

# Chapter 47

## Strengthening Food Security With Sustainable Practices by Smallholder Farmers in Lesser Developed Economies

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### ABSTRACT

*Smallholder farming has played a key role in reducing world hunger and the focus now turns to consolidating these gains. What practices and policies will enable smallholders to sustain their livelihoods and strengthen food security? Following a brief discussion of agricultural models, and the global shift to sustainable development goals, this chapter examines practices of smallholder farmers in St. Kitts with examples from elsewhere. Assessing what has worked and what barriers continue to limit smallholder success, the chapter offers a list of adaptive strategies, policy recommendations, and areas for future research that can maximize smallholder farming impact on food security. Suggested priorities include: focusing research and policies on individual farm enterprises; moving toward an integrated farm model; adopting best practices in marketing, distribution, and accounting; improving government support; and adapting education programs to include modernized curricula, non-formal education, and the use of ICTs for training and extension at all levels.*

### INTRODUCTION

*Improved agricultural productivity, especially by small and family farmers, leads to important gains in hunger and poverty reduction. (Food and Agriculture Organization, 2015)*

Beginning in 1980s, lesser-developed countries (LDCs) witnessed a trend of declining production of agricultural food products, both crops and livestock, while at the same time more developed countries

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(MDCs) experienced increased production. As such, LDCs became more dependent on imported food from MDCs. Because of this, and despite their former status as agrarian societies, emerging economies have had to divert scarce economic resources away from other imports, investments, and foreign debt payments to pay for imported food. Even worse, when a dependency syndrome combines with government instability and social conflict, the result has often been hunger, malnutrition, and even famine in extreme cases.

With these dynamics in mind, governmental and non-governmental entities have worked to combat world hunger within a comprehensive United Nations framework known as Millennium Development Goals (MDG). In 2015, the UN Food and Agriculture Organization reported that 79 out of 129 countries had met the MDG benchmark of reducing hunger by one half. Worldwide, hunger has fallen by almost 20% in the past decade with most of those gains happening in the developing world mainly through the increased productivity of smallholder farms, operated mostly as family enterprises. In order to understand this success, and to envision ways of enhancing it to address the problems of the 796 million people who remain in hunger worldwide, this chapter approaches the topic of food security in emerging economies from several angles. After briefly touching on how MDCs have transformed their agricultural sector to become competitive in world food production, the chapter focuses primarily on the concerns of food production and distribution facing the Caribbean and other emerging economies with the input factors of cultural, socio-politico-economic, technological, and environmental conditions, including climate change. The chapter proposes how such economies may be transformed so that food security may be achieved. It presents examples of best practices and scenarios using a simple model of decision-making based on this range of factors.

In exploring food production and distribution in emerging economies, a central claim is that agricultural diversification is essential to achieve local food security and that diversification rests on four pillars: productivity, flexibility, competitiveness, and sustainability. Therefore, this chapter will examine concerns about food security from the perspectives of these four pillars. While some areas may realize high productivity, there is scarcity in other areas, which prompts a concern with food distribution networks in the context of trade and marketing.

All of the concerns can be addressed systematically by the application of a model of the farming system adopted from Waugh (2009). The unit of analysis is the individual enterprise or individual farmer level. The proposition is that if individual enterprises are successful, then national and regional agricultural economies will be successful. The model will address the prevailing conditions in terms of input factors and what decisions can be made in those respects. It also recommends the evaluation of profit and/or loss and a feedback mechanism to the decision-making process.

## **Main Characteristics of Agriculture in MDCs**

Virtually every industrialized nation, for example, Australia, France, Japan, and the United States, has experienced an agricultural revolution (Nebel and Wright, 1996). The agricultural revolution in such countries had one thing in common, that is, significantly higher utilization of farm machinery not only for land preparation but also for planting, application of fertilizers and pesticides, and harvesting. They brought additional land into production, increased the use of chemical fertilizers and pesticides, increased use of irrigation, and substituted new varieties of crops or hybrids. According to Nebel and Wright (1996), all these developments carried an environmental cost, and expanding production by those methods has reached or exceeded sustainable limits. With competitiveness resulting from such significant inputs by

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