

Sri Lanka
State of the Economy Report 2010

Chapter 7
Challenges for the Food Crop Production Sector:
A Post-conflict Perspective

by
Parakrama Samaratunga & Erandika Wijekoon

7. Challenges for the Food Crop Production Sector: A Post-conflict Perspective

7.1 Introduction

Sri Lankan agriculture, particularly the food crop production sector, has been in a crisis for many decades. Both long standing endogenous problems as well as the more recent exogenous factors - such as the global 'foodflation', energy crisis, and economic crisis - have contributed to this quagmire, Sri Lanka's armed conflict of the last three decades is also popularly believed as one such inhibiting factor. In the present context where all development and reform initiatives are being reconsidered in a post-conflict context, development of food crop production should also be discussed in the same vein. However, the discussion on the food crop sector has already received considerable attention.¹ Therefore, the primary objective of this Chapter is to bring in the additional dimensions introduced by the present 'post-conflict' setting to the extent possible.

The post-conflict effect on the food crop sector emanates from the end of the 30 year armed conflict and the ensuing restoration of civil administration in the Northern and Eastern Provinces of Sri Lanka. This impact will be felt on both the consumption side as well as on the production side. An increase in demand for food and an increase in food supply can be expected not only in the conflict-affected areas, but also in the rest of the country as a result of the restoration of peace.

7.2 Agricultural Sector in Sri Lanka's Economy

Agriculture is one of the key sectors of the national economy with significant contribution to GDP, employment and income. In 2009, the relative contribution of agriculture to GDP was only 12 per cent, while that of

Table 7.1
Percentage Contribution to GDP by Industrial Origin

Year	Agriculture Forestry & Fishing		Industry		Services	
	Value (Rs. mn)	%	Value (Rs. mn)	%	Value (Rs. mn)	%
1977	4,299	26.7	3,491	21.7	8,288	51.5
1987	27,409	23.6	30,198	26.1	58,315	50.3
1997	131,678	17.8	227,847	30.8	380,238	51.4
2007	265,870	11.9	635,199	28.5	1,331,587	59.6
2009	294,921	12.0	701,129	28.6	1,453,254	59.3

Source: Central Bank of Sri Lanka, *Annual Report*, various issues.

¹ See IPS, *Sri Lanka: State of the Economy*, various issues.

Table 7.2
Growth Rate of GDP (1977-2009)

Year	Agriculture Forestry & Fishing	Industry	Services	GDP
1977	10.4	-3.4	4.7	4.2
1987	-5.9	5.3	3.2	1.6
1997	3.1	8.3	6.6	6.5
2007	3.3	7.6	7.1	6.8
2008	7.6	5.9	5.6	6.0
2009	3.2	4.2	3.3	3.5

Source: Central Bank of Sri Lanka, *Annual Report*, various issues.

the industrial and service sectors were 28.6 and 59.3 per cent, respectively. With structural changes in the economy due to pro-market policy reforms of the post-1977 period, the relative contribution of agriculture to GDP has declined from 26.7 in 1977 to 12 per cent by 2009 (Table 7.1).

With rising overall GDP growth in the country, the slow growth rate in the agricultural sector compared with higher growth rates of service and industrial sectors has contributed towards the shrinking of agricultural sector contribution to the economy (Table 7.2).

While Sri Lanka posted, on average, an annual growth rate in the region of 5 per cent, agriculture continued to perform poorly, growing by not more than 2 per cent on average while in some years it has been negative.

One important point to note is that the contribution of agriculture to overall economic growth has shown a marked decline from 1977-1987. Disruption of agriculture in the North and East (N&E) regions with the eruption of the violent conflict in the early 1980s could be identified one among

Table 7.3
Decadal Growth Rates of Major Non-plantation Crops (%)

Major Crops	Extent Cultivated			Production			Average Yield		
	1979- 1988	1989- 1998	1999- 2008	1979- 1988	1989- 1998	1999- 2008	1979- 1988	1989- 1998	1999- 2008
Paddy	0.4	1.7	1.9	3.0	3.0	3.4	2.4	0.8	1.5
Maize	7.3	0.3	6.7	6.9	1.1	15.2	1.5	0.9	7.9
Green gram	9.2	-4.7	-5.4	9.6	-2.9	-4.8	7.9	1.9	0.6
Cowpea	6.3	-4.7	-0.8	6.7	-3.8	-0.1	0.6	0.9	0.7
Black gram	17.0	3.8	-0.4	17.2	4.0	3.9	0.7	0.2	4.3
Red onion	-2.1	-5.1	-2.3	-1.5	-6.8	1.6	4.3	-1.8	4.0
B'onion	19.4	6.8	-1.3	6.8	14.0	-1.0	4.0	6.7	0.3
Ground nut	0.7	-1.2	0.0	0.1	-1.9	5.1	0.3	-0.8	5.1
Chillies	-3.1	-1.3	-4.0	6.6	-0.9	-1.8	5.1	0.4	2.3
Banana	4.8	1.3	-0.1	-9.2	-2.3	0.0	2.3	-3.6	0.1

Source: HARTI, *Agricultural Trade Review*; and Department of Census and Statistics

numerous for this. Reduction in production growth rates around this period of individual food crops in Sri Lanka is further highlighted in Table 7.3 as well.

