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STRATEGIES FOR MOBILIZATION OF RESOURCES THROUGH UWI FOR CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT

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THE UWI REGIONAL MODEL

The University of the West Indies (UWI) is perhaps the most successful regional university in the world, serving as it does, some 14 States in the Caricom Region. It is here predicted that as the 21st century unfolds, the UWI model will become increasingly important for the development of small states in many parts of the Third World.

This prediction is made on the basis of the following logic:

1. Universities are central to the process of development and maintenance of sovereignty of small States.
2. Small developing countries cannot afford to maintain a university of the quality needed for the realization of development and sovereignty.
3. The UWI model has shown that a regional university can serve the needs of both campus and non-campus Contributing States.

Therefore, it is in the context of a regional model for agricultural development that I should like to approach the title given me by the Agro-Economic Society, that is, "*Strategies for Mobilization of Resources Through UWI for Caribbean Agricultural Research and Development*".

I can see this model being applied to the many small countries of: The Middle East, East Africa, Southern Africa, Central America and South East Asia as it has already been adopted in The University of the South Pacific and The University of the French West Indies. However, in a certain sense, the major universities of Europe and North

America are also regional in character in that they contribute to development of a regional community of state interests in multi-state nations.

I hope that you will permit me the luxury of first treating very briefly with the notion that universities will have a central role for development of Third World countries in the 21st century, even as they have played a major role in the development of First World countries in the 19th and 20th centuries. Thereafter, I shall discuss briefly traditional university strategies, the Caricom environment and finally, the UWI strategy.

UNIVERSITIES AND DEVELOPMENT OF THE MODERN STATE

Universities have played a major role in societal development of the First World countries because they have been able to mobilize resources for the continued development of these societies.

Such societal development has been based on:

- (i) release of *intrinsic cultural, political, social and economic forces* for development, among the people of the society through
- (ii) supply of the ingredients for building the societal institutions, concerned with the release of these forces, but
- (iii) at the same time engaging in dynamic dialogue and constructive criticism of the work of the societal institutions.

The outstanding ingredients for societal institution building supplied by universities are the TETRAD of:

- educated leaders

trained manpower
new and improved options for policy and
technology
literature and other communications for the
preservation and dissemination of
knowledge.

The most enduring philosophy upon which modern First World development, catalysed by universities has been built, is that of the 17th century philosophers, Bacon and Descartes, who were the progenitors of the idea of the *Fusion of Science and Technology* for utilitarian purposes.

The alliance of science and technology for agricultural, medical and industrial advancement of society, fostered in universities, has been the hallmark of development in First World countries.

Many Third World countries have tried to emulate this paradigm for development, without paying sufficient attention to nurturing indigenous university and societal institutions, towards release of the intrinsic societal forces for development. Such forces cannot be imported, nor indeed can the culture of alliance of science and technology for development. Importation of technology, as all nations do, is a short-term palliative, but not a surrogate for internalization of the culture of science and technology.

UNIVERSITY STRATEGIES FOR MOBILISATION OF SOCIETAL RESOURCES

(a) *First World Universities:*

University strategies for mobilization of resources for development in the First World have included:

- (i) education and training of up to 35% of age cohort 20-24 at Bachelor's level, towards provision of trained manpower for Societal development. In Caricom the relevant statistic is less than 5%.
- (ii) identification and training of candidates for leadership in society in postgraduate programmes.
- (iii) generation of alternative policies and technology for development of society.
- (iv) generation and preservation of literature and other communications for dissemination of knowledge for societal development.

These strategies have traditionally sufficed

for the mobilization of resources for First World universities from the church, governments including the military, benefactors and sponsors, private enterprise, trade unions and other, and societal organizations. And academic structures for undergraduate and postgraduate education and training and research have been the instruments for resource mobilization. These instruments have led to the *socialization of university services* to the society from which the resources were mobilized.

More recently, universities in the USA, Japan and Europe have engaged in more aggressive injection of alternative computer, electronic and genetic engineering technology into society through an alliance of science, technology and business, in *business incubators and science parks*.

This mid-20th century university innovation threatens not only to make First World universities central to the process of development worldwide, but, in so doing to compromise the sovereignty of developing countries - unless there is an early response from their Third World counterparts. This latter alliance has led to the *commercialization of university services to society*.

