Challenges for Food Security in Eritrea – A Descriptive and Qualitative Analysis

Ravinder Rena

Department of Business and Economics, Eritrean Institute of Technology – Mai Nefhi

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Abstract: Food security is about ensuring that all people at all times have both physical and economic access to the basic food they need. In a number of African countries chronic malnutrition and transitory food insecurity are pervasive. Like most African countries, Eritrea is also a victim of the problem of food insecurity. Based on this historical and recurrent food insecurity in Eritrea, an attempt is made in this paper to assess the possible causes of food insecurity in the country. Furthermore, the paper captures the available food security policy proposals of Eritrea and eventually draws conclusions and extends possible recommendations and policy remedies suited to the country.

1. Introduction

Food security has been interpreted differently from decade to decade. Before the acute food shortages of the mid 1970s, it was reasonable to think of food security as purely a distributional problem. However, following the surplus food production in the world in the mid 1980s the issue of food insecurity in the developing countries turns out to be not only a distributional problem but also the inability of poor countries, poor families and poor individuals to purchase sufficient quantities of food from the prevailing existing supplies. There is no uniform measure of food insecurity; however, the most common measure of food insecurity in a country is the number of people whose food consumption falls below a predetermined minimum level, which is deemed necessary for

* Assistant Professor of Economics, Department of Business and Economics, PO Box 7956, Eritrean Institute of Technology – Mai Nefhi (under the Ministry of Education), Asmara, Eritrea. Tel: 00291 7120361 (mobile in Eritrea); e-mail: ravinder_rena@yahoo.com. The author would like to thank anonymous referees for their useful comments and suggestions on the draft copy of the paper.

good health. This measure is widely used by, among others, the World Bank and the Food and Agriculture Organization (FAO).

In a number of African countries, chronic malnutrition and transitory food insecurity are pervasive. Generally, the prevalence of food insecurity in a country can be deduced from the existing gap in the daily calorie intake per capita, the high rate of infant mortality and the under-five mortality rate, mainly due to malnutrition. Small farmers, landless rural workers, urban non-professionals and the unemployed are the sub-groups who are chronically food insecure. Like most African countries, Eritrea is also a victim of the problem of food insecurity. Currently, the country is unable to cover half of the food needs of its population. According to a study by the FAO in 1995–97, the per capita calorie availability for Eritrea was 1,630 calories per day, which is far less than the international minimum standard for survival for the sub-Saharan countries (2,100 calories) and much less than the standard for an adequate diet of 2,400 calories. Thus, the issue of food security needs greater attention in the country because primarily food insecurity is hampering the development process through affecting its human capital and secondly encouraging dependence on food aid.

1.1 Profile of Eritrea

Eritrea is one of the youngest nations in the world; it became officially independent from Ethiopia in 1993 after a debilitating war that lasted more than 30 years. It is located in north-east Africa with a total area of 124,432 km^2 and a coastline on the Red Sea of almost 1,000 km. The country is a land of varied topography, climate and rainfall. It is an arid and semi-arid region consisting of a high plateau and coastal plains. Climate varies according to the different topographical regions, mostly hot and dry along the lowlands and Red Sea coast and cooler and more humid on the inland plateau. Average temperature ranges from 35 °C in the lowlands to 20 °C in the highlands. The highlands have a moderate climate with minimal seasonal temperature variation. Temperature variations in the lowlands are much greater than in the highlands. During the hot and dry season maximum temperature can reach 45 °C in the lowlands and 29 °C in the central highlands. The Red Sea coastal plain, particularly in the Dalul depression in the south-east that falls 100 meters below sea level is notable for having some of the highest temperatures recorded on earth. It can reach an extreme high temperature in the summer, with occasional highs up to 60 °C (Ministry of Information, 2002).