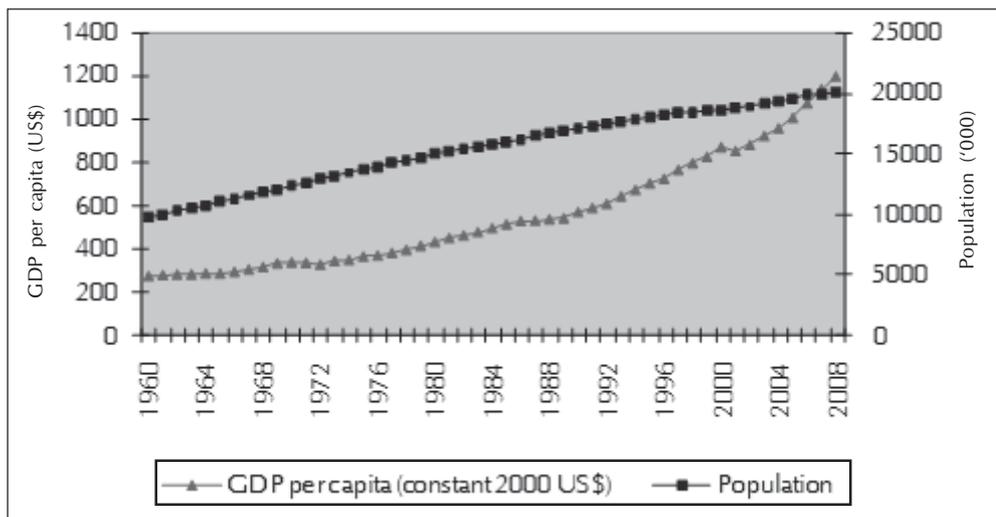
7.2.1 The Demand Side

Both population and per capita income have been increasing in Sri Lanka for the last five

decades (Figure 7.1). As a result of these two factors, the demand for major food categories has been constantly rising in Sri Lanka.

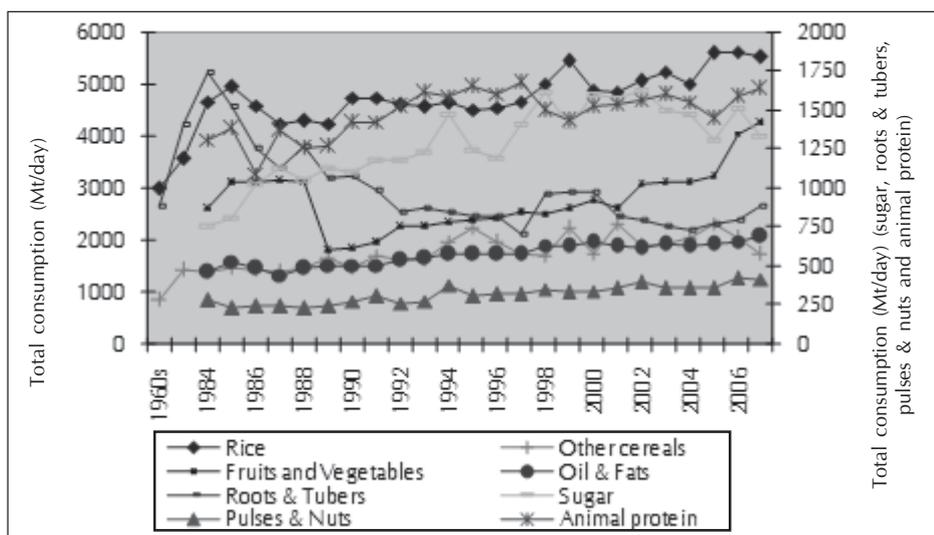
This overall picture, however, camouflages certain details that are relevant in explaining variations in food demand. Firstly, the disparity between the per capita income in

Figure 7.1
Change in Real Per Capita GDP and Population (1960-2008)



Source: Central Bank of Sri Lanka; and CBSL, *Annual Report*, various issues.

