

**AGRICULTURE DEVELOPMENT AND FOOD SECURITY POLICY IN
ERITREA - AN ANALYSIS**

By

Ravinder Rena^{1*}



Ravinder Rena

*Corresponding author: Email: drravinderrena@gmail.com

¹Ph.D. Associate Professor of Economics, Department of Business and Economics,
College of Arts and Social Sciences, Po Box: 7956, Eritrea Institute of Technology,
Asmara, Eritrea Tel: 00291 7120361 Eritrea.

ABSTRACT

The main economic activity of the people of Eritrea is agriculture: crop production and livestock herding. Agriculture mainly comprises mixed farming and some commercial concessions. 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 and tomatoes and cotton. The major livestock production constraints are disease, water and feed shortages and agricultural expansion especially in the river frontages. The agricultural sector employs eighty percent of the working population, but its production has not managed to cover internal food demand and is forced to cover nearly 50 per cent of its annual cereal requirements through imports-commercial and food assistance. Like most African countries, Eritrea is also a victim of the problem of food insecurity. In good years the country produces only about 60 per cent of its total food needs and in poor years, it produces no more than 25 per cent. On average, once in 10 years, the country is threatened with famines.

Annual crop production depends on rainfall that is variable and unevenly distributed from year to year. Therefore, the primary goal of Eritrea is to guarantee food security by introducing modern technology, irrigation, terracing, soil and water conservation, with less dependence on rainwater. Thus the Government has articulated its food policy, which stresses national ownership of grant food assistance and to achieve food security in the coming five years. The policy indeed encompasses all sectoral policies and represents the Government's engagements with regard to food security. Despite the general trends of improvement in the economy of Eritrea, it has not yet fully recovered, and thus will still continue to require variable degrees of food assistance for the coming few more years. Based on this historical and recurrent food insecurity in Eritrea, an attempt is made in this paper to assess the agriculture development and food policy in the country. Furthermore, the paper captures the available food security policy proposals of Eritrea and eventually draws conclusions.

Key words: Agriculture, Food Security, Food Policy.

INTRODUCTION

The Eritrean macro-policy framework has been drawn as groundwork for the overall economic and social development of the country and its people. The Government of Eritrea has committed itself to achieve food security in the coming five years. However, this big challenge can only be achieved if the root causes of food insecurity are addressed. Food security is addressed through maximum possible domestic food production, optimal commercial food imports, and whenever absolutely non-avoidable, by grant food assistance supplements [1]. Government policy is to manage existing local productive resources to produce enough food and address food self-sufficiency and thus food security. This avoids dependency on free handouts and domestic market distortions by subsidized food aid.

However, despite the general trends of improvement in the economy of Eritrea, it has not yet fully recovered, and thus will still continue to require variable degrees of food assistance for the years 2007 and 2008. The Government has articulated its food policy, which basically stresses national ownership of the assistance. This is monetization of grant food assistance. The funds generated as a result of monetization are utilized to finance programs and projects that enhance food security.

Eritrea is located in the Horn of Africa, bordered in the north and west by Sudan, in the south by Ethiopia and Djibouti, and in the east by the Red Sea. It has an estimated population of about 4.5 million and a total land area of some 12.2 million hectares. Its annual population growth is estimated at 2.9 percent. Eritrea has nine ethnic groups and six administrative provinces/regions (zobas). The country has six agricultural zones defined by climate, altitude, soils, and population density. They are: (1) The Central High Land Zone; (2) The Western Escarpment Zone; (3) The South Western Lowland Zone; (4) The Green Belt of the Eastern Escarpment of the Highland Zone; (5) The Coastal Plains Zone and, (6) The North-western Lowland zone.

It is to be noted that the GDP *per capita* increased from \$130 in 1994 to 230 in 1998 and declined to \$190 in 2005. 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 the 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 29 per cent by 2005. 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. The GDP *per capita* (in US dollar terms) remained basically unchanged over the last ten years (1997-2007) 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 [2].

Indeed, the economic mainstay of Eritrean people is agriculture of which crop production followed by livestock herding are the core economic activities. The

agricultural sector employs about seventy percent of the working population, but its production has not managed to cover internal food demand. There are three major national production systems in Eritrea, they 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 (see table -3) and sesame, and the main irrigated crops are all horticultural crops like bananas, onions and tomatoes and cotton. The lowland regions have large livestock numbers with a high percentage of breeding stock. The major livestock production constraints are disease, water and feed shortages and agricultural expansion especially in the river frontages.

