



Economic Policy and Sustainable Rural Development

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Editorial

Traditional approaches to sustainable development have tended to focus on natural resource management. While the focus continues to be on environmental preservation, the concept of sustainable development has been proposed as the most appropriate mechanism through which a balance can be achieved among the desirable objectives of economic growth, environmental preservation and social equity. Over the period of the mid 70s, to mid 80s, many countries, including some in the Caribbean, experienced real economic growth. However, this growth was not accompanied by significant progress in environmental preservation and social equity.

The 21st Century, is likely to be characterised by interdependence, integration and driven by trade which will present formidable challenges towards achieving this balance. Within this scenario, agriculture will be included in the global integration process and sustainability will depend, to a large extent, on achieving social equity. IICA views sustainable agricultural and rural development as a multidimensional process based on the interdependence of competitiveness, equity and good governance. Ultimately, all of IICA's interventions are aimed at achieving sustainable agriculture and rural development.

In an attempt to devise a strategy for sustainable agriculture and rural development, emphasis was placed on agriculture and natural resources during an IICA-sponsored Caribbean Training Course held in St. Lucia in August, 1997. While opinions regarding just what constitutes sustainable development varied, there was consensus that the natural resources of the region were under threat, that current agricultural technologies used in the region were inappropriate and that there was insufficient involvement of rural societies in the rural and economic development process. In order to redress the situation, various models of sustainable agricultural and rural development (SARD) have been developed and implemented with mixed successes. The workshop sought to review the experiences of applied SARD models in some Caribbean countries. It was anticipated that this exercise would go a long way towards strengthening implementation of SARD in the region. Success in this area would be a definite step towards the much desired goal of sustainable and equitable economic development.

Sustainable Agriculture And Rural Development*

Introduction

Since the Bruntland Report (1990) - Our Common Future - definitions of sustainable development have become the preoccupation of economists, planners, environmentalists, ecologists and resource-owning communities. The well-known definition of sustainable development offered by the Report states "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" However, even today a precise definition of sustainable development is still a much argued point, depending on the author and the organization involved.

The popularity of the Bruntland definition is by no means due to an achievement of better understanding of a concept. Instead the definition owes acceptance and importance to the political support it was able to galvanise, causing the issue of sustainable development to become the central point of discussion across the globe. As a result and perhaps for the first time since the creation of the United Nations in 1947, the developed and developing world, international organisations and local communities were talking about the same issue - a future that linked development to the integrity of the natural environment. Notwithstanding, and IDRC Report (1990) concluded that a definition offered in a World Conservation Strategy (WCS) report some time earlier, better captured the interrelated challenges of sustainable development. The definition embraced a concept that seeks to develop strategies and tools to respond to integration of conservation and development, satisfaction of basic human needs, equity, social self-determination and ecological integrity. Conservation, equity

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Sustainable Agriculture And Rural Development *continued*

and development are now the key words of conferences and meetings on sustainable development. It is quite possible that had this earlier definition been given the political acceptance of the Bruntland Report, progress towards a working concept of sustainable development, might have been more significant, today.

Meeting Basic Human Needs - The Dilemma

The two definitions above made reference to satisfying conditions with respect to meeting basic human needs. Herein lies the dilemma, and elusiveness of a precise definition. As human needs are strongly influenced by culture and the fact that on a global scale everything is interconnected poses a dilemma as the requirement for meeting one community's basic needs, invariably impacts sometimes negatively, on the capacity of other people to satisfy their own needs. For example, the effect of global warming will be felt in the countries of the north as well as those of the south and perceivably more devastating in the south. Yet the phenomenon is attributed to actions of countries in the north, as they seek to enhance abilities of their own present and future generations to satisfy basic needs. On the other hand, the bulk of the world's plant genetic diversity lies south of the equator. This is the natural resource base for future generations capacities to produce medicines, food and fibre. Notwithstanding, the thrust for development, to meet the needs of growing populations of the south has placed this important natural resource under threat, as large areas of natural forest are indiscriminately harvested.

Sustainable Agriculture Development

Agriculture is natural-resources dependent. It is the sensible exploitation of agro-ecological systems which give agriculture its productive capacity. The productive potential of any agro-ecological system is dependent on the

composition of soil water and biodiversity of the system. Any threat to the system or part of it is a threat to its capacity to support agriculture. It is more than a preoccupation with conservation of agro-ecological systems or threats to same. It is the result of the proper combination of human resources, technology, and identified and accessed investment opportunities, with productive potential of these agro-ecosystems. The product is a marketable output that is competitive and provides profitable returns to the different groups along the production and marketing chain.

Competitiveness and equitable profitability in the sector are therefore synonymous with sustainable agriculture. The great importance of the natural resource systems with sustainable agriculture is that it is the one requirement in the chain which is largely irreplaceable. It is the proper use and conservation of these natural systems which will afford access to basic human needs on a sustainable basis directly, or by way of the market system.

Considerations of equity creates opportunities for social self-determination. However, considerations of equity and social self-determination bring another dimension to the working concept, that of the changing roles of centralised institutions which impact directly on societies which are natural resource dependent and the accompanying transfer of responsibilities to local institutions. Agriculture dependent communities will begin to demonstrate tendencies towards sustainability or competitiveness, when such institutional shifts have taken place and fully integrated within strategies and plans for conservation and development of the natural resources.

Central Role of Sustainable Agriculture in Sustainable Rural Development

Rural people's needs are almost entirely satisfied by agriculture (including forestry, fisheries) and related activities. Therefore an achievement of sus-

tainable rural development signifies that agriculture and related activities are competitive and that new opportunities are being created for rural people to satisfy their needs. Furthermore it signifies a decentralisation of institutions and accompanying transfer of institutional responsibilities to rural societies.

The extent of rural poverty and the existing poor social services for rural people in the developing countries are clear indications that the agriculture sector is not competitive and is failing to contribute satisfactorily to welfare, despite its importance to rural life. An IICA Study (1990) supports the view that low investment and inappropriate technology use, are the primary constraints to viable agricultural activities. However, in the context of sustainable agriculture and sustainable rural development the causes are more deeply rooted. The sector continues to be seen as high risk, without form and without the capacity to enjoy economic prosperity. In order to change this perception, a broad set of policy actions intended to generate rural activities which are profitable and continuously responsive to the market will be required.