Figure 7.2
Consumption of Major Food Categories (Mt/day)



Source: Department of Census and Statistics, "Food Balance Sheets", various years.

conflict-affected areas and the rest of the country grew in leaps and bounds after 1983. Secondly, needless to say, the poverty situation diverged between the two areas as a result. According to Sri Lanka Food Security Assessment (2007) conducted by the World Food Programme (WFP), about 23 per cent of the population lives below the official national poverty line in the seven 'conflict unaffected' provinces in the country.² Household survey data suitable for poverty measurement does not exist for the two remaining conflict-affected Northern and Eastern Provinces. However, according to the WFP, the N&E has by far the lowest per capita income of all the provinces, so it is likely that the incidence of poverty in these areas is greater than in most of the other provinces. Hence, the national poverty headcount could, in fact, be greater than the stated 23 per cent.

Poverty reduction has been slow because of generally slow economic growth in the past. While Sri Lanka's economic growth accelerated during the second half of the 1990s, there was a sharp increase in inequality, and this considerably reduced the poverty-reducing benefits of the growth process.

It is also important to note that wide income disparities prevail within the 'conflict unaffected' areas as well. Nevertheless, the situation in those areas would not be directly influenced by the restoration of peace as that of conflict-affected areas. Consequently, this aspect is not highlighted here, notwithstanding the relevance of its possible indirect effects.

Secondly, there is a host of non-income factors that contributed to the discrepancy in food consumption in 'affected' and 'unaffected' areas.

- Market prices and their volatility make it very difficult for the poorest households to obtain enough food.
- There are substantial differences in road access, market access, quality of education, job opportunities and investment in general, which have an overall impact on relative poverty between urban and rural areas. The N&E is likely to be more adversely affected by all the above mentioned factors.
- Purchasing power is further reduced by wages not increasing at the same rate as inflation, especially for unskilled labourers who earn less today than they did in the 1970s.
- The conflict has resulted in severe livelihood depletion in the N&E due to the embargo on agricultural inputs and fuel, as well as restrictions on fishing.
- The government's safety net programme for poor households, Samurdhi, has been found to have serious defaults with targeting, with some 40 per cent of the benefiting households not amongst the poorest.

Some of these income and non-income factors determining food demand are the first to be affected by the dawn of peace in Sri Lanka. The first is the improved mobility of both people and goods within the N&E and between the N&E and the rest of the country. This results in the removal of one major impediment to food security in N&E, poor food accessibility. Both public food distribution channels and private marketing agents would be enabled to carry out their operations more efficiently resulting in a sharp decline in food prices, giving rise to an increase in food consumption in the area. Further, rehabilitation and reconstruction activities that are already under way in the N&E

² World Food Programme, 2007, "Sri Lanka Food Security Assessment Based on the Integrated Food Security and Humanitarian Phase Classification Approach".

would be a new avenue of employment and increased family income of which the most immediate impact would be increased food demand. In addition to these immediate impacts, there are possible medium and long run effects that would further increase the demand for food in the N&E in time to come. They are the reduced general inflation, increased investment and employment and a reduction in the rate of out-migration which has been in an increasing trend during the last decade, according to the WFP (2007).³

The impact of cessation of the conflict on food demand in the N&E can, therefore, be expected to be a positive one in the short run as well as in the long run. In addition, the end of the conflict could have similar impacts on food demand in the rest of the country too. The immediate impact would

be an increase in consumption of food due to the reduced general rate of inflation. Possible long run impact of increased investment, employment and personal income would follow suit, although their impacts may not be so salient as in the N&E. In total, however, the impact of peace will be a substantial positive one, on the demand for food in Sri Lanka. Obviously, most of this incremental demand will be first felt on starchy staples and pulses, followed by cheaper sources of animal protein such as dry fish than more expensive fruits, vegetables and meat.

The N&E has traditionally been a high potential agricultural area. The agricultural production scenario before the eruption of violent conflict in the early 1980s is summarized in Table 7.4.

Table 7.4
Agricultural Production and Cultivated Extent in N&E (1975-1985)