Agriculture is the backbone of Eritrean economy; it is the livelihood for the vast majority of the Eritrean people. About 70 percent of the population depends on agriculture and its allied fields such as crop production, livestock, forestry, and traditional fishing. Although agriculture is the most important sector in terms of employment and livelihood, its contribution to the country's GDP is relatively moderate, estimated to be between 21 to 30 per cent [3]. This is comparable to the average of about 30 per cent for sub-Saharan African countries. Agricultural production levels in Eritrea are generally low (see table -1), with average yields per hectare perhaps among the lowest in Africa [4]. The contribution of agriculture to exports is also modest with most of the exports coming from the livestock. The current situation of low performance in agricultural sector can be attributed primarily to the more than three decades of armed struggle for independence [5, 6].

Eritrea has been concentrating on many agricultural products such as vegetables, milk and milk products, meat, leather products, and so on. It has been facing numerous challenges inside and outside the country. Table -1 describes that the export value of agriculture in Eritrea as lower than any other selected African countries. In 2002, the cereal production in Eritrea is found to be 270, 000 metric tons; on the other hand Botswana produces only 20,000 metric tons. It can be viewed that the *per capita* area under cultivation in both Botswana and Eritrea is found to be greater than any other African countries: Botswana 10.6 hectares and Eritrea 1.21 hectares. The most important observation from the table is that the agriculture shares in GDP in countries like Eritrea, Kenya, and Zimbabwe found to be less than 17 per cent, whereas in other African countries particularly in Angola and Democratic Republic of Congo, GDP share found to be more than 50 per cent. All in all Eritrea's agriculture status in many aspects seems to be smaller than other African countries listed in the table. In table – 2, the area size, population and GDP are presented. It is noted that Botswana (with a small population) performing better than Eritrea in terms of GDP. Zimbabwe and Angola are also performing better than Eritrea in terms of their GDP with relatively large proportions.

One of the primary goals of the Eritrean agricultural sector is to guarantee food security by introducing modern technology, irrigation, terracing, soil and water

conservation, with less dependence on rainwater. By 2005, major dam projects like the *Tokar* dam, have been carried out and about 20 other dams were constructed [7]. Once food security is attained, the goal foresees the export of agricultural products as a foreign currency earner. To address food insecurity, the Government of Eritrea has been involved in the implementation of several agricultural, health, education, fisheries and other infrastructural projects and programs. Food security in the country is given top priority particularly from 2005 onwards. Food security has to be achieved in the country through increasing agricultural production, creating non-agricultural employment opportunities and raising the purchasing power of the people, and also by establishing strategic food reserves. Other contributions to food security are indirect and enabling. The current state of the national infrastructure in the country does not allow this to occur; market fragmentation and poor transport creates high localised market prices and household fragmentation when seasonal work outside the local area is sought. The constraint to expansion is the high cost of construction and maintenance especially in the more remote areas.

Options that lead to increases in indirect/long term food security include: increasing schools to increase the educational level of its people to increase the opportunity to non-agricultural jobs and income levels. Increasing hospitals/medical or health centres improves health and nutrition resulting in reduced productivity loss due to sickness. Besides, rural savings mobilisation, and provision of credit and rural enterprises increase the employment diversification [5, 9, 23].

The agricultural and food security policies of the Government of Eritrea mainly focus on the pre-eminence of food security and resource conservation in agricultural development. Population policy is not yet (2006) developed in detail, but aims at promoting an appropriate rate of population growth that fosters economic and social development. The land tenure policy has been proclaimed, which assures women's rights to land on equal basis with men where ownership of land is the exclusive right of the government [1]. Water policies are in the initial stages and aim to address water development while identifying the potential national water resource development projects and priorities [10]. A related policy area of the Government as stated in FAO is the prevention of the dumping of unneeded and/or poor quality foodstuffs on local markets, with the resultant impact on local producers and on the health of local consumers [9, 11].

