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The State Of Food Security: Recent Trends In Syria

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Abstract

Hunger and malnutrition inflict heavy costs on individuals and households, communities and nations. More than a quarter of the world's chronically hungry people live in countries where the prevalence of undernourishment is very high (35 percent or more).

Syria is designated as low-income, food-deficit country. Despite progress in agriculture, current production cannot keep up with population growth that is considered one of the highest rates in the world.

This paper presents a preliminary assessment of food security issue in Syria through the most recent relevant studies conducted at global, regional and Syrian national levels. The assessment covers Syrian governmental plans and policies towards achieving food security and fighting hunger in the rural areas as well as the ongoing research of FAO, UNDP, WHO, UNICEF, and other international organizations. The first part of the paper is a definitional and conceptual framework. the second one is an analysis of recent literature review (at global, national and household levels) with special reference to the linkages between food security and the sustainable livelihood approach. While the last part summarizes the state of food security in Syria and concludes discussing some research needs. It was shown that Syria still has challenges to achieve food security in many spots of the rural areas where many families not having enough food accession and availability. Moreover, challenges can be met through increasing awareness-raising campaigns on the use of balanced and sanitary food, reducing thinness rates and malnutrition among children.

Table of Contents

1. Introduction	1
2. Conceptual Framework	2
2.1. What is meant by food security, food insecurity and vulnerability?	2
2.1.1 <i>Food security</i>	2
2.1.2 <i>Food insecurity</i>	2
2.1.3 <i>Vulnerability</i>	2
2.2 Food security and sustainable livelihood approach	2
2.2.1 <i>Participatory poverty assessments</i>	3
2.2.2 <i>Food security versus poverty</i>	3
2.3 Measuring food security and indicators	4
2.3.1 <i>Nutrition requirements</i>	4
2.3.2 <i>Measuring food deprivation</i>	4
3. Food Security at global and national levels	5
3.1 Food security at global analysis	5
3.1.1 <i>Food supply and availability</i>	5
3.1.2 <i>Food consumption</i>	6
3.1.3 <i>Undernourishment around the world</i>	6
3.2 Food security at Syrian national analysis	7
3.2.1 <i>Food availability at national level</i>	7
3.2.2 <i>Development in per capita availability of food commodities</i>	9
3.2.3 <i>Development of per capita calorie intake</i>	9
3.2.4 <i>Food acquisition</i>	10
3.2.5 <i>Undernourishment at national level</i>	10
4. Conclusion	13
4.1. Food availability	13
4.2. Food stability	13
4.3. Food accessibility	13
4.4. Undernourishment	14
4.5. Challenges and constrains	14
4.6. Proposals for future work	14
References	17
Annexes: (List of references)	19

1. Introduction

Despite the vast wealth creation in much of the world, nearly 800 million people in developing countries are chronically hungry and the number of people living on a dollar a day is virtually unchanged from a decade ago. According to the Human Development Report 2004 (UNDP, 2004) the undernourished population totals 34 millions in the Arab States and the target of halving this will not be met before 2015 as expected. At regional level, the numbers of undernourished were reduced in Asia, the Pacific, Latin America, and the Caribbean. In contrast, the numbers continue to rise in Sub-Saharan Africa, Near East and North Africa (FAO, 2004). In addition to that, 11 million children under age five are dying each year all around the world (one million in the Arab States). Until early seventies, the Arab World was a self-sufficient area in most of food commodities. After mid-seventies, however, the accelerated demand for food which resulted from the increased numbers of population caused to suffer from different types of food insecurity. Eventually, as the food gap has been enlarged, the importance of food security issues has greatly increased in the Arab World in light of the recent trends of the world economical, political, and trade systems changes accompanied with the EU Agreements, the accession to the WTO, and negotiating and implementing regional and bilateral trade agreements. Therefore, achieving food security has recently become the main strategic goal the area.

