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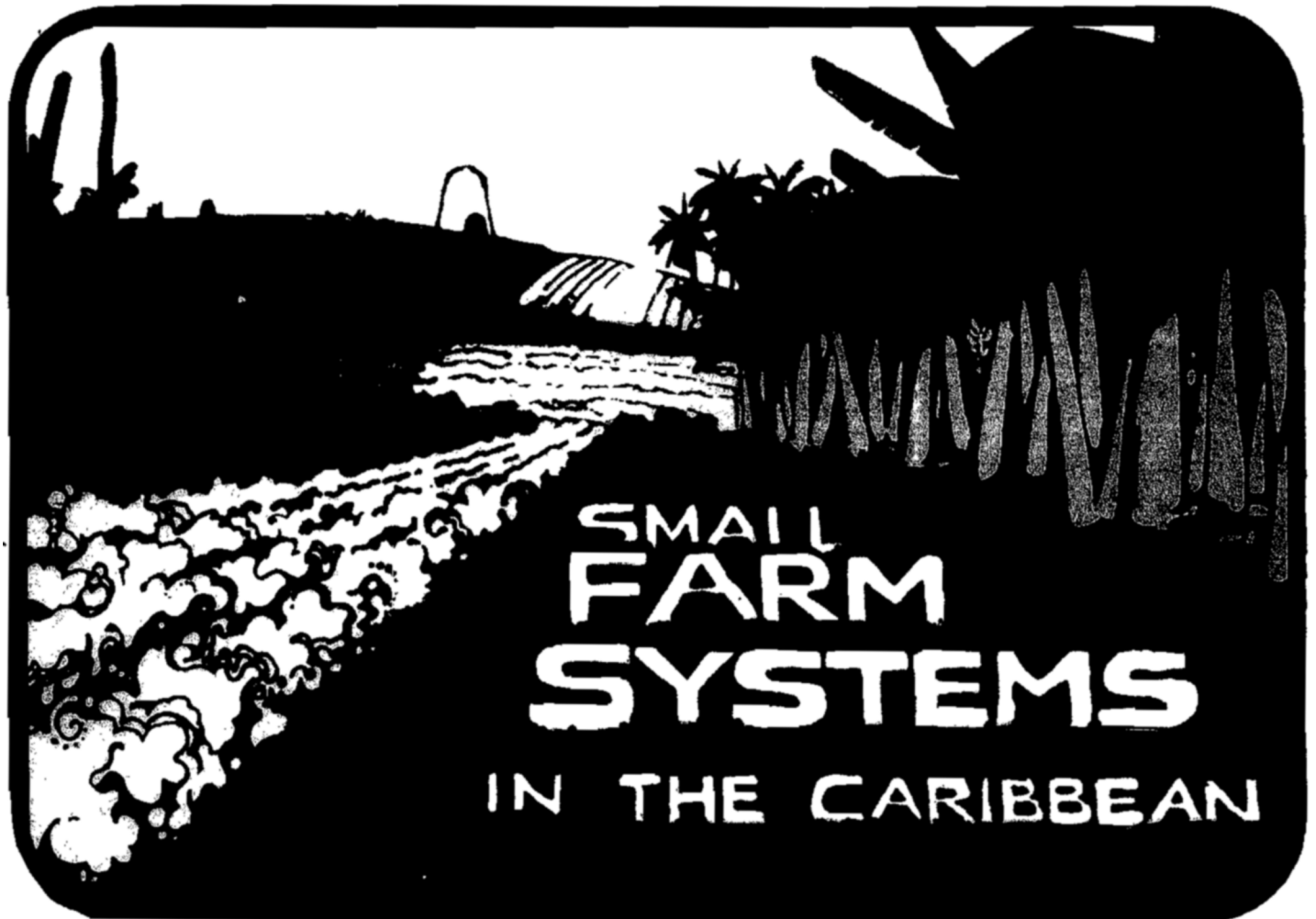
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Industrializing Small-Scale Food Processing

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A model for industrializing the local food supply is constructed on a partnership between government and the private sector, whereby the former limits its involvement to contributions of physical resources and data collection, and the latter assumes the responsibility for management. A restrictive, sometimes uncertain raw products base precludes all but step

growth from the initial product or product-class. The high cost of acquiring the processing units makes further investments of capital infeasible after the initial expenditure, except increments corresponding to advances in new products or product-classes.

