

CHAPTER 5

INSTITUTIONAL AND LEGISLATIVE FACTORS IN SOIL CONSERVATION

The major activities and problems arising in the watersheds of the Caribbean relate to forestry, agriculture, tourism and settlements. Water production and the protection of water sources, deforestation, soil erosion, flooding, pollution from agricultural chemicals and sewerage disposal are the major concerns. Watersheds therefore have to be managed to protect against the kind of use which would create or exacerbate these problems.

There are five elements which are critical to the management and protection of watersheds in the Caribbean.

- Policy and management planning;
- Political will;
- Institutional arrangements;
- Supporting legal instruments;
- Technical, financial and other supports for implementation.

This section is concerned mainly with reviewing the institutional and legal arrangements for facilitating or promoting the adoption of soil conservation and minimizing soil erosion and the pollution of water sources by agricultural activities in the watershed. It is concerned with forestry management as it relates to agroforestry, soil management, and the protection of water intakes against pollution. The reports of the consultants on land use and watershed management, and on legislation, to the Food and Agricultural Organisation/Tropical Forestry Action Programme (FAO/TFAP) were important sources of information for this chapter.

5.1 Policy and Management Planning

5.1.1 Policy

Caribbean Governments have explicit or implicit policies of watershed protection. The policy translates into sectoral policies with implications to watershed management or into prescriptions against several kinds of activities in the watershed which can damage the watershed or cause environmental degradation. There is, however, a need for more clearly articulated policies on watershed management.

5.1.2 Management Planning

Planning and management of land use and watershed development are *ad hoc* and generally ineffective. There are no comprehensive land use plans nor land zoning. Countries have periodically prepared National Development Plans, and Sectoral Plans. Some have also prepared (Trinidad and Tobago), or have in preparation (St. Vincent), National Physical Development Plans which have not been approved by Parliament and implemented. Land use planning and land zoning have not been addressed in a comprehensive manner.

Urban development, water and sewerage development, and forestry development are regulated, and approval is required before activities are undertaken. Agricultural development is not regulated and activities can be undertaken without approval. In fact, statutory regulations deliberately exclude agricultural lands from Town and Country Planning control and seek to encourage agricultural expansion.

In the Caribbean, a lack of an integrated system of planning, lack of legislation to control development, and lack of capacity to monitor development and enforce compliance are important deficiencies in land use planning. In St. Lucia, proposals for development are required to be sent to the Central Planning Unit (CPU), where they are dealt with by the Physical Planning Section. However the great majority of development plans are never sent or decisions are largely decided in the political arena. Physical planners make

recommendations to the Development Control Authority (DCA), but these are made on an *ad hoc* basis and there is limited contribution by Public Health, Fire Department, Ministry of Agriculture (MOA) in the case of agricultural development, and Water and Sewerage Authority (WASA). Because of the absence of a land use plan and no effective land zoning, agricultural land can be subdivided for housing without reference to MOA. Housing expansion increases water runoff, and in the absence of proper provision for drainage can increase flooding and soil erosion. There is need for a fully integrated group within the CPU to plan future land use taking into consideration, economic, sociological and environmental/ecological considerations.

In Barbados, Town and Country Planning Department approves proposals based on certain guidelines. They would seek advice where necessary from other departments with interest in land use or the environment e.g. Agriculture, Water Authority, Health, Works. The advice is based on *ad hoc* views of appropriate land use. There exists a pragmatic approach to zoning without a comprehensive plan.

In Dominica, like so many of the islands there is a lack of a coherent national land use policy and plan but planning permission is required (subject to exemptions made by the Minister) for any land development, excluding the use for agricultural purposes. This has led to unsuitable areas being farmed while more suitable lands are under utilized. Zoning restriction for various forms of agricultural land development need to be considered by Government. In St. Kitts a multiplicity of statutes relate to land use and the Town and Country Planning Act seems not to be implemented.

In St. Vincent and the Grenadines there is Physical Planning and Development Board which includes as *ex officio* members, the Chief Technical Officers concerned with the most important resource sectors. The Board has all the usual powers e.g. planning, land acquisition, development permission; may issue tree preservation orders, prohibit destruction of trees, forests and woodlands. A novel provision is the power to require environmental impact assessment. The Board was established by Act of Parliament in 1976 (The Town and Country Planning Act 1976) but this Act was repealed by The Town and Country Planning Act of 1992.

Land Use planning suffers from two types of problems:

- (i) Firstly, there is an institutional need to replace the existing government agencies which have limited or overlapping jurisdiction with an appropriately constituted land use body.
- (ii) Secondly, there has been a failure to integrate physical, sociological and economic factors in the planning process.

These shortcomings need to be addressed and sufficient resources provided for the execution of the mandates from the political directorate.

Policy and management planning must also address a range of constraints which affect the practice of soil conservation. These include:

Attitudinal constraints: farmers' reluctance to change, to adopt agroforestry which involves the use of trees on small farms.

Structural constraints: prevailing systems of land tenure, endemic political patronage, and institutionalised avoidance of enforcement of laws.

Squatting on Crown Lands: compromised by a political culture which ignores violation. Squatting is a serious problem in the Caribbean as indicated in **Section 4.2**. A policy and management plan to address present and future squatting are required.

