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# NETWORKING AS A STRATEGY FOR AGRICULTURAL DEVELOPMENT IN THE CARIBBEAN

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## BACKGROUND

The Caribbean Community (CARICOM) comprises the English-speaking territories around the Caribbean sea including Belize in Central America and Guyana in South America. The Windward and Leeward Islands together form the Organization of Eastern Caribbean States (OECS). The Windward Islands are Dominica, Grenada, St. Lucia, St. Vincent and the Grenadines and the Leeward Islands are Antigua and Barbuda, Montserrat and St. Christopher/Nevis. Also included are the more developed territories of Barbados, Jamaica, and Trinidad and Tobago.

The countries within CARICOM have a range of biological and physical resources as well as cultural, social, economic and organizational diversity. These features are characterized by diverse production systems in the various agroecological zones. The economies of these countries particularly the OECS depend mainly on agriculture and agriculturalists exploit the similarities among the countries in the production and marketing thrusts. It is important to note that the OECS countries are cooperating, although to a limited extent to develop production and marketing policies. Within CARICOM however, the need for a more organised collaboration is apparent considering the range of commodities which can be produced in the various countries. In addition, specialist activities in crop or animal production are carried out in specific locations. This enables component research in the commodities in countries where there is a comparative advantage. This will no doubt reduce the level of duplication and waste of resources which can occur. In the OECS resources are limited hence adaptive and applied research are conducted by CARDI in collaboration with the respective Ministries of Agriculture. The University of the West Indies is also involved with

the National Extension Services in technology transfer. In the other CARICOM countries the national institutions conduct research and extension activities.

Most of the CARICOM countries also have institutions which conduct commodity research, marketing and extension mainly in the traditional export crops. These activities have been concentrated on the large scale production of export commodities for example sugar and bananas. The efforts by the national institutions to service the small farmers involved in subsistence agriculture have met with limited success possibly because these farmers are constrained by a poor resource base. However, because of the contraction of the traditional export markets and the reduction in foreign exchange, small farmer production is now being promoted more aggressively.

In addition, CARICOM policy makers have been encouraging crop diversification and agro industry involvement. Even where some facilities exist as in Jamaica, Trinidad and Tobago and Barbados, the resources available limit the extent of research and extension activities.

The guiding policies for achieving the objectives of increased agricultural production and productivity are given in the Caribbean Community Programme for Agricultural Development (CCPAD) and the OECS Agricultural Diversification Plan.

The CCPAD suggests that the improvement of agriculture in the region could be achieved by the promotion of inter sectoral linkages, market improvement, institutional supports and an efficient mechanism for technology transfer. In addition, the OECS Agricultural Diversification Plan has listed a range of commodities, particularly horticultural crops, which should be produced for export.

Research and technology transfer in agriculture require information exchange, proper planning and implementation of ideas. However, the

uncertainties which face the large number and range of agricultural practitioners result in poor information exchange and inadequate collaboration. In some parts of the world, networking has been used to deal with such problems.

According to some proponents, networking has its greatest usefulness where the existing system is deficient but the problem is well defined.

This paper will therefore look at networking as a vehicle for mobilizing the agricultural sector particularly considering the lack of co-ordination which now exists and the problems of inefficient agricultural production.

Networking, as defined by the USAID (1985) is the establishment of a system or arrangements to work on a common crop, commodity or problem. It is seen by many involved in agricultural development as a mechanism for the transfer of improved technology to national programmes or institutions. Networking allows for collaboration and information exchange among research institutions or individuals or groups. Networks have been designed to meet specific conditions which include information exchange whereby ideas, methodologies and the results of current research are exchanged.

Within the framework of information exchange there may be scientific consultations which facilitate individual country research in common areas of interest, and information on the results are exchanged among institutions, groups or individuals.

In the case of collaborative programme networks, the countries involved, may have greater research activities dealing with information exchange, technical collaboration and training among participating countries. In dealing with the common problems, there is joint inter-country planning, implementation and monitoring of research among these countries.