	Paddy		Other Cereals		Pulses		Oil Seeds		Roots and Tubers		Chilli (Green)	
	Ext (ha)	Pro ('000mt)	Ext (ha)	Pro (mt)	Ext (ha)	Pro (mt)	Ext (ha)	Pro (mt)	Ext (ha)	Pro (mt)	Ext (ha)	Pro (mt)
1975			8432	7152	1682	1184	4550	1140	20853	112732	6234	6262
1976			8481	5856	1868	1042	4195	1016	19295	133993	9949	10041
1977			6561	4613	2609	1715	4686	1092	14951	101785	11377	10129
1978			5739	5022	2160	1469	3985	1308	9313	54696	5672	5313
1979	211,449	587.9	5368	5398	3078	1703	7662	3104	19734	119564	15333	14506
1980	232,412	638.7	2779	5134	3483	2355	7908	4178	13591	122777	11539	12856
1981	218,801	615.4	6581	6739	3413	2243	6744	3487	13594	118575	9979	11793
1982	200,461	603.6	6431	4662	3271	2292	9087	3335	14568	133738	9531	11195
1983	253,143	822.3	7423	8645	3666	2917	7114	3862	14914	167296	9516	13274
1984	207,978	567.5	8628	10653	3168	2724	4415	2636	8674	101940	3602	6837
1985	234,571	762.2	10432	14848	8488	7598	3843	2577	12574	146412	5418	18062

Notes: Ext and Pro stand for Extent and Production, respectively.

Source: Department of Agriculture, Socio Economics and Planning Centre.

³ Ibid.

However, taxes imposed by the militant groups, trade embargos imposed by the government (especially on fertilizers and fuel), breakdown of the North-South road connectivity and railway, dysfunction of agricultural research and extension system along with the general collapse of the security situation led to lower outputs, increased costs of production and contracted market opportunities. The end result was to limit agricultural supplies from the N&E to the rest of the country to a minimum. Production that took place was for consumption within the same conflict-affected localities.

An end to the conflict, therefore, would obviously be an opening up of a large agricultural resource base for production. However, the effect of this opening up is difficult to predict accurately due to the lack of statistical data for the N&E for the last 30 years. Without knowing the magnitude of the resource stock that was held back, it is difficult to predict the impact of its re-introduction to the production stream. Making crude assumptions about the magnitude or the rate of this "come back" would also be undependable for they are strongly affected by exogenous factors such as government policy. The

task is made further difficult by the lack of food demand and supply parameter estimates for the country. Thus, the impact forecast is, by default, limited to a qualitative one.

However, it is reasonable to assume that the resource utilization would not return to the pre-conflict levels immediately. Working on a rather conservative but arbitrary assumption that the immediate (short run) impact would be to return one-third of the land area kept unused during the conflict at present productivity levels, the added output would be as indicated in Table 7.5.

Agriculture in the N&E had historically been trade oriented. Mainland Northern Province and the entire Eastern Province have been major sources of rice to the rest of the country. Domestic demand for chilli and onion used to be largely met with the produce in the North and the Jaffna Peninsula had been a major supplier of potato to the rest of the island in Maha seasons.⁴ Pulses and some oil seeds were also among the contribution of the N&E to the food supply reaching the 'unaffected' areas. Under the assumption that 80 per cent of the produce of the N&E reaches the

Table 7.5
Added Output Due to New Cultivations

	Rice	Other Cereals	Pulses	Oil Seeds	R&T
Pre-conflict cultivated extent ^a	253,143	5468	2241	7065	18222
Post-conflict cultivated extent ^b	98,714	1263	1134	1502	6448
Decrease in land extent (ha) due to conflict	154,429	4,205	1,107	5,563	11,774
Assuming 1/3 of their extent, addition after conflict (ha)	51476	1402	369	1854	3925
Present productivity (kg/ha)	4232	2815	1069	1139	10329
The added output (Mt)	217870	3946	394	2112	40538

Notes: a: Pre-1983 highest; b: Post-1983 lowest; c: Refers to roots and tubers.

Source: Calculations based on data from the Department of Agriculture.

⁴ 'Maha' is the major cultivation season spanning September to February.

Table 7.6
Additional Short Run Supply of Added Output to the Rest of the Country

	Rice	Other Cereals	Pulses	Oil Seeds	R&T
The added output (Mt)	217870	3946	394	2112	40538
Additional supply to the rest of the country (Mt)	174296	3157	316	1690	32430
Addition to the current supply (%)	4.77	2.31	0.94	7.82	6.30

Source: Calculations based on data from the Department of Agriculture.

markets in the rest of the country, the additional supply of food to these areas in the short run would be as indicated in Table 7.6.

These may be considered as the lower bounds of estimates in the light of the conservative assumptions on which they are made. Although the additional supplies indicated are not large, they may depress the prices substantially in the short run due to the low price elasticities of basic food commodities. Although this is beneficial from the consumers' point of view, the producers in the rest of the country will be forced to face some competition. Pre-conflict farm budget data published by the Department of Agriculture have shown that the producers in the N&E are more efficient in agriculture than their counterparts in other areas. The producers in these areas who are at the threshold of production inefficiency, therefore, run a risk of being forced out of business.