In this context, FAO estimates that undernourishment in Syria accounts for 2.5-4% of population, a relatively low share among the developing countries. Yet, the estimates was mainly based on the per capita calory intake which is in fact insufficient for a country like Syria and it showed a little decline between the period of 1990-1992 and 1999-2001 (FAO, 2004). However, Syria still faces a daunting challenge to meet the national goal of achieving food security, especially because most Syrian's poor (61% of the poor) live in rural areas and depend on agriculture for survival (UNDP, 2005). Most recent estimation was done by the UNDP cooperating with the Syrian Government illustrated that in 2003-2004, almost 2.02 million individuals in Syria (11.4 per cent of the population) could not obtain their basic food and non-food needs.

In fact, the Syrian economy depends mostly on agriculture out of which 70% is rainfed and does not earn enough outputs and sources of livings. Weather risks besides the long drought periods, land fragmentation and soil fertility deterioration have been the main obstacles to developing agriculture. Therefore, the food security issue in Syria has many relationships between the low productivity of agriculture and the misuse of land and water resources, and the other factors lead that to low productivity and to low return, which may lead to exiting agriculture seeking other income sources.

The rise in population growth rates, the increase in the number of new comers to the labor market, and inability of the economy to provide them with job opportunities, in addition to the impact of international economic changes on the Syrian economy in recent years, led to a rise in unemployment from 6.8% in 1995 to 9.5% of the total workers in 2000 (State Planning Commission & UNDP, June 2003) and up to 10.8% in 2004 (CBS, 2005).

Trying to answer a key question "Is there a food security issue in Syria?" This paper presents a preliminary assessment of the most recent relevant studies conducted at global, regional and Syrian national levels. The assessment covers Syrian governmental plans and policies towards achieving food security and fighting hunger in the rural areas. The ongoing research of FAO, UNDP, WHO, UNICEF, and other international organizations to assess the state of food security in the developing world would be of great importance as well.

The paper consists of four main parts: the first one is definitional and conceptual issues of food security. Part two presents an analysis (at global, national and household levels) of recent literature review with special reference to the linkages between food security and the sustainable livelihood approach. While the last part summarizes the assessment of the current state of food security in Syria and concludes with some proposals for future work and areas of improvement needed.

2. Conceptual Framework

2.1. What is meant by food security, food insecurity and vulnerability?

The right to adequate food is a human right based on the Art. 11 of the International Covenant on Economic, Social and Cultural Rights enshrine the right of everyone to an adequate standard of living for himself and his family, including food, clothing and housing (FAO, 2003).

2.1.1 Food security

Food security is defined by FAO as physical and social economic access for all people to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food security requires that:

- Sufficient quantities of food of appropriate quality be available—a production issue;
- Individuals and households have access to appropriate foods—a poverty issue; and
- Nourishment is taken under good conditions, including regular meals, safe food, clean water and adequate sanitation—a public health issue.

The objective of food security, as defined by the Food and Agriculture Organization is to assure to all human beings the physical and economic access to the basic food they needs. This has to be achieved at three levels simultaneously: individual, household, and national/regional levels. According to this internationally agreed definition, food security has three dimensions: availability, stability, and access. It implies that there is the need not only to make adequate supplies of food available, but also to maximize the stability of these supplies and to secure access to them by those who need them.

2.1.2. Food insecurity

Food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food. Food-insecure people are those individuals whose food intake falls below their minimum calorie (energy) requirements, as well as those who exhibit physical symptoms caused by energy and nutrient deficiencies resulting from an inadequate or unbalanced diet or from the body's inability to use food effectively because of infection or disease. Food insecurity is a complex phenomenon, attributable to a range of factors that vary in importance across regions, countries and social groups, as well as over time. These factors can be grouped in four clusters: the socio-economic and political environment; the performance of the food economy; care practices; health and sanitation.

2.1.3 Vulnerability

Vulnerability refers to the full range of factors that place people at risk of becoming food-insecure. The degree of vulnerability of individuals, households or groups of people is determined by their exposure to the risk factors and their ability to cope with or withstand stressful situations. There is also an important time dimension to the phenomena of inequality and poverty. The notions of vulnerability and marginalization are often employed in this context. Vulnerability refers to the livelihoods being in or falling into relative or absolute poverty.

