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**Hilside  
Development  
Strategy For  
Jamaica**

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Eugene N. Babb  
Jennifer A. Bremer

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Development Alternatives, Inc. 624 Ninth Street, N.W. Washington, D.C. 20001

## PREFACE

This strategy statement represents a consensus of the Hillside Development Strategy Workshop held at Ocho Rios, Jamaica, on June 15-17, 1984, and attended by representatives from the Jamaican Ministry of Agriculture, other Jamaican government agencies, the USAID mission to Jamaica, and other international agencies. The workshop was organized and managed jointly by the Ministry of Agriculture, USAID/Jamaica, and Development Alternatives, Inc. (DAI), with financial sponsorship by the Ministry and USAID. The basic reference document used in the workshop is A Strategy for Jamaican Hillside Agricultural Development, a study conducted by DAI in 1983. Copies of this report are available in the Jamaican Ministry of Agriculture, USAID, and DAI in Washington, D.C.

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## HILLSIDES DEVELOPMENT STRATEGY

The proposed hillsides development strategy for Jamaica comprises seven fundamental premises:

- The future of the hillsides cannot be considered in isolation; it is directly linked to the development of the lowland and urban areas of Jamaica.
- Stabilization of the hillsides to ensure Jamaica's future water supply and to control erosion is absolutely necessary for the sound development of the island as a whole.
- This stabilization requires conversion of most steep areas to permanent crops, including pasture, and improved soil conservation practices on those areas suited to annual cropping. Many areas now devoted to annual cropping cannot be stabilized economically unless they are converted to mixed crop systems, based on perennials and agroforestry.
- If the hillside farmers are to adopt environmentally sound, sustainable systems of agriculture and are to make the necessary long-term investments in their land, these systems must offer them an attractive return, provide an income sufficient to their needs, and fit within their capacity to supply labor and other inputs.
- These systems must be served by reliable input supply services, profitable markets for produce, sound technical information on production practices and land management, and security of tenure.
- Current trends promote the intensification and diversification of lowland agriculture, based on increasing production of food crops and vegetables. The modern technologies, applied to the better soils under irrigation on the lowlands, imply that annual crops on the hillsides will not be competitive with lowland produce.
- The hillsides will continue to play a major role in Jamaican society, as a place of work, as a major contributor to agricultural production for export and domestic consumption, and as a place of residence for a large portion of the population.

The transformation of Jamaican agriculture in the lowlands has already begun, and steady change will take place over the next 15 years. The key question for the hillsides is whether intensification and increased prosperity in the lowlands will be mirrored by impoverishment and marginalization for the vast majority of farmers on the hillsides or whether lowland development will provide the impetus for a parallel transformation of the hillsides into a stable and productive system based on permanent crops.

## THE FUTURE OF THE JAMAICAN HILLSIDES

### The Development Context for the Jamaican Agricultural Sector

Future investment in Jamaican agriculture will increasingly be devoted to intensification and diversification of lowland agriculture, leading to the transfer over time of substantial food crop production to the lowlands.

This transformation will have far-reaching affects on the hillsides, which must adjust to changing markets for hillside products. The preferred scenario calls for changes in the economy of the hillsides in the three areas discussed below.

#### 1. Agricultural Production

Hillside annual cropping will be limited to three types:

- Farms on Class II and III soils with appropriate erosion-control measures (Class IV land might be used with extensive terracing and other measures but normally that would be too expensive;
- Intercropping within permanent crops; and
- Small kitchen gardens for home consumption.

Production of annual crops will be more intensive than at present, focusing current resources on a smaller area to make maximum use of the better soils on less-steep slopes and in valleys. Certain vegetables are more suited to hillside climate and emphasis would be expected on the higher value crops. Economically attractive soil conservation practices will be integrated into the farming system.