Although this appears at first sight to be a problem, this is nothing but a hastening of one of the long standing needs for a change towards product diversification in Sri Lankan agriculture. In fact, this would not only be a need for the 'unaffected' areas but also be a valid solution to the problems of agriculture in the N&E. The merger of the agricultural sectors of the N&E and the rest of the country through open inter-regional trade would,

therefore, generalize the issues hitherto treated as pertaining to agriculture in the latter, to cover the former as well.

7.3 Issues Relating to Agricultural Development

As discussed above, the end of the long held armed conflict in Sri Lanka will result in increased agricultural production and reduced prices of traditionally produced food crops. In addition to the restoration of war ravaged infrastructure which is part of the general rehabilitation programme, the problems pertaining to agricultural development in Sri Lanka would, therefore, remain unchanged. The issues considered so far for the areas where peace prevailed could now be generalized as applicable to the entire country without any significant change. As such, the impact of return to normalcy on agriculture in Sri Lanka would be one that proliferates the validity of the issues and problems hitherto considered only in relation to the 'unaffected' region.

The following nine broad issues covering the development in Sri Lankan agriculture, can be generalized as relevant to both conflict-affected as well as unaffected areas in the short run as well as in the long run.⁵

- Reduction of agrarian poverty
- Food security

⁵ Samarasinghe, P.A., 2010, "A Note on Agricultural Development Issues of Sri Lanka", paper presented at the "Global Development Network", Prague, Czech Republic, 13-19, January, 2010.

- Public investment in technological and institutional innovations
- Market and regulation of agricultural land
- Inefficiency in irrigation water use
- Adoption of cutting edge technology
- WTO, regional and bilateral trade agreements
- Climate change and agriculture
- Integrating agriculture in dynamic markets

7.3.1 Reduction of Agrarian Poverty

The agriculture sector has to make the largest contribution in poverty reduction as the majority of the poor are living in rural and plantation sectors, where agriculture is the predominant economic activity. Further, the majority of rural poor and all estate workers rely on agriculture for their livelihood. According available estimates, about 40 per cent of those involved in agriculture and related fields were in poverty. About 31 per cent of the total labour force of the country, and over 75 per cent of the rural labour force is involved in agriculture and related activities and agricultural households account for nearly 50 per cent of the poorest households. Because of this clear linkage between agriculture and poverty incidence, poverty reduction has become the top priority in agricultural development in recent times. The inclusion of the N&E that is predominantly agricultural and deeply poverty stricken to mainstream development, further strengthens the poverty focus of post-conflict agricultural development. Thus, increasing agricultural productivity and increasing rural income through rural agro enterprises will remain on top of the agenda for rural poverty alleviation in Sri Lanka.

Even though the causes of agrarian poverty and the means available to overcome it vary across regions, the poor basically suffer from a set of common issues such as low resource

endowment, low skills, poor access to technology and inadequacy of institutional support. Consequently, agrarian poverty stands out as a serious issue demanding prompt attention at policy level. As such, empowerment of the agrarian poor has been recognized as an essential part of any poverty alleviation programme in Sri Lanka. This entails improving access to numerous productive resources and agrarian services. The present disjointed efforts in this respect should be effectively coordinated and focused on priority objectives.

7.3.2 Food Security

The role of domestic agriculture in addressing the problems of food security has been broadened with the advent of the global food crisis in 2008. The gradual rise of food prices that started in the early part of the decade was a result of a systematically developing mismatch between the world's demand and supply of food. The global trend of deliberate cut backs of investment on improving technology based agricultural productivity growth in the face of declining real prices of food in the world market in the past two to three decades was a major factor behind this, and Sri Lanka was no exception to this widespread phenomenon.

This state of affairs was engendered by the leniency of the assumption that the food availability at macro or global level is adequate to ensure food security for the masses. The crucial question of distribution rooted in food accessibility and affordability was disregarded. The gradual distancing of the traditional food production bases from their food consuming masses in favour of specialized food producers further aggravated the problem. Moreover, the imminent prospect of a sharp rise in fuel prices and the ensuing implications on the poor majority was also sidelined.

In recent years, Sri Lanka's food security problem was found to be more severe at micro (affordability) level than at macro (or availability) level. The meso (physical accessibility) level problem is less clear, but appears to be the least serious.⁵ In terms of nutritional security, utilization at the household level is a serious issue of concern. Other than that, social issues affecting intra-household food insecurity such as alcoholism, social norms and behaviours are found to be affecting food security at the household level. This state of substantial food insecurity in Sri Lanka is nothing but the cumulative outcome of the aforesaid problems that have been smoldering for more than two decades, and the mere cessation of armed conflict is not likely to bring about any positive change in this respect.