It is reported that in 2004, 66 per cent of households in Eritrea were living below the poverty line. These people did not have sufficient income or endowments to consume a minimum requirement of 2,000 calories per capita per day, plus a few other essential non-food commodities such as clothing and housing. In that year because of drought, 70–80 per cent of the households received food aid; without it, 69 per cent of the population would have been unable to consume the minimum basket of food and other essential commodities. More than half of the poor live in the rural areas of the highlands, the rest in the rural lowlands (about 30 per cent) and in the urban areas. Crop cultivation and animal husbandry account for 60 per cent of rural incomes although, in the lowlands, livestock income is more important. The rest is obtained from wage, self-employment and trade. The non-poor have 3–4 times higher income from crops and livestock: the difference is partly explained by the availability of water and partly by the ownership of cattle, which provide both animal traction on the farms and income from livestock products. On average, the non-poor rural household owns seven livestock units compared with two units by poor households. The really significant difference between the poor and non-poor, however, is in income from trade and self-employment. On average, the non-poor rural household gets eight times as much income from these activities as the poor household does (Government of Eritrea, 2004b). Therefore, in this predominantly rural country, opportunities for and the ability to participate in trading and service activities appear to make a critical difference. In urban areas, the poor are likely to be concentrated in low-skill occupations that require little capital, mainly in the non-formal sector.

It is to be noted that the GDP per capita increased from $130 in 1994 to $230 in 1998 and declined to $190 in 2003 (Government of Eritrea, 2004b). Thus, the growth performance over the last 10 years was mixed, and no clear trend emerged. On average, real GDP grew by 5 per cent, driven by expansion in the non-agricultural sectors. Industry experienced the highest growth among major sectors, reaching 13 per cent on average, and its share in GDP rose to 25 per cent by 2002. By contrast, the growth of agriculture fluctuated significantly year by year, largely owing to the weather conditions, and, on the whole, Eritrea's food security did not improve. In US dollar terms, GDP per capita remained basically unchanged over the last 10 years at a very low level by international standards. Inflation, which had remained manageable during the four years following independence, has been consistently high since 1998, mainly reflecting the war, drought conditions, monetary expansion for deficit financing, and the depreciation of the Nacfa since 1998 (Yamauchi, 2004: 14).

Indeed, the main economic stay of the people is agriculture, of which crop production followed by livestock herding are the core economic activities. The agricultural sector employs about 80 per cent of the working population, but its production has not managed to cover internal food demand. The three major national production systems in Eritrea are agriculture, agro-pastoralism and pastoralism. Pastoralists are found in the western and eastern lowlands. Agro-pastoralists are found throughout the country. Agriculture mainly comprises mixed farming and some commercial concessions, mostly in the river basins. Most agriculture is rain-fed. The main rain-fed crops are sorghum, millet and sesame, and the main irrigated crops are all horticultural crops like bananas, onions, tomatoes and cotton. The lowland regions have large livestock numbers with a high percentage of breeding stock. The large number of female animals means that regional herds recover quickly from disasters but there are fewer suitable draught animals. The major livestock production constraints are disease, water and feed shortages and agricultural expansion especially in the river frontages.

Nevertheless, the country is not self-sufficient in cereals even in the most productive years. A large part of the population has a poor resource base and little purchasing power, and is likely to become vulnerable to food insecurity. Food security has been at the top of the agenda since independence. Successive years of drought, combined with the border war with Ethiopia, have created major food shortages.

1.2 Objective of the Paper

Being one of the poor developing nations, the existence of food insecurity is much pronounced in Eritrea. However, the intensity and persistence of food deficit of the country varies from one period to another. For example, the drought in the early 1980s was a typical image of the worst food insecurity in the country. On the other hand, the late 1990s has witnessed some positive improvement towards food security. Currently, various pockets of the country are once again hit by drought. Based on this historical and recurrent food insecurity in Eritrea, an attempt is made in this paper to assess the possible causes of food insecurity in the country. Furthermore, the paper captures the available food security policy proposals of Eritrea and eventually draws conclusions and extends possible recommendations and policy remedies suited to the country. Food insecurity prevails at the household, national and regional level. However, the scope of this paper covers only the national level. Moreover, food security might be related to the environment and

other sectors of a given economy though it is beyond the scope of this paper.

The organization of the paper is as follows. The first part is introductory in nature and provides a profile of the country. The second part deals with the available related literature concerning the definition and theories of food security/insecurity. The third part focuses on the challenges and extent of food insecurity in Eritrea. The fourth and final part provides concluding remarks of the study.