Objective of the Study

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 situation in the early 1980s and during 1999-2004 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. The chronic drought conditions hit various pockets of the country. Based on this historical and recurrent food insecurity in Eritrea, an attempt is made in this paper to assess agricultural development in the country. Furthermore, the paper captures the available food security policy proposals

of Eritrea and eventually draws conclusions that are useful for policy development. The data have been collected from different written works, government documents and reports, particularly from the Ministry of Agriculture, Ministry of National Development, Food and Agricultural Organisation (FAO), and World Food Programme (WFP).

Food insecurity prevails at the household, regional and national 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. This research paper is composed of five parts. The first part is introductory in nature. The second part deals with the recent agriculture development in the country followed by the third part, which captures the conceptual perspective of food security policy elements and it also provides food policy issues in the country. The fourth part focuses on results and discussion. The fifth and final part of this paper provides concluding remarks of the study.

RECENT AGRICULTURAL DEVELOPMENT

Since Eritrea faced chronic drought conditions for more than five years (1999-2004), The successive 2005 and 2006 have bumper rainfall in the country. Hence, from the beginning till the harvesting season the government's attention has been focused on agriculture development and food security. All the human work force and materials in all the regions have been mobilized to concentrate on this objective of increasing agricultural production. Eritrean Minister for Agriculture, Mr. Arefaine Berhe in the Cabinet meeting held in July 2005, opined that "in the first harvesting period of 2005, Eritrea got about 4.4 million quintals of agricultural output. In line with this, the Ministry of Agriculture (MoA) has launched its programme towards achieving this specific goal."

It is reported that the total size of the cultivated area is 556,000 hectares and this agricultural area spread over six regions in the country. The largest proportion of this area goes to the Gash Barka (bread basket of Eritrea) region with 251,275 hectares, Southern Region 163,565 hectares, Northern Red Sea region with 63,210 hectares, in Anseba Region 51,000 hectares and in the Maekel (Central) Region 26,275 hectares. It is found that in contrast to the previous years, 2005 agricultural performance has increased by 23 per cent.

In addition to the traditional ways of farming in 2005 and 2006, a number of tractors are also involved. Hence, 983 government and privately owned tractors are deployed in all zones (regions) of the country. Out of these 983 tractors, 43 per cent government owned, and 57 per cent are privately owned ones.

These tractors mostly engaged in ploughing the plain areas. However, the remaining plots of land mainly found in escarpments, are ploughed by traditional mode of farming. The campaign initiated by the MoA targeting farmers, and was not only concerned about effective usage of tractors, but also of efficient exploitation of the traditional farming. The MoA also provided farmers with quality seeds, such as millet, sorghum, sesame.

Indeed, to ensure sustainable food security, the agricultural output must increase consistently. In achieving this objective, the MoA has been providing farmers the modern agricultural equipments such as: tractors, quality seeds, and pesticides. It is reported that these were already distributed throughout the country in the mid 2005. Ploughing all these hectares of land at the specified time deserves a joint effort of the government and the public at large. Further to utilize this for the maximum advantage, the challenges ahead are obvious. However, the MoA has been exerting efforts to regulate these activities. According to the reports of MoA in 2005, more than 103,400 hectares of land have been reserved for the better quality seeds. In this case, 8,594 quintals of properly examined seeds and 235 quintals of pulses have been distributed to all six administrative zones.

It is a known fact that the fertility of the soil is crucial in nurturing agricultural products. In Eritrea, manure of the soil has been limited only to animal wastes. Hence, the MoA has provided two essential ingredients in manure. They are dub and urea. The Ministry has supplied more than 53,000 quintals of dub (it has nitrogen, calcium, and phosphorous) and urea. Out of these 53,000 quintals, 94 per cent dub, and 6 per cent urea.

While addressing the nation on the eve of 13th Independence Day (24th May 2004), President Isaias Afwerki disclosed that *“the efforts are under way to develop the agriculture including: terracing and leveling of cultivable land; building of numerous small-medium and large-sized dams; controlling water in all regions through the building of diversionary water canals and streams. Exploiting underground water resources and using them carefully and effectively; investing heavily in agricultural machinery and farming tools. Introducing wide usage of modern irrigational technology; improving the quality of seeds, fertilizers and pesticides; increasing the production of meat, milk, pulses and oil in quality and quantity; selecting and upgrading agricultural products for export markets”*.

It is also to be noted that weeds are the most common serious enemies of seeds in Eritrea. Weeds also require a large number of human force and they are not easily controllable. In preventing such negative scenario, the MoA has deployed two types of herbicides in respective zones. With the promising summer rainy season and with all the endeavours, the nation is optimistic it would again march towards self-sustenance in agriculture that was crippled by the war and erratic rainfall.