7.3.3 Public Investment in Technological and Institutional Innovations

With the progressive opening up of the Sri Lankan economy in the last 2-3 decades, the development focus shifted from agriculture to industry and services. Investment in research and development (R&D) in agriculture was reduced, and funds were diverted to manufacturing and services sector development, especially to the garment sector. The investment in agricultural research was on an upward trend during the green revolution starting around 1970s. It is clear that this investment started declining with the first introduction of liberalization in 1977 and continued on a negative trend thereafter.⁶ Public spending on agricultural research as a percentage of agricultural GDP in Sri Lanka remains very low compared even to developing countries like India, and it is recommended in the literature to increase public investments at least up to 2 per cent of agricultural GDP. Though the country has em-

ployed substantial manpower in an array of research institutions for different crops, the output has been constrained by poor complementary investments in R&D.

Some of the major problems of the current research system are its supply driven nature and lack of interaction and proper coordination among institutions. The degree to which research is steered by an integrated research policy and to what extent research priorities are set using an objective criteria are not clear. The agriculture sector has to play a vital role in making productive use of land and helping the rural poor to come out of the poverty trap. In this connection, government and public institutions have to play the major role as the private sector is unlikely to undertake agricultural research due to the difficulty in securing property rights for technology they develop, and due to the public good nature of some services like surface irrigation. However, in all other instances like seed, planting material, other inputs and extension, both the public and private sector actors can participate in service provision. Although it is not clearly established in the case of Sri Lanka, public-private partnerships are said to be successful in providing some technological inputs, and this is the kind of area in which additional effort may result in high returns.

7.3.4 Market and Regulation of Agricultural Land

The limited agricultural land market of Sri Lanka resulting from state regulations and ill-defined property rights, which is also plagued with distorted land prices and asymmetric information flow, is likely to prevent low income groups from actively participating in land transactions necessary for size adjustments. This could lead to perpetuation of

⁵ Samaratunga, P.A., 2009, "Multiple Facets of Food (In)Security in Sri Lanka" in Surabhi Mittal (ed.) *Food Security in South Asia*, Cambridge University Press.

⁶ IPS, 2008, "Does Foodflation Call for Reforms in Agriculture?" in *Sri Lanka: State of the Economy 2008*.

the problem of non-viable holdings. However, it is mainly the out-right ban on sales of alienated land and strict regulations and penalties on land fragmentation that have prevented concentration of lands in the hands of a few dominant groups of people in settlement schemes. The current allocation system is not always passing land to the most efficient producers who would invest in improving land quality, resulting in land degradation in the long run. It is also believed that without secure property rights, operators are only interested in short run profits and they, therefore, neglect the sustainability of land use. The controversial impacts of this land policy need to be assessed and fed into policy circles to design a new land policy more suitable for competitive agriculture of the present day.

The current post-conflict scenario adds to this long standing problem of inadequate land markets. Thirty years of war in the N&E and the breakdown of civil administration obviously have made its dent in the land market activities, particularly in relation to ownership and user rights. Establishment of these rights is a prerequisite to the mobilization of land resources for commercial agricultural production in these areas.

7.3.5 Inefficiency in Irrigation Water Use

Inefficiency in irrigation water use implies that a unit of irrigated land uses more water than the requirement of a crop. Consequently, the extent cultivated with the total volume of water available would be less than the maximum cultivable extent. This is a result of (a) a lack of technical know-how on water management and/or (b) a lack of an incentive to use water sparingly. At zero price of irrigation water, there is no incentive for farmers to limit their water use or to adopt water saving technologies.

Inherent difficulties in charging for water prompted the need for an effective alternative. Participatory Irrigation Management (PIM) has been proposed and adopted in Sri Lanka for this purpose. The main purpose of PIM is to make the farmers work together with government irrigation agencies, taking the responsibility of irrigation systems management with a view to improving the productivity of irrigated agriculture, making the system performance efficient and reducing government expenditure.

PIM could often be taken as a justification for refraining from charging. Nevertheless, the problem of irrigation service provision cost cannot be solved without some form of a charge. Hence, the long run solution to the problems of irrigation water use efficiency, equity and cost recovery seems to lie with a suitable combination of participatory management and land based irrigation charges. This is an area of particular interest in the N&E, where commercial agriculture is predominantly irrigated. Restoration of both physical (irrigation) and institutional infrastructure from the present war ravaged state brings additional challenges for development of agriculture in these areas.

7.3.6 Adoption of Cutting-edge Technology

The rationale for considering research and development (R&D) is the belief that investments in research results in an increase in the stock of knowledge which, in turn, either facilitates the use of existing knowledge or generates an entirely new technology. Technological advances, through improvements in either the quality or the quantity of inputs, lead to productivity gains. Education, training and extension also increase productivity by increasing people's knowledge and skill base, which are essential for technology adoption and efficient use of inputs.