The development policies foreseen would need to be wide ranging and would result in appropriate institutional changes, and enactment of enabling legislation. They would also be understood and accepted by rural people. The policies would reflect the special situation of small island states which are natural resource dependent. This means that due consideration would be given to the limitations imposed on size and type of product, by the often fragile ecosystems of small island states.

In the Caribbean agricultural practices still tend to place emphasis on product intensity rather than quality. The effect of this so far is further depletion and degradation of the natural resources. Already, there is strong evidence that in the countries of the sub-region the fragile agro-ecosystems,

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Windows of Sustainability in Jamaica (WS): First Year Experience in Rio Cobre Watershed Area*

Background and Objectives:

Within the framework of efforts of IICA's member countries, the GTZ and local partners in Jamaica, the "Window of Sustainability" proposes to acquire concrete experiences with implementing concepts of sustainable agriculture and natural resource management, moving beyond the theoretical framework.

The objectives is to produce tangible, practical case of sustainable rural development, and develop a conceptual model for the promotion and evaluation of sustainable agriculture that can serve as solid foundation for the process of information and dissemination by IICA-GTZ and other participating entities; and provide training opportunities on the subject, both for technical staff from cooperation agencies and target groups.

Basin of the Rio Cobre River, Study Area:

The area is located in the northeastern part of the island, some 40km from the capital, Kingston. It covers an area of approximately 64,000 hectares, With rolling terrain and elevations no higher than 200 meters above sea-level (see Figure 1). The climate is humid tropical, with an annual rainfall of between 1,300mm to 1,900mm. The soils are deep, with good drainage, and gradients range between 0 and 50%. Population density is less than three persons per

hectare. The area has good roads that link the main population centers in the region. One third of local farmers belong to producers' organizations which market coffee, cocoa, sugar cane, pepper, nutmeg, mango, avocado, vegetables and various species of lumber trees.

Specific Objectives:

a. Analyze agricultural related natural resources management (forestry and water) policies and their influences on integrated management of watershed and generate policy guidelines for validating in the case study.

b. Define and implement operational mechanisms that ensure coordination among national and local NGOs and community-based organizations that are relevant to production, processing and marketing, and environmental issues.

c. Generate system of agricultural production with an interdisciplinary focus, the objective being to maintain production, productivity and profitability while avoiding negative impacts on the environment.

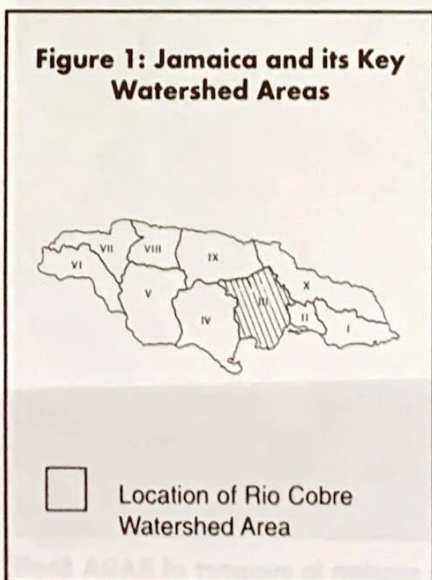
d. Monitor at local level with particular reference to major activities (within the domain of agriculture resources) that have an impact on the environment.

The Nature of the Problems (stakeholders' vision):

A participatory Quick Appraisal by stakeholders helped identify the causes and effects specific to the Rio Cobre watershed area. This analysis is presented in Table 1 was taken as a guideline for developing the overall plan of action.

Table 1: Identification of major causes and effects in the Rio Cobre Watershed Area, St. Catherine, Jamaica

| Causes | Effects |
|--|---|
| <ul style="list-style-type: none"> Poor extension work to provide team work No local research on crops No promoting of organic farming Low farmgate prices | Poor quality products Low level of income |
| No local enforcement of laws | Loss of energy alternative (wood, lumber, coal) |
| Land clearing Coal burning No animal feed alternative | Loss of natural resources |
| <ul style="list-style-type: none"> Poor agricultural waste management No landfill to place garbage | Contamination of natural resources (water, soil) |
| <ul style="list-style-type: none"> Unavailable inputs Low level of technology Weak technology transfer | Low level of income |
| <ul style="list-style-type: none"> Hand labour is expensive Lack of marketing for ag. prods. Lack of training to develop skills | Lack of alternatives to generate income. Investment cannot be recovered Abandonment of farm Unemployment Emigration |



Windows of Sustainability in Jamaica *continued*

Four Major Strategic areas to address the problems in Rio Cobre.

At this stage four key areas of actions are undertaken, namely: Establishing Policy Guidelines, Analyzing Sustainable Production Factors, Achieving Participation of the Target Group, and Preparing Environmental Management Plan and Establishing Monitoring Mechanisms in Rio Cobre watershed area. These four areas should generate concrete results in the WS.

Result A: Policies and their influence on sustainable development analyzed

The idea is to gather, analyze and summarize information concerning policies, laws, decrees and regulations that affect, positively or negatively, the sustainable development in the WS. On the basis of this information, collaboration will be offered in the design of new strategies that help to promote sustainable development.

Result B: Productivity of production factors on a sustainable basis, analyzed

The aim is to identify and analyze production systems, parameters of productivity (labour, land and capital), costs, benefits and external factors. In addition, alternative production methods based on criteria of sustainability will be proposed and developed.

Result C: Participation of the target group achieved

The target population will be clearly identified (this is the second time IICA is in this project area) including the Local Management Committees, and the Farmer Action Groups and the Institutional interests. The idea is to encourage the active participation of communities (stakeholders) and institutions, allowing them to develop their decision-making and administrative capacities for managing their resources at the Parish level.

In addition, seminars and workshops will be offered on specific subjects such as gender, environmental education, farm management, integrated management of agricultural practices and other topics, in order to train the communities and strengthen their capacity for self-management.

Result D: Environmental Management Plan, implemented

The objective is to identify and analyze the environmental effects, impacts and factors generated by production activities, through the use of Environmental Impact Evaluation Modules, in order to provide a basis for an Environmental Plan of Action in the WS.