(b) *Third World Universities:*

Many Third World countries have adopted the European university model, whereby university-based education, training and research activities, sponsored by Ministries of Education, are separated from research-institute based research and development activities, more closely articulated with the development process and sponsored by other sectoral ministries. The success of such a system depends on the consummate exercise of leadership and management skills, particularly in the area of resource allocation.

Thus in the case of agriculture, it often happens that resources are allocated for education and training by public sponsors in Ministries of Education, whilst alternative policies and technologies are demanded by public clients in Ministries of Agriculture, despite deployment of resources for research and development programmes to research institutes.

Therefore, it is an inescapable fact that university faculties of agriculture must compete, on the one hand:

with other tertiary and vocational educational institutes, e.g.
agricultural colleges, community colleges,
farm schools, etc. for national resources, on

the basis of societal needs for trained manpower; and

- with other university facilities for Ministry of Education resources, on the basis of student numbers and on the other hand
- with research institutes for agriculture sector resources at national, regional and international levels, on the basis of capacity to manage and to deliver research project findings for development, within a fixed time schedule.

Suffice it to say that, worldwide, traditional university faculties of agriculture have not been able to attract resources, adequate for the proper prosecution of their functions, in the context of this competitive scenario. They have lost to agricultural colleges in many developing countries and this loss has led to the foundation of many agricultural universities in Asia, e.g. India and in Africa, e.g. Kenya, Morocco and in South America, e.g. Venezuela. They have also lost research resources to national and regional research institutes as well as to the international version of the agricultural university, the CGIAR International Agricultural Research Centres.

The reasons for these losses, in the context of clear advantages of Faculties of Agriculture in multi-university setting will not be here analysed. Instead, strategies for mobilization of resources to meet the challenges of the 21st century in the Caricom environment, with particular reference to the UWI, Faculty of Agriculture, will be outlined.

THE CARICOM ENVIRONMENT FOR RESOURCE MOBILIZATION

The UWI, Faculty of Agriculture derives from a tradition of training of West Indian students at the science and technology-based diploma (DICTA) level. A few students were also allowed to enter postgraduate programmes at Associateship (AICTA) and at Higher Diploma (DTA) levels at the Imperial College of Tropical Agriculture (ICTA) on the St. Augustine Campus. Over 1924 to 1960, only 130 West Indians were trained in this system.

In close proximity on the same campus, but separate from the teaching staff, there also existed a research staff, dedicated to investigations on the soil resource base for agriculture as well as on export crops, e.g. sugarcane, cocoa, bananas and later on food crops, e.g. tropical root crop commodities. But the agricultural, production-based investigations were always linked to utilization research on cocoa fermentation, sugar technology

and banana storage.

The research team mobilized public resources for research and development by generating production technologies, e.g. disease resistant, high performance varieties and improved cultivation practices for cocoa, sugarcane, bananas as well as information on the classification and definition of the characteristics of the major Caribbean soil types. But equally, success in mobilization of private and public resources for research was due to formulation of utilization technologies for cocoa fermentation, banana storage and sugar technology.

The materials and technologies involved were disseminated worldwide, through the media of bulletins and the international journal *Tropical Agriculture*, for communication to farmers and entrepreneurs by colonial departments of agriculture. The circumstances of Caribbean agriculture, the St. Augustine Training and Research Institute, as well as the public sponsors of agricultural training and research have changed dramatically since the inauguration of the UWI, Faculty of Agriculture in 1960.

Thus, Caribbean agriculture has:

- diversified considerably towards production of food crops through small farmers and marketeers;
- suffered reduction of the profitability and foreign exchange earnings of export crops;
- experienced considerable decrease in the fertility of the soil resource both under export and food crop commodities, leading to threats to the sustainability of agricultural productivity;
- witnessed considerable growth in poultry production using imported inputs and technology, compared with cattle and small ruminant production;
- but devoted increasing amounts of scarce foreign exchange earnings to food imports.