It is interesting to note that the public in Eritrea is acting as a main actor in all the developmental projects of the country. It is a known fact that, to ensure food security, first there should be enough water for drinking and more for industrial and agriculture uses. A systematic way of farming which includes crop change is also another means to the farmers to adopt to ensure the food security. It is found that in the past, Eritrean society did not give much attention to vegetables and/or commercial farming; but at present a lot of farmers have started farming various types of vegetables and cash

crops. Similarly, the Government is trying to motivate the farmers to engage them in animal production too. The Government and people of Eritrea clearly understood that they should not depend on food aid and therefore they must work hard to attain the food security. However, due to natural, economic, political factors there are many impediments in securing the food security in the country.

FOOD SECURITY POLICY - A CONCEPTUAL PERSPECTIVE

Generally, food security policy serves as a mechanism to give institutional expression to the priority for food and the elimination of hunger, transcending sometimes sharp sectoral demarcation in national decision making [12]. National food policy in most societies is designed to achieve four basic objectives: efficient growth in food and agricultural sectors, job creation, a decent, minimum standard of living, and security against famine or extreme food shortages [13].

Food Security Policy Elements

A concept of a food security policy encompasses all sectoral policies and represents the Government's engagements with regard to food security [14]. The food security policy elements cannot be isolated and should be seen as part of an integrated and comprehensive reform effort. Furthermore, food security policy does not pretend to be complete, but highlight priority issues [15, 16]. The structural food security policies are generally aimed at ensuring the necessary conditions for access by all people at all times to enough food for an active, healthy life. The policy has supply and demand side elements.

The supply side of the structural food security policy includes agricultural policy (support policies to the development of the domestic supply), and trade policy (in order to set up conditions for commercial imported food supplies). The objectives of the Government's agricultural policy are to set up the necessary conditions that will allow the development of an efficient and profitable domestic agricultural production [14]. Eight issues are in the broad field of agriculture that includes farming, food processing and agricultural services [15].

The first food security policy element is to promote basic domestic crop and animal production in adequate quantity, and at a cost that makes them competitive against imports. This is done together with strongly stimulating the economic growth of the agricultural sector as pulling force for the overall development process of the country. Land and agrarian reform, crop and livestock production, rural finance, extension services, natural resources management, reform of agro-industries, and seed development are key policy issues included in this case [15].

Policy Issues

1. Land and Agrarian Reform: The policy of the Government focuses on the establishment in the long-term of a secure and well-functioning market in land and other immovable assets based on free market principles. This will contribute to the

overall economic development of the agricultural sector in the country, through stimulating the process of farm restructuring, consolidation and development of commercial transactions in the sector [17]. The rationale behind land privatization is that market forces will determine the best opportunities for an efficient and profitable agricultural production [14].

2. **Agricultural Marketing:** The policy of the government is to facilitate agricultural recovery and growth, to raise rural incomes through stimulating the development of well performing agricultural commodities markets.
3. **Financing Private Rural Enterprises:** The Government's policy is to increase the efficiency and profitability of the agricultural sector and the living standard of the rural population through the establishment of a sustainable system of mostly private rural finance [4, 18]. The objective of the rural credit policy is to provide conditions and guarantees to commercial banks in order that they accept the risk to provide credit to agricultural producers at acceptable terms [14].
4. **Extension Services for Crop and Livestock Production:** The Government's general policy objective is to promote farm reform and adaptation of private rural operators to market economy requirements and to extend the required knowledge and advice through private agencies with technical support [7].
5. **Management of Natural Agricultural Resources:** In order to maintain food stability during future years, it is the Government's policy to optimize the use of the three basic natural resources needed for a sustainable domestic food production: farmland, water, and rangeland. It means at the same time increasing the productivity of each of these resources, and to set rigid standards in order to avoid overexploitation. A policy of preservation of the nation's vast natural capital is considered to be a guarantee of a continuously stable national food balance [19].
6. **Agro-Industries:** The government's policy is to support the development of a competitive private food processing industry in the country. This is aimed at guaranteeing food is processed, conditioned and preserved properly thus contributing to import substitution and taking full advantage of the export potential of the sector in the longer term [20].
7. **Institutional Reform:** The overall policy is to continue the process of institutional reform in the Ministry of Agriculture and Water Resources in conformity with the government free market policy [5].
8. **Seed Development:** The overall policy is to support the development of a viable domestic seed industry, which will provide farmers with a range of quality seed and develop the possibility of exports [19].