What are the inputs of IICA-GTZ?

The TCA in Jamaica has assigned, part-time, the Farming System and Watershed Management Specialist, and IICA-CASS volunteer (six months); and IICA-GTZ has assigned resources for the full-time Agronomist, field inputs and the training for the target group.

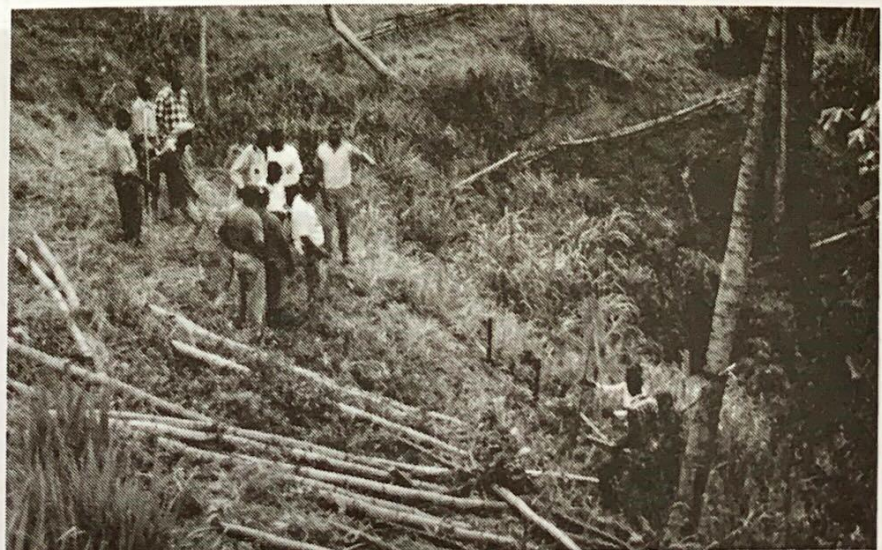
Activities in the WS since January 1997

a. **Strategic alliances** were established with local and national organizations and institutions. The main

alliances of the Window are The Rural Agricultural Development Authority (RADA), the Environmental Foundation of Jamaica (EFJ), the Natural Resource Authority (NRA), Forestry Department (FD), the Water Resource Authority (WRA), the Planning Institute of Jamaica (PIOJ) and others. The activities are organized with the participation and support of technical staff and farmers from the above-mentioned organizations.

b. **Policy guideline** document affecting the development of Rio Cobre has been prepared for subsequent evaluation with target group and to serve as a framework for the program implementation. This document is of interest for the major institutions mentioned above as well as Donor/Lender Agencies in the island.

c. **Research plots were established and field tests** conducted to evaluate the production systems and the parameters of productivity (bio-physical-economical). The major focus adopted is to define the agro-forestry systems that are sustainable in short and medium term that are environmentally friendly and, as well as, to help generate constant cash flow. These systems will be evaluated with a view to improving them and alternative practices that



The training session in support of RADA Staff

Windows of Sustainability in Jamaica *continued*

move towards sustainable farming systems. The evaluation (and monitoring) will take into consideration a number of parameters, organic farming, land husbandry practices as well as yields, income cost/benefit ratio and other aspects.

Examples of the first year trials are: Coffee and Coconut system (shade and income generating), Pine apple and trash barriers, introduction of short term crops such as peanut and pumpkin (later in orange orchard), and Mucuna Sp. For mulching, weed control and soil fertility building in gentle slopes.

d. In terms of the project's **Social Analysis**, participatory methodologies such as the Participatory Rural Diagnosis are used. The target group contributes to preparing a work plan, which addresses the problems identified in the diagnostic process. The project offers the necessary support for implementing the plan.

First year major focus has been to train the target group in technical, social, and environmental aspects. Emphasis has been placed on strengthening local organizations, especially the area of gender. Workshops and field days to enhance production activities; sensitization in environmental issues are conducted to develop an Environmental Management Plan. A series of practical training workshops has led to preparation of Micro-projects that address the major problem areas identified by beneficiaries examples of Micro- projects including agro-tourism, Water and waste management, goat production with agro-forestry, and conservation of protected areas).

Training key institutions in the area of Environmental Impact Assessment has been accomplished with the help of IICA-GTZ. The Environmental Management Plan For Rio Cobre area will be monitored next year based on the indicators developed with the stakeholders (see Figure 2).

What would be the future focus of the WS in Jamaica? (1998-2000)

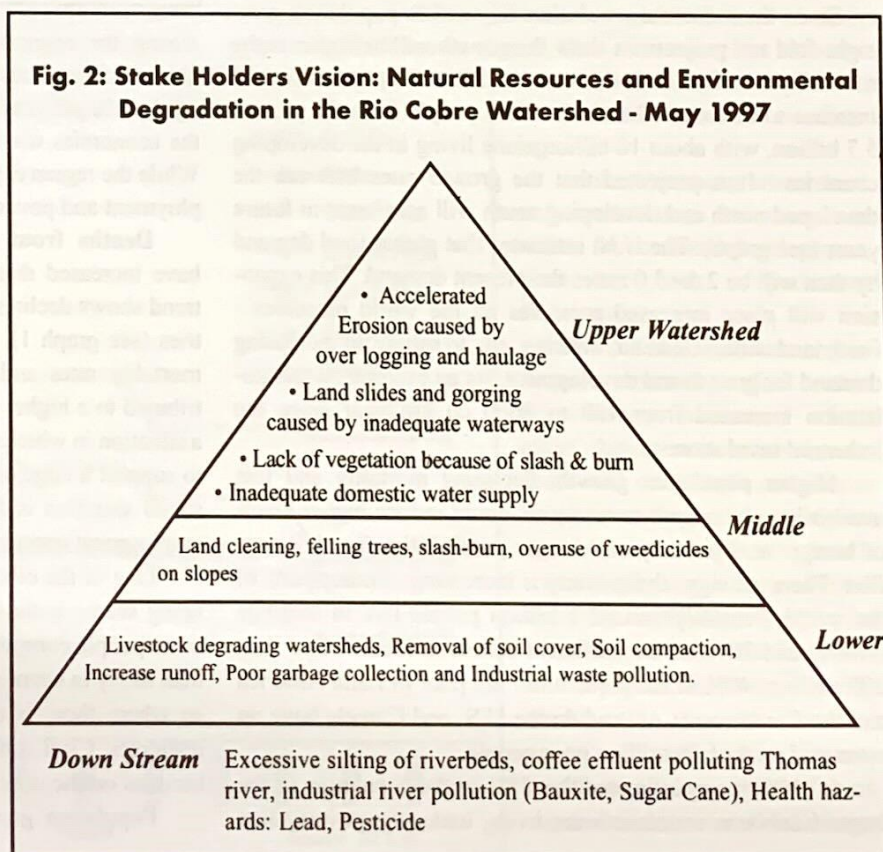
The first year efforts have been directed to bringing the stakeholders and interested institutions together in order to recognize and promote the need for the integrated, multi disciplinary and participatory approach to the Rio Cobre watershed management. The consensus refers the strategies and actions that promise to be sustainable and largely self-directed, with minimum but relevant inputs from the IICA-GTZ project. New alliances will be sought with institutions such as IPGRI-UWI.