The area in permanent tree crops, including fruit trees, timber species, cocoa, coffee, and spice crops, will increase, and many areas now in annuals will be converted to tree crop production. Tree crop systems will be more intensive than at present, drawing on labor and other resources now devoted to annual crop production. Mixed systems will become more common, combining different types of tree crops, tree crops with annuals as intercrops, and grass strips within tree plantations.

Permanent pasture and small farmer livestock production will assume much greater importance in hillside agriculture. The expansion will be in meat and dairy production to meet the growing demand for livestock products, to replace production from lowland areas converted to annual cropping, and to reduce imports.

The area in forest and woodlots will increase on both public and private lands. Fast-growing multipurpose species suited to Jamaican conditions will be used increasingly.

## 2. Population and Employment

Although the population in the hillsides will continue at approximately its current level, a smaller proportion of the labor force will rely on annual-crop agriculture. Off-farm work will replace much of traditional agriculture, based on a mix of non-agricultural work, employment in the processing of livestock and permanent crops, and work in intensive agricultural operations in the lowlands.

### 3. Resource Base and Land Use

The hillside land and water resource base will gradually stabilize as the intensity of cultivation declines on all but the best soils and labor and other resources now devoted to hillside agriculture are transferred to off-farm uses. The national land use pattern will become more balanced, with the greatest intensity of use on the more stable soils in the lowlands. The long-term viability of this transformation will be protected by less-intensive use of the uplands, permitting implementation of stabilization measures in critical watersheds.

#### REQUIREMENTS TO ACHIEVE THIS SCENARIO

The dominant trends in Jamaican economic development support this scenario, including:

- Increasing investment in intensive lowland agriculture;
- Gradual decline in hillside population; and
- Increasing reliance on off-farm and non-agricultural employment.

The current situation in the hillsides, however, must be changed to achieve the scenario described above. The following barriers must be overcome:

- Unspecific and conflicting goals for the hillsides;
- Confusion of responsibility among government agencies;
- Failure to involve hillside residents in planning and managing hillside development;
- Insufficient investment in hillside agriculture;
- Lack of clear, secure title to most hill lands;
- Uncertain markets for permanent crops, especially live-stock products and perishables;

- Inadequate information on improved technologies for permanent crops and livestock production;
- Widespread annual cropping on inappropriate sites;
- Weakness of productive infrastructure in hill areas;
- Lack of economic techniques for sustainable annual cropping;
- Low esteem for the farming profession, as a result of its low profitability and stagnant technology; and
- Lack of sufficient training for farmers, extension workers, and others in technologies appropriate to the hills.

The recommended strategy for hillside development is designed to overcome these barriers and to create a climate in which the small farmers on the hillsides are able to convert their operations into sustainable, profitable farms; are encouraged to do so by the prevailing market conditions; and can be ensured of reaping the benefit.

#### INVESTMENT PRIORITIES

The overall investment program recommended to achieve the desired scenario is based on two principles:

- The scenario cannot be achieved by regulation or fiat but can be achieved gradually by promoting desirable private investments and discouraging undesirable investments.
- Successful implementation of the strategy does not require that all farmers switch to the desired cropping pattern immediately; success can be achieved by a gradual but permanent transition to sustainable systems by most farmers over time, as they respond to changing conditions in the lowlands and new opportunities on the hillsides.

The barriers identified above provide the basis for identifying six priorities for investment:

## 1. Agroindustry and Agribusiness

An expansion of agroindustry in the hillsides is needed to provide the basis for increased production of permanent crop and livestock products on a profitable basis, as well as to provide employment alternatives to traditional annual-crop agriculture. Overall priorities in this area include:

- Expansion of processing of coffee, cocoa, fruit, timber, and other tree products to provide an assured market for farmers;
- Processing of livestock products, especially dairy products;
- Production of inputs needed for expanded tree crop and livestock production, including seedlings and improved breeds;
- Creation of marketing channels to connect producers with sources of inputs and markets for their final output by encouraging private traders and merchants; and
- Lending policies modified to recognize the long development time for permanent crops before income accrues to farmers.