This study is conducted by using data obtained from different Eritrean government bodies, books, reports and journals. The method followed throughout this paper is qualitative and descriptive in nature. The basic concept of this paper is to identify certain challenges for food security/insecurity in Eritrea and provide some implications to improve the situation. The sample period of investigation varies according to data availability. Although some years (prior to independence) are included to capture the historical context of food security/insecurity in the country, the paper mainly covers the post-independence period.

2. Review of Related Literature

2.1 Definitions of Food Security/Insecurity

The term 'food security' has been defined and interpreted with a slight difference by various authors and organizations. This research takes the following perspective on food security: 'Food security requires the supply of an adequate amount of food so as to meet the nutritional needs of all the people at all times' (Berck and Bigman, 1993). In this definition, 'nutritional needs' are to be determined by dietary requirements necessary to sustain a healthy and productive life and not by the effective demand and the actual purchasing power. 'All of the people' requires catering to special needs of weaker segments of the society and in particular, of women and children. 'At all times' emphasizes the need to prevent temporary food deficiencies as well as long-term obligations to increase food production in order to keep pace with the population growth (Berck and Bigman, 1993).

A country and people are food secure when their food system operates efficiently in such a way as to remove the fear that there will not be enough to eat. In particular, food security will be achieved when the poor and vulnerable, particularly women, children and those living in marginal areas, have secure access to the food. Food security will be achieved when equitable economic growth ensures that these groups have sustainable livelihoods; in the meantime and in addition, however, food security

requires the efficient and equitable operation of the food system (Mellor *et al*., 1988). Food security requires access by all people at all times to enough food for an active, healthy life. The essential elements of this definition are the emphasis on both the demand (access) and the supply (availability) of food. Food insecurity, in turn, is the lack of access to enough food (World Bank, 1986).

Food security is about ensuring that all people at all times have both physical and economic access to the basic food they need. Food security has three specific aims: ensuring production of adequate food supplies, maximizing stability in the flow of supplies and securing access to available supplies on the part of those who need them (FAO, 1999). In terms of current national policy, food security refers to the existence of the capacity and ability to make readily accessible to all Eritreans food of sufficient quantity and acceptable quality at an affordable price at any time and place within the country (Government of the State of Eritrea, 1994). There are two kinds of food insecurity: chronic and transitory. Chronic food insecurity is a continuously inadequate diet caused by the inability to acquire food, while transitory food insecurity is a temporary decline in the household to access to enough food (World Bank, 1986). This paper is concerned with both types of food insecurity, which are prevalent in most East African countries.

2.2 Approach Towards Food Insecurity

The entitlement theory and the concept of vulnerability are the two widely accepted approaches of what makes the livelihood of one person, a household, a nation and/or a region more likely to embark upon a sustained food insecurity pressure (Gebrehiwot, 2001). According to the entitlement theory, food insecurity is not solely related to overall food supplies; but the result of a decline in people's exchanges entitlement. The key approach is the word entitlement. Physical availability of food at some level is insufficient to prevent food insecurity. In countries with national food surpluses such as Tanzania and Uganda, nutritional indicators reveal considerable food insecurity for a large proportion of the population (USAID, 2001). The argument is that people's failure to obtain food can arise from any combination of trade failure, production failure, own labour failure, or inheritance and transfer failure.

The entitlement theory explains food security by focusing not on food supply per capita but on household access to food: every household has one or several entitlements to food, based on trade, contractual or social obligation earned from inheritance, or production of food for consumption by the producer household. To minimize the risks of catastrophic

entitlement failure, vulnerable households strive to diversify entitlement bases, especially when entitlements are threatened. For instance, vulnerable farmers engage in activities such as poultry farming. The greatest merit of the entitlement theory is that it explains food insecurity in the face of ample production. People may be food insecure despite the fact that food is available (Gebrehiwot, 2001).