The overall aim is to test-validate the policy guidelines established and introduce technologies that are environmentally friendly within the framework of micro-projects, which are currently being prepared by the stakeholders. Specific emphasis in technologies will be made, among others, in the area of organic farming, coffee pulp process-

ing, cover cropping, agro-forestry practices and the evaluation of crop biogenetic diversity in the watershed area (under the hypothesis that the indigenous cropping systems have been unsustainable). A monitoring system for environmental management will be finalized and implemented by the stakeholders and three major institutions (RADA, FD, and NRA) will be strengthened in the area of agriculture and natural resource management.

The efforts of Watershed in Jamaica should be considered useful for comparing, contrasting and complementing the experiences of managing other Watersheds which are in progress within the context of IICA-GTZ initiative in Central, South and Andean regions. ❖

**Bommat Ramakrishna
TCA in Jamaica*



Non-Sustainable Development: Some Causes and Effects*

Five years after the Summit of Rio and despite some progress and increasing awareness around the world, the recently held Earth Summit meeting in New York concluded that the sustainable development objective advocated in Rio is still a far-off goal. Many development thinkers argue that mankind needs to alter his lifestyle radically if economic and social development is to continue because several signs of "unsustainable" development have been appearing around the globe. Increasing population and poverty, resource degradation and depletion and economic degradation indicate that the world economy is moving along the path of non-sustainable development. Given the future demand for food, the relative availability of land, water, plants and the changes in climatic conditions, it seems that resources will be insufficient to satisfy the future needs "at an acceptable economic, social and environmental cost". Some view this future as consistent with a Malthusian scenario.

To a great extent, humanity has reached an unsustainable lifestyle. Both the poor and the wealthy are "accused" of contributing to unsustainability. On the second hand, poor people's lifestyles are characterized by the need to survive, and their limited access to resources and awareness of the adverse implications of their actions on resource degradation and depletion. This creates problems for the future. On the other hand, the lifestyle of the affluent is characterized by wasteful consumption and the lack of concern for resource and environmental conservation.

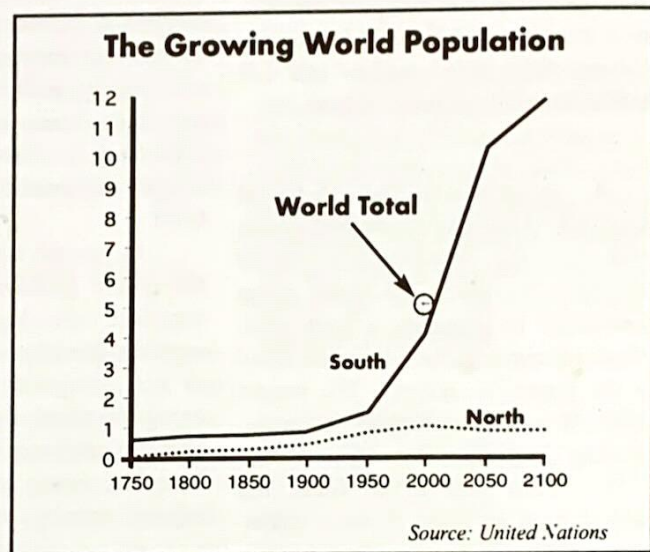
Population growth has been impressive in the last century. Since the industrial revolution the world's population grew eight-fold and projections show the growth will be higher in the next 50 years. By 2050, it is estimated that the population will increase to between 10 and 12 billion people from the present 5.7 billion, with about 10 billion alone living in the developing countries. It is projected that the growth rates between the developed north and developing south will accelerate in future years (see graph). The U.N. estimates that global food demand by then will be 2.5 - 3.0 times the present demand. This expansion will place increased pressures on the world resources - food, land water, clean air, housing, etc. to satisfy an increasing demand for growth and development. As an example, water utilization increased from 100 to 3600 cu./km./year since the industrial revolution.

Higher population growth, declining mortality and less availability and access to resources could induce higher levels of **hunger and poverty and larger possibilities for civil conflict**. There are signs that poverty is increasing in many parts of the world. Presently around 1 billion people live in absolute poverty and 20% have insufficient access to food. More than 200 million (40% of the population) are poor in Latin America and the Caribbean (LAC) while the U.S. and Canada have an estimated total of 38 million poor people.

In 1990, it was estimated that 55% of the population of the larger Caribbean countries were living under the poverty line

and more than the one-half were without access to safe water and sanitation. Estimates of the population living in poverty for some selected LAC countries show that it was about 75% for Haiti (1994), 70% for Guatemala (1995), 63% for Guyana (1994), 45% for Belize (1996) and 44% for the Dominican Republic (1994). In terms of poverty among social and ethnic groups, poverty tends to be concentrated among indigenous groups (more than 60%). While the percentage of poor in the rural areas is high, the situation seems to be worsening in urban areas also in many LAC countries.

In the LAC region, the poverty situation was aggravated



during the economic crisis of the 1980s, when the wages decreased by almost 50%, per capita income declined on average by 1% per year and the employment generation capacity of the economies was low to absorb increases in the labor force. While the region experienced some growth in the 1990s, unemployment and poverty are likewise increasing.