Investments in processing or inputs for annual crops should in general not be a priority and should be limited to areas with a high concentration of Class II and III lands. The proposed investment strategy relies primarily on private sector investment, including farmers' organizations and cooperatives where appropriate and feasible without ongoing government intervention.

## 2. Permanent Crop and Livestock Production

Substantial on-farm investment will be needed to achieve the transition to permanent and sustainable systems. This investment will require a major increase in the availability of medium- and long-term credit for hillside farmers. The institutions providing investment credit will require increased technical and management capability.

Conversely, credit should not be provided for hillside annual crops, except on lands certified to be Class II or III, or in permanent intercropping programs, in order to make these funds available for socially sound investment.

### 3. Productive Infrastructure

An increase in high-value tree and livestock products and increased off-farm employment will require that basic productive infrastructure in the hillsides be upgraded. The emphasis should be on roads and basic services to support the agricultural production and processing needed for these products. Investments should be concentrated in zones most favorable to expanded production.

### 4. Tenure Security

The present tenure situation, in which only a minority of hillside farmers have clear title to their land, is a major barrier to achieving the desired scenario because:

- Farmers are unable to get credit necessary to make the transition to permanent crops and livestock; and
- There is not an effective land market to permit transfer of land to those willing to make the investment or to promote consolidation into economic holdings.

Provision of clear and secure title to smallholders is extremely expensive but is nonetheless a prerequisite to sound hillside development. Even if a means can be found to provide titles less expensively than permitted under present laws and credit procedures, the necessary investment will be large.

## 5. Technology Generation

Technology generation in support of the proposed scenario should focus on three areas:

- Small-farmer mixed tree-crop production systems;
- Intensive small-farmer livestock production; and
- Intensive annual-crop systems for Class II and III lands incorporating soil conservation measures.

The search must identify technologies that are economically attractive, ecologically sustainable, and feasible for the small farmer. In each of these areas, the emphasis must be on developing a production system based on current farmer practices to the greatest extent possible.

Conservation measures for annual cropping should concentrate on agronomic practices rather than on technologies requiring expensive construction but having little or no impact on production. Terracing should be limited to areas in which a high-value cropping pattern, relatively good soils, a need to retain moisture in the soil, and the presence of markets make the investment attractive to farmers.

## 6. Conservation in Priority Watersheds

Reforestation of public lands and control of waterways are expensive but critical to the success of the program. The scarce resources available should be concentrated in the watersheds that have the highest priority for lowland development, based on the need for water for irrigation, tourism, industry, and urban development.

## KEY PROGRAMS

Based on these investment priorities, five key activities can be identified as the basis for a hillsides program. The overall goal of the program is to create conditions that favor realization of the above scenario. It must be emphasized that the scenario and the production pattern it implies are indicative and serve as a guide for targeting support to agriculture. They cannot be seen as a mandate that farmers are required to observe.

1. Credit

An expanded supply of medium- and long-term credit should be made available to both farmers and agribusiness entrepreneurs to support the investments needed in tree crop production, livestock, agricultural processing, marketing, and input supply.

2. Farming Systems Research

A research strategy based on the farming systems approach is recommended to generate technologies meeting small farmer needs in the three priority areas identified above. This research must be carried out in close cooperation with existing on-station research, including particularly that of the specialized tree-crop institutions; extension workers emphasizing the product mix identified for each area (tree crops, livestock, or annuals), crop zone, or recommendation domain; and farmers, who will provide the land and participate in designing, implementing, and evaluating the research.

3. Farmer and Extension Worker Training

Farmers and extension workers should receive training and other assistance to assist them in making the transition to a more sustainable system. Areas of emphasis for both farmers and extension workers include land classification and selection of

appropriate land use patterns; integrating tree crops and livestock into existing small farmer systems; intensive tree crop production for small farmers; and intensive small farmer livestock production.