## FEATURES OF A NETWORK

Plucknett and Smith (1984) described networks as formal and informal with a hub or nucleus which co-ordinates the administrative, financial and communicative aspects of the network. In informal networks, ideas and information are exchanged among individuals or groups who interact because of common interest. The formal system is characterized by reduced interaction between participants and the hub of nucleus. There is however, greater specialization among participants and a greater degree of autonomy. As

specialization increases, the system becomes more complex, sub-networks focus on particular problems and the satellite participants become more independent and interact among themselves.

The hub maintains its role for communication, administration and financial activities.

## TYPES OF NETWORKS NEEDED FOR THE CARIBBEAN

Cooperation is seen as integral to a Caribbean network, since in most countries the actors in the agricultural sector conduct agricultural activities with little or no reference to each other. The result is little information flow which is further compounded by the large number of diverse participants in the various locations. Collaborative programmes which seem to be most suited to the Caribbean have been known to engender greater benefits to participants by increasing their interdependence and the sustainability of their programmes.

In the design of national research and development programmes one would expect information flow among the farming community with the national, regional and international research institutions as well as links with institutional support agencies e.g. marketing, extension, credit.

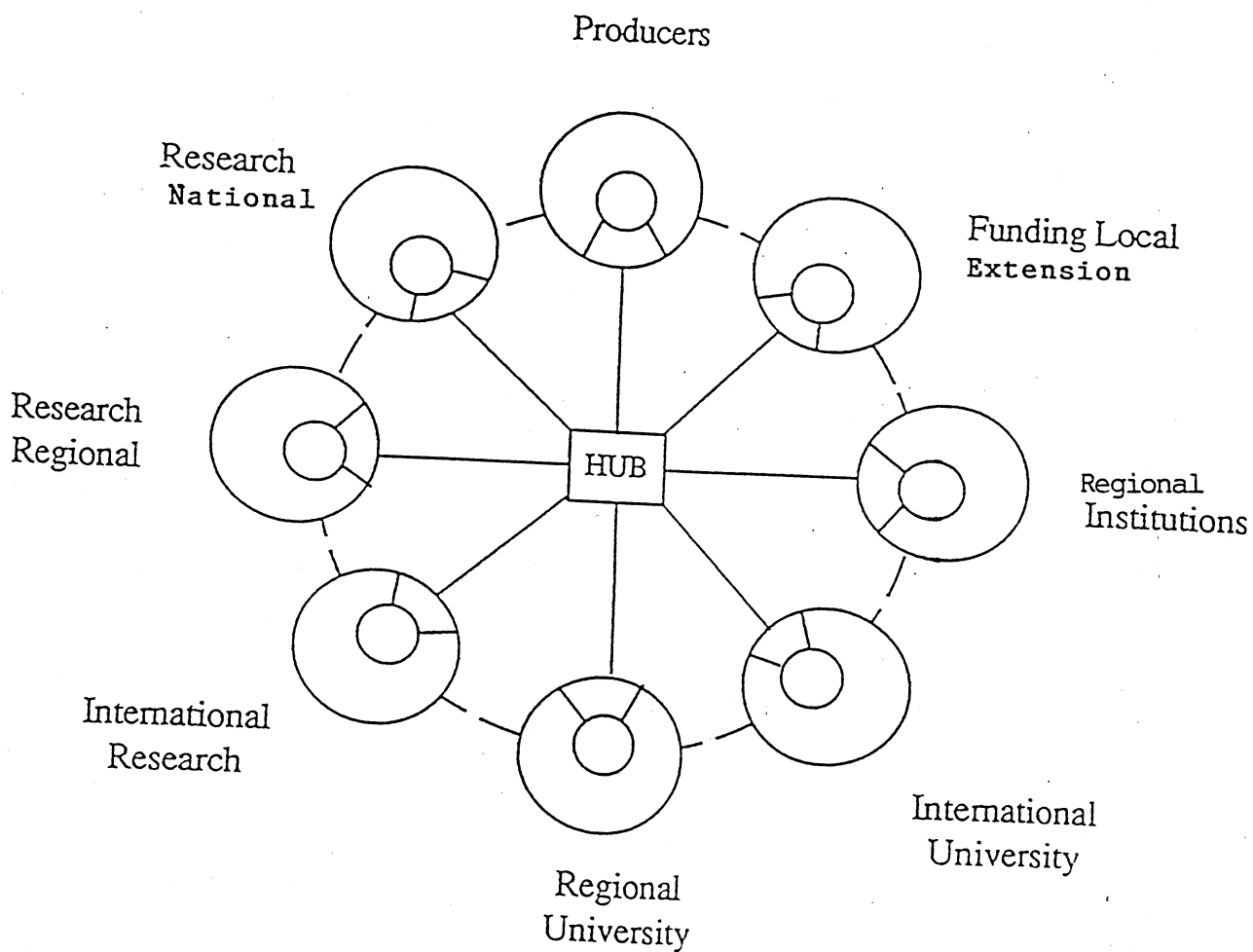
The benefits of a network in agriculture development in the Caribbean are obvious but the initiators of such systems must set specific guidelines for the network.