Low priority to the forestry sector: inferred from the modest budgetary allocations for forestry management and development. There is need to emphasise the important intangible values of forest cultivation and the role of forest management in soil conservation.

Uncontrolled grazing: resulting in serious denudation of vegetation in the dry season and erosion in the wet season.

Lack of trained human resources: hampering management and law enforcement.

5.2 Institutional and Legislative Arrangements

5.2.1 Major Institutions

Appropriate institutional arrangements and legislative instruments are required for the successful adoption and implementation of soil conservation. Planning, management, provision of infrastructure, and technical support to farmers are all necessary functions which require appropriate, properly structured and functioning institutions. There must also be legal instruments to give authority to the institutions to carry out their functions and to enforce compliance. Soil erosion and conservation are important factors in watershed management and protection and in the Caribbean there are many institutional structures and arrangements already pertaining to watershed management and protection. This can be a problem if the institutional roles and jurisdiction to avoid overlap and conflicts are not clearly defined.

In the Caribbean, the Ministry of Agriculture (MOA) or Department of Agriculture is the major institution responsible for soil conservation in both public and private agricultural lands. In many States, a Department of Forestry or a Forestry Unit is located in the MOA and takes responsibility for addressing soil erosion in forested lands. The ultimate responsibilities are with the Chief Agricultural Officer (CAO) or Chief Forestry Officer (CFO) who assign specific responsibilities to the appropriate units or officers. The units are named and structured differently in the MOA in the various territories e.g. Field Engineering Division (Trinidad and Tobago), or the Land and Water Use Unit of the Agricultural Engineering Services Division of the MOA (St. Lucia), or the Land Use Unit (Grenada). In some of the territories, a unit in the MOA dedicated to soil conservation does not exist but an agricultural engineer or agronomist is assigned the responsibility. All agricultural extension officers are expected to have some knowledge of soil conservation measures to be able to advise farmers. In the event of special internationally funded projects a specific project team is established.

Forestry Departments only occasionally have active programmes in soil conservation although conservation of soil is specifically stated as one of the reasons for declaring forest reserves. However, the preservation of forests, reafforestation and action against deforestation have always been important features of their work programme, which have contributed to the reduction of soil erosion.

Because soil erosion can affect water intake zones, surface water reservoirs and the quality of water supply, the institutions which regulate water resources development are concerned with soil conservation. In all the Caribbean islands there are functioning Water and Sewerage Authorities (WASA). They have broad powers for water conservation and protection of water gathering grounds. Generally, WASA have full power and authority over all public waters, to conserve, augment, allocate, distribute or redistribute, and monitor water resources. Catchment areas are required to be retained as forest reserves and imposes on the CFO the responsibility for their protection, conservation and maintenance. In St. Lucia, WASA power is limited to requesting the CFO to protect any water gathering grounds threatened by deforestation and since the CFO powers are restricted to the small area of Crown Lands the effect is insignificant.

The MOA through its CAO or CFO is generally represented on the Board of WASA and this representation should be used more positively to:

- (i) foster interrelationships with other sectors e.g. Works, Drainage, Health which are also represented on the Board;
- (ii) promote programmes for soil conservation awareness, adoption and enforcement.

WASA should use their authority and power and the importance of water to the nation to enforce proper soil management and the protection of the soil against erosion.

The institutional arrangements cannot always be separated from the legislation and these are considered in some detail at Appendix A. The

institutional arrangements for soil conservation in Barbados is of particular interest and is discussed.

Legislation and Related Institutional Arrangements

The separate administration of the Caribbean in colonial times and post independence has led to the development of non-unified legislation. This has usually been developed in the context of the particular economic, social and political environment. A substantial amount of legislation that relates to activities in the watershed which affect soil erosion and conservation has been enacted decades ago and has not been amended or repealed to reflect the changes which have occurred. There are also institutional deficiencies. Consequently, some of the legislation is outdated, ignored and generally unenforceable due to inadequate technical personnel for monitoring and enforcing compliance, and sometimes lack of political will. Sometimes, the institutional roles and jurisdictional competencies are not clearly defined in several resource management areas e.g. development control and planning approval; allocation and use of public lands; conservation and protection of watersheds and water supply; pollution control and the maintenance of water quality.

In addition to legislation which directly pertains to agriculture, there are numerous Acts pertaining to town and country planning, forestry, water and sewerage (the aspects dealing with management of water runoff, storage and quality) and Crown Lands protection, are relevant to soil conservation. All territories have a Town and Country Planning Act, a Water and Sewerage Act and many have a Crown Lands Ordinance.

The Town and Country Planning Act is intended to ensure the orderly development of the towns in particular, and generally excludes jurisdiction over agricultural lands. The Act does not specifically address land use planning. The Water and Sewerage Act aims at protecting water resources through forestry protection and the prevention of inappropriate land use in water intake zones. This legislation should be extended to enforce the proper use of land in the watershed. The Crown Lands Ordinance protects these lands against misuse and often includes the rights of land acquisition for the Crown or of declaring forest reserves.

Although there are many Acts which, if enforced, can contribute to soil conservation, there are relatively few which focus specifically on soil conservation. Three of the more significant ones are:

Soil Conservation (Scotland District) Act (Barbados);

Barbados Agricultural Development Corporation Act (Barbados);

Forest, Soil and Water Conservation Act (Grenada).

These and the other pertinent legislation are presented in Appendix A.