The demand side of the structural food security policy includes support policies to access food such as income policy and social security. The objective of support policies to access food is to ensure that all people have access to sufficient,

healthy and accessibly priced food. This implies that supplied food commodities are accessibly priced, and that all population groups have at least a subsistence income allowing them to purchase a minimum monthly food basket [14]. Three issues that relate to social considerations and public health are presented below.

Social Protection and Health Care (Policy no. 9 to 11): The second element of food security policy is to guarantee that people at all socio-economic levels, and in all regions, have adequate access to basic and healthy food. Key policy issues are to be complimented primarily with overall efforts aimed at employment/income generation [19].

9. Social Safety Net: The overall long-term objective of the policy is to have a sustainable, effective and performing social safety net, providing a minimum guaranteed income to vulnerable groups in order to ensure their access to sufficient food that corresponds to rational physiological consumption norms [19].
10. Nutrition: The long-term objective of the policy is to institute balanced nutritional habits among the population [9].
11. Food Quality and Safety: The long-term objective of the policy with respect to food quality and safety is to ensure that accessible and viable locally produced and imported food commodities are safe, healthy, and in conformity with common international quality standards [9].

Emergency food Security policies are aimed at setting up the necessary framework in order to be prepared in case of emergencies affecting food security. Elements of this policy are presented below.

Emergency Preparedness (Policy no. 12 to 14): The second element of food security policy is the overall policy of the government to ensure permanent food security in the country. To achieve continuous food security the government must be fully capable and competent to monitor current food security levels, anticipate and forecast any looming food crises and put in place necessary prevention and mitigation measures [14]. This policy comprises three issues as described below.

12. Food Observatory: The Government will seek to unify and co-ordinate all parameters into centralized fast, reliable, and if so cost efficient Early Warning and Food Information System [9].
13. State Wheat Reserve: The Government will commission a feasibility study to consider whether a national food reserve is needed and if so what should be its size, cost, responsibilities, and principles of management, rules of engagement and system of financing [19, 22]. The objective of an emergency cereal reserve is to be able to provide early food support to populations that have been affected by emergency situations like war and drought [14].

14. National preparedness plan against Food Emergencies: The Government's policy to see to the preparation of a specific preparedness plan designed to be used without delay in case of unforeseen food emergencies of all possible sorts [20, 21]. The objective of disaster preparedness is to have a governmental structure and operational procedures in place in order to respond quickly and efficiently to emergency situations [14].

The Government takes the commitment in order to achieve food security through the structural and emergency food security policies. The structural food security policy sets the conditions for a stable, accessible and healthy food supply to all categories of the population. The emergency food security policy takes the engagement to set up the necessary disaster preparedness measures in case of emergencies endangering food security [14].

RESULTS

Eritrea is a food insecure country. Imports are high even in good years; for example, despite 1998 being a year of good rainfall, national import requirements were nearly 200,000 metric tons or 30.5 per cent of consumption [21]. In good years the country produces only about 60 per cent of its total food needs and in poor years, it produces no more than 25 per cent. On average, once in 10 years, the country is threatened with famines. Annual crop production depends on rainfall that is variable and unevenly distributed from year to year. Eritrea so far has not managed to raise crop production to a level that can support the entire population, and is forced to cover nearly 50 per cent of its annual cereal requirements through imports-commercial and food assistance. The majority of Eritrean farmers live close to subsistence level even during normal agricultural season; they complement their income by working as manual labourers and selling firewood to support themselves and their families [23].

As a result of widespread periodic food shortages, child malnutrition in Eritrea is high. About 38 per cent of children in Eritrea under five-years are stunted with low height for age, 15 per cent are wasted with low weight for age, and 44 per cent of children are underweight with low weight for height. Nearly 50 per cent of children suffer from anemia. Furthermore, women are most critically affected by food insecurity and malnutrition, which puts them at a greater risk of complications and death during pregnancy and childbirth. Malnutrition rates for lactating mothers are among the highest in Africa. This is in part a reflection of inadequate food supply at the household and national levels, due to a complex set of factors. Caloric intake and nutritional composition of the typical Eritrean diet are below minimum standard. High level of poverty restricts household access to food. The lack of adequate potable water, poor sanitary conditions and disease also affect nutritional status [22, 23].

