Chapter 1

INTRODUCTION

R.P.I.R. Prasanna
Department of Economics, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka, Sri Lanka

'It is in the agricultural sector that the battle for long-term economic development will be won or lost" – Gunnar Myrdal, Nobel Laureate in Economics

The world food crisis, reported in the years 2007 and 2008, and the biggest food crisis of the 21st century, resulted in an unexpected increase in world hungry people from 800 million to 925 million. It put all global efforts towards a hungry-free world via agricultural modernization and the first target of the Millennium Development Goals (MDGs) into question. It is evident that half of the deaths in children under five worldwide are due to malnutrition (FAO, 2015) , and thus, any form of food crisis aggravates the situation. According to the United Nations General Assembly Resolution 3348 (XXIX) of 17th December 1974, the right to be free from hunger and malnutrition has been recognized as one of the fundamental human rights. Further, at the first international conference on nutrition, co-hosted by Food and Agriculture Organization (FAO) and World Health Organization (WHO), the member states have pledged to eliminate or substantially reduce starvation, famine, and chronic hunger, undernutrition especially among children, women and aged, micronutrient deficiencies, diet-related communicable and non-communicable diseases, etc. (FAO, 1995).

In contrast, according to WHO (2021), 39% of adults aged 18 years and above were overweight in 2016. One of the leading causes of the increased percentage of the overweight population is an increased intake of energy-dense foods. As free from hunger and malnutrition is an internationally accepted human right, the recent and the most prominent food crisis of the 21st century forced the world to rethink the sustainability of world food production, fairness of distribution, and food security conditions concerning human justice.

The theoretical origin of the current food crisis in the world is essentially the population theory expressed by Thomas Malthus in 1798 in his well-known work 'An Essay on the Principles of Population,' which states that the world population will increase geometrically, but available food resources will increase only

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arithmetically. The world population doubled from 1 billion to 2 billion from 1800 to 1930 (The United Nations Population Division, 2002). This led scientists to attend to the Malthusian Population trap strongly or to support Neo-Malthusian fears. In the year 1950-51, the global population was nearly 2.5 billion. It rose to 6 billion by the end of the 20th century and crossed 7 billion in 2007. According to the projection of the United Nations Population Division, the world population is expected to be 8 to 11 billion by 2050. Thus, it indicates that there will be an additional 2 to 4 billion people to feed on earth by 2050.

In the early 1940s, the world recognized these emerging challenges and turned its focus to agriculture by considering the prominent social theory—agricultural transformation or modernization—to increase the world food supply by making theoretical justifications—Neo-Malthusian fear—to stimulate the agrarian transformation in Third World countries. This transformation entirely replaced traditional agrarian structures with a new value system, and social and cultural practices in the developing countries were mostly agriculture-based by applying Western scientific advances (Irangani, 2015). Specifically, the Western world viewed agriculture in the Third World countries as static, normatively consistent, or structurally homogenous and recognized those characteristics as growth-retarding characters in the capitalist development (Gusfield, 1967; Altieri, 1987; Kloppenberg, 2006). They basically considered the subsistence nature of agriculture in the Third World countries as the core issue of low farm productivity, which obviously leads to global starvation with a population explosion (Irangani, 2015). According to the speech of US President Harry S. Truman on January 20, 1949, the economic life of people in the Third World countries is primitive and stagnant, and food is inadequate (Latham, 2011).

'We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of the diseases. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and skill to relieve the suffering of these people. The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for the assistance of other people are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible.'

As a result of the agrarian transformations with Western scientific advancements, particularly in the developing countries, the world had increased the global output of food grains and per capita availability of food. For instance, from 1950 to 2008, global output increased by 229% from 631 to 2,075 million MT,

and per capita availability of food increased by 27%, from 248 to 314 kg (see Table 1.1). In terms of calories, per capita calorie availability has increased from 2,220 Kcal per day in 1960 to 2,640 Kcal per day in 2006-08 (FAO, 2012). The situation of developing countries is even superior because of increased per capita calorie availability— 1,850 Kcal in 1960 to 2,640 Kcal in 2006-08—compared to the world average of 2870 (FAO, 2012).

Table 1: Trends of world population, food production, and per capita availability of food

Year	Population (billion)	Food Production (Million T)	Per capita availability of food (kg)
1950-51	2.5	631	248
1960-61	3.1	824	272
1970-71	3.8	1079	286
1980-81	4.5	1429	321
1990-91	5.3	1768	334
2000-01	6.1	1843	301
2007-08	6.6	2075	314
% change (1950-51 – 2007-08)	164%	229%	27%

Source: UN Population Division and FAO Statistics, 2009.

