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EXPATRIATE FOOD TECHNOLOGY AND VALUE-ADDED CARIBBEAN AGRICULTURAL PRODUCE

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ABSTRACT

Contemporary international aid in primary agriculture to the Caribbean region is at the stage when a concomitant program of advanced food processing know-how is the obvious next agenda item. Processes for fruits and vegetables are universal, but expatriate delivery systems must be tailored to the Caribbean context in which the singular advantage over temperate-climate manufacturing is an over-abundance of heat. Thus, dehydration methodologies that harness this otherwise expensive and invaluable resource should be paramount over canning and refrigeration. In adapting the appropriate methodologies, aid institutions that are less inclined to tell "what's good for you", but are more inclined to ask, "how may we help you", should be the new partners. Where agricultural production is an important component of economic development strategies, there is no hope of success by imitating temperature-climate mechanisms. Uniquely tropical products and processes should be the new Caribbean dimension in international commerce. Cornell University's most recent initiative in international development, of the order of US$7.5 million, combines all these principles in technical assistance.

INTRODUCTION

Primary agriculture in the Caribbean region is at the stage when a concomitant program of advanced food processing is the obvious next agenda topic. Where agricultural production is an important component of local economic development, there is no hope of success by imitating temperate-climate models, given the disparate levels of organization and financing. Homegrown models must be constructed, mindful, nevertheless, of extraregional trends. Convenience, ready-to-eat, microwavable foods, facilitated by dehydrated fruits and vegetables, are recent consumer trends that cannot be ignored.

The Role of Biotechnology

In science and technology, Caribbean society (with the probable exception of Puerto Rico) trails temperate-climate societies by fifty years. At current rates of growth, the gap will widen, unless the former is catapulted by the infant disciplines of biotechnology into the 21st century, when, in historical time, all are at the starting gate.

In constructing regional, agricultural models, biotechnology research and applications pertaining to Caribbean fruits and vegetables, should provide the blueprint. The new disciplines, applied to the huge assortment of fruits and vegetables, should not be diverted by temperate-climate priorities, but should be governed by truly inherent initiatives that seek to commercialize native resources, including neglected fruits like the sugar apple, sapodilla, tamarind, etc. What is needed is a fast turn-over of germplasm for crop introduction and improvement. Toward this end, it is eminently more cost-effective to under-study institutions and databases already established in the region, as is the Tropical Agricultural Research Station of the USDA, located in Mayaguez, Puerto Rico. The USDA research budget is larger than the combined sum of the budgets of the States and Territories served by the Caribbean Food Crops Society. Notwithstanding political prohibitions, singular advantages besides dollar economies will accrue, through, for example, university collaboration, bi- and multi-lateral research and extension programs, and inter-personal associations across the political divide. Failing this, Caribbean crop studies will span decades instead of a mere couple of years.

New Agricultural Items of Commerce

The Tropics is synonymous with pineapples, bananas and sugarcane. These were the profitable harvests of the plantation monopolists whose shipping to and marketing in the temperate latitudes were guaranteed in advance. The post-colonial Caribbean has no such guarantees, and a new, diffuse class of entrepreneurs is constrained by import and export costs that tend to make their products relatively non-competitive on world markets. It is this modern agribusiness context that should redirect Caribbean farmers and nurserymen towards manufacturing high-value, small-volume, light-weight items begotten of primary agricultural produce. Thus, spices and condiments and their extracts, fruit concentrates and essences, vegetable powders, etc., food ingredients hitherto psychologically abandoned to the USA, Canada and Europe, ought to be the current, native, value-added, Caribbean products of international trade.

Universally, energy is the most expensive input into fruits and vegetables processing. The Caribbean has an abundance of natural (and free) heat energy, which is the singular advantage bestowed by Nature on the region over temperate-climate zones. Harnessing this resource to fuel the new fabrications does not necessarily mandate the importation of sophisticated systems. For example, dehydration is a simple process requiring no more than a concentration of heat (to vaporize moisture) and a current of air (to transport moisture away from the fresh material). In any event, imported delivery systems should be modified to suit traditional, open-air methods of drying agricultural produce.

Technical Adaptation

Heavy machinery industries seldom exist in the Caribbean, and most food-processing equipment will therefore continue to be of extra-Caribbean origin, designed primarily to accommodate larger scales of operations on an infrastructure that, in the case of computerization, makes no provision for large tolerances. Computers come to mind, because food-processing systems are now computerized, and they function on no more than a 15% voltage fluctuation, in contradistinction to power generation in the Caribbean where, customarily wider fluctuations are the norm. Simplicity, robustness and moderate capacity are considerations, before making purchases from abroad. The simpler the design and the less mechanically and electronically intricate is the equipment, the more adaptable it will be to Caribbean industrial requisites.

Final Perspective

Barring individual wealth, cooperatives are probably the best organizational model whereby modern food processing in the Caribbean may be administered to. It is understood that technology and technology transfer (especially from North to South) are expensive propositions, and the "coop" mechanism would be one way to generate the much needed investment capital from a pecuniary subsector of the regional economies. Temperate-climate expertise in coops will not always be transferable, because, it turns out, extra-regional models cannot always be reduced linearly to Caribbean dimensions. In assembling an indigenous model, or tailoring an outside one, the region should avoid international business entanglements that will obscure the first, ideal principle of development, i.e., lifting "underdeveloped" peoples out of persistent poverty, and submerge the post-colonial, entrepreneurial spirit in a melee concocted by global businessmen and commission agents, as they machinate their way towards single-purpose objectives. Aid that is less inclined to be predicated on "what's good for you", and more inclined to be predicated on "how may we help you", is the only worthwhile pursuit. The alternative will be a return to the status quo ante.