History and circumstances have conspired to perpetuate the Caribbean region's status as a net consumer of resources. With reference to the food industry, pressures exerted by foreign exports into the states and territories continue to exacerbate the north-to-south disproportion. Modern concepts of food production will increase these pressures, as corporate capital and advanced technology converge on "rural environment systems" (Mulcahy, 1984), in anticipation of greater economies of production time and cost.

Regional food production mechanisms are still quite commonly a vestige of past mercantilism, whereby processing and fabrication were activities expatriated from the Caribbean production centers. Indigenous scientific research was a necessary minimum. Not surprisingly, therefore, many transplanted technologies subsequently failed (in under-developed countries), without having had the opportunity to augment the local manufacturing effort (Kassapu, 1979).

Food production in the developing countries as a whole increased only 0.2% a year, on a *per capita* basis, between 1961 and 1980 (Mellor and Adams, 1984). There are structural reasons for this lack of growth in the Caribbean. For example, frequently governments' allocation of public funds to agriculture has not been commensurate with the real cost of implementing and completing programs. Their often outdated and overcentralized involvement may also be a contributing cause of stagnation and failure, especially when popular participation is effectively barred (McCallum, 1980).

Food production, notably fruit and vegetable culture, in most of the region is generally confined to the primary activities of a helter-skelter peasantry who have little interest in, allegiance to, or knowledge of agriculture as a business. Their associations and cooperatives have traditionally protected narrow interests, and comprehensive planning has thus largely remained a bureaucratic exercise by ministries of agriculture. Given the small scale of projects and the limited access to finance and technology, an industrialized food supply will necessitate a revision of strategy in order to expand the operational base and supplement and complement the singular assets of each interest group.

In this presentation, a model of cooperation in food manufacturing is proposed between government, private interests and small-scale producers. The model has the objective of harmonizing divergent, sometimes conflicting perspectives, and thereby optimizing production, processing, storage and distribution of food commodities.

DISCUSSION

The primary production of food is already a *fait accompli*. Revisionism needs now to focus more on the secondary stage (fabrication), beginning with the processing of these raw materials. The new strategy should be underlain by two principles, *viz.*, (1) local ownership and management of the total production apparatus, and (2) exemption of technological criteria from political manipulation.

First Principle

Nationals cannot "move on" in stressful times, because they have nowhere else to go. Consequently, their only option is to persist and succeed, notwithstanding environmental and cultural impediments.

