Chapter 20
Diversified Integrated Farm Model:
Case Study – Plum Tree Farms, St. Kitts

Leighton Naraine
Clarence Fitzroy Bryant College, St. Kitts-Nevis

ABSTRACT

There is a worldwide issue in emerging economies with food security and increasing dependence on imported food from more developed countries. St. Kitts-Nevis and numerous Caribbean countries face similar circumstances. St. Kitts-Nevis is positioned to change this trend in its national economy and contribute to export with its Caribbean partners and perhaps further afield. Climate change, particularly pervasive drought conditions, present serious challenges but also opportunities to mitigate and adapt such adversities and accrue benefits to local farmers and related entrepreneurs if a model integrated farm is established with key contributing factors in its design such as productivity, flexibility, efficiency, and sustainability. An integrated farming system would compensate for low economies of scale in a value chain model, and linkages would sustain long-term stability and growth at the enterprise, sectoral, and inter-sectoral levels.

INTRODUCTION

This chapter begins with a review of the nature, trends, and characteristics of the diversified integrated farm model and similar models. We saw in Chapter 1 how the paradigmatic shift has been made from the industrial model of monoculture or extensive farming of a single or few crop types and livestock types independently, although there were industries to utilize by products of one as raw material for the other. That industrial model has led to environmental degradation and negative impacts on climate, ineffective processing and utilization of waste, marginalization of smallholder farmers in rural communities particularly in lesser developed countries (LDCs) in favor of more developed countries (MDCs), and ineffective in reaching the vast majority of the world's population that is undernourished. Although that scenario is complex in nature it may be simplified or categorized into three dimensions: 1. profitability

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of the majority of individual farmers and their livelihoods; 2. lack of social equity and status in society of smallholder farmers; and 3. detrimental environmental impacts to the extent of climate change and the loss of biodiversity and overall health and living conditions.

The more contemporaneous literature cites examples of farm models that promote adaptive capacity of communities to cope with the three dimensions (stated above) by addressing productivity, flexibility, efficiency, and sustainability, and their advantage over the industrial model.

THE DIVERSIFIED INTEGRATED FARM MODEL (DIFM): NATURE, TRENDS, AND CHARACTERISTICS

Howard-Hassmann (2015, in The Human Rights Quarterly) investigates the right to food in Venezuela for the period 1999 to 2013. She found that the state failed to protect this fundamental right. The state-run stores endured that food was sold cheaply and imposed price controls but the food supply was reduced and became extremely severe. Baptiste and Nordenstam (2017) relate the perceptions and action of villagers in the wetlands of rural Trinidad where drilling for oil and gas occurred. They show, contrary to general perception of mainstream researchers on environmental ethics in more developed economies, that villagers in rural wetland communities place high value and respond appropriately to the extent that they are capable with concern for the environment. They found that those whose livelihoods depended on the wetlands were more likely than others to perceive oil and gas drilling as dangerous to the environment and their livelihoods. They asserted that environmental concern was traditionally considered among the highly educated and wealthy people in most affluent countries. Their investigation referred to the finding of scholars who found that people residing in LDCs also have high levels of perception of environmental problems and express concern for the environment.

Blazy, et al (2017), investigating farm diversity with prototyping as useful for designing alternative crop management systems (CMS). They view prototyping methods inadequate to take into account farm diversity in terms of economic, social, and natural constraints. Instead, they propose a two-step methodological framework. Looking at Banana Crop Management systems in Guadeloupe (French Caribbean), the first step is designing a farm typology based on their technical nature, context, and performance, and the second step is prototyping different modalities of intercropping, patterns of pesticide use, choices of hybrid cultivars, and rotations with cover or cash crops. They made the justification for new decision rules for pest control by replacing systematic pest control treatments with new biological components to realize better performances.

Beckford, et al (2017) draw attention to survival strategies of small-scale farmers in Jamaica as an adaptation strategy and innovation for domestic food production. They asserted that such adaptation and innovation have not generally been considered for on-farm research because they have been perceived as recipients, instead of originators, of technical knowledge and sustainable and viable practices. They point to abundant evidence in the tropics of small-scale farmers as adaptive and experimental problem solvers, and experts at devising innovative survival strategies. They argued that, “While literature on the topic is rich with accounts from Africa, Asia and Latin America, there is a general dearth of examples from the Caribbean.” They highlighted some examples from Jamaica among small-scale domestic producers functioning with village-level problem solving and survival practices in the challenging agroecological environment. They noted that one reason given for the perception of village-level farmers by researchers is that researchers are unfamiliar with the rationale of traditional agricultural practices and compounded