AN APPROACH TO DEVELOPMENT PLANNING IN THE HAITIAN CONTEXT*

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Introduction

Haiti occupies an area of 27,700 km² - about half the size of Nova Scotia - on the western one-third of the island of Hispaniola, which it shares with the Dominican Republic. Having gained its independence from France in 1804 at the end of a thirteen year revolutionary war waged by its black slaves, descendants of those brought there from West Africa by the Spanish and the French in the sixteenth and seventeenth centuries, Haiti is the second oldest independent nation in the western Hemisphere. While considered the world's wealthiest colony at the time of its independence, it now ranks among the "Fourth World" nations, those extremely poor countries with little hope of improvement. As such, Haiti is a prime candidate for development aid on the part of foreign donors.

In this paper we outline an approach to rural regional development planning that results from research in the Cayes Plain Basin of Haiti's Southern Peninsula (Figure 1), conducted for the

*We gratefully acknowledge the contribution of Herman Lauwerysen, anthropologist and amateur linguist, to our work while in Haiti.
United States Agency for International Development (USAID) in 1983-84. Before discussing this approach, we first consider two more general topics: the dimensions of the development problem in Haiti and some issues related to development planning in that country. Our concern is less with the specifics of the plan outlined than with the manner in which the problem is approached. In this sense, our focus is methodological rather than descriptive.

Dimensions of the Problem

The manifestations of Haiti's poverty are striking [5;7;13;14; 16;17;18]. Its economy, in the process of a very gradual transformation from an overwhelmingly agrarian base to a dualistic system with an industrial sector, is characterized by a poverty of resources, poorly developed production systems, low technological levels, unskilled labour, a deficiency of capital, and low productivity of all factors of production. Its approximately six million persons are predominantly young (52 percent under 19 years). Most are malnourished (average caloric intake is 8 percent below recognized minimum requirements, falling in some rural areas to a deficiency of 35 percent; 80 percent of preschool-aged children are malnourished and 30 percent are severely malnourished) and do not have access to safe drinking water (86 percent of the total population and 97 percent of the rural population lack access). They have a high rate of morbidity and a short lifespan (51 years expectancy); they are illiterate (approximately 80 percent of adults) and are characterized by a high rate of infant mortality (130 per 1,000 live births, ranging to over 200 in some areas - as compared to a level of 31 per 1,000 in the neighbouring Dominican Republic).

Unlike most developing countries, Haiti has had more than a century and a half over which a polarization of economic well-being has evolved. The annual per capita income figure of US $270 disguises tremendous variations in income distribution. In fact, the per capita income of more than 80 percent of the population is less than US $150. Forty-four percent of the national income accrues to four-tenths of one percent of the population [16].

At the core of Haiti's difficulties are three interrelated factors. First, the Haitian economy is based principally upon agriculture. It is estimated that 80 percent of the population depends directly upon agriculture and that 70 percent of the labour force is engaged in this sector [16]. The major portion of these persons practise subsistence farming on small, fragmented holdings under a multiplicity of tenure arrangements in which one farmer may
simultaneously be an owner, a renter, and a sharecropper. Second, a minimal level of high potential agricultural land exists in the country: only one-third of Haiti is regarded as arable, and only 20 percent of the land area consists of flat or gently rolling terrain; areas with gentle slopes and good soil often have moisture deficiency problems. The remaining 80 percent is mountainous, having slopes of greater than 20 percent. This not only limits productive land but also compartmentalizes the country into many relatively isolated regions. Third, the population is large and densely distributed. With an estimated six million people, Haiti's population density of 220 persons per km² is greater than any other Latin American or Caribbean country (with the possible exception of Barbados, having a population of only 250,000 on its largely flat terrain) and comparable only to Rwanda and Burundi in Africa [18]. In terms of population density relative to arable land, Haiti's 700 persons per km² ranks among the highest in the world [14]. The implications of this figure are particularly important, since the major portion of its population is engaged in agriculture.

Taken together, these three factors create a situation in which there is a highly unfavourable ratio of persons to resource base; i.e., a tremendous population pressure upon a land resource intrinsically sub-optimal due to generally poor soils and an unreliable rainfall regime. Soil erosion - resulting from steep slopes, intense rains, deforestation for charcoal production and extension of cultivated land (only 7 percent of Haiti remains forested in spite of its mountainous nature), and outmoded and destructive farming practices - is a major problem; it is estimated that the Artibonite river alone carries off 3.6 million cubic meters of arable soil every year [7:211]. The rural population has overflowed into unsuitable lands to such an extent that some experts recommend a 30 percent reduction in the area currently under cultivation, due to low soil fertility and high susceptibility to erosion [14]. The intensive use of marginal lands with primitive methods over many decades has ruined the carrying capacity of farmland through soil erosion and exhaustion. Thus, Haiti may represent the most advanced state of environmental degradation in the world [5:14].