The term 'vulnerability' refers to the factors that place a person at risk of becoming food insecure, including those factors that hinder one's potential of subsistence (FAO, 2000). Furthermore, vulnerability refers to insecurity and exposure to risks, shocks and stress. Vulnerability has two sides: an external side of risks, shocks and stress to which an individual or household is subject; and an internal side which is defenceless, meaning a lack of means to cope without damaging loss. Vulnerability, unlike poverty, is dynamic and better captures changing processes as people move in and out of poverty. The two dimensions of vulnerability, namely 'sensitivity' (the magnitude of the system's response to an external event) and its 'resilience' (the ease and rapidity of the system's recovery from stress) are very crucial. The lower the resilience and the higher the sensitivity the higher the vulnerability and vice versa (Gebrehiwot, 2001). A country's political situation can improve food insecurity, but it can also worsen it. Those political systems that foster people's participation tend to reduce vulnerability. On the other hand, a civil conflict can become a factor of vulnerability that can hinder political trading, destroy people's social and private property, and trigger both unemployment and the migration of affected families (FAO, 2000). The countries of the Horn of Africa, for instance, are vulnerable to the internal socio-economic and political shocks. Today this region is known for its lower resilience and higher sensitivity. In the 1970s and 1980s most people could easily resist two or three successive crop failures, before reaching starvation levels. Now and in most countries of the region community resistance in the chronic food deficit pockets is limited to one season crop failure because of the in-built lower resilience and higher sensitivity (FAO, 2001).

3. The Challenges for Food Security in Eritrea

In the years before the escalation of the war for independence, Eritrea was a net exporter of agricultural products. In the Ministry of Agriculture and FAO sector review of 1994, it is stated that Eritrea has been an agro-industrial and fishing centre, which accounted for 40 per cent of the industrial output of Ethiopia. Large-scale agricultural farms of horticulture and oil crops were found in the lowlands of Eritrea (Ravinder Rena, 2002). The natural resource base was in good condition, which contributed to

higher agricultural productivity. After the escalation of the 30 years bitter war, however, the Eritrean economy in general and the agricultural sector in particular, was in complete stagnation and even deterioration (Ravinder Rena, 2004a). Lands were left idle or became permanently fallow because people were either too poor to cultivate due to lack of resources or because lands were mined, risking tens of thousands of lives.

The current food insecurity situation is exacerbating due to the border conflict with Ethiopia between 1998–2000. The agricultural activity near the border has totally stagnated and the majority of the people who reside there have been displaced because of the war. For instance, according to the USAID Famine Early Warning System Network, the Eritrean Relief and Refugee Commission (ERRC) in the year 2003–2004 has issued an emergency appeal for $147 million to cover assistance for 1.6 million people or about 50 per cent of the entire population who are affected by war and drought (see Table 2). This includes 1.1 million war affected, 335,000 drought affected, 175,000 impacted host communities, and 150,000 victims of urban poverty. It is estimated that between 80 to 90 per cent of these are women, children and the elderly people.

The FAO in its report of the food supply situation and crop prospects in sub-Saharan Africa stated that there are 17 countries in this region that are in a state of emergency. Eritrea is one of these countries in severe food crisis, and the problem is stated in the report as follows. In Eritrea, the food outlook remains bleak with a large number of the displaced farmers unable to return to their farms and large tracts of land still inaccessible due to land mines. The Spring (short) rains from March to May, which are beneficial for early land preparation and regeneration of pastures, have failed in many areas of the country particularly from 1999–2004. Prices of cereals have increased significantly in between 1998–2004, reflecting short supplies. The slow response to humanitarian appeals is a major concern with only a small fraction of the government's appeal met so far. Overall, more thousands of people are estimated to have been displaced by the war with Ethiopia in mid 1998.

Most of the international organizations, some bilateral and few NGOs are operating in Eritrea as partners in agricultural development. Since recent times, participation of NGOs has been on the decline. The partners are either directly involved in agriculture development and fisheries or indirectly in rural infrastructure or institutional strengthening. Within the UN system, they include the FAO, United Nations Development Program (UNDP), United Nations International Children's Emergency Fund (UNICEF), World Health Organization (WHO), World Food Program (WFP), United Nations High Commissioner for Refugees (UNHCR) and Danish Development Agency (DANIDA). Among the multilaterals and financing institutions the EU, the World Bank,

International Fund for Agricultural Development (IFAD) and African Development Bank (ADB) are actively supporting the research and a wide range of sectors to create an enabling environment to achieve the food security and rural development (Ravinder Rena, 2004b: 121). From among the bi-laterals, Denmark, Norway, and United States Agency for International Development (USAID), the Netherlands and Italy are the major partners. Among the NGOs, Africare, the Lutheran World Federation and the local churches are the main institutions participating in the Eritrea agriculture development.