The network must encourage cooperation among participants or stakeholders and have the potential to generate knowledge and stimulate information exchange. The extent of cooperation among the national research institutions and agencies would depend on the specific objectives of any one participant, the commodities, the inputs, resources and outputs. Variations in these areas would require a mechanism for coordinating the resources and information needs. In addition, the information acquired should also be packaged and disseminated among the various participants.

Figure 1 is a schematic of a complex network which would be applicable to the Caribbean situation. The participants are the stakeholders and each would operate in a sub-network. The sub-networks are the satellites of the hub. The hub focuses on administrative, financial and communicative aspects of the network.

FIGURE 1.  
Conceptual Network for the  
Caribbean-Complex Networking

Information Exchange among participants---and the hub



## PARTICIPANTS OF THE NETWORK

The stakeholders have an underlying need to resolve common problems and attain common goals. Evidently the sharing of common interest would motivate cohesion among the participants.

In keeping with the concept of a collaborative network to deal with the disparities of the participants, the participants will form sub-networks each focusing on particular problems interacting among themselves for information, technical assistance and expertise. It becomes evident that networking in the Caribbean would be a mix of scientific, consultative and collaborative research activities in order to effectively deal with the large group of stakeholders. Table 1 gives a list of the participants in a Caribbean network and indicates the divergence of interest among the participants.

The producers are of various types; small medium and large-scale farmers and agro-industrialists. For each group of people, inputs and needs will be different. For the agro industrialist and large-scale farmers, information would be as critical as for the small farmers who are larger in number and engaged in more diverse activities. The network must also be designed to generate knowledge and encourage information flow among the support agencies, that is the various national research and extension institutions, commodity or marketing boards and the university. At the higher level there is need for coordinated activity with non-English speaking Caribbean countries with similar problems. The benefits to be derived from international agricultural research centres, international universities and regional institutions like IICA, CARDI and the CARICOM Secretariat cannot be underestimated. The latter dealing specifically with administrative and policy matters.

The provision of funds for the network would have to be the responsibility of the National Governments who should also strive to attract international funding. This however should be a coordinated effort agreed on by the hub of the network. Within the hub would be the network coordinator with administrative responsibility in terms of determining strategies for achieving the networks goals including implementation, monitoring, education and selection of staff for specific activities. As a result, the structure would accommodate the different areas of emphasis and information flows which are possible among the different interest groups.

## EFFECTIVENESS OF NETWORKS

The effectiveness of networks would depend on the problem being perceived as common to the territories and the desire on the part of participants to cooperate. Having defined the problem and set up systems to deal with it, there must also be effective feedback which would allow for appropriate and timely solutions to problems. This would eliminate or minimize wastage of time and resources and the possibility of duplication. By coordinating activities it will be possible to ensure that the limited resources and expertise available to these countries are optimally utilized and where systems are effective, benefits will outweigh the costs. The extent to which this occurs will be the yardstick by which to measure participation. Poor performance by participants could result in break down of the system. It is important that all participants are trained and possess the desired expertise to enable them to contribute to the system and continued participation is assured. Of equal importance is the availability of funds for operation of the network particularly for communication through electronic media, and travel among the territories.

The importance of the role of technology transfer in agricultural development cannot be overestimated and the network is seen as a means of effecting information flow between the farmer and the researcher. Important for technology transfer is a mechanism for accessing data especially indigenous type information and the dissemination of the information relevant for adoption of appropriate technology.