Population pressure upon a severely degraded environment is producing a second major problem that has not yet been adequately addressed - the increasing polarization between the capital city, Port-au-Prince, and the other parts of the country. This constitutes Haiti's regional problem, as the relative levels of well-being are approximately equivalent in all areas of the country excepting the Port-au-Prince "city-state." The level of migration from all rural areas (the southern peninsula, in particular) to Port-au-Prince is high and growing. While the annual rate of increase of the total population has been approximately 2.2 percent - reflecting high levels of outmigration to Cuba, Puerto Rico, Jamaica, the Bahamas and the United States - Port-au-Prince has grown at a rate estimated to be in excess of 7 percent per year [14]. Over a five-year period, its population has gone from three hundred thousand to approximately one million, representing about 17 percent of the national population. The second largest city, Cap Haitien, has a population of only forty-six thousand; only five other urban areas contain populations greater than fifteen thousand.

In addition to the rural population pressure push factors, migration to Port-au-Prince may be attributed to wage rate differential pull factors; wage rates in the capital city are approximately three times higher than in the rural regions, and this disparity is increasing [14]. However, unemployment in Port-au-Prince is estimated to be in excess of 50 percent, exacerbating poverty-related problems. In addition, the population density in certain parts of the capital (e.g. Cité Simone, where no building is higher than one story) now reaches 60,000 persons per km², approximately equivalent to Hong Kong [14].

The U.S. Agency for International Development [14] cites a number of factors that cause poverty and constrain development in Haiti. Two of these, population pressure and topography, have already been explicitly considered. Others include:

- **Limited natural resource endowment**: there are few minerals and known petroleum deposits; only bauxite can be mined in commercial quantities, but today the bauxite operation is closed.
- **Natural disasters**: floods, hurricanes, and droughts; these aside, the timing and amounts of rainfall in many areas make rainfed agriculture a high risk venture.
- **Weak transportation and communications infrastructure**: this contributes to the centralization of power in Port-au-Prince.
- **Human resources**: fewer than 20 percent of all Haitians are functionally literate; only 1 teacher for every 550 primary school age children in rural areas; only 4 percent of all rural children who begin primary school ever finish it.
- **Declining agricultural productivity**: declining per capita output due to fragmented holdings, erosion, primitive and harmful farming methods; traditionally strong export crops have been vastly reduced (e.g., Haiti became a net importer of sugar in 1977).
A detailed examination of the range of philosophies and approaches underlying development planning, even as they apply to the Haitian context, is clearly beyond the scope of this paper. In this section, however, we first raise a selected set of issues relevant to the design of a regional planning strategy in Haiti. We then use this set of issues to introduce the planning framework utilized in our own work in the Cayes Plain Basin.

The Issues

Perhaps the first distinction that needs to be made is between implicit versus explicit approaches to development. This is a distinction that applies principally to the policies of the government of the developing country in question rather than to those of foreign donors, the activities of which are, by definition, explicitly oriented towards social and economic development. While many developing countries may not have explicit regional development policies, a wide variety of government decisions and actions have implications for the nature and pattern of development; these are generally manifested in budget allocations, capital expenditures, and sectoral economic strategies. In general, implicit policies tend to reinforce the advantages of the relatively more developed urbanized and industrialized areas over lagging rural areas. This is certainly the case in Haiti, where a disproportionate share of expenditures are directed to Port-au-Prince and where many economic policies favour the urban elite at the expense of the rural farmer; similar situations may be observed in other developing countries.

A second and related issue concerns the compatibility of policies; i.e., the fit between the plans for development originating with foreign donors and the national policy environment of the recipient country. In the absence of special treatment or specific exemptions, development initiatives are subject to prevailing government policies relating to taxation; labour; land tenure and inheritance; imports, exports, and pricing; credit; social services; and specific economic sectors. The potential results of well-conceived programs or projects are often curtailed by the absence of a supportive policy environment. Thus, while it is necessary to adapt development initiatives to the existing policy context, it should also be recognized that part of the development process...
involves the reform of institutions and policies that constrain development.

A number of additional issues may be expressed in terms of fundamental trade-offs or dichotomies which underlie development planning. The first of these is the classic efficiency versus equity question. Is the goal of development assistance to maximize national output, or to promote equity between persons or regions, or somewhere between the two extremes? The notion of regional planning presupposes that the distribution of social and economic benefits is a consideration. Second, there is the question of centralization versus decentralization. This dichotomy subsumes several more specific issues concerning economic activities of various types (industrial development, in particular); employment opportunities; physical and social infrastructure; government services and facilities; and, more generally, influence, power, decision-making and public participation. A third trade-off involves the role of government in development; in developed countries this trade-off is usually stated as public sector versus private sector. In developing countries this may be better expressed as governmental versus nongovernmental initiatives, the latter including both the private sector and, more significantly, a wide variety of non-governmental organizations (NGOs), including private voluntary organizations (PVOs). In many developing countries a significant portion of development activity is initiated by NGOs.