3.1 Possible Causes of Food Insecurity

Eritrea is one of the most food insecure countries in the world. What could be the possible causes for the past and current food insecurity magnitude in Eritrea? Although the causes of food insecurity are intricate in nature, Table 1 presents a summary of the possible causes, which are discussed in more detail in the subsequent pages.

Table 1: Summary table of food insecurity causes

Type of food insecurity	Probable causes
Chronic food insecurity	*Demand side* • Lack of employment opportunity for various reasons and barriers. • Lack of national capacity to import because of balance of payment problems caused by inadequate resources, emphasis in military expenditure etc. *Supply side* • Lack of assets such as land, good health and education, which directly and indirectly reduces food supply. Insufficient transport services, which are necessary to improve access to food. • Constraints on boosting the supply of food because of inadequate technology, tradition and land tenure system, epidemics etc. • Protracted war, drought and high population growth rates.
Transitory food insecurity	*Demand side* • Sharp changes in purchasing capacity of consumers due to depression in economic activity, social unrest or war. *Supply side* • Sharp reduction in the domestic or imported supply of food because of crop failure, civil war and interruption in food trade.

3.1.1 Lack of Purchasing Power

The world has ample food. Therefore, enough food is available so that countries and hundreds of millions of poor people can import it if they can afford to. Yet many poor countries like Eritrea and hundreds of millions of poor people don't share in this abundance. They suffer from food insecurity, caused mainly by lack of purchasing power. Problems of supply, such as during famines at times of war can aggravate food insecurity. But famines strike even when food grain markets are working well. Within a given country, therefore, the supply of food is not the only obstacle to food security. The loss of real income better explains why famine (the worst case of food insecurity) occurs. The victims typically belong to one or several vulnerable groups. They could not buy food, for they did not have the purchasing power (World Bank, 1986). Eritrea, for example, is unable to feed its famine-affected population due to unavailability of foreign exchange and thus capacity to import. The estimated requirements for food assistance in foreign currency in 2004 is presented in Table 2.

3.1.2 War and Civil Strife

War and civil strife creates food insecurity in many ways: the destruction caused by battle and scorched earth tactics, the requisition of food by armies, blockade of food and people in sieges, the imposition of restrictions on movement and trade, forcible relocation of civilian population and enforced rationing of food. These factors undermine the rural economy, not merely by the destruction of harvests and assets such as oxen,

Table 2: Funding requirements for Eritrea in 2004 (in US$)

Sector No.	Sector name	Original requirements
1	Agriculture	5,413,482
2	Coordination and Support Services	879,857
3	Education	2,366,909
4	Family Shelter and Non-Food Items	8,560,000
5	Food	97,800,000
6	Health	6,965,580
7	Mine Action	2,306,000
8	Multi-Sector	14,591,740
9	Protection/Human Rights/Rule of Law	2,501,265
10	Water and Sanitation	5,854,195
	Grand Total	147,239,028

Source: UN Office for the Coordination of Humanitarian Affairs (OCHA), Asmara, 28 November 2003.

but by making impossible the trading and migration that sustained a peasantry already on the edge of survival (Alexander, 1997). Agricultural production has been disrupted by actual conflict, by war-induced mass migrations and by an emphasis on defence over and above agricultural and social sector spending (Ravinder Rena, 2004c). For example, a report by the FAO shows that the governments of Ethiopia, Eritrea, Uganda, Sudan and Somalia are engaged in regional or internal conflicts and are using scarce resources on arms. In 1997, these countries devoted $2 billion to military expenditure (FAO, 2001).