Deaths from malnutrition and preventable diseases have increased due to poverty and hunger, even though the trend shows declining mortality rates since 1970 in LAC countries (see graph 1). Population growth accompanied by lower mortality rates and a higher life expectancy have also contributed to a higher dependency ratio in developing countries - a situation in which a small portion of the population is required to support a large, non-working population. The economic and social situation is further exacerbated by the slow growth in employment opportunities and limited access to social services.

One of the effects of a growing population with resources being scarce is the increased likelihood for **civil conflicts**. As more people compete for the same resources, disputes are more than likely to occur over sharing of resources. This is even more so where there is uneven access to and distribution of such resources. Civil conflicts are likely to increase and place heavy burdens on the state and its legal institutions.

Population growth and over-exploitation have provoked

Non-Sustainable Development: Some Causes and Effects *continued*

resource depletion. There are severe environmental changes due to human actions, specially those induced by agricultural and industrial production. Since the mid-18th century, the methane concentration doubled in the atmosphere and carbon dioxide increased by an estimated 28%, resulting in a significant damage to the stratospheric ozone layer and relative warming of the seas. Between 1980 and 1992, carbon dioxide emissions increased in almost all the countries, including those considered to have a relatively small industrial sector such as Costa Rica, Colombia and Bolivia. In Latin America, the higher CO₂ pollution comes mainly from Mexico's industrial activities, which emitted an estimated 330 million, metric tons in 1992.

Deforestation, soil degradation and environmental pollution have together contributed to global warming, acid rain and ozone depletion. The most invisible effect and widespread concern is **global climatic change**. Pollution has contributed to deterioration in human health quality. Congenital malformation, pulmonary malfunction due to excessive metals, decrease in life expectancy and higher mortality rates are some of the frequent problems in those regions with high industrial emission. Inadequate investment and insufficient incentives to control contaminants have aided the process.

The increased need for land for agriculture production has accelerated **deforestation** globally. The planet lost 6 million sq. km of forest in less than 200 years due to agricultural activities (advancing frontier), cattle farming, legal and illegal forestry production, urbanization and inappropriate economic and environmental policies and strategies. Furthermore, it is estimated that between 60,000 and 70,000 sq. km. of agricultural land become unproductive every year. In the LAC region, the aver-

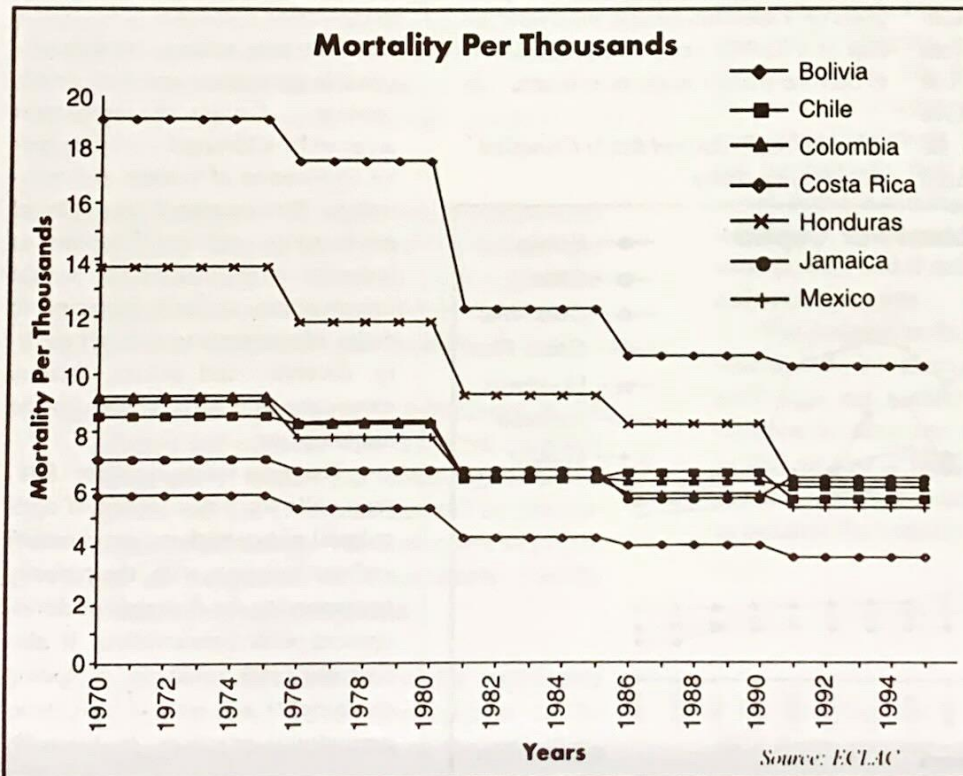
age rate of deforestation is high while per capita land availability has consistently declined (see graphs). Intensification of livestock activities has had a negative impact on natural forests. For example, between 1970 and 1989, Costa Rica's livestock and forestry policies contributed to an estimated 36% reduction of the existing forests and 2,200 million tons of soil loss. The estimated monetary loss of the forestry, soil and fishery resources was US\$3.7 billion, with degradation contributing to the loss of between 3.5% and 10.2% of GDP and a decline in agricultural GDP of 29% per year.

In general, deforestation contributed to erosion of biodiversity (species loss), sedimentation and pollution of rivers, destruction of habitats and marine life, salinization, ground water contamination, downstream effects, concentration of CO₂ in the atmosphere and global climatic change. In agriculture, the intensive use of chemicals could affect soil fertility and land productivity in the long term, in addition to the increased resistance of pests and diseases to such inputs.