There remains an array of interrelated questions as to what the potential benefits and risks are. What new policies and institutions are needed to achieve benefits without incurring unintended costs? What should be the roles of the private and the public sectors? How can modern technology help poor people escape poverty? In other words, how can technology be used to make agricultural development more inclusive? Moreover, private sector participation in technology development in value chains, where research results exist and benefits can be privately appropriated, has to be secured with protection of markets for research results via patents and intellectual property rights (IPRs). Consequently, the state has to play a role in preventing exclusion of certain strata of farmers, and prevent the country being overly dependent on technologies that can be controlled by external economic or political powers.

7.3.7 WTO, Regional and Bilateral Trade Agreements

Sri Lanka has been a net food importer since the time of British colonial rule and has been affected by changes in the global food market, both favorably and unfavourably. As a result, the food security situation in Sri Lanka still depends, particularly through food availability parameter, on the conditions in the world food market as well as the domestic market, in both the short and long run. Since the agricultural sector in Sri Lanka was substantially liberalized unilaterally before and soon after to the adoption of the Agreement on Agriculture (AOA) under the WTO, Sri Lanka did not gain increased market access for its exports, and consequently no diversification of agricultural exports took place either. Lower productivity and competition, and import surges that followed speedy liberalization resulted in higher import diversification and export concentration. In fact, the speedy and unchecked liberalization led to increases in non-

essential and 'luxury' food items that do not contribute to improved food security. Even the recent limited export drive was not sufficient to improve income levels of the majority of the rural poor substantially and, therefore, could not result in any improvement in sustainable agricultural development and food security in the country.

Despite these measures, on the other hand, frequent ad hoc tariff amendments in terms of imposing and removing specific duties and numerous other levies and surcharges have had adverse impacts on the farmer, the trader and the consumer from time to time. This disturbs the decision making process of the producers, and discourages investments in the agricultural sector. Since agricultural trade is a very sensitive issue in agricultural development of the country, trade policies should not be a cause for marginalization, impoverishment and uneven development, especially for the majority of small farmers. Trade has perhaps been the most researched area in agriculture in recent years in Sri Lanka, but a synthesis of these findings in solid policy recommendations is still pending, and agricultural trade policy decisions continue to be made without giving due regard to their development implications.

Trade supported by improved export diversification in order to harness market access opportunities can be used to promote overall growth in the N&E area. Shifting from semi-subsistence agriculture to commercially oriented agriculture through the cultivation of high-value crops for export markets is considered necessary. Removing existing barriers, while facilitating smooth flows of commodities and technology, is a prerequisite in this regard. Thus, trade policies should be coordinated with overall economic policies in the region. Improved private sector participation to seek the trade potential in the area, especially in agribusiness is necessary. The support of external countries should be

secured in order to take advantage of, or to avoid potential pitfalls in international trade agreements.

7.3.8 Climate Change and Agriculture

Agriculture in Sri Lanka has evolved in close harmony with the prevailing climatic conditions of respective agro climatic regions of the country. However, it has been evident during recent decades that the heritage of farming experiences and accumulated weather tradition of centuries are no longer useful in the process of agricultural planning at any level. Sri Lanka's climate has undergone changes to an extent that the correct amount of rainfall does not come at the correct time of the growing season. Agricultural productivity in Sri Lanka is likely to suffer substantial losses because of high temperature, severe drought, flood conditions, sea level rise and soil degradation. Thus, the future of agriculture in a changing global climate in the context of increasing human population has to be a policy priority, and an issue of topical importance to the scientific community.

Increased occurrence of extreme rainfall events due to climate change, droughts and floods could lead to crop losses due to moisture stress and excess water. Moreover, increased occurrence of positive rainfall anomalies is likely to cause severe damages to existing irrigation infrastructure, limiting water availability for irrigated crop production. Sri Lanka being a tropical island, crop injuries due to high temperatures are inevitable.

Apart from the direct impact of increased variability of rainfall and rise of ambient temperature, indirect effects of increased rainfall intensity worsens land degradation, especially in hilly areas where plantation crops are grown. Moreover, increased temperature and frequent and negative rainfall anomalies can cause salinization of agricultural lands in semi-arid parts of the country. The same

will lead to rapid drying up of tanks, giving rise to scarcity of water for agriculture. As an island, Sri Lanka is highly vulnerable to sea level rise and consequent sea water intrusion to low lying agricultural lands which could cause further reduction of land available for agriculture. All these climate change related aspects are particularly severe in the N&E which is entirely in the Dry Zone. Consequently, devising adaptation strategies suitable for these areas should be at the centre of post-conflict agricultural development plans of Sri Lanka.