Clearly, despite the effort to secure food in the country, Eritrea is still suffering from severe food insecurity. It is observed that over the past fifteen years the Government has been purchasing grain from international markets as a means of preparing for the drought calamities in advance (see table - 4). Thus, to avert the current humanitarian

crisis, in 2004 the Government has purchased a total of 85,000 metric tons of grain from international markets at a cost of USD 15 million. Eritrean society did not give much attention to grow vegetables and/or commercial farming; but at present a lot of farmers have started farming various types of vegetables and cash crops. Similarly, the Government is trying to motivate the farmers to engage in animal production as well. Besides, the government of Eritrea has been working tirelessly to conserve water and soil and ensure food security. The government views food security as the main objective to eradicate poverty.

DISCUSSION

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 [1]. The food insecurity in the country is the result of various causes, which are complicated and incomplete in value. The food security policy in Eritrea needs coordination and cooperation of different government and non-governmental bodies.

In the first harvesting period of 2005, Eritrea obtained 4.4 million quintals of agricultural output. In line with this, the Ministry of Agriculture (MoA) has launched its programme towards achieving this specific goal. It is reported that the total size of the cultivated land area was 556,000 hectares in 2005. This agricultural area has been composed of six regions in the country. It is found that in contrast to the previous years, the agricultural performance has increased by 23 per cent in 2005. Further, 103,400 hectares of land has been reserved for improved seeds. In this case, 8,594 quintals of properly examined seeds and 235 quintals of pulses have been distributed to all six administrative zones.

Implications

To address the possible food insecurity problem in Eritrea, the Eritrean Government has been actively involved in the implementation of several reforms. It can be suggested that the Government of Eritrea has to exert some relevant development interventions in order to address the food security. Some of the implications are as explained below.

- Develop agriculture and increase food production;
- Improve the purchasing power of rural and urban households in general and the poor in particular;
- Introduce needed changes in people's dietary and food preparation habits;
- Maximize profits from local produce through processing, conservation and packaging; 5. Strengthen the dynamics of farmers' organizations to ensure their full participation in sustainable development programs;
- Introduce and implement economic policies that are transparent and reliable and protect producer prices, discourage imports of food commodities that undercut local production, and alleviate the costs of agricultural equipment

and imports;

- Create and strengthen a climate that is favorable to productive investment in the agriculture sector, such as equipment, management schemes and other activities;
- Build infrastructure, such as roads and railways for conveying produce to the market and install a communication network that is essential for the efficient operation of marketing and supply systems;
- Strengthen the institutional, technical and financial capabilities of rural organizations by encouraging the formation of women's groups and associations and those for young people, with emphasis on their full participation in activities aimed at their benefit;
- Support programs and projects designed to generate greater returns on local produce and securing increased consumption of this produce by the population; and
- Strengthen the possibilities for diversifying agricultural products and their disposal on the markets at local, national, sub-regional, regional and international levels.

CONCLUSION

To ensure food security, there should be enough water for drinking and more for industrial and agricultural uses. A systematic farming (like crop change) can be adopted by the farmers to ensure food security. The Government and people of Eritrea realized the importance of food security and working hard to reduce the dependency on food aid. The government is planning to introduce various agricultural development programmes in a phased manner. However, due to natural, economic, and political factors there are many impediments in securing food security for the country.

Therefore, food security policy encompasses all sectoral policies and represents the Government's engagements with regard to food security. First, it concerns structural food security policies, which food security policy-supply side and food security policy-demand side. Second, it relates to emergency food security policies. The Government of Eritrea has prepared a prudent policy to achieve food security at national level by 2010. Despite the general trends of improvement in the economy of Eritrea, it has not yet fully recovered, and thus continue to require variable degrees of food assistance for the coming few years.

The Government has articulated its food policy, which basically stresses national ownership of the assistance that is called monetization of grant food assistance. The funds generated as a result of monetization are then to be utilized to finance programs and projects that enhance food security. Finally, having established the necessary strategy and framework, government of Eritrea and its international development partners must commit themselves to set common goals, policies and programs to prepare sound food policy that eventually develop the agriculture sector and end the famines, chronic drought and thus achieve food security for Eritrea.