A fourth dichotomy involves the capital orientation of approaches; i.e., infrastructure and physical capital versus human capital and social institutions. This well known issue, reflecting fundamentally different perspectives concerning the nature of development, requires no further comment. Fifth is the question of functional integration versus selective regional closure. At issue here is whether lagging areas are insufficiently integrated into the larger national economic system for the latter’s benefits to “trickle down,” or whether the integration that exists enables the economic “centre” to exploit the “periphery” [6]. A sixth trade-off may be expressed in terms of top-down versus bottom-up development [12]. This well-known dichotomy reflects the distinction between imposed solutions, usually of a paternalistic and technocratic nature, and those originating endogenously from within an area. This issue is often combined with that of outside-in (commercialization) versus inside-out (mobilization) development [11]. In addition, there are two other closely related trade-offs that are fundamental to the choice of planning alternatives: sectoral versus regional approaches and single project versus coordinated approaches. In combination, these two dichotomies yield a typology of four planning alternatives (Figure 2).

Finally, three issues of a more operational nature must be raised. The first is the selection of an appropriate unit or set of units for planning. The second involves the well recognized problem of obtaining adequate data for planning purposes [9]. A common problem is that what data are available are collected for administrative units, which often may not be suitable for planning purposes. On the other hand, one often finds that administrative data are so sparse and unreliable that it is necessary to specially collect data for whatever planning units are chosen. The third issue is perhaps the most important - the establishment of an appropriate implementation mechanism. Plan conception and plan implementation are integral components of a single process. In the absence of a workable implementation mechanism, however, the most well-conceived plans are merely hypothetical. An appropriate mechanism must fit the social, economic, political, and institutional realities of a country and must ensure that diverse efforts are coordinated.

An Approach to Development Planning

It is simply not possible to outline the manner in which our approach to development planning relates to the many issues just raised; our attitude toward many of these will be implicit in the following section’s discussion of an appropriate planning framework for the Ceyes Plain Basin of Haiti. Before embarking on this discussion, however, we consider two general issues: an appropriate planning approach in terms of the sector/regional and single project/coordinated dichotomies; and the choice of an appropriate planning unit. In concluding this section, we briefly outline a conceptual model of the development planning process in which we have been engaged. A discussion of an implementation strategy is reserved until later in the paper.

The planning approach that we have adopted is represented by section IV of Figure 2: a coordinated regional approach. A coordinated approach to planning signifies one which considers various economic sectors (e.g., marketing, transportation, agriculture, industry), various components of the physical environment (e.g., rainfall, soil quality, geomorphology, ground cover), and various elements of the socio-cultural milieu (e.g., attitudes, values, and beliefs associated with farming practices and land tenure.) Further, this approach recognizes that these three broad categories are themselves functionally interrelated. While “perfect” coordination is unlikely ever to be achieved, one can strive to identify and to coordinate a set of key interacting elements. One important implication of this approach is that its successful operationalization requires an interdisciplinary effort. A regional approach signifies one in which the spatial dimensions of both human social-economic activity and the physical environment are incorporated...
into the planning process. The regional approach may be contrasted with the sectoral approach favoured by classical economics, in which the location of phenomena plays no role. From a pragmatic viewpoint, the regional approach encourages the concentration of resources and planning efforts within a well-defined area rather than allowing them to be spread too thinly over a wide area.

Spatial Orientation

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<tr>
<th>Sectoral Approach</th>
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<td>Single Activity Approach</td>
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<td>III</td>
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<td>Coordinated Approach</td>
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Figure 2

MATRICES OF PLANNING APPROACHES

A region is an intellectual construct having no existence beyond the minds of the planners and policy-makers who establish it for a specific purpose, using various human and physical criteria that will best permit planning goals to be achieved. That is to say, regions do not exist naturally but are delineated as needed. There is, however, a logic to the delineation of a region, and this generally involves the consideration of both the homogeneity of the attributes (e.g., per capita income, soil and crop types) and the flow patterns of people, products, information, money, energy and physical matter (e.g., soil particles, water).

In the planning initiative described below the river basin is utilized as the regional unit of analysis. There are two principal justifications for this. First, many of the variables and attributes upon which a coordinated planning approach in a rural area is based (e.g., pedological, biological, and hydrological factors) clearly function within the boundaries of major river basins. Second, our field investigation in the Cayes Plain Basin has demonstrated that a significant proportion of social and economic activities tend to function most strongly within river basin boundaries. That is to say, in the study area, due to the existing network of roads and trails, a higher level of social and economic flows occur within river basins than between basins. Movements are largely upstream and downstream, linking the upper and lower portions of the basin; cross-basin flows are negligible due to their relative difficulty. This pattern stands in contrast to that of developed countries characterized by better transportation capabilities and more mobile populations, where the river basin is generally not, from a human perspective, an appropriate regional unit.