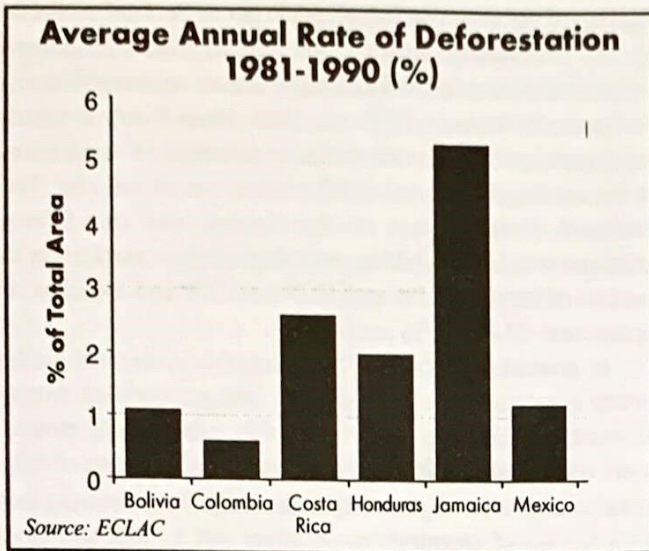
Poverty and economic activities have also aggravated **soil degradation and water pollution**. Added to this is the adoption of poor management resources. The consequences are an existing conflict between soil use and its capability, soil erosion, loss of soil fertility sedimentation and reduced water quality. It is estimated that the sediment load has increased three-fold in major river basins and 8 times in smaller ones. Water pollution has reached a level in which contribution of inputs of nutrients by humans at least equals the amount contributed by natural resources. Fishery resources have been affected by changes in water quality and over-exploitation. In general, the food chain in fisheries has become shorter, thus threatening the resource

base and economic survival of communities dependent on fishing.

In the Caribbean where land and coastal zone resources are critical for economic development, there has been a persistent deterioration in most of the islands' coastal zone. There are six major causes for this phenomenon: hurricanes which effect damages to beaches, near shore and coral reefs and induce beach instability; sand mining and destruction of sand dunes; removal of mangroves resulting in shoreline instability, degradation of sediments and nutrients and loss of marine life; water quality deterioration due to chemical waste and waste which in turn contribute to degradation of coral reefs, beach resource and marine



Non-Sustainable Development: Some Causes and Effects *continued*



by persistent deficits in the government budget and trade accounts (countries living beyond their means) and rapid debt accumulation. Although debt write-offs reduced the financial and economic burden for some countries, the incentives to borrow and accumulate debt rapidly exist in most countries.

life; construction activities; and a general rise which affect beach erosion.

Besides natural resource and environmental degradation, economic degradation is also a major factor in unsustainable development. Persistent deficits in the government budget and trade accounts, high inflation, overvalued currency, foreign exchange shortage and debt accumulation (internal and external borrowing) together contribute to economic degradation. The debt of lower income countries presently exceeds US\$1.0 trillion with interest payments exceeding US\$60 billion per year, resulting in a net transfer of resources from lower to high income countries. While economic stability and growth have occurred in many LAC countries in the 1990s, most economies are characterized

The above scenarios are not meant to provide a "doom and gloom" situation of the future but to increase awareness of some adverse trends that indicate development is likely to be unsustainable. Mankind has made tremendous progress and continues to do so to sustain life and the economic and social well being of society. New inventions and rapid changes in technology have contributed to higher productivity and consumption. While these factors will continue to influence the pace and direction of development, the trade-off between development goals on a substantial basis and preservation of a healthy environment are likely to become sharper in the near future. ❖

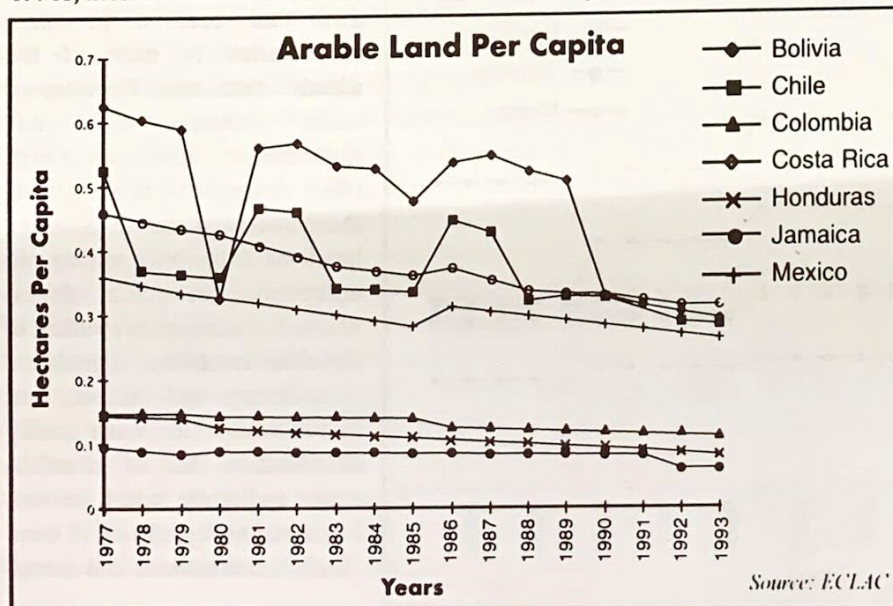
**Dowlat Budhram and Karla Crawford
IICA Headquarters*

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limited water resources and rich biodiversity are under threat. Despite this there is still too much complacency in attitudes toward the natural resource base of the sector. This is well demonstrated by the lack of recognition of the real value of the sector to the economy, to rural people and their activities and by extension to social development. Insufficient consideration is given to the conservation and reuse of water, the value of agro-industrial products and to systems which preserve biodiversity. Yet capacities in areas such as manipulation of the genetic diversity, environmental impact assessments and environmental costing continue to be inadequate and insufficient.

To implement the mix of policies and actions envisaged will first require a critical assessment and evaluation of human resources in the sector. This should be followed by recommendations for human resource development with a view to increasing capacities to formulate and undertake actions, towards sustainable agriculture and rural development. Among the important areas to be addressed would be better application of science and technology for increased agricultural productivity and conservation of natural resources. This would improve the sector's capacity to make adjustments to product quality, diversity and prices, thereby enhancing ability to remain in the market place.

The type of agriculture foreseen calls for a new breed of agricultural policy makers, agronomists and extensionists with the capacity to respond to the demands of development with conservation. It also foresees rural producers exploiting the benefits of a mix of indigenous agricultural practices, traditionally



Sustainable Agriculture And Rural Development *continued*

conservation oriented, with modern technology, to enhance agricultural productivity.

To achieve the above would be to create opportunities for rural people to improve prospects for economic prosperity. In this way a new profile of agriculture could emerge with the correct value placed on rural people and their activities. One could foresee possibilities for the persistent poverty now observed, between rural and urban people, narrowed.