Table - 1 Agricultural Statistics of Selected Countries in Africa in 2002.

| Country | Fertilizer Use (In 000 of Metric tons) | Value of Agriculture Exports (Value in Million USD) | Cereal Production (In 000 metric tons) | Area under Major Crops (in 000 ha.) | Per capita Area under cultivation | Agriculture as % of GDP |
|---------------|--|---|--|-------------------------------------|-----------------------------------|-------------------------|
| 1] Angola | 5 | 6 | 550 | 3,000 | 0.23 | 56.60 |
| 2] Botswana | 4 | 115 | 20 | 1,700 | 10.6 | 36.18 |
| 3] Chad | 17 | 135 | 1,153 | 3,520 | 0.45 | 37.94 |
| 4] DR Congo | 0 | 95 | 1,622 | 6,700 | 0.13 | 58.00 |
| 5] Eritrea | 7 | 2 | 270 | 498 | 1.21 | 16.60 |
| 6] Kenya | 128 | 1,157 | 2,264 | 4,000 | 0.13 | 16.98 |
| 7] Madagascar | 9 | 92 | 2,357 | 2,565 | 0.16 | 31.95 |
| 8] Malawi | 50 | 359 | 2,475 | 1,875 | 0.17 | 37.85 |
| 9] Mozambique | 5 | 50 | 1,476 | 3,120 | 0.18 | 22.00 |
| 10] Zimbabwe | 174 | 1,157 | 2,513 | 3,220 | 0.25 | 16.29 |

Source: World Bank Africa Data Base -2003

Table - 2 Agricultural Statistics of Selected Countries in Africa in 2002.

| Country | Land Area (in 000 sq kilometers) | Population (In Million) | GDP (Value in Million USD) |
|---------------|----------------------------------|--------------------------|----------------------------|
| 1] Angola | 1,247 | 12.72 | 13,189 |
| 2] Botswana | 567 | 1.60 | 7,530 |
| 3] Chad | 1,259 | 7.69 | 2,608 |
| 4] DR Congo | 2,267 | 51.39 | 5,671 |
| 5] Eritrea | 124 | 4.10 | 751 |
| 6] Kenya | 569 | 30.09 | 10,357 |
| 7] Madagascar | 582 | 15.52 | 4,020 |
| 8] Malawi | 94 | 11.04 | 1,697 |
| 9] Mozambique | 784 | 17.62 | 4,321 |
| 10] Zimbabwe | 387 | 12.63 | 17,759 |

Source: World Bank Africa Data Base -2003

Table - 3 Production (Metric tons) and area (hectares) Sown by Main Crops During the Period 1992-1999.

| Year and Production | Cereals | Pulses | Oilseeds | Total |
|------------------------|----------------|---------------|---------------|----------------|
| 1992 Production Area | 251,300 | 6,000 | 5,100 | 262,400 |
| Sown | 263,100 | 8,800 | 12,700 | 284,600 |
| 1993 Production Area | 86,850 | 1,530 | 9,670 | 98,050 |
| Sown | 338,500 | 15,000 | 42,100 | 395,600 |
| 1994 Production Area | 253,400 | 4,370 | 8,800 | 266,570 |
| Sown | 330,310 | 7,950 | 24,700 | 362,960 |
| 1995 Production Area | 122,460 | 6,122 | 11,696 | 140,278 |
| Sown | 298,432 | 21,935 | 29,073 | 349,440 |
| 1996 Production Area | 85,358 | 6,369 | 5,187 | 96,914 |
| Sown | 322,179 | 14,127 | 35,050 | 371,356 |
| 1997 Production Area | 99,080 | 1,209 | 2,624 | 102,913 |
| Sown | 374,255 | 5,798 | 13,350 | 393,403 |
| 1998 Production Area | 457,810 | 3,275 | 6,792 | 467,877 |
| Sown | 477,043 | 6,942 | 13,436 | 497,420 |
| 1999 Production Area | 427,060 | 15,009 | 30,258 | 472,427 |
| Sown | 318,829 | 7,700 | 14,316 | 340,805 |
| Average 1992-99 | 222,915 | 5,485 | 10,028 | 238,429 |
| Production Area | | | | |
| Sown | 340,331 | 11,032 | 23,091 | 374,453 |

Source: Ministry of Agriculture (2002) *Agricultural Sector Policy and Strategy Framework: Background and Context Development and Management*, Asmara: Ministry of Agriculture, The Government of State of Eritrea (November).