#### 4. Watershed Conservation

Ongoing conservation efforts should be coordinated and expanded to increase their impact on critical watersheds. Given the high cost of traditional reforestation and waterway control measures, work in this area should be concentrated on 5-10 key watersheds and work in other watersheds should be postponed until these are brought under control.

#### 5. Titling

Whether based on a major expansion of current programs or a reform of existing land and credit laws, a program is needed to provide clear and secure title to all hillside farmers by the year 2000. This program must reach the vast majority of farmers who own family or private lands or rent from these owners. The needs of this group are different from those of the few thousand individuals who have benefited from previous land settlement schemes.

### PLANNING AND IMPLEMENTATION OF THE STRATEGY

Implementation of the programs outlined above will require the close cooperation of a wide range of governmental, parastatal, and private sector institutions. Because of the lead role played by agriculture in the hillside economy and in the proposed transition to a permanent crop system, it is proposed that the Ministry of Agriculture coordinate implementation of the program.

### Specification of Agricultural Zones

Identification of appropriate crop zones based on economic and ecological factors is already well under way. This process must be completed to provide the operational basis for coordinating actions by all agencies concerned. The zones, including zones for annual crop production on Class II and III soils (and Class IV in special cases), should be specified precisely and agreement reached with local and national authorities to focus development resources in accordance with the needs of each zone. In many cases, this will require phasing out or redirecting resources currently aimed at inappropriate crops and activities. Although the government should not attempt to regulate the decisions of individual farmers and entrepreneurs, government assistance, in the form of extension, credit, or technical advice, should be directed to crops in the approved zone cropping pattern.

### Creation of a Mechanism for Coordination

Implementation of a hillside transformation program based on agro-economic zones will require close cooperation of all agencies involved in hillside development. It is recommended that two bodies be created to achieve this goal:

- An interministerial coordinating committee composed of representatives of all agencies active in hillside agriculture and natural resource management, under the chairmanship of the Permanent Secretary of the Ministry of Agriculture. The role of the committee is to formulate operational policies, set priorities, and develop coordinated work plans.
- An executive directorate for hillside development reporting to the PS/MinAg and charged with the responsibility and authority to implement the strategy and with day-to-day coordination of the activities of the various agencies involved and resolution of conflicts in land use.

## Policy Framework

Ultimately, small farmers will accept a transition to permanent crops and pasture as the basis for hillside agriculture only if it is profitable for them to do so. Access to inputs and market outlets (particularly through the private sector) and the price structure they face will have at least as great a role in shaping their decision as will direct government interventions such as extension services. Therefore, it is critical that the policy framework support this transition by:

- Putting in place the conditions and incentives that will make permanent crops economically attractive; and
- Directing government resources (research, extension, etc.) toward uses consistent with the desired transition.

Given the limitations of Jamaica's domestic markets, import-export policies are especially important. These policies must support local initiative but must not favor certain activities at the expense of reduced profitability and competitiveness for the majority.

### NEXT STEPS IN PROGRAM DEVELOPMENT

Six steps should be taken in the short term to begin implementation of the strategy:

#### 1. Revision and Adoption of the Strategy

The first and most critical step is to complete the process begun with the hillside strategy workshop. This requires that the strategy as outlined in this paper be:

- Further discussed at the technical level within the Ministry of Agriculture and other concerned organizations;
- Approved at the policy level, both within the ministries involved and at the level of the Prime Minister; and

- Made operational by issuance of appropriate directions to the various agencies involved in strategy implementation.

## 2. Further Development of Hillside Zone System

The initial effort to define broad agricultural zones should be completed as soon as possible to provide the basis for future action in the program areas identified. This will require a streamlined planning process to:

- Complete the preliminary determination of the crop mix appropriate for each area on economic, technical, and social grounds, based on available information;
- Consolidate each regional pattern into a national production mix and validate this mix in the light of available information on markets, input supply, food needs, etc.; and
- Revise the regional patterns to produce a reasonable national pattern.