The statistics over per capita availability of food grains showed that agrarian transformation or modernization in agriculture in the developing countries has resulted in increasing the food production substantially with the adoption of Western scientific advances.

The important questions raised along with increased per capita output of food grains is 'why conditions of food producers in some regions of the world do not adequately improve or getting worst, why there is still discussion over the global food crisis, why so many people are still hungry having even no meal, why there is a growing critique over environmental problems associated with agricultural transformation or climate change problem at mass scale?' These questions query the sustainability of food production in the transformed or modernized agrarian structures in developing countries. This is mainly due to persistent poverty, environmental challenges, social and cultural polarization, the less economic return of farming, etc., in the transformed agrarian structures.

The evolution of historical facts behind the agriculture modernization in the third world countries in the Cold War period indicate that agriculture modernization or transformation was the tool of Western countries (First world) used to promote the capitalist system in the world and establish the conditions

for smooth functioning of the capitalist systems. Specifically, the emergence of communist ideology in Asia threatened the industrial material base that western countries had maintained since the colonial period and market for their products. The report 'Note on Indian Agriculture' submitted by Harrar et al. (1952) noted this challenge and emphasized the need to address key challenges in agriculture in India using the Technical Cooperation Administration (TCA) (Point Four). Some influential members of the Rockefeller Foundation – Weaver, Harrar, and Mangelsdorf – stated that an infusion of Western agricultural knowledge into overpopulated India could overcome the massive problems the country faced. Thus, Western anti-communist ideology was central to the transformation of agrarian structures in the then third world countries in the world in the post-colonial period.

In Sri Lanka, technological transformation or agricultural modernization during the 20th century is considered the most influential effort in enhancing food production in the country. It changed the basic structure of ancient agriculture the country maintained for centuries. Under this process, Sri Lanka initiated many irrigation and settlement projects, particularly from the 1930s, mostly recognized as agriculture settlement schemes in the literature. The purposes of establishing agriculture settlement schemes in the country during the early stage were to enhance the country's food production, address the issue of land scarcity due to the high population pressure in the wet zone, eliminate the land issue among the poorest of the poor, protect peasant farmers, generate employment opportunities using unused land resource-based in the dry zone, resolve the potentially serious political problems resulting from the existing agrarian structure, upgrade the gross national product, and accelerate economic growth (Farmer, 1952; Farmer, 1957; Dunham, 1982). Later, the added objectives to the settlement schemes were the generation of hydropower, promotion of industrial-based, agro-based industries in particular, and promotion of export crops (Chandrasiri, 2010).

Even though the agricultural settlement schemes helped the nations to increase the food production substantially, it is questionable the long-term achievement of economic and social objectives of the schemes, as there is a contentious academic discussion over many issues in the schemes, such as indebtedness among the farmers, land fragmentation, sharecropping on a massive scale, and socioeconomic differentiation (Bryan, 1990). In recent years, the low profitability of farming systems in the major agriculture settlement schemes has largely been questioned in the literature. Persistent agrarian poverty and stagnated nature of economies are primarily visible in the schemes. The World Bank (2003) and Denning (2017) report that poverty incidence is the highest in the agricultural regions of the country. These persistent issues, particularly at the agricultural settlement schemes, is primarily due to the

problems in the planning stage of agriculture settlement schemes, non-understanding or non-extension of the settlement schemes to the next developmental stages, non-revision of laws related to lands in the agriculture settlement schemes, inadequate acknowledgment of social and cultural values of the indigenous agricultural system in the agricultural modernization process, and agriculture policy-related issues, etc. These issues have put the sustainability of farming systems and livelihood of farmers in the agriculture settlement schemes in the country into jeopardy.

Providing a country paper to the International Irrigation Management Institute (IIMI), Abeysekara (1993) provided the lessons learned from evaluating the major irrigation projects of the country and emphasized the more significant research issues. According to the noted important research issues, the author of the study encouraged the researchers in the particular research disciplines related to major irrigation projects such as impact assessment of settlement projects in terms of irrigation, agricultural, employment, and income, investigation of issues relating to the sustainability of irrigation projects, studies designed to improve and strengthen the institutional capacities of the irrigation schemes, and studies on problems affecting irrigation system performance. These research notes documented in the 1990s emphasized the need to transform the agriculture settlement schemes to the next developmental phase or new era with novel approaches to maintain the sustainability of irrigation settlement schemes in the future. Even though many families were settled in these schemes in the past, allocating small land plots for farming, research activities related to the development of agriculture settlement schemes have not been adequately undertaken specifically after the 1990s, the period where there was a need to transform the agriculture settlement-based agrarian economies to the next developmental phase.