Farmers operate in a dynamic environment and they need timely results and information. The network should therefore accommodate phased activities so that interim goals are realised and the interim results and reports help to motivate farmers and researchers/extensionist. In contrast, the setting of long term goals which may not be readily achieved can cause loss of interest and lack of participation by the beneficiaries who would be reluctant to commit resources.

## EXISTING NETWORK

Currently there is limited use of networks in agriculture in the Caribbean. CARDI, by virtue of its role in agricultural research and development activities has initiated networks. On examining the structure and activities of CARDI, it is evident that potential for networking exists. This is based on the

**TABLE 1: PARTICIPANTS OF THE NETWORK AND THEIR INTEREST**

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<i>Producers:</i> small, medium, large-scale farmers, agro-industrialist	Research, Technology Transfer, Training
<i>National Ministries of Agriculture</i>	Research, Technology Transfer, Training
<i>National Agricultural Organizations:</i> e.g. Commodity Research Agencies Marketing Agencies and Boards	Research, Technology Transfer, Training
<i>Regional Institutions:</i> e.g. CARDI, Inter-American Institute for Cooperation in Agriculture (IICA), CARICOM	Research, Development, Administration and Policy
<i>Regional University:</i> The University of the West Indies	Research Education, Technology Transfer
<i>Funding Agencies:</i> National	Development banks Commercial banks
Foreign	External Donors
<i>International Agricultural Research Centres:</i> e.g. International Institute for Tropical Agriculture of Nigeria (IITA) Technical Centre for Agricultural and Rural Cooperation (CTA)	Research Administration, including Institutional Strengthening
<i>International Universities</i>	Research, Administration, including Institutional Strengthening
<i>Non-English Speaking Caribbean Countries</i>	Research, Administration, including Institutional Strengthening

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following factors:

- The regional nature of the institute and its involvement in agricultural research and development
- Collaboration with national agricultural research institutions
- Collaboration with international agricultural research institutions and international universities
- Collaboration with the University of the West Indies
- The institute's well trained professionals and support staff deployed throughout the region
- Access to donor agency funding and technical cooperation allows it to tap into

sophisticated techniques for problem solving.

- Available funds for operation, including training, local regional and international travel among the territories.
- Ability to tap various sources of information and the continuing awareness of specific problems in the region.

Given these factors, CARDI's use of networking includes applied research, investigative research with on-farm trials and farm validation of specific technology packages. A country with a comparative advantage in a particular commodity may be designated the centre of excellence; research into that commodity would be undertaken which would include characterization of the stages

onto commercialization. The activities are handled through field station and on farm experiments. Technologies which are developed are validated by selected target farmers, prior to being transferred to a wider community.

A schematic of a root crop network involving seven countries of CARICOM is shown in Figure 2. The problem has been clearly defined and the objectives of the activities stated by the National Governments. CARDI, as the executing agency takes responsibility for research, technology transfer and coordination of activities in each of the territories involving provision of germplasm, training and linking with other support agencies. In a Caribbean network this root crop network would be a satellite. Its effectiveness would depend on the extent of coordination by the hub when one considers the diverse activities in the various locations and that each of these activities will impinge on the production package which will be eventually developed. Communication among the locations, also coordinated by the hub, ensures rapid dissemination of the findings and recommendations.

In this way the applicability of the research would be tested promptly and decisions made will be relevant to specific farming environments. One should also note that the network could link with external agencies including The University of the West Indies, the University of Florida, the Inter-American Institute for Cooperation on Agriculture, the International Institute for Tropical Agriculture of Nigeria, the Ministries of Agriculture and farmers involved.

## CONCLUSION

Considering the extent to which networking has become integral to agricultural development in all parts of the world, it is possible that networking can be the vehicle by which the Caribbean can extend its agricultural capabilities. The examples set by CARDI in its attempt at networking, although at a limited level indicates that there is scope for networking in agricultural programs. It is evident that the divergences within the Caribbean could result in difficulties in establishing networks and much effort will have to be expended in planning and executing

networks. In pursuit of the ultimate goal of agricultural development, there should be strong commitment to initiating such activities.

An evaluation of CARDI's networks would provide consensus for the establishment of agricultural network in the Caribbean.