Figure 3 presents a summary of the conceptual model of the coordinated rural regional development process that we have employed in Haiti. It must be stressed that this model is not simply a theoretical creation but is, rather, one designed to achieve results. It is for this reason that the implementation of the plan is given equal weight to the construction of a logical plan. Rural development in Haiti is ultimately a question of improving its agricultural system. This is not meant to imply that other activities such as primary and secondary processing and urban growth centre functions do not play a role; it is simply a recognition of the fact that the overwhelming majority of the rural population earns its livelihood from working the soil. Agricultural production is completely subject to the constraints and potentials of the natural resource system (rainfall, climate, soil type and depth) due to low levels of agricultural infrastructure and technology. Similarly, since produce is not grown exclusively for on-site consumption, the nature of the marketing system has important implications for the creation and retention of surplus value by individual households. Thus, the first step in the planning process is a technical assessment of these three interrelated systems. An

In a river basin, all energy and matter flow in a unidirectional manner from the upper reaches to the mouth of the river. It is this property that makes the river basin a logical unit for regional development planning concerned with agriculture and environment, since two crucial attributes, soil and water, are removed and transported from the land via the river system. In addition, the flow characteristics of these two attributes, as well as numerous human agricultural practices, are determined by the energy attributes (altitude, slope) of the basin.

In the Haitian context there is sometimes also a third consideration, especially in instances where field investigations of human activity patterns are lacking. Due to the general unavailability of socio-economic data for sub-national units, insufficient human activity information exists for attempting to delineate regions. Thus, by default, exclusively physical criteria must often be utilized.
Figure 3
CONCEPTUAL MODEL OF RURAL REGIONAL DEVELOPMENT IN HAITI
"objective" technical assessment, however, does not necessarily reflect the "real" world. It is for this reason that both the technical assessment and the resulting plan must be passed through social-cultural-institutional filters.

In the planning document produced as a result of our work [2], individual chapters are devoted to the specific elements of the planning process depicted in Figure 3. In the remaining portion of this paper, there is only sufficient space to outline the nature of a coordinated rural regional development plan for the Cayes Plain Basin, and to make some general observations concerning its implementation.

A Coordinated Rural Regional Development Plan for the Cayes Plain Basin

The two principal and interrelated goals of the development plan outlined here are the improvement of the standard of living in the study area and the amelioration of the area's land resource base. Indirectly, the plan also seeks to arrest the high level of outmigration from the study area to Port-au-Prince; i.e., the growing polarization of the national economic system, by enhancing local income levels and employment opportunities.

Located in the southwestern portion of the Southern Peninsula, the Cayes Plain Basin comprises approximately 720 km² (see Figure 1). Approximately 375,000 people live within the basin, an estimated 37,000 of them in Les Cayes, Haiti's third largest urban centre. With population densities ranging from over 475 persons per km² in the lowlands to a "low" of 125 persons per km² in the poorer agricultural areas on the upland slopes, no portion of the basin can be classified as underpopulated. Excluding the inhabitants of Les Cayes, almost all of the population earns its livelihood from occupations directly connected to agricultural pursuits. The few active industries that exist in the area process agricultural output. The rural family unit is largely a self-sufficient entity that lacks any real specialization. While this structure maximizes the family unit's ability to survive under uncertain environmental conditions, it must result in a decreased level of economic efficiency and output.

The crops grown in the area are dominated by varieties that are largely consumed locally. This is particularly true for the rainfed agricultural areas. A well-articulated market system exists throughout the basin. The flows of commodities through this system reach the most distant points of the basin with surprising facility. Yet, like the industrial composition of the region, the markets' goods are dominated by the agrarian economy of the
River Basin can be divided into four major topographic units: the consumption. These units differ in both their erosional and agricultural igneous highlands, a limestone plateau, the slopes, and the low- variations in river flows need to be undertaken. This will make ways a microcosm of all of the humid portions of Haiti, since it lands. Because the environmental interaction between these units is linked to the dynamics of the L'Acul river system, the larger quantities of the water presently passing through the system and emptying into the Caribbean available for irrigation and consumption. Using lithologic, slope inclination, and elevation criteria, L'Acul River Basin can be divided into four major topographic units: the igneous highlands, a limestone plateau, the slopes, and the lowlands. These units differ in both their erosional and agricultural potential. Because the environmental interaction between these units is linked to the dynamics of the L'Acul river system, the high elevations and large moisture surplus of this unit create a high level of potential energy for erosion and soil particle transport. With their ever decreasing natural tree cover, the Highlands are continuously losing their thin veneer of soil. This is reflected not only in the limited land uses found in this area but also in high levels of water discharge and siltation in units downstream. Economically, this unit provides unfinished wood products such as lumber, firewood, and charcoal.