2.2 Food security and sustainable livelihood approach

There are particularly strong links between the sustainable livelihoods approach and participatory poverty assessments (PPAs). These assessments have been developed as an instrument for including the perspectives of the poor in the analysis of poverty and the formulation of strategies to deal with it. The trend is to build PPAs into ongoing welfare monitoring and policy formulation processes and to use them as a way to build ownership and new relations between various actors in the policy process (DFID, 2001).

Like livelihoods analysis, PPAs are rooted in traditions of participatory research and action. The two share many themes in common e.g. an emphasis on vulnerability to shocks and trends and on various kinds of assets and are therefore expected to be complementary. However, since both vary by context, it is not possible to make definitive statements about the links in any given case. In most cases, livelihood outcomes can be thought of as the inverse of poverty. That is, if an individual describes poverty as food insecurity, powerlessness and a lack of access to key services, then the livelihood outcomes they seek might be expected to be food security, a sense of power and dignity and improved access to services. Therefore, the primary method of understanding livelihood outcomes is to develop a thorough understanding of local definitions of poverty.

The livelihoods approach incorporates and builds upon existing participatory methodologies:

- It promotes people's achievement of their own livelihood objectives. There is no prejudice about what these are – they must be 'established' through participatory activities.
- It builds upon people's strengths. Again, this is only possible if participatory methodologies are used to establish who has access to which types of capital and how this is affected by the institutional, social and organisational environment.
- It seeks to understand, through participatory analysis, the effects of macro policies upon livelihoods.
- Indicators of impact are expected to be negotiated with local people. This idea of negotiation goes well beyond minimal ideas of participation as consultation.

2.2.1 Participatory poverty assessments

Recent Participatory Poverty Assessments (PPAs) have found poverty to be a multi-dimensional social phenomenon based on many interlocking factors (this is clearly congruent with the Sustainable Livelihood approach as a whole). Despite the complexity of poverty, they have also found that there is commonality across locations and groups. The following are core components of the way in which many people understand poverty:

- a state of dependence and a lack of psychological well-being;
- a sense of isolation from services, markets, government institutions and information;
- powerlessness and a lack of voice;
- food insecurity;
- lack of employment and insecure sources of income;
- illiteracy;
- lack of assets to protect against shocks (i.e. vulnerability);
- insecurity, including physical insecurity and helplessness in the face of exploitation;
- physical weakness, ill health and lack of access to respectful, effective, inexpensive and nontime-consuming healthcare;
- social isolation, loss of culture, disintegration and lack of dignity/respect in social life.

Any investigation of livelihood outcomes must therefore be sufficiently broad to cover this wide range of issues where they are locally relevant.

2.2.2 Food security versus poverty

There is some overlap between poverty and food insecurity. Chronic food insecurity is almost always closely associated with poverty, and responses to the problem will usually require an injection of external resources (Rao, 2001). Seasonal food insecurity is the outcome of regular patterns usually in weather related activity. The most obvious is the crop production cycle, however, there are other aspects of economic activity which may have a strong seasonal element. Employment in the tourist industry and in crop and livestock processing may have a strong

seasonal element. There are a number of approaches to alleviate seasonal food insecurity. Governments can provide support for off-season sources of employment and non-farm activities. Price stabilization boards and buffer stocks can reduce seasonal price variation while provision of alternative sources of credit can help break the cycle of indebtedness.

2.3 Measuring food security and indicators

2.3.1 Nutrition requirements

To assess the level of food security, appropriate ways of measuring the concepts of adequacy, stability and access have to be found. Some variables describe the macro economy, e.g. income distribution and food supply, others relate to the household, food stocks and food consumption, and yet others are indicators of individual status, food intake and anthropometric measurements. Here, we emphasize direct indicators of food consumption and nutritional status.