The zone system must be viewed as a practical guide for government action, not as a pattern that should be forced on the farmers or as a theoretical ideal to be admired in the abstract. It is up to the government to create the conditions that will motivate farmers to adopt the desired pattern in their own best interest.

## 3. Mobilization of Local Support for the Strategy

The lack of involvement at the local level has been a serious failing in past hillside development programs. Development of the regional patterns outlined above, therefore, should involve local leaders within the community as well as the local levels of the various implementing agencies. This approach will assist the planners by mobilizing local expertise to supplement existing information sources and will begin the process of reorienting the agricultural leadership away from a continuation

of past policies in the hillsides. Consultations should be on an informal basis, possibly by conducting regional workshops similar to the national workshop completed in June 1984.

#### 4. Identification of Options for Tenure Reform

Although there is broad agreement that security of tenure is a prerequisite to sound long-term management of the land resource, the existing system for registering land ownership is not adequate to the task of providing clear title to all present owners within an acceptable time frame. Given the cost per farm and the long delays involved, it is not desirable simply to expand the current system. The cost, whether borne by the individual farmer or by the government, is too high to permit this approach. Therefore, it is necessary to identify the legal and procedural options available for granting titles on an island-wide basis. Although the resulting titles must be acceptable for purposes of obtaining credit and selling the land, it may be possible to identify mechanisms that require fewer and less costly steps than those now mandated (formal survey, notification, gazetting, etc.).

The system developed must be applicable to family land, government land, and community land as well as freehold areas. Much more than an improved system for government settlement schemes is needed to support development of an active land market capable of transferring land to those who will use it in the country's best interest and be capable of supporting this use by facilitating credit, consolidating holdings, and making long-term investment.

5. Examination of Factors Limiting Farmer Acceptance of Permanent Crops

A review of the current situation should be conducted to determine the factors that currently limit farmer willingness to adopt a production pattern on steep land based on permanent crops and pasture rather than on annual crops. This review should determine which of the following (or other factors) are the principal constraints to expanded permanent cropping and recommend actions to reverse them:

- Policies that limit farmer profit from tree-crop and hillside livestock production (encouragement of cheap imports?);
- Policies that discourage investment in permanent crops (land titling, long-term lending);
- Policies that discourage investment in processing and input supply for these products (taxation?);
- Technical gaps that make these crops unattractive economically (lack of disease control?); and
- Other barriers in the areas of markets, infrastructure, input supply, and credit that limit farmer interest in substituting these crops for annual production

In addition, the evaluation should consider whether factors outside government control make permanent crops unattractive, by asking questions such as:

- Is there a limitation on the market for these products, so that increased output could not be sold at a profit?
- Does the farmer have sufficient labor available to produce these products economically?
- Are these products profitable, assuming existing market distortions are removed?
- Are they more profitable than annual crops?
- Are these crops technically feasible on the lands under consideration?

The evaluation must take a realistic look at the feasibility of expanding permanent crop areas and the actions needed to push this transition forward as rapidly as possible.

6. Creation of the Coordinating Committee and Executive Directorate

Discussions should be held among the agencies involved to determine:

- Membership of the committee;
- Procedures for operation of the committee;
- Role of the committee in resolving disputes and setting priorities for action; and
- Composition and responsibilities of the directorate.

On the basis of the agreements reached in each of these areas, the committee should be formally established, together with the executive directorate to support its operation.

#### ROLE OF DONOR AGENCIES

This is to be a Jamaican national strategy for hillsides and should be refined and implemented within the government framework recommended by the strategy workshop. Once the program for the implementation of the strategy is established, the requirements for donor assistance can be determined by the government and proposed projects can be identified for donor consideration.

Several areas of potential requirements for technical assistance were identified at the workshop, including land titling, management of farming systems research and extension; export crop marketing, horticultural crop development, fast-growing tree production, small-scale livestock enterprises, watershed management, and credit management. Many of these subjects are now included in existing projects but could be supplemented or redirected to conform to the new hillsides strategy.