The options available for improving the land resources of this unit and improving the livelihood of its inhabitants, while at the same time protecting the environment of units downstream, are extremely limited. The optimal land use for the Highlands would be a forest preserve to protect its watershed function, and managed forest and grazing. But given the current demands of the population living within this area, these land uses are not immediately practical and should, rather, be regarded as long-term goals related to the relocation of the population. In the short-term, several interventions need to be implemented; first, reforestation, pasture management to prevent overgrazing, and the introduction of perennial agriculture (tea, coffee) under rigorous soil conservation practices (e.g., check dams, mulching, stone barriers).

There are few degrees of freedom in the land use alternatives for the Highlands. Similarly, the range of possible economic opportunities for this unit is extremely restricted. Besides the continuing sales of lumber, small craft wood industries (e.g., furniture and broom fabrication) need to be introduced. The development of more efficient methods of charcoal production would lower pressure on the land while maintaining production levels. Only inhabitants presently living in the Highlands should be eligible for employment in soil conservation and reforestation activities; immigration must be discouraged.

Igneous Highlands

The Cayes Plain Basin was selected as the focus of planning efforts for a number of cogent reasons. First, the Basin is in many ways a microcosm of all of the humid portions of Haiti, since it manifests all of the major topographic units found throughout its humid areas. Second, the Basin is both a major agricultural area and one of the country's most densely populated regions; land is intensively utilized and covers the spectrum of quality and productivity. Third, the area has untapped water resources which hold potential for the enhancement of agriculture. Fourth, not only does the Basin appear to be an operationally valid planning unit, from both human and physical perspectives, but it also appears to be a manageable planning unit; i.e., sufficiently compact that investments committed will not be spread too thinly. In addition, three sub-regional units may be identified within the basin. This is important since, from a temporal perspective, it is impossible to simultaneously implement all elements of a plan in all portions of a planning region; implementation must be phased, and this requires the delineation of logical sub-units. One of these, L'Acul River Basin, was chosen for detailed analysis, since it is representative not only of the larger Cayes Plain Basin but also of other similar regions of Haiti.

L'Acul River Basin occupies approximately 30 percent of the Cayes Plain Basin (230 km²). Given the elongated shape of the basin, the steep slopes in its upper and middle portions, the absence of tree cover, and extensive areas of thin soil cover or bare rock, L'Acul River and all of its tributaries are raging torrents during the wet periods of the year; during the dry season flows are intermittent, but after a single rain event portions of the valley bottoms can experience flooding. In order to maximize the water resources of the basin, strategies to dampen the extreme variations in river flows need to be undertaken. This will make the basin appear to be an operationally valid planning unit, from both human and physical perspectives, but it also appears to be a manageable planning unit; i.e., sufficiently compact that investments committed will not be spread too thinly. In addition, three sub-regional units may be identified within the basin. This is important since, from a temporal perspective, it is impossible to simultaneously implement all elements of a plan in all portions of a planning region; implementation must be phased, and this requires the delineation of logical sub-units. One of these, L'Acul River Basin, was chosen for detailed analysis, since it is representative not only of the larger Cayes Plain Basin but also of other similar regions of Haiti.

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The Plateau

While the gentle-to-rolling limestone plateau comprises only 7 percent of L’Acul Basin, its potential importance in the regional context is far greater. Relative to other portions of L’Acul Basin, the size of the Plateau farming units is favourable and the land resource is in good condition—still capable of economically viable agricultural production. With improvements in its farming practices and infrastructure, the Plateau could clearly support its existing population at an acceptable standard of living. Further, its climatic conditions potentially permit the growth of mid-latitude high-value crops that are relatively scarce in Haiti. In spite of this favourable potential, conditions in the Plateau unit are far less propitious. The relative inaccessibility of this unit is reflected in a poor level of social services, minimal opportunities for transporting perishable crops to market, an irregular distribution of water resources, and a restricted range of crop types.

The development strategy for the Plateau must maintain the generally favourable resource base existing in the area while increasing the standard of living of the inhabitants. As in the Highlands, immigration must be minimized. Five major types of interventions may be identified. First, the coordination of land use is required, in terms of both crop selection and conservation practices, within the boundaries of the topographic features that determine the intensity and magnitude of soil erosion. For example, if an innovative farmer plants a higher yielding crop variety that matures out of phase with the crops of his neighbours, he would lose much of his harvest to birds. Similarly, erosion control measures on a slope require the cooperation of all farmers. Second, the introduction of new crop types and varieties that will increase revenue per land unit under existing conditions and of new farming practices to increase the yield of existing crops is necessary. Onion, Irish potatoes, and garlic, all of which are imported into the Cayes Plain Basin and which have a high market value, can likely be cultivated in the unit. New varieties of sorghum and congo peas would permit these crops to enter the market when it is not already saturated, resulting in higher revenues. Similarly, coffee yields could be increased dramatically by pruning and mulching.