The training and research institutes have:

- expanded internally into Faculties of Agriculture and Engineering; the latter housing pre and post harvest agricultural engineering and food technology;
- expanded externally to form CARDI (which has since decentralized to all of the 12 Contributing States) as well as separate Commodity Research Institutes for sugar, bananas, cocoa;
- satisfied the demand for trained manpower in the production of some 1100 B.Sc. graduates and 220 M.Sc., M.Phil and Ph.D.

- graduates since 1960;
- selected many new varieties and formulated improved practices for food crop production and storage and ruminant husbandry; but
- failed to formulate a new paradigm for agricultural development towards the 21st century.

In the meantime, direct public sponsorship

- has multiplied to some 12 sovereign Caricom governments;
- and is executed both *at regional level* through Ministries of Agriculture and the Caricom Secretariat to Research Institutes and Ministries of Education at the University Council to the UWI and *at national level*, through Ministries of Agriculture and Public Corporations to Commodity Research Institutes.

International sponsorship:

- is executed at regional level through Caricom and the UWI and at national level through Ministries of Agriculture
- very limited private sponsorship is executed through commodity associations, banks and companies.

In the context of this complicated regional environment, *a most important strategy for the mobilization of resources for research and development* is the joint formulation of regional and national programmes by researchers from all institutions, and the allocation of resources won, to those researchers with comparative advantage for execution of individual projects and programmes. This strategy has been proposed for the Caribbean Agricultural Research Coordinating Committee (CARCC).

STRATEGIES FOR RESOURCE MOBILIZATION THROUGH UWI

The Faculty of Agriculture is in the process of formulating seven strategies for resource mobilization in the 1990s and beyond as follows:

1. Diagnosis of generic and specific problems of agricultural development in Caricom for discussion with the national agricultural sectors in the Region.
2. Formulation of technology-oriented B.Sc. programmes in Crop Production, Livestock Production and General Agriculture, with substantial inputs of agribusiness training, on a multi-campus basis, designed to provide a new generation of Caribbean farmers, entrepreneurs and extension

agents in the Region.

3. Formulation of technology-oriented 1-year M.Sc. programmes in areas of identified need, in addition to existing M.Phil and Ph.D. research programmes, to produce a cadre of highly trained leaders and researchers, for the agricultural sectors in the Region.
4. Formulation of three inter-disciplinary research programmes, designed to address the major problems of the Region in areas of:
 - *Sustainable Agricultural Development*: including agriculture-based and environment-based, agro-forestry components to ensure the sustainability of agricultural productivity in the Region.
 - *Product Development*: including economic and technical (pre-harvest, post-harvest processing) components designed to realize food security and to generate foreign exchange earnings.
 - *Policy Evaluation*: including client-oriented and research-oriented components designed to assist regional agencies, national governments and commodity associations in the assessment and formulation of policies and strategies for agricultural development.
5. Introduction of a commercial component of Faculty activity including a University Agricultural (Holding) Company with:
 - an agribusiness incubator without walls; and
 - a commercial farming company as subsidiaries; and
 - a tropical agriculture publishing house (TAPH) to repatriate *Tropical Agriculture*.
6. Constitution of an International Centre for Tropical Agricultural Sciences (ICTAS) with inter-faculty units including Faculties of Agriculture, Engineering, Natural Science and Social Science as follows:
 - unit of sustainable agricultural development
 - unit for product development
 - unit for policy evaluation; and
 - the existing Cocoa Research Unit as well as the Tropical Agriculture Publishing House.
7. Formulation of an Outreach Programme with three major thrusts as follows:

- the existing Caribbean Agricultural Extension Programme (CAEP) with a farm-home management-systems approach to agricultural extension.
- a Continuing Education Programme in Agricultural Technology (CEPAT) of short courses in areas of identified need, designed to upgrade the technological and management skills of practitioners at all levels in the agricultural sector.
- a Programme for Coordination of Tertiary Agricultural Training (PROCOTAT) designed to upgrade the training in

agricultural technology offered at the technical colleges of the Region to 3 year Associate Degrees.

The Faculty looks forward to discussion and collaboration with all Governments, agencies, institutes, private and public business houses, farmers and agricultural entrepreneurs in the Region, towards recognition of the programmes described as part of the regional thrust for agricultural development. We are convinced that such recognition must be the first step in the mobilization of resources through UWI for Caribbean Agricultural Research and Development.