Technical Papers Series*, No. 10, Office for Public Sector Studies, Institute of Latin American Studies (ILAS), University of Texas at Austin.
- Sociedad Venezolana de Planificación. (1981). "La Planificación Posible en la Prospectiva Sociopolítica de América Latina." *Cuadernos de la Sociedad Venezolana de Planificación*, Nos. 133–55.
- Solari, A., R. Franco, and J. Jukowitz. (1976). *Teoría, Acción Social y Desarrollo en América Latina*. Mexico City: Siglo XXI.
- South Magazine. (1986). "Third World Development Plans: Strategies for a Decade." *South* 63(January): 67–84.
- Stolper, W. F. (1966). *Planning Without Facts: Lessons in Resource Allocation From Nigeria's Development*. Cambridge: Harvard University Press.
- Tinbergen, J. (1964). *Central Planning*. New Haven: Yale University Press.
- . (1967). *Development Planning*. New York: McGraw-Hill.
- Trist, E. (1976). "Some Concepts of Planning." Paper presented at the seminar on Long-range Planning sponsored by The Extension Service of the University of Western Australia, 21 July.
- United Nations. (1951). *Measures for the Economic Development of Underdeveloped Countries*. New York: U.N. Department of Economic and Social Affairs.
- . (1971). General Assembly Resolutions Nos. 2626/XXV and 2681/XXV, 25th Period of Sessions, New York.
- United Nations Advisory Committee on Science and Technology for Development. (1984). "Discussion of Issues Relating to Science and Technology for Development: Long-Term Perspectives on Science and Technology for

- Development." Report of a Panel Meeting held in Mbabane, Swaziland, A/CN.11/AC.1/V/3, 17 December.
- United Nations Development Programme. (1979). *Estudio de Evaluación No. 1: Planificación General del Desarrollo*. New York.
- United Nations Economic and Social Council (1974). "Report on a Unified Approach to Development Analysis and Planning," Doc. No. E/CN.5/519, 5 December, New York.
- USSR Academy of Sciences. (1980). *Planning in Developing Countries: Theory and Methodology*. Moscow: Progress Publishers.
- Varsavsky, O. (1971). *Proyectos Nacionales: Planteo y Estudio de Viabilidad*. Buenos Aires: Ediciones Periferia.
- Vickers, G. (1965). *The Art of Judgement: A Study of Policy Making*. New York: Basic Books.
- Waterson, A. (1965). *Development Planning: The Lessons of Experience*. Baltimore: Johns Hopkins University Press.
- White, G. (1987). "Cuban Planning in the Mid-1980's: Centralization, Decentralization, and Participation." *World Development* 15(1): 153-61.
- Wiles, P. (1967). "Some Fundamental Questions on National Planning." In B. Gross (ed.): *Action Under Planning*. New York: McGraw-Hill.
- Willig, R. L. (1980). "Modelos y Estrategias de Participación para Cambio Social en América Latina." Ponencia presentada en el XIII Congreso Interamericano de Planificación, Caracas, 26-31 de octubre, organizado por la Sociedad Interamericana de Planificación y la Sociedad Venezolana de Planificación.
- Wolfe, M. (1980). "An Assessment." In United Nations Research Institute for Social Development (UNRISD): *The Quest for a Unified Approach to Development*. Geneva: United Nations Research Institute for Social Development (UNRISD).
- . (1982). "El desarrollo esquivo, la búsqueda de un enfoque unificado para el análisis y la planificación del desarrollo." *Revista de la CEPAL* 17 (agosto).
- Zuzunaga, C. (1977). "La Frustración del Desarrollo Planificado." *International Development Review* 1: 18-21.
- . (1986). Personal communication.