Third, reforestation and pasture improvement would not only increase revenues but also reduce the pressure on the existing resources. Fourth, infrastructure improvements in the road system, social services, and food storage are required to improve the relative inaccessibility of the area, enhance the quality of life, and increase the financial returns from agriculture. Fifth, the introduction of technologies and products that are either innovative or simply not presently utilized would increase agricultural output.

The use of wind or photovoltaic pumps, for example, can convert potentially significant groundwater reserves to spray irrigation and potable water use.

The Slopes

This unit is analogous to the Igneous Highlands in many respects, but at a lower altitude. Due to the overutilization of steep slopes, the environmental condition is rapidly deteriorating through erosion. In addition, this increases the magnitude and frequency of flooding in the lowlands and, conversely, reduces streamflow during drier periods. The presence of completely degraded slopes (exposed bedrock) in many areas in this unit indicate the removal of much formerly viable land from production and have increased the pressure on remaining lands. Almost all lands within the unit should not be in annual crops and should not be farmed except with major conservation efforts. Once again, the necessity of supporting the existing population implies that land regeneration will not occur in the short-term.

Several steps can be taken to minimize the further loss of land: first, the reforestation of the slopes into densely planted orchards; second, major conservation efforts, including terracing; and, third, the control of livestock numbers and the introduction of new feeding practices to prevent overgrazing. In addition, a road needs to be built to permit fruit crops to reach agro-industries on the lowlands. Only inhabitants of the Slopes unit should be employed in this project, which will substitute for the short-term loss in revenue due to the conversion of cropland into orchards. As other options become available in the Cayes Plain Basin, the Slopes should be gradually depopulated and annual crops should be replaced by perennials.

The Lowlands

The Lowlands unit has the greatest agricultural/economic potential in the study area and the ability to support the largest population base. In physical terms, water and soil particles originating in the three upstream units affect the agricultural capacity of the Lowlands. Since this is so, the interventions recommended for the three upper units will benefit the Lowlands as much as the units in which they are implemented. In economic terms, there is a two-way flow of agricultural products between Lowland and upper-unit markets, and a flow of manufactured and processed goods from the Lowlands to the upper units. The Lowlands unit faces a number of critical constraints to development: extreme variability of river regimes; siltation of its irrigation system; a limited range of non-land-based employment opportunities; and the inability to retain surplus value created by agricultural output.
Three priority areas for intervention thus involve irrigation, agro-industry, and the role of the city of Les Cayes.

A more even temporal distribution of the annual pattern of water availability is required in the Lowlands. In addition to the measures outlined above, which will provide more water for use in existing irrigation systems (as well as increasing their efficiency and reducing maintenance costs), better water management practices need to be introduced; e.g., metering, drainage canals, expansion of tertiary canals. Increased irrigation would enable both the intensification of crop yields (e.g., sugar cane output can be enhanced by a factor ranging from two-fold to six-fold) and the extensification of certain crop types.

The increasing agricultural yields resulting from the intensification and extensification of production (which, in turn, is a consequence of expanded irrigation in the Lowlands, increased output from the Plateau, and greater production of fruit from the Slopes) suggest that there is a potential for agro-industrial development in the Cayes Plain Basin. A short-to-medium-term step in this direction should be the rehabilitation of the region’s only sugar cane centrals; this implies a specific set of issues relating to the use of irrigation and fertilizer, to pricing, and to purchasing practices. In addition, other industries which can process perishable produce need to be developed: small scale manioc, corn, and rice milling; and, most important, processing of fruit tree crops from the rehabilitation of lands in the Slopes unit. There is also a need for nurseries to supply seeds and seedlings to a broader portion of the Southern Peninsula.

The full potential for rural development within the Cayes Plain Basin is closely related to the ability of the city of Les Cayes to attain an enhanced level of development. The major burden of effectively absorbing that portion of the Highlands and Slopes population that the land is no longer capable of supporting will fall upon Les Cayes. The imperative for such urban-centred development, however, appears to be inconsistent with implicit and de facto national policies, if not specifically contrary to those established explicitly and de jure.