3.1.3 Natural Hazards and Natural Resource Constraints

The limitations of the natural environment in Eritrea place certain constraints on improving food security. The main natural hazard affecting the country is drought. The chances of drought occurring in parts of the Greater Horn have increased from a probability of one in every six years to one in three years for those areas affected. Over the last decade there has been two apparent changes in long-term weather patterns. First, there is a mean decrease in annual rainfall in the Sahelian Zone of Sudan; and second, inter annual variability of rainfall has been increasing in the crescent from Kenya to Sudan, including parts of Ethiopia and Tanzania (USAID, 2001). Because Eritrea lies in the Sahelian rainfall zone of Africa, its agriculture has been vulnerable to frequent years of drought. Rainfall in Eritrea has been poor for most of the past twenty years. For instance, the drought of the 1980s resulted in severe losses for both the human and animal populations of Eritrea. It was estimated that production of crops had declined by 40 per cent and the number of livestock reduced by 50 per cent. The exceptionally low rainfall further exasperated the situation in 1990; consequently, the rural population was left practically without oxen and seeds for the next planting season (Tesfagiorgis, 1993).

The geography of Eritrea includes lowlands in the west, central highlands, and coastal plains along the eastern coastal boundary. All levels, high to low risk, of malaria exist in the country. Indeed, in the lowlands, malaria is generally endemic with moderate to high intensities of transmission. Here, there is a risk of epidemics in non-immune populations that migrate into the area, such as during refugee or displaced citizen resettlement programmes, troop mobilization, or internal displacements such as those during the recent war with Ethiopia. Malaria in highland areas is highly seasonal and unstable, with frequent waves of epidemics. These waves of malarial infection result in high morbidity and mortality during the planting season when the rains start and during the harvesting season when the rains cease. Peak transmission occurs in two periods,

September through November and January through March, with some variation among the country's six identified zones (Efram, 1995; CDC, 2000). Although data on its impact on food security is unavailable in concrete figures, malaria is, by all indications, a major public health problem in Eritrea. Data available from the Eritrean Ministry of Health (MoH) indicate that malaria is the most common cause of death among adults and children over five and the third most common cause of death in children under five. Nearly two-thirds of the population is at high risk of infection, and cases diagnosed as malaria account for 32 per cent of outpatient visits and 24 per cent of hospital admissions at government health facilities. These statistics also indicate that *Plasmodium falciparum* is responsible for over 90 per cent of malaria infections in Eritrea (Efram, 1995).

3.1.4 Rapid Population Growth

A partial explanation for food insecurity is that the greatly increased population of Eritrea may have approached or exceeded the carrying capacity of the fragile environment in some areas. With reduced fallow, barely arable land being cultivated and increased grazing pressures to feed livestock, increasing soil erosion and deforestation are reducing productivity (Ravinder Rena, 2004b). The Eritrean population which was estimated at about 330,000 in 1900, rose to about 510, 000 in 1982 and to 760,000 in 1941. By 1992 the population was estimated at 2,649,866 and in 1999 the estimate was about 3,337,000 (FAO/MoA, 1999). Along with the existing land tenure system (Ravinder Rena, 2004a), the rapid population growth in Eritrea led to a severe shortage of arable land. Many households have been left with plots of arable land that are small to support a family. With such a mounting shortage of land, fallowing land for purposes of restoring its fertility has been largely discontinued. Thus, in much of Eritrea, land is farmed and grazed continuously with serious consequences on its fertility and vegetative cover (Tesfagiorgis, 1993).

The alarming population growth can be partly explained by the lack of national family planning initiatives. The population of Eritrea is partly increasing because there is considerable lack of knowledge and unmet need for family planning. It is reported that only about two-thirds of women and four-fifths of men know of at least one modern method of family planning. Currently, only 22 per cent of the total demand for family planning is being met. Family planning services are not widely available in Eritrea. Only one-third of married women live within 5 km of a source of family planning and only one-quarter of married women

can reach the nearest facility providing family planning within 30 minutes (National Statistics Office, 1995).

