

CHAPTER 3

SOCIOLOGICAL FACTORS IN SOIL CONSERVATION

Although farmers on hillsides in the Caribbean are aware of the need for soil conservation, the level of adoption and implementation is low. It was generally accepted that the development of technologies, the demonstration of those technologies and the provision of technical assistance were all that was needed to achieve implementation and sustainability of soil conservation. The belief was that if farmers can see the reduction in soil erosion and improved crop yield through the use of soil conservation measures they will implement the methods. The lack of success of soil conservation projects over many decades using this approach has led to the realization that soil conservation policy, the method of implementation, and human behaviour are more important than technology.

Soil conservation is not only a technical problem, it is also a behavioural or social problem. Socio-cultural and socio-economic factors and decision making methods must be considered in the design and implementation of soil conservation projects. It is a mistake to believe that because bench terraces are widely adopted by farmers in the Far East and the United States of America, they will be readily adopted by farmers in the Caribbean because a scientist says they are good and should be implemented.

The review and assessment of the successes and failures of soil conservation projects in the Caribbean (Gumbs, 1992) have revealed the social problems which have constrained the successful and sustained adoption of soil conservation. This chapter examines the important socio-cultural and socio-economic factors which must be considered and are relevant to the implementation of soil conservation projects, and assesses the actual experiences with the implementation of soil conservation in the Caribbean.

3.1 Socio-Cultural Considerations

The four cultural criteria in project implementation are:

- Identification of critical behavioural factors.
- Familiarity and closeness of project designers and technical staff with project events.
- Ability to measure and evaluate success in quantifiable terms.
- Evaluation of the role and performance of the project designers and implementing agency.

Identification of Critical Behavioural Factors

It is important to recognize that the critical behavioural factors must be identified and considered in the project design. With every successful project, social change which is necessary for successful project implementation, will occur. The acceptance of this change is necessary if the change is to be sustained and recipients are not to revert to their former ways.

Relevant information has to be gathered which will inform all aspects of project design and implementation. There are two ways in which this information can be obtained **(a)** by a review of existing literature; **(b)** data collection in the field. A very popular method employed today in collecting information very quickly and cheaply is the **Sondeo** which is a rapid rural reconnaissance or appraisal. The information gathered by this method is later verified and strengthened by conducting a Baseline Survey which is a more formalized method of data collection.

The questionnaire, discussions with the rural community and subsequent appraisal of the information should identify, *inter alia*, current systems, problems and constraints, reasons for certain actions, results of previous attempts to effect change, and attitudes which have been conditioned

by the physical, social and cultural environment or by tradition. The views of prospective project participants must be sought and considered, and the participants given an opportunity to contribute to project design.

Familiarity and Closeness of Implementors with Project Events

Project staff must be familiar with all aspects of the project and must be equipped to implement the project. Because all technical and social factors and their interactions may not be known at the project design stage, there may be a need to adjust the design of the project to meet the objectives. This must be allowed after suitable consultations.

Some of the more important factors which are necessary to ensure this relationship are:

- (i) knowledgeable and socially aware managers and agents;
- (ii) agents and extension officers must clearly understand the project objectives and the role the extension officer has to play;
- (iii) early appointment and continuity of staff;
- (iv) effective line of communication which must not be too long;
- (v) authority of managers to adjust or even redesign in light of experience;
- (vi) suitable extension officer/participants ratio for effective servicing and monitoring;
- (vii) ability to provide timely inputs in accordance with agreement;

- (viii) proper monitoring to ensure that project design is being adequately implemented;
- (ix) evaluation at important stages to show that the project has met policy, audit, and economic targets and legislative criteria, and to apply the lessons learnt to other projects;
- (x) project must be located close to participants i.e. in their locality;
- (xi) involvement of local people in service delivery and in bringing about changes in attitudes.

The organizations which can be involved are voluntary associations, cooperatives, traditional associations, women's groups, churches and other similar organizations. It is important to consider membership composition, leadership, meeting procedures, and the influence of such organizations when deciding on the role that they should play in project implementation. The leadership must be carefully chosen and therefore it is necessary to consider their social and economic background, the process by which they are selected, the terms of their office, the ways in which they are rewarded, and the process by which they can be replaced or removed. The important interest groups must be represented and attention must be paid to continuity or turnover in membership and the obligations of members. The frequency of meetings, procedures for calling meetings, methods of publicizing, regularity of attendance, the independence under which meetings are held and the influence and authority of those who attend are relevant considerations.

The aim of a successful soil conservation project is to have the behavioural changes which have been introduced by the project, institutionalized. When this occurs the specific project supports can be withdrawn or reduced to a minimum. Projects are frequently designed for three

to five years. While this time period may be adequate for infrastructural development projects (e.g. construction of facilities or structures, training), longer periods (10-15 years) may be a more realistic period when behavioural change is a factor. It is often not feasible to sustain or fund a project for such long periods and therefore realistic and specific targets must be set for a project which falls within the 3-5 year period. It is critical that the required behavioural changes are clearly understood and institutionalized by both public sector and community organizations in order to ensure continuity after the project. Soil conservation projects are frequently substantially subsidized, thus reducing the potential for long-term behaviour change. The view that farmers who practise soil conservation must be assisted by grants becomes entrenched.