Strategy for Sustainable Agriculture and Rural Development

The operationalisation of a set of actions to achieve sustainable agricultural and rural development will undoubtedly be a difficult undertaking and will require a carefully formulated strategy. A group of Caribbean agriculturists and environmentalists, found this to be so, when at a meeting in the summer of 1997, held in Saint Lucia, they braved the challenge of proposing a Caribbean Strategy for sustainable agriculture and rural development. An agreement on what constitutes "satisfying one's needs" and more so rural people's needs was never reached. The differences in perspectives of the Caribbean group, generated hours of arguments about the extent to which the natural resources could be exploited in order to satisfy basic needs of the region and still retain the capacity to regenerate themselves naturally.

On the other hand, there was common agreement within the group that the agricultural natural resources of the region were under threat, that the technologies used in agriculture were inappropriate and that there was insufficient involvement of rural societies in the entire process. Increasing poverty in rural areas was acknowledged with great concern, as was the relative decline in the social and economic value of agriculture to rural societies and to the whole economy. On that basis four important strategic measures were proposed.

- a. Improvement of the region's policy framework to better support sustainable agriculture and rural development. Necessary studies should be conducted to provide the basis for the development and adoption of such policies.
- b. Appropriate patterns for technology to be adopted and utilised, with increased emphasis on the role of science and technology on development and use of information and on communications technology. The importance of proper use of indigenous environmentally friendly technologies, was recognised.
- c. Support systems/mechanisms for sustainable agriculture and rural development to be strengthened, with emphasis on the institution-

al changes and increased administrative capacities to integrate environmental and economic consideration in development planning. The intensification of regional approaches to technical assistance programmes and support was proposed.

- d. Methodologies for identification of suitable indicators of sustainable agriculture and rural development to be improved and used more widely. In particular correct economic valuation of environmental, social and cultural assets and how development plans impact on them should be given attention.
- e. Promote rural societies participation in decision-making process in matters of conservation and use of agricultural natural resources. Furthermore with this empowerment rural societies must practice standards of accountability expected by the state or the private sector. Participation should be afforded effectiveness though the promotion of environmental awareness and sustainable development issues, within these societies.

An elaboration of this proposed strategy and its subsequent endorsement by the Ministries of Agriculture in the region could be an important step towards achieving sustainable agriculture and rural development. It would also advance the process started by another group of Caribbean delegates who met in Kingston in 1990, to propose sustainable development policies. The delegates concluded that it is possible for the region to achieve the necessary increase in growth for acceptable livelihoods, without crossing major natural threshold. Furthermore, they proposed that this can be done if economic decision-making is integrated with environmental considerations, if the wider society is involved in the development process and if culture is a precondition of development and social progress.

The progress in the discussion to arrive at a working concept is slow, but there are evident gains. This is not only a good sign but a clear indication that we do not have to embrace the same one definition of sustainable development. In fact all that is really necessary and important is that our practices meet perceived or real basic human needs, conserve or enhance the capacity of the natural resources.

** Barbara Graham
IICA Representative - OECS*

Approaches of Sustainable Development: The IICA/GTZ Model*

Introduction

One of the key challenges facing the agricultural sector of Latin America and the Caribbean (LAC) in the future will be to find ways to achieve and maintain production by making rational use of natural resources. This calls for a development model that combines economic criteria, concerns for equity and respect for the environment. Meeting such a challenge will require models that are practical, clear-cut and useful to steer and propel strategies for sustainable development. Any model selected must focus on solving problems associated with a population that is growing rapidly and finds its ability to participate in the production process increasingly restricted. Under today's conditions, evidence reveals that agricultural production is becoming more and more unsustainable. As it exerts even greater pressure, natural resources deteriorate and great pockets of poverty develop. Solutions must be found. This paper presents a model with potential solutions for sustainable agriculture.

Objectives

Strengthening IICA's institutional and operational cooperation capacity with respect to management of natural resources and sustainable agricultural development.

Strategies, Methods and Activities

- Development of a conceptual framework
- Institution building
- Training of counterparts
- Development of information and communication systems
- Identification and formulation of projects

Definitions of Sustainable Development

Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations.

Sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.
FAO, 1989.

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Brundtland, 1987.

Problems in Attaining Sustainable Development

- * Lack of clear concepts and objectives of sustainability.
- * Lack of practical examples of sustainable development.
- * Methodologies and tools are available but not applied.

Risks of Sustainable Development

- * In many cases, the term sustainable development is not clearly defined and is used to justify everything.
- * It is only related to the ecological dimension and loses importance in contrast with the economic and social objectives.
- * Many of the existing definitions are not operational.
- * Generally, it is broadly defined lacking content specifics.

The Valuation of the Future

1. Probably the major obstacle to sustainable development is the inability to think and act with the future in mind.
2. This inability is conditioned by several factors:
 - * Economic
 - * Political
 - * Institutional
 - * Cultural
3. To act as a function of the future implies planning and reflection.
4. We must (re)construct the capacity of making these functions.

Sustainable Development and Sustainability

- * Sustainable development is a politic and not scientific concept.
- * Sustainability has three dimensions: ecological, economic and social.
- * There is not an absolute sustainability; sustainability means the accepted (through consensus) balance between these dimensions.
- * This balance depends on the wishes and needs of society, and on the relation between the three dimensions.

Tools and Methodologies for Sustainable Development (Developed by the IICA/GTZ Project)

- * Diagnoses, current use and management of renewable natural resources.
- * Guide for the micro-regional diagnoses and development.

Approaches of Sustainable Development: The IICA/GTZ Model *continued*

- * Modules for the analysis of the environmental impact assessment.
- * Indicators of sustainability.
- * Material for training in sustainable development.
- * Management of natural resources (amren).
- * Integration of gender issue in sustainable development projects.

Windows of Sustainability (WS)

Purpose

Are practical examples that aim to demonstrate and utilize, in situ, the concepts and methods of sustainable development.

Objectives

- * Encourage the countries to exchange information and document existing experiences.
- * Acquire concrete experiences while implementing concepts of sustainable rural agriculture.
- * Produce tangible, practical cases, that can serve as a solid foundation for processes of information and dissemination.
- * Provide training opportunities on the subject.