There are a number of specific avenues along which the urban-centred development of the region should be directed. First, the establishment of labour intensive industries should be encouraged. The decentralization of industry from Port-au-Prince or the attraction of newly emerging industries may be justified on the basis of lower land prices and lower density, more pleasant living conditions. Due to an abundance of inexpensive labour, Les Cayes is an appropriate site for the development of a quasi-freeport operation similar to those existing in Port-au-Prince. Second, the potential of Les Cayes as an industrial centre is directly related to the development (or, more correctly, the restoration and rehabilitation) of its port facilities. Third, an effective set of services for both the urban population and for rural outreach need to be established: health, sanitation, education, information, technical training, as well as permanent regional offices of the Haitian government and international donor organizations. Interestingly, this strategy conforms to President Duvalier’s recently articulated goal of governmental decentralization. Fourth, in order to facilitate and to complement the implementation of the three previous initiatives the living environment of Les Cayes needs to be enhanced; due to its lack of services and amenities it is presently regarded as a “frontier outpost.”

Summary

The individual elements of this rural regional development plan are by no means novel. The originality and, one hopes, the efficacy of this approach lie in its ability to recognize and to utilize the linkages between spatial units and between the various functional elements of the physical, social and economic systems. Figure 4 summarizes the planning goals and interventions recommended for each of the four units of L’Acul River Basin. As noted, these goals and interventions are more broadly applicable to similar subregions in the Cayes Plain Basin and in other parts of Haiti.

A number of general points following from the previous discussion need to be emphasized. First, it appears that the river basin is an effective planning unit. Second, the four subregions defined within L’Acul River Basin are highly interconnected in terms of both physical and social-economic criteria; activities in any one unit clearly affect those in others. Third, the physical and the human-economic environments are closely interrelated; development cannot occur unless both components are addressed. Fourth, the role of temporal, as well as spatial, factors needs to be considered. For example, the revenue accruing to farmers is presently not being maximized due to the timing with which crops are introduced into the marketing system. Finally, the potential for development of the rural areas of the Cayes Plain Basin is closely interrelated with the potential for urban-industrial development in the city of Les Cayes. The goal of land resource preservation can only be accomplished if a capacity is created to absorb the surplus population of the ecologically fragile Highland and Slopes subregions.
PLANNING GOALS AND INTERVENTIONS

**CAYES PLAIN BASIN**

**PLANNING GOALS**

- **HIGHLANDS**
  1. Decrease Runoff
  2. Improve Water Management
  3. Decrease Soil Loss

- **LES PLATONS**
  1. Increase Infiltration
  2. Expand Agricultural Output
  3. Decrease Population

- **SLOPES**
  1. Decrease Runoff
  2. Expand Agricultural Output
  3. Decrease Population

- **LOWLANDS**
  1. Improve Water Management
  2. Extend Irrigation
  3. Increase Agricultural Output
  4. Improve Infrastructure

**INTERVENTIONS**

- **HIGHLANDS**
  1. Reforestation
  2. Wood Fabrication
  3. Footpath Improvement
  4. Managed Forests
  5. Controlled & Improved Chemical Production
  6. Selective Permanent Agricultural Crop Farming
  
  S = Short-term
  L = Long-term

- **LES PLATONS**
  1. Improved Farming Systems
  2. Introduction of New Crops and Varieties
  3. Irrigation
  4. Woodlot Development
  5. Controlled Pasture
  6. Improved Social Services
  7. Road Linkages to Lowlands
  8. Storage Capacity Improvements

- **SLOPES**
  1. Introduction of Fruit Orchards
  2. Major Soil Conservation Practices
  3. Improvement of Roads in Ruis Mornes Valley
  4. Reforestation

- **LOWLANDS**
  1. Irrigation Expansion
  2. Introduction of New Crops and Varieties
  3. Creation & Enhancement of Industries
  4. Storage Capacity Improvements
  5. Drainage Canals Built
  6. Development of Les Cayes Growth Center
  a. Labour Intensive Industries
  b. Development of Port Facilities
  c. Regional Administrative/Institutional Functions
  d. Improved Urban Quality of Life

**Figure 4**
Guidelines for Implementation

Now that an appropriate development plan has been specified the next step is to design a suitable implementation mechanism. We are not able to deal at length with this aspect of the planning process for two reasons: first, it is a topic that is perhaps even more complex than the specification of the development plan itself; and, second, the exact nature of the mechanism is still under design. At this stage, however, it is possible to make some general observations concerning the direction that our thinking is taking. Underlying these general observations is a concern for five themes related to implementation: sustainability - the ability of an initiative to continue its momentum after formal funding has expired; local participation - the peasants are the ultimate evaluators, and programs not rational from their viewpoint will fail; incentives - necessary changes and innovations will be adopted only if they show results in terms of acceptable market price; decentralization - given that a rural development strategy cannot be successfully implemented from the capital city, which of several models of decentralization should be utilized (e.g., devolution, deconcentration, delegation)?; and inclusion - relevant local actors, organizations, and economic sectors should not be overlooked.