Measurement and Evaluation of Success

For the success of a project to be assessed it is necessary to have measurable criteria. Input and output parameters which measure behavioural change must be quantified. Success must not be measured in terms of the number of farmers who have adopted the proposed practice but the impact of the cost of adopting the techniques on the farmers' income and the improvement of his standard of living or quality of life. The number of people who have been targeted and who have benefited have to be assessed. Socio-economic assessment is considered in **Section 3.2**. However, it must be noted here that for a farmer, money is the bottom line, and for soil conservation practices to be sustained they must result in economic benefits.

Evaluation of Project Designers and Implementing Agencies

The role and performance of project designers, implementors and participants are all important to the success of a project. A poorly designed project or failure of participants to cooperate will cause a project to fail regardless of how good the other components are. The project designers, the funding agency, in addition to the implementing agency and participants must be evaluated. These evaluations will allow the identification of the basis for success and failure. It will avoid similar errors being repeated in other similar

projects and prevent alienation of the community from participation in other projects. Conversely, successful projects, methods, or systems can redound to the benefit of other projects.

If a project is not to collapse after project funding and other supports are terminated, the organization's or recipient's implementation capacity must be improved or must be adequate. This must be assessed before the project is embarked on. It may be better to extend the project for a while longer if this would increase the chances of survival than terminate at the official termination date.

3.2 Socio-Economic Considerations

Analysis of economic efficiency or cost/benefit analysis must be carried out. Sometimes it is necessary to assess the economic efficiency of project alternatives. Lack of trained manpower and time often prevent the exploring of alternatives.

It is not always easy to obtain prices to assess cost/benefit. Some benefits may not be easily and accurately quantifiable. In addition, many distortions in the pricing system which are common in developing countries occur e.g. protective tariffs and quantitative restrictions of imports and exports; unrealistic exchange rates which undervalue or overvalue national currency; government controls over interest rates. These distorting factors can make appraisal of the social or economic benefits of a project based on actual prices both incomplete and inaccurate. If market forces operated freely in the presence of domestic and international competition, actual prices of all factors of production would give an accurate assessment.

Projects such as soil conservation which are socially profitable but which incur a loss on the basis of market prices may have to be subsidized as a matter of public policy. The kinds of subsidies and methods of implementation can have adverse social impacts which must be avoided.

Farmers in developing countries seldom keep good records of their activities which are essential for any accurate economic analysis. More attention must be paid to proper record-keeping both by farmers and implementing agencies if the true economic impact of soil conservation is to be obtained.

3.3 Influence of Sociological Factors on Soil Conservation Projects in the Caribbean

The economic impact of the soil conservation projects implemented in several countries of the Caribbean have not been evaluated and the information to permit this evaluation has not been collected. The projects can therefore only be evaluated on the basis of the number of farmers who have adopted and implemented the technical recommendations. The implementation of the methods promoted by the projects has not been widespread and usually does not reflect the effort and expenditure. Most of the conservation projects did not achieve the objectives of adoption and sustainability by farmers. Several factors are responsible for this and many of them are common to projects which have been implemented in the Caribbean islands. The main factors are:

(i) Squatting and land tenure

Farmers who do not have title to their land or are squatting do not readily adopt soil conservation if it costs them time, money and labour. Preventing soil loss is not a priority since they do not own the land.

(ii) Small farm size

Many conservation practices are considered unacceptable because they reduce the already small land area for cropping e.g. drains, terraces, some types of contour barriers, trees.

(iii) Engineering structures

Conservation based on engineering structure are often too costly and technically difficult for resource poor small farmers who comprise the majority of farmers on hillsides.

(iv) Educational level and trainability

The farmers on hillsides often lack formal education and therefore the training programmes must take this into consideration. The farmers cannot be expected to quickly absorb technically complicated measures, unless they are correctly presented.

(v) Top-down rather than bottom-up approach

The system of instructing farmers to adopt methods which are assessed by the technicians to be good for them, has not led to successful adoption. This approach does not always consider the needs, limitations and social context of the farmer. The bottom-up approach which involves the participants and relevant members of the community at the planning and implementation stage overcomes many of the difficulties.

(vi) On-farm demonstration rather than demonstration on Government stations

Demonstrations on Government stations in particular have not proved to be a successful method of transferring soil conservation technology. Farmers generally feel that they do not have the resources of the Government stations to implement the measures.

(vii) Labour availability and cost

The various farm activities compete with soil conservation for labour. Soil conservation does not take precedence when labour is scarce and/or expensive.

(viii) Economic benefits

Farmers are more motivated to adopt soil conservation for economic reasons than altruistic reasons like saving the soil for posterity. Some soil conservation methods e.g. bench terraces, often result in yield declines in the early years especially when the subsoil is exposed during construction.

(ix) Subsidies and dependency

Financial support provided for soil conservation leads to the farmers ceasing to practice soil conservation when the subsidy is terminated. They come to accept soil conservation as a measure which must be financed in total or in part by the Government. Some assistance seems to be necessary but the type of subsidy and method of administration are critical if it is not to be abused or to be ineffective.

(x) Poor project management

Early appointment of staff, fully trained staff with full awareness of objectives, staff continuity, timely inputs, available markets for the crops recommended have influenced the successful implementation of the projects.

(xi) Role of extension officers and agents

They must know and understand their roles and use the most effective methods for disseminating information and transferring technology. The perception that the messengers are not competent, reliable or sincere impacts negatively on the participants and reduces the chances of successful implementation. These factors have played important roles in limiting the success of the implementation of soil conservation and must be considered in future projects or programmes.