Population growth rates remain high because of poverty and accompanying problems of poor child survival rates. Limited access to or the absence of basic services such as health facilities and education has meant low contraceptive prevalence rates, poor bodily absorption of available food nutrients because of disease and high infant mortality. In 1995 roughly half of the women in Eritrea live within 5 km of a facility providing antenatal care and delivery care, and 40 per cent of children under three live within 5 km of a facility providing immunization services (National Statistics Office, 1995). Illiteracy rates for Eritrea, especially for women, exceed the average for sub-Saharan Africa as a whole and correlate closely with fertility and high infant mortality rates (USAID, 2001).

In Eritrea, with women illiteracy (age range 15–49) at 62 per cent, the contraceptive prevalence rate among married women is only 8 per cent. The direct estimate of infant mortality (0–4 years) before 1995 was 72 deaths per 1,000 births; under-five mortality was 136 deaths per 1,000 births (National Statistics Office, 1995, 2002; World Bank, 1986).

3.1.5 Poor Economic Policy Environment

In Eritrea, agricultural growth and the development of product markets and processing industries have not occurred to a certain extent because of a poor policy framework that has led to insufficient research, a lack of appropriate technologies and weak distribution of existing technologies (Tesfagiorgis, 1993; Ravinder Rena, 2002). Economic and agricultural policies that distort prices of agricultural inputs and outputs also adversely affect investment in agricultural production, marketing and storage, and incomes earned from these activities (Ravinder Rena, 2004a). Moreover, the road systems do not reach some areas in Eritrea and are a woefully inadequate support to an active and extensive agricultural trade.

3.1.6 Weak Regional Institutions and Donor Co-ordination

Food security may not be attained unless appropriate measures are taken at regional level. For that matter, it should be seen at household, local, national and international levels. There is almost unavoidable interdependence between countries due to the difference and similarities in natural endowments and environment factors. Societies of the region lack recognition of the benefits that accrue to nations from regional

co-ordination. The only one regional institution, the Inter-Governmental Authority on Development (IGAD), exists but is relatively weak. The absence of stable and legitimate national governance structures and the continuation of cross-border conflict have precluded strong regional organizations from dealing with complex regional problems such as refugees, trade, arms flows, natural disasters, etc. Donor involvement in the region has often been duplicative, conflicting or conducted without local participation. In-country donor co-ordination is often limited to the exchange of information after implementation. Not only is a regional co-ordination forum lacking, but also no national structure exists for joint problem identification and joint resolution with donors and non-governmental organizations (USAID, 2001; FAO, 2001).

3.1.7 Low Agricultural Productivity

Sustained growth in agricultural productivity is critical in the improvement of food security for two reasons. First, growth in agricultural productivity translates into increased food supplies and lowers food prices for consumers. And second, growth in agricultural productivity means higher incomes, and thus improved ability to purchase food and other basic necessities, for many food insecure people, who earn their livelihood through agricultural production (USAID, 2001). Unfortunately over the past hundred years, backwardness and uneven development have characterized Eritrean agriculture (Tesfagiorgis, 1993; Ravinder Rena, 2002). The main reasons for the low agricultural productivity, apart from the protracted war, recurrent drought, pests and diseases, low irrigation scheme (only 0.18 per cent of the arable land) and lack of infrastructure, can be summarized as follows:

- *Archaic (outdated) and traditional farming method*: With the exception of few commercial agricultural farms or estates like Elabered, Afhimbol, Aligider etc., the farming method of the Eritrean subsistence farms is archaic and very traditional. Farming is seen as a way of life rather than an economic enterprise with its own technological and institutional needs and demands. Many farmers have not been able to harvest sufficient food to feed themselves for a whole year (Gebremedhin, 1996). The whole farming process, starting from the preparation of the land through the planting of seeds, clearing of the field, and harvesting and transportation of crops, is completely by human or animal power (Ravinder Rena, 2004a). It is to be noted that over 90 per cent of the subsistence farmers of Eritrea rely heavily on draught animal power. In the 1990s, for example, the shortage of animal power is becoming the single biggest problem for a large

majority of traditional subsistence farmers (Tesfagiorgis, 1993; Gebremedhin, 1996).