There are a variety of structures through which a development strategy of the type outlined in this paper could be implemented. These include: a national lead line agency such as the Ministry of Plan or the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR); a subnational government entity such as a département, arrondissement, or commune; a new permanent integrated development agency directly under the president; a project management unit; or private voluntary organizations (PVOs). Each of these has strengths and weakness; no one is entirely suitable for the task of implementation. An appropriate implementation mechanism must involve relevant government agencies, local authorities, private organizations, peasant groups and private sector entities. It also requires a process by which the most appropriate available entities or resources can be focused upon specific activities.

Our current thinking leads us to propose a mechanism with four elements. First, an administrative and coordinating body that has access to the upper levels of government and that has an overview of both development needs and the broader national policy context. Further, this body must have legitimacy in the eyes of other government agencies in terms of its planning, financing, oversight and evaluation roles, and must not be seen to compete with them in project implementation. The regional office of the Ministry of Plan is a likely candidate for this role. Second,
two advisory mechanisms - one for government agencies and officials, the other for non-governmental entities. The former exists in the form of the CORCOPLAN (a regional council of the heads of government agencies) for the Department of the South; the latter will have to be created. The purpose of both groups is not only to provide a better understanding of local conditions and needs but also to involve as wide a spectrum of society as possible in the development process. Third, a donor financing and control mechanism (in this case a USAID office) to determine what kinds of activities are eligible for assistance and to administer projects that they choose to fund directly. Fourth, a process of project identification, development and placement. Here, the coordinating body identifies appropriate activities using input from the advisory groups and the donor, and decides which specific entities or organizations are capable of realizing them.

Conclusion

The underlying design flaw in many rural development initiatives is that development is conceptualized in the very narrow confines of the immediate project, with offsite variables and impacts rarely considered. Similarly, infrastructure components have usually been stressed while institutional and organizational components and broader economic-physical interrelations have been downplayed. It is for these reasons that the approach outlined here stresses both a regional approach and the inclusion of physical and human components in a coordinated framework. Our approach seeks to incorporate existing processes as they operate in rural areas and to stimulate the latent potential of the Cayes Plain Basin, as well as to strengthen its existing capabilities.

Perhaps a useful caveat concerning the design and implementation of a development initiative such as the one outlined here can be drawn from the experience of DRIPP (the French acronym for "integrated regional development from Petit-Goâve to Petit-Trou-de-Nippes," two towns on the north coast of the Southern Peninsula), funded by the Canadian International Development Agency (CIDA) from 1974 to 1981. While DRIPP's "integrated" approach was in many ways based upon a philosophy similar to that which we have expressed here, its ultimate lack of success may be basically attributed to an intractable scope in terms of the region covered and the range of activities included (schools, health, roads, hydrology, land tenure and twelve other components), as well as to problems of operationalization, implementation and community involvement. The approach may thus be viewed as an "ideology in search of a methodology."  

In drawing our discussion to a close it is appropriate to complement the specific observations concerning a strategy for development in the Cayes Plain Basin with some recommendations of a more general nature relevant to development planning in Haiti. First, Haiti's greatest comparative advantage lies in its population rather than its physical resource base. Its human capital must be developed; in particular, the technical skills needed to promote development (including social, economic, physical science, and agricultural areas) should be emphasized. Those individuals who have already been trained in the course of previous projects and initiatives should be employed to assist new development efforts. Second, one of the major constraints to development planning is the scarcity of consistent and reliable data upon which to base decisions. Thus, an enhanced human and physical data base is required, especially at a regional level. A potential problem with the river basin planning unit which we have utilized here, and which we have elsewhere recommended for use, is that it does not correspond to existing administrative units. On the other hand, the existing data base for administrative units below the national level is so poor that when future data are collected they could easily be aggregated into appropriate river basin units.

Third, to the fullest extent possible, new development initiatives should complement and build upon past initiatives. This includes not only research and infrastructure but also, as noted, human resource capabilities. Fourth, development initiatives can only be successful if resources are committed over the long term. Although certain processes, technologies, and organizational structures can be instituted in the short-to-medium term, the social changes that comprise development will only be attained if long-term support is committed. Fifth, just as a development plan for a specific region must consider the nature of (and the interactions between) subregions, it must also consider the relationships between the region and the nation. In particular, regional development initiatives need to be coordinated with national social and economic policies. Ideally, national policies should complement and reinforce regional development efforts; at a minimum, the former should not introduce constraints upon the latter. A final and related point is that a specific development initiative such as the one that we have outlined can only fully succeed if it is accompanied by more general social and economic policy reforms.

4This is clearly the approach to rural development adopted by the Haitian government in the Central Plateau through its Organisme de développement du bassin du fleuve Artibonite (ODBFA); see [8].

5See English [5] for a detailed analysis of DRIPP and, more generally, of Canadian development assistance to Haiti.
particularly in the areas of social structure and income distribution, land tenure, education and health services, community participation, and commodity pricing. These are but some of the challenges that face development planning in Haiti.

References