Nutritional requirements definitions refers to the quantity of energy and of nutrients, expressed on a daily basis, necessary for a given category of individuals that will allow these individuals, when in good health, to develop and lead a normal life. Requirements vary according to age, sex, body weight, level of activity and physiological status (Rao, 2001). Reference Nutrient Intakes (RNIs) are used as a standard to assess the adequacy of intake of nutrients. RNIs are calculated so as to ensure the best possible nutritional status. For all nutrients, with the exception of energy, they include a safety margin to take account of individual variation, taking the form of the mean plus two standard deviations, thus ensuring the levels will be adequate for 97.5% of the population.

2.3.2 Measuring food deprivation

Average food availability comes from “food balance sheets” compiled by FAO every year by tallying how much of each food commodity the country produces, imports and withdraws from stocks, subtracting the amounts that were exported, wasted, fed to livestock or used for other non-food purposes, and dividing the caloric equivalent of all the food available for human consumption by the total population to come up with an average daily food intake or dietary energy supply (DES). Data from household surveys are used to derive a “coefficient of variation” to account for the degree of inequality in access to food. Similarly, since a large adult needs almost twice as many calories as a three-year-old child, the minimum requirement per person for each country takes into account its mix of age, gender and body sizes. FAO reports the proportion of the population whose daily food consumption falls below the minimum daily requirement as undernourished.

3. Food Security at global and national levels

3.1 Food security at global analysis

Since the 1960's, the world food system has responded to a doubling of the world population providing more per capita food at progressively lower prices. Global nutrition has consistently improved. This performance was possible through a combination of high-yielding seeds, irrigation, and plant nutrition and pest control. In the process, large quantities of water were appropriated for agriculture. As population keeps increasing, even if at a slower rate, more food and feed livestock need to be produced in the future. While food production is satisfying market demand at historically low prices, an estimated 8 hundred million people in developing countries do not have access to sufficient and adequate food. In spite of the overall improvement in the nutritional situation, the absolute number of undernourished people is reducing at a much slower rate than had been anticipated. The 1996 World Food Summit set a target of reducing the number of chronically hungry people by 2030 to about 400 million, but current projections indicate that this figure may be achieved fifteen years later than targeted, unless policy and financial action is taken.

Two distinguished approaches can be followed in analyzing policies to improve food security: The supply and demand based approaches. Food supply determines availability; food demand refers to the ability to gain access to food. Factors determining supply are: (1) volume and stability of food production; (2) available food stocks; (3) food imports. Factors determining demand are: (1) the purchasing power for all depends on the market: this depends on wages, employment, and prices. At the national level, demand depends on the availability of foreign exchange to pay for food imports; (2) the productive assets available to those who depend on own production for food consumption, and (3) non market transfers (including food aid). Which approach to take depends on whether supply or demand deficits dominate.

3.1.1 Food supply and availability

The main source of the world's food supply is agriculture, which includes crops, livestock, aquaculture and forestry. Therefore, the bulk of global food production (cereals, oils, livestock and fish) is dependent upon a whole range of agricultural systems in which water is a critical factor of production. In addition, at local level, agriculture is the mainstay of many rural economies. Providing the 2,700 calories per person per day needed for adequate nourishment requires an average of 1,000 cubic meters of water (FAO/World Bank, 2001).

Most agriculture is rainfed, but irrigated land accounts for about one fifth of the total arable area in developing countries producing around two fifths of all crops and three fifths of all cereals. Cereals are the most important crop that provides 56 percent of calories consumed. Food production from the livestock sector includes meat (beef, pork, poultry, etc.), dairy products and eggs. In the last few decades, consumption of meat in developing countries has been growing at a rate of about 5 to 6 percent per year, that of milk and dairy products at 3 to 4 percent per year. Much of the growth has been occurring in a small number of countries, including such populous countries as Brazil and China. Many developing nations and whole regions, including Sub-Saharan Africa and parts of the Near east/North Africa, where the need to increase protein consumption is the greatest, have not been participating in the satisfaction of the world meat sector. Worldwide, the poultry sector has been expanding fastest, and its share in the total meat output went from 13 percent in mid sixties to 28 percent currently. The increasing share of poultry in meat production is expected to continue in the future. Intensive forms of livestock production have led to a strong demand from cereals used as animal feed production is rising steadily to meet this demand.