Table - 4 Average National Food Balances in Eritrea (000 metric tons).

| S.No. | Component of Balance | Average 1992-1995 | Average 1996-1999 |
|-------|----------------------|-------------------|-------------------|
| 1. | Opening Stock | 92 | 71 |
| 2. | Production | 190 | 259 |
| 3. | Imports | 138 | 347 |
| 4. | Supply | 420 | 677 |
| 5. | Consumption | 384 | 587 |
| 6. | Seed and Loses | 36 | 42 |
| 7. | Closing stock | NA | 64 |
| 8. | Export | NA | 0 |
| 9. | Demand | 420 | 677 |

Source: Ministry of Agriculture (2001) *Agriculture Sector Review*, Asmara: Government of Eritrea.

REFERENCES

1. **Government of Eritrea** Macro Policy Document. Government Press, Asmara, Eritrea. 1994.
2. **Ayumu Y** Fiscal Sustainability - the Case of Eritrea. IMF Working Paper WP/04/7. 2004: 3-5.
3. **World Bank** Eritrea: Options and Strategies for Growth, Report No. 12930 - ER, East Africa Department, Washington, D.C. World Bank, 1994.
4. **Rena R** Eritrean Agriculture: Prospects and Challenges. *Eritrea Profile*, 2002; **9**: 5-6.
5. **Rena R** A Handbook on the Eritrean Economy: Problems and Prospects for Development. Dar Es Salaam, New Africa Press, 2006: 52-104.
6. **Rena R** Emerging Eritrean Agriculture in Accordance with Global Competition: A Case Study on Elabered Estate. *Osmania J. of Socl. Scie.* 2004; **4**: 34-44.
7. **Rena R** Green Revolution: Indian Agricultural Experience - Paradigm for Eritrea. *Eritrean Studies Review*, 2004; **4**: 103-130.
8. **Rena R** Community Development and Food Security in Eritrea – A Focus on Zoba Debub. *Eritrea Profile*, 2005; **12**: 4.
9. **Ministry of Agriculture of Eritrea** Food and Environment Security in Eritrea. Asmara, 1997.
10. **Bojo J** Land Degradation and Rehabilitation in Eritrea. Washington, DC. World Bank, 1996.
11. **FAO/ MoA**. Crop Assessment Report 1992-1999, FAO and MoA, Asmara, 1999.
12. **Hansen A and DE McMillan** Food in Sub-Saharan Africa. USA, Lynne Rienner Publishers, 1986.
13. **Timmer CP** Food Policy Analysis. The Johns Hopkins University Press for the World Bank, Baltimore. 1983.
14. **Leblanc M** Concept of a Food Security Policy. Available at <http://www.resal.org/Download/report/mission/Nei/0799Stnis.pdf>. 1999.

15. **Piccioni N** The Commitment of a Young Nation: Eritrea and follow-up to the World Food Summit, UK. Cab International, 1997.
16. **Iannotti L, Ferris-Morris M, Lucas K and R Edward** Case Study: Eritrea. Linking Food Security and Nutrition. Washington, D.C. World Bank, 1998.
17. **World Bank.** Poverty and Hunger: Issues and Options for Food Security in Developing Countries. Washington D.C. World Bank, 1986.
18. **Ministry of Agriculture of Eritrea** Agricultural Sector Policy and Strategy Framework: Background and Context Development and Management. Asmara, The Government of the State of Eritrea, 2002.
19. **FAO.** Report of the Regional NGO Consultation for Africa on the World Food Summit, WFS/ARC/NGO/REP, FAO, Rome, 1996.
20. **FAO.** Special Program for Food security (SPFS): Rationale, Objectives and Approach, PFS/ Doc/4, FAO, Rome, 1996.
21. **Ministry of Agriculture of Eritrea** Agriculture Sector Review. Asmara, 2001.
22. **Government of Eritrea** Eritrea: Food Security Strategy. Ministry of National Development, Asmara, 2004: 16-28.
23. **Rena R** Challenges for Food Security in Eritrea: A Descriptive and Qualitative Analysis. *Afr Devpmt Review*, 2005; **17**: 193-212.