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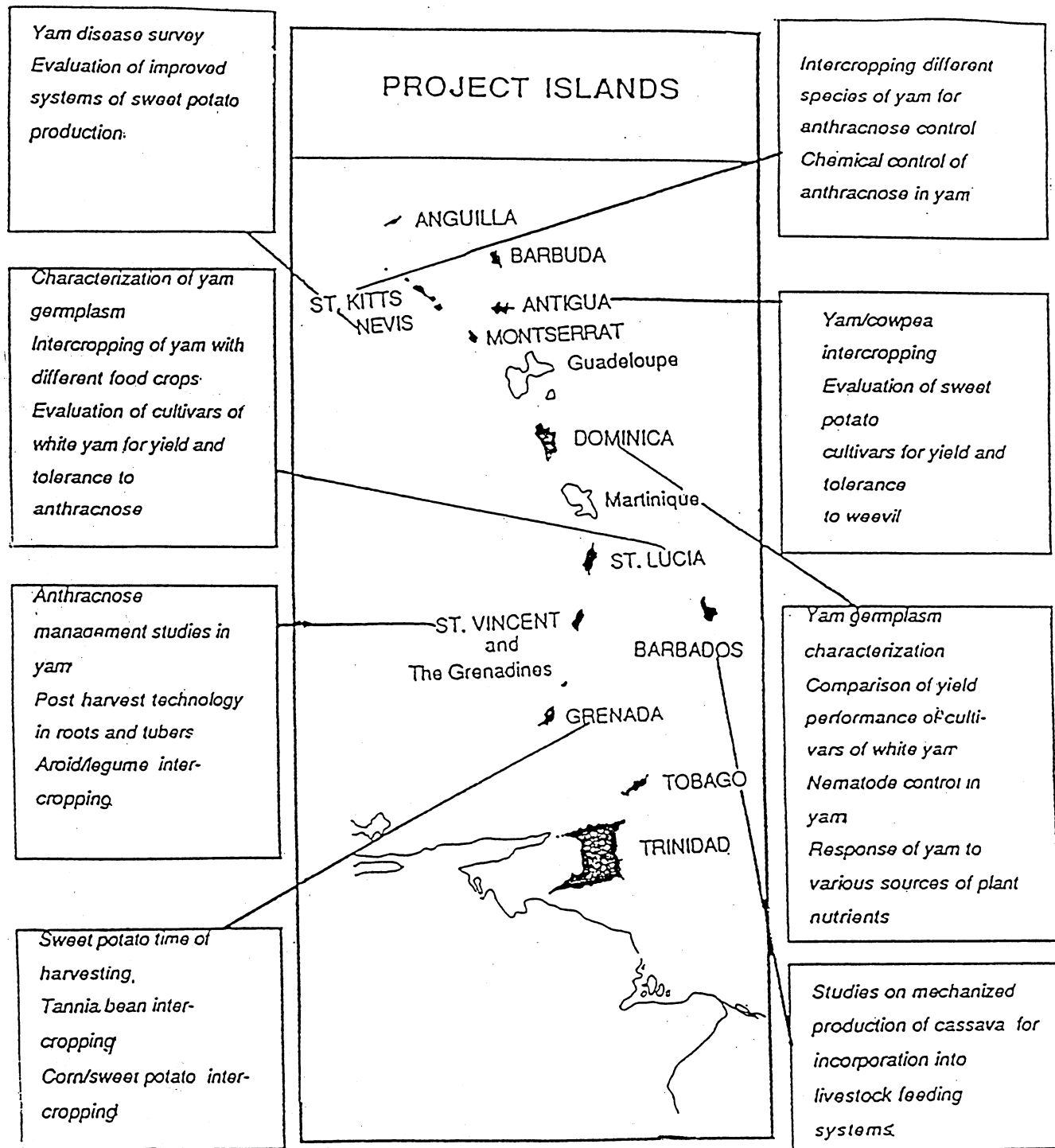


Figure 2: Networking of Activities in root-crop based systems in different project islands

Source : Dyer, Derrick 1989, Regional Mechanisms for the Generation and Transfer of Technology: The CARDI Experience Paper at the Third International IFARD Seminar, Cordoba, Agrentina 1989, CARDI, UWI Campus, Trinidad.