- *Traditional land tenure system and farm record*: Several land tenure systems existed in Eritrea. Communal or village land ownership *(diessa)* is the most dominant land tenure system. The greatest majority of the Eritrean farm population falls under this ownership system (Zekarias, 1966; Tesfagiorgis, 1993). The traditional land tenure system has posed the most formidable social and institutional barriers to agricultural development (Gebremedhin, 1989; Ravinder Rena, 2004a). The main features of the communal land tenure system that are creating inadequate farm size and low productivity in the agricultural sector are: the excessive subdivision and fragmentation of landholding; the difficulty of acquiring new land; the inability or unwillingness of the farmers to make permanent improvements or plant permanent crops on commonly owned or land held for only a short period of time; and the absence of appropriate land-measurement and effective registration procedures (Gebremedhin, 1996; Tesfagiorgis, 1993).
- *Marketing and storage facilities*: Agricultural development cannot be carried forward without constant attention to markets and marketing services. However, most marketing services in Eritrea have not been adequately developed. Costs of producing farm products are unduly high because farmers do not produce more than their subsistence and minimal cash needs. Large proportions of most farm commodities are produced on small subsistence farms resulting in low yields (Tesfagiorgis, 1993; Ravinder Rena, 2002). Any surplus produced in excess of family requirements tends to be very small and probably credit-linked. Storage is a necessity whether the farm yields are produced for domestic consumption or export market, but facilities are still rudimentary. It has been estimated that about 25 per cent of the farmer's produce, mainly grain, is lost in the process of preparing and storing for the market (Nekby, 1971; Gebremedhin, 1996).
- *Traditional social conditions*: A variety of social factors have also acted to retard the rate of development in agriculture. Tradition is a common phenomenon in Eritrea's rural areas, and the behaviour of the agricultural population is governed both by tradition and its related institutional laws. Rural labour is linked with the multiplicity of religious holidays, and observers of such holidays are forbidden to perform any kind of labour on those holidays. Moreover, excessive fasting and religious pilgrimages severely hamper the effectiveness of the rural labour force. Nearly 180 days in the year are designated as the days of the saints (Pankhurst, 1970).

4. Conclusion

The situation of food insecurity in sub-Saharan Africa in general and in the Greater Horn of Africa in particular is worse than in any other region in the world. Eritrea, being part of this region, is suffering from the problem of food insecurity. The magnitude of food insecurity in the country is widening from time to time. In the year 2003–2004, it was estimated that 50 per cent (about 1.6 million) of its population was vulnerable to this problem. The extent of the food insecurity situation can be cited from the failure of the agricultural sector to increase production on the supply side and the inability or the poor purchasing power of the population on the demand side to supplement the food needs which cannot be satisfied by domestic production.

The causes of food insecurity are intricate, cross-sectoral and multifaceted in nature. The magnitude and nature of the causes also vary from country to country. The widespread variability of the causes among countries indicates that there exists no one-policy-fits-all condition. Therefore, although drawing successful lessons from international experience is quite crucial, there needs to be a clear understanding of how to address issues unique to Eritrean food insecurity.

In a nutshell, a number of factors have converged to create this food insecurity in Eritrea. An unstable social and political environment has precluded sustainable agricultural growth. Poor economic policies of marketing and pricing have inhibited the development of agriculture based on comparative advantage and the intensification of agriculture. Retarding economic growth, growing population pressures have combined with a lack of investment in human resource development, further stressing the natural resource base. Agricultural productivity has been lower due to inadequate technology; land tenure system, lack of irrigation and research, traditional barriers and civil strife.

Indeed, the fact that food security is cross-sectoral in nature reveals that its achievement, though largely dependent on agriculture, is not only associated with agriculture. Therefore, sustainable food security could not be achieved by only focusing on agriculture at the expense of the other sectors. The efforts being made towards revitalization of the non-agricultural sectors of the economy, i.e. fisheries, industry and services, as well as preparing the necessary infrastructures, will significantly contribute to achieving the goal of food security. An improved healthcare system and levels of education (especially for women) and human resources development programmes will also have a direct and indirect contribution on the realization of food security.

Further, focusing on only one side of the food security problem, be it demand or supply side, will fail to alleviate food insecurity. The central theme of food security policy in Eritrea should therefore consider the food availability issue, which is more of a technical matter, and food entitlement, which is more of a distributional concern.

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