7.3.9 Integrating Agriculture in Dynamic Markets

Rapid and ongoing changes are presently occurring in the domestic and export procurement systems in Sri Lanka with the growing dominance of supermarkets, high quality retailing, bulk procurement by domestic manufacturing firms and increased quality awareness in the global trading system. This phenomenon has been further influenced by urbanization, income increases, increased migration of Sri Lankan citizens, increased female participation in the labour force, etc. These factors have created a new demand pattern shifting the focus towards continuous supply of high quality, value added products with improved processing, packaging and labelling.

Thus, the impact of modern and restructured markets has had a number of repercussions on small-scale farmers who are unable to keep up with emerging marketing trends. This situation has triggered the need for a new innovative practice working with smallholders to improve their ability to face restructured market conditions by delivering knowledge, assisting in accessing capital and advising on food sanitation and enterprise planning. Even though there are certain innovations elsewhere that fulfill these consumer demands while effectively integrating the farmers in the supply chain, lack of ca-

capacity to accommodate a large number of poor farmers have resulted in exclusion and marginalization. Quality unconsciousness and credit bound relationships also have some form of correlation with the exclusion of farmers from the chain. Nevertheless, the capacity of small scale farmers and rural small and medium enterprises (SMEs) to sustain their participation in a given supply chain and restructured market, has still not been adequately studied, analyzed or understood.

Connectivity is a key driver of economic growth, and better marketing can reduce poverty among rural communities engaged in agriculture. A fragile business enabling environment due to poor infrastructure and lack of technological advances may act as a major barrier in integrating N&E producers in modern dynamic markets. Thus, improving market linkages and relaxing any existing barriers have the potential to induce economic growth in these areas.

7.4 Conclusion and Policy Implications

Sri Lankan agriculture, particularly food crop production, has been in a crisis for many decades. While long standing endogenous problems as well as the more recent exogenous factors have contributed to this situation, a protracted armed conflict added to it only marginally. Although the end of the 30 year long armed conflict is beneficial for Sri Lanka in the long term, it entails an array of challenges which could be felt on both the consumption side as well as the production side, not only in the N&E, but also in the rest of the country.

Restoration of peace will increase the demand for food and food supply in the conflict-affected areas which would in turn be transferred to the rest of the country. An increase in food demand is partly attributed to the added population in the conflict-affected areas. On the other hand, improved mobility of both people and goods within the N&E

and between the N&E and the rest of the country, will certainly cause an upward trend in food consumption through improved food accessibility. Improved incomes and overall livelihood opportunities will raise the purchasing power of the people positively, contributing to food demand. Further, macro-economic factors like reduced general inflation, increased investment and employment and a reduction in the rate of out-migration will add on to this. The end of the conflict could have similar impacts on food demand in the rest of the country also.

On the whole, the impact of peace will be a substantially positive one on the demand for food in Sri Lanka. Obviously, most of this incremental demand will be first felt on starchy staples and pulses, followed by cheaper sources of animal protein such as dry fish than more expensive fruits, vegetables and meat. This added food demand may not be met with local production alone and a rise in food imports, at least in the short run, is likely.

The N&E has traditionally been a high potential agricultural area providing livelihood to a group of hard working and resilient farmers. The cessation of the conflict, therefore, would obviously be an opening up of a large agricultural resource base for production. Although, the effect of this opening up is difficult to predict accurately due to unavailability of necessary data, it is reasonable to assume that resource utilization would not return to the pre-conflict levels immediately.

The substantial increase of the supplies of the commodities produced in the N&E is likely to exert downward pressure on their prices, creating a beneficial effect on consumers. Managing extra production is very important from the farmers' point of view while poor infrastructure including transport, storage, etc., would pose barriers to achieving this. On the other hand, producers from

the rest of the country can be expected to face some degree of competition from efficient N&E producers.

Although the increased food demand cannot be met with increased local supply in the short run - leading to extra imports - it is mandatory that there should be a long term strategy to address major development issues that Sri Lanka's agriculture sector has been facing for a long time, including reduction of agrarian poverty, food security, public investment in technological and institutional innovations, market and regulation of agricultural land, inefficiency in irrigation water use, adoption of cutting edge technology,

WTO, regional and bilateral trade agreements, climate change and agriculture, and integrating agriculture into dynamic markets. All these efforts should focus on the long overdue requirement of product diversification in Sri Lankan agriculture.

As stated above, the relevance of these are not limited to the N&E only, and a merger of the agricultural sectors of the N&E and the rest of the country through open inter-regional trade and information prompts the need for an integrated development programme for agriculture in the entire country.