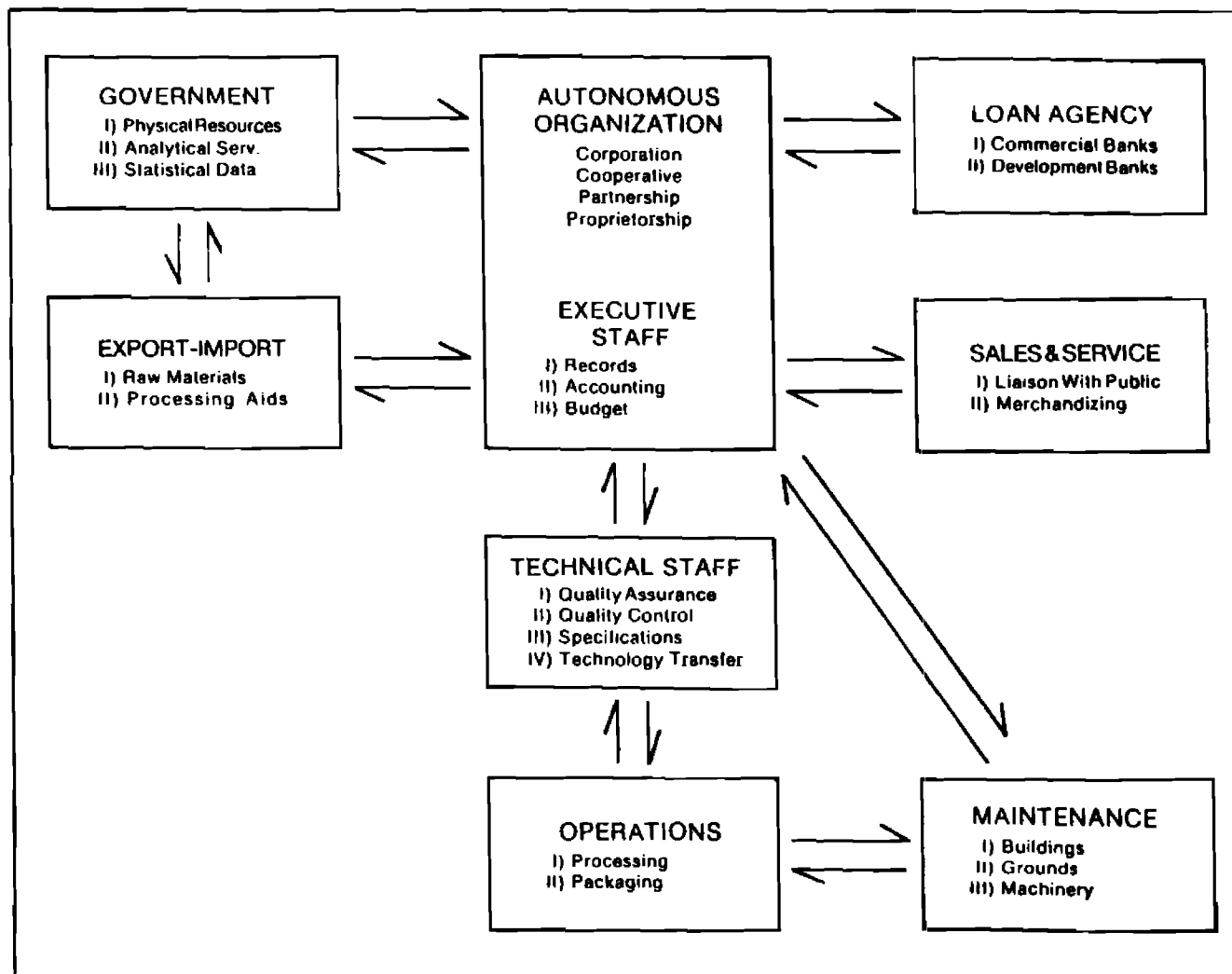
Second Principle

Industrialization is universally predicated on technological adaptation, which in turn is predicated on objective analyses. In a subjective, political climate, factual data are not dispassionately evaluated. For these reasons, it is mandatory that technology and politics be distanced at opposite poles in a non-exclusionary food administration.

Supplementation and Complementation of Functions

Food production in most Caribbean states and territories is a joint venture between government, the private sector and the banking community, among whom complementary virtues are equally distributed (Fig. 1). For example, government, the custodian of the people's land, leases parcels to the providers of labor in the private sector, who then proceed to a bank for funding. Neither by itself can successfully produce, harvest and market foodstuff. The perspective of each sub-sector is different, the first being equity instead of efficiency, the second being individual and family rather than national sustenance, and the third being stockholders' earnings, not a national economy. On the basis of a common mandate, *i.e.*, accountability for the nation's food supply, these separate interests may be integrated into a single entity exclusively focused on the most economical means of food production, processing, conservation and distribution in the national interest. The organizational arrangement outlined distributes responsibilities and authority in a way that avoids conflicts between otherwise divergent vistas.

FIG. 1. Organizational chart of a model food processing industry.



Technology manifests itself in a politico-economic framework, but nevertheless, and most importantly, the technical staff must be insulated from government and politics. Their security should be predicated only on their successes in native product research and development. The executive staff must be independent and strong enough to resist arbitrariness from the numerous institutions with which it must interact, while simultaneously deferring to independent technical thought from those whom it directs.

The Cost of Implementation

This subject is more appropriately discoursed by agricultural and food economists. The technologist should assist in defining the product-class, e.g., fruit and vegetable juices, that would be guaranteed to succeed. This strategy would insure completion of the first phase, while simultaneously generating operational revenue for stepwise growth into other commodity areas, e.g., tubers and meats, which require different processing systems.

Food processing presupposes the existence or construction of a factory. Given this facility, an adequate supply of raw products may derive from corporate agriculture as well as the local peasantry, including a network of small-scale entrepreneurs and cor-

rage industries engaged in pre-processing intermediate foodstuffs. Equipping the factory will depend on the nature and expected, perennial volume of the initial product class, and on the magnitude of the investment that will be adequate to accommodate it. The cost of capital will be determined by its timing and source. Hence, implementation will be a unique exercise, determined *in situ* by unique variables in a unique time context. Elements of a modern food industry are already in place albeit scattered throughout the states and territories. It remains for the incumbent regimes, genuinely committed to agricultural development, to pioneer the way out of a debilitating reliance on food imports.

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