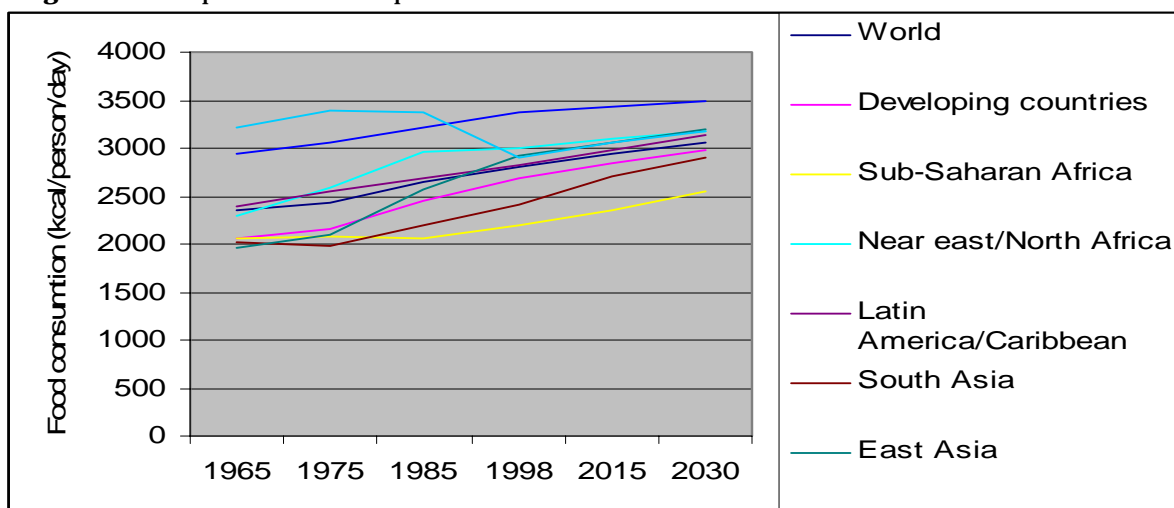
In the last decade, agricultural production has grown faster than world's population and there is no evidence that this should change. Overall, the message from agriculture is cautiously optimistic.

Trade remains marginal compared to overall domestic production in the food sector but is growing. Developing countries imported 39 million tons of cereals in the mid seventies. This is expected to rise to 198 million tons in 2015 and to 265 million tons in 2030. Access to export markets is one key to sustainable development for agriculturally dominated economies.

3.1.2 Food consumption

Per capita food consumption, expressed in kcal/person/day, is used as the indicator of food intake. The evolution of per capita food consumption in 1965 and 2030 is given based on historical data and on FAO projections for the years 2015 and 2030.

Figure 1. Per capita food consumption from 1965 to 2030.



Source: FAO, 2002.

Figure 1 shows a global food security situation that is consistently improving, with a steady increase in per capita food consumption at the global level as well as at the level of developing countries. The threshold of 2,700 kcal is taken as an indicator of the level of satisfaction of food security requirements, yet the demand for food tends to saturate at the level of 3500 kcal/person/day (FAO, 2002). It should be noted that gains in overall food consumption are not necessarily translated into equivalent declines in the absolute numbers of undernourished people, in particular when there is high population growth.