According to the four-stage settlement development model developed by Scudder (1985), it is questionable whether agriculture settlement schemes are even passing the third stage, five decades after the agrarian transformation or modernization, particularly after introducing the technological package of the *Green Revolution.* The reason is a considerable number of farmers in these settlement schemes are still struggling to deserve adequate income from farming to survive or move out of poverty. Further, issues related to investment and experiments in farming, improvement in farm productivity, movement to cash crop systems, and diversification of livelihood activities have been largely noted in the academic literature. Specifically, many factors have hindered the development of the self-reliance ideology of the farmers, and thus, second and third generations of the settlement schemes are in a dilemma in continuing with farming in the settlement schemes.

Thus, the vacuum in research on transformed or modernized agriculture settlement schemes during the last three decades has made the problem understanding complex, delaying the policy intervention to maintain the sustainability of the major agriculture settlement schemes. In this context, this research project aimed to study the current issues and challenges facing the agriculture settlement schemes to broaden the understanding of the nature of the problems, how they impact farm production, the livelihood of farmers, and the food security status of farm families and existing viable solutions. In this connection, the first part of the project is devoted to providing a general overview of the history of agriculture settlement schemes and agricultural policies in Sri Lanka, the second part to providing the analytical knowledge about specific issues of the agriculture settlement schemes, and the last part to demonstrate the empirical solutions for selected issues in the agriculture settlement schemes in Sri Lanka.

References

Abeysekera, W.A.T., 1993. Rehabilitation of irrigation systems in Sri Lanka: A literature review. Colombo, Sri Lanka: International Irrigation Management Institute, IIMI Country Paper - Sri Lanka - No. 1.

Altieri, M., 1987. *Agroecology: The Scientific Basis of Alternative Agriculture.* Boulder: Westview.

Chandrasiri, J., 2010. *Impact of Informal Land Transactions in Settlement Schemes in Sri Lanka,* Colombo: Hector Kobbekaduwa, Agrarian Research, and Training Institute.

Denning, S., 2017. *Poverty Update: The Four Main Causes of Poverty in Sri Lanka.* Seattle: The Borgen Project.

FAO, 1995. *Food, Nutrition and Agriculture,* Rome: Food and Agriculture Association of the United Nations.

FAO, 2012. *Feeding the World,* Rome: Food and Agriculture Organization.

FAO, 2015. *The spectrum of malnutrition,* Rome: Food and Agriculture Organization of the United Nations.

Farmer, B., 1952. Colonization in the Dry Zone of the Ceylon. *Journal of the Royal Society of Arts,* C(4876), pp. 547-564.

Farmer, B., 1957. *Pioneer Peasant Colonization in Ceylon.* London: Oxford University Press.

Gusfield, J., 1967. Tradition and Modernity: Misplaced Polarities in the Study of Social Change. *American Journal of Sociology*, 72(4), pp. 351-362.

Harrar, G., Mangesldorf, P. & Weaver, W., 1952. *Notes on Indian Agriculture*, Washinton DC: Rockefeller Archive Center.

Irangani, M., 2015. *Principles in the Indigenous Agricultural Techniques and Management in Sri Lanka: A Historical-Comparative Analysis.* Kagoshima: Kagoshima National University.

Kloppenberg, J., 2006. Franklin Delano Roosevelt, Visionary. *Reviews in American History*, 34(4), pp. 509-520.

Latham, M., 2011. *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present.* 1 ed. New York: Cornell University Press.

Scudder, T. A., 1985. Sociological framework for the analysis of new land settlements. In *Putting People First: Sociological Variables in Rural Development*, 2nd ed.; Revised and Expanded; Cernea, M.M., Ed.; Oxford University Press: New York, NY, USA; pp. 148–187.

The United Nations Population Division, 2002. *The World at Six Billion*, New York: The United Nations.

World Bank, 2003. *Sri Lanka Promoting Agriculture and Rural Non-Farm Sector Growth*, Washinton DC.: Rural Development Unit, South Asian Region, World bank.