Methodological Approach

- I. Establishment of several criteria used to identify potential projects or locations that could serve to implement WS.

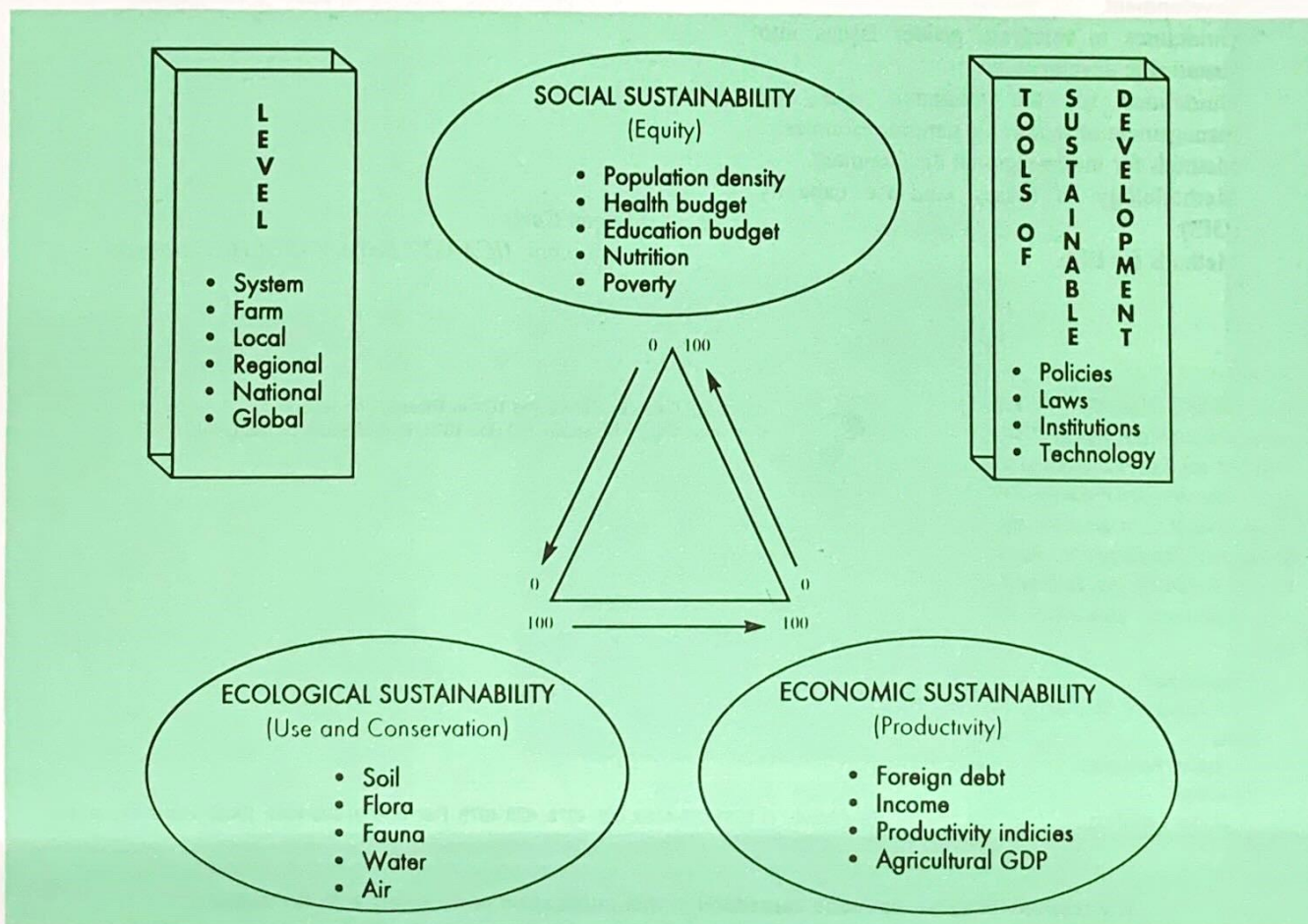
Important criteria used:

- * Institutions or projects that are interested in adopting this strategy;
- * Existence of financial, human and information resources.
- * Probability of success.
- * Continuity and sustainability.
- * Application of the IICA/GTZ methods.
- * Level of representativeness.

After such criteria's analysis, three windows were identified:

- Reventado River Watershed, Cartago, Costa Rica.
- Puriscal Region, Costa Rica.
- Copper River Watershed, Jamaica.

All three cases are cooperation's projects already in progress, with the IICA/GTZ Project collaborates.



Approaches of Sustainable Development: The IICA/GTZ Model *continued*

2. In 1996, the working group and the counterparts defined objectives, activities, instruments and strategies to be applied in these three windows.
3. The established planning matrix defines 4 expected results for each window:

Result A:

Policies and their influence on sustainable development, analyzed.

Result B:

Productivity of production factors, on a sustainable basis, analyzed.

Result C:

Participation of the target population in each area, achieved.

Result D:

Environmental Management Plan implemented.

4. Instruments of sustainable development used to introduce, promote and evaluate sustainability:
 - * Conceptual guidelines for sustainable development.
 - * Training materials on sustainable development.
 - * Guidelines to integrate gender issues into sustainable development.
 - * Guidelines for the diagnosis, use and management of renewable natural resources.
 - * Methods for micro-regional development.
 - * Methodology to assess land-use capacity (GIS).
 - * Methods for EIA.

5. The mentioned instruments and concepts have been theoretically elaborated; however, they still need to be used and scientifically tested.

The following procedures are planned to implement the windows in early 1997:

- * Analysis of policies and regulations that affect the sustainable development of the selected regions.
- * Identification and analysis of production systems, and development of alternative production methods.
- * Diagnosis of target groups and self-help strengthening.
- * Workshops on specific subjects.
- * Establishment of sustainable indicators for each dimension.
- * Identification and analysis of environmental impacts and factors generated by production activities, and elaboration of an Environmental Plan of Action.

6. The Project has generated growing demand for the implementation of new WS in areas including:
 - * The Amazon region of Brazil
 - * The Chaco region of Paraguay
 - * The Andean regions of Peru and Colombia



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