3.1.3 Undernourishment around the world

More than a quarter of the world's chronically hungry people live in countries where the prevalence of undernourishment is very high (35 percent or more). Almost half (44 percent) of the 340 million people living in the 26 countries of these sub-regions are undernourished. Only six countries elsewhere in the world have such high prevalence rates - Afghanistan, Bangladesh, Haiti, the Democratic People's Republic of Korea, Mongolia and Yemen. Around 570 million undernourished people - almost three-quarters of the world total - live in countries where the prevalence of hunger is neither very low (below 5 percent) nor very high (above 35 percent). While Asian countries are about equally divided between the "moderately low" (5-19 percent) and "moderately high" (20-34 percent) categories, most countries in Latin America and the Caribbean fall in the former. Six million undernourished people live in countries where the prevalence is very or extremely low, mainly in the Near East (FAO 2005).

Undernourishment and deficiencies in essential vitamins and minerals cost more than 5 million children their lives every year, and cost developing countries billions of dollars in lost productivity and consumption. More than three quarters of all child deaths are caused by neonatal disorders and a handful of treatable infectious diseases, including diarrhoea, pneumonia, malaria and measles. And well over half of these deaths can be traced to the increased vulnerability of children who are undernourished and under weight. Nutrient deficiencies also increase the risk of death from childhood diseases. A deficiency in vitamin A, for example, increases the risk of dying from diarrhoea, measles and malaria by 20 to 24 percent. Overall, the World Health Organization

(WHO) estimates that more than 3.7 million deaths in 2000 could be attributed to underweight. Deficiencies in three key micronutrients—iron, vitamin A and zinc—each caused an additional 750 to 850 thousands deaths (WHO, 2000).

The World Food Summit, held at FAO from 13 to 17 November 1996 resulted in the Rome Declaration on World Food Security and the World Food Summit Action Plan, which laid the foundations for a global effort towards food security. In 2000, 189 countries endorsed eight Millennium Development Goals; the first on the list was to halve the number of poor and hungry people by 2015. Three years later little progress has been made, and these goals will remain unfulfilled dreams unless words are translated into action. Poverty and hunger remain the most important and urgent challenges facing the international community. Official Development Assistance (ODA) needs to be increased and be particularly targeted to the Least Developed Countries (LDCs).

World Food Programme (WFP) is implementing these commitments, the Programme looked at where its own resources are being used to halve poverty and hunger and whether it was maintaining the commitment to direct more assistance to the LDCs. In 2003, the WFP was put under extraordinary challenges, fighting hunger in a world that intends on producing ever more hungry people. Political divisions, violent conflict, natural disasters and the unyielding pandemic of HIV/AIDS all came together to challenge the limits of WFP and the United Nations family.

FAO has a major role to play in assisting countries in implementing the provisions of the World Food Summit Plan of Action that fall within its mandate, as well as in monitoring, through its Committee on World Food Security (CFS), overall progress in achieving the Summit's goals. In 1997, FAO launched TeleFood, a campaign of concerts, sporting events and other activities to harness the power of media, celebrities and concerned citizens to help fight hunger. Since its start, the campaign has generated close to US\$ 14 million in donations. Money raised through TeleFood pays for small, sustainable projects that help small-scale farmers produce more food for their families and communities. The total number of the Tele-Food projects implemented all over the world exceeded 1200. Allocations for each Tele-Food project fluctuates between US\$ 5000 and 10000 representing all inputs (materials and supplies) required as well as the technical assistance. They must be appropriate for the beneficiaries, locally sustainable and environmentally safe.

3.2 Food security at Syrian national analysis

Up to mid eighties, Syrian agricultural strategies and policies were geared towards assuring self-sufficiency in important and strategic food commodities. Large-scale programs of natural resource mobilization and government intervention in agricultural activities under a central planning system led to exceptional increases in agricultural production. The price policies for inputs and outputs as well as other government intervention measures, particularly in marketing, introduced however serious price distortions which led to inefficiencies in resource use and proved ineffective in ensuring high levels of overall self sufficiency.

The policy reform program, introduced thereafter, aimed at removing or reducing these distortions, thus ensuring increasing efficiency in domestic resources use. Initially input subsidies were reduced, producer prices were augmented and planning intervention started being less rigid. At a later stage, in 90s, trade liberalization policies were put in place. Crop diversification policies were also promoted and increased attention was given to the comparative advantages of Syrian agriculture. The concept of self-reliance was gradually substituting for that self-sufficiency and this implied a more active participation of the country in international trade. Agricultural trade expanded and played a more important role than in the past in achieving food security. Policies aiming at making exports more competitive in international markets were implemented with success. At present agricultural trade is an essential element for the country's food security.

3.2.1 Food availability at national level

The considerable growth of agricultural production realized in the last decades enabled the country to meet the fast growing demand for food due to population growth as well as the needs of the expanding agro industrial sector. Self-sufficiency ratios improved for a wide range of food

commodities. There were even large surpluses in some commodities, which started being exported such as wheat, vegetables, and fruit (FAO, Syrian Agriculture at the Crossroads, 2003).

A study conducted at NAPC estimated the prospective self-sufficiency rates in Syria for different food commodities in 2010 and 2020. The study indicated that self sufficiency rates would be realized for all food commodities in 2010 leaving a surplus for export, even under the assumption of a high rate of population increase between 1997 and 2010 (3.1%). Similarly, in 2020, most of the food commodities would also realize high self-sufficiency rates including wheat, legumes, vegetables, fruits, meat, and eggs, even under the assumption of a high rate of population increase in 2020 (2.7%) (table 1) (NAPC, Salem, 2001). On the other hand, the need for importing extra quantities of the strategic commodities that is being currently imported like sugar, rice, vegetable oils excluding olive oil, and a considerable part of the feed for livestock will increase.

Table 1. Projected food self-sufficiency rates for years 2010 and 2020.

Commodity	Self-sufficiency rates (%)				
	1987-88	Projected for 2010		Projected for 2020	
		2.7%*	3.1%*	2.3%*	2.7%*
Wheat	118	120	115	119	109
Dry legumes	130	133	128	110	101
Potatoes	101	128	122	115	106
Citrus	102	148	141	155	142
Apples	103	132	126	113	91
Table olives	100	136	127	109	100
Tomatoes	125	128	122	114	105
Other vegetables	-	159	151	145	135
Other fruits	-	100	95	93	85
Red meat	99.6	115	110	97	89
Poultry meat	100	100	95	103	95
Milk	100	101	86	99	91
Fish	100	85	82	93	84
Eggs	103	138	132	131	120

*Assumed rates of population increase between the years indicated in the table.

Source: Salem, 2001.

While production is the pillar for the availability of food security, trade is an essential element for the stability dimension, as it provides needed complements to production as well as necessary non-locally produced food commodities. Its role is particularly important in a country like Syria where large fluctuations in the levels of local production can occur because of changes in the levels and distribution of rainfall. Total trade volume has recently increased considerably as well in agricultural trade thanks to the liberalization process; export earnings grew at a fast rate to finance imports needed to ensure the stability in food supplies. Agricultural exports grew by a higher rate than agricultural imports, which positively affected the agricultural trade balance.

Food availability calculation is based on the annual food balances prepared by the Ministry of Agriculture and Agrarian Reform. These food balances define the quantities "Available for Consumption" for a given commodity as equal to Production + Imports – Exports. They include therefore not only quantities available for food but also for other uses such as seeds as well as losses, waste and changes in stocks (SOFA, 2005). Its worth mentioning here that the quantities "Available for Consumption" should be calculated based on the following equation: Production + Imports – Exports+ changes in stocks+ losses. Given the last two items are almost negligible and can be eliminated.

3.2.2 Development in per capita availability of food commodities

Availabilities per capita between the periods 1999-2000 and 2001-2002 were in line with the evolution of total availabilities for almost all commodities mentioned above. Substantial increases in the per capita availability were attained for the following products: wheat, lentils, chickpeas, potatoes, tomatoes, olives, and eggs. Moreover, a slight increase was achieved by citrus. A reduction in availability per capita occurred, however, for milk, meat, water melon, eggplants, grapes, apples, and pomegranates.

Comparing per capita consumption of different food commodities between urban and rural areas, per capita share of milk (fresh and processed), olive oil, and fresh white meat is higher in rural areas, as compared to urban areas. On the other hand, per capita share of dairy products and fresh red meat is higher in urban areas than in rural areas, while they are equal for other vegetable oils (12 g per day) (NAPC, Salem, 2001).

3.2.3 Development of per capita calorie intake

Per capita calories intake in Syria remained stable during the periods 1999-2000 and 2001-2002 ranging from 3034 to 3040 calories per day (FAOSTAT, 2003). The protein intake increased in between these periods by 2.6% (from 73.3 g to 75.2 g per day), while the fat remained almost stable (from 107.2 g to 106.3 g). The largest share of calories consumed in 2002 is from vegetable origin (2625 calories per day making 86.4% of total daily calories). Livestock products accounted for 413 calories per day, representing 13.6% of total daily calories intake (table2).

Table 2. Percentage Contribution of Food Commodities to per capita Daily Consumption of Calories, Protein & Fat in Syria, 1999 and 2002

Commodities	Consumption of Calories%		Consumption Of Protein%		Consumption of Fat%	
	1999	2002	1999	2002	1999	2002
Cereal	32.3	32.6	38.0	37.7	6.8	7.2
Wheat	29.5	28.3	35.7	34.0	6.4	6.3
Rice	2.2	3.2	1.7	2.5	0.2	0.3
Potato	1.1	1.2	0.6	0.8	0.1	0.1
Sugar	8.9	8.8	0.0	0.0	0.0	0.0
Oil Crops	1.2	2.2	1.7	2.3	4.4	8.3
Vegetable Oils	11.1	10.2	0.1	0.1	51.0	46.4
Vegetables	1.2	1.3	2.2	2.2	0.4	0.3
Fruits	2.7	2.3	1.4	1.2	0.6	0.5
Other Fruits	0.5	0.5	0.3	0.3	0.1	0.1
Bovine Meat	0.5	0.5	1.0	1.0	1.8	1.8
Mutton & Goat Meat	1.9	1.8	3.9	3.8	6.6	6.4
Poultry Meat	0.6	0.6	2.3	2.5	1.4	1.5
Animal Fat	1.6	1.6	0.0	0.0	7.4	7.2
Milk	4.1	4.2	8.8	8.9	10.9	11.1
Eggs	0.6	0.8	1.8	2.4	1.8	2.2
Fish	0.1	0.1	0.5	0.6	0.2	0.2
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: FAOSTAT, 2003.

Table 3 compares food consumption of Syria in terms of calories and nutrient intake to high income countries. In 2002, the daily-consumed calories were 3654 in France, 3671 in Italy, and

3774 in US. These levels are higher than in Syria (by more than 600 calories per day) and reflect the income effect and the differences in consumption patterns. Moreover, the share of calories of animal sources in these countries is higher than that in Syria and represented 37% in France, 26% in Italy, and 28% in USA. Such evidences confirm literature argument that calories and protein of animal origin in total calories and protein intake increase therefore with the level of per capita income.

Table 3. Per Capita Food Consumption in Syria Compared to Selected High Income Countries in Year 2000

Country	Daily Calories			Daily Protein Grams		
	Total	From Plant Sources	From Animal Sources	Total	From Plant Sources	From Animal Sources
Syria	3,052	2,635	417	75	53	21
Italy	3,663	2,729	934	113	52	62
France	3,597	2,242	1,355	117	40	77
USA	3,814	2,771	1,043	115	42	73

Source: Central Bureau of Statistics & FAO Stat, 2000.

The per capita calorie intake has increased by 271 k calorie or 8.7% as a total increase between 1988 and 1998. There also has been a slight change in favor of commodities of plant origin as compared to those of animal origin.

3.2.4 Food acquisition

The ability of the less privileged groups of the population to continue having access to the food they need depends on different factors among which price and income are very important. In fact, the evolution of price and income affect not only the quantities of food consumed but also the structure of this consumption through the substitution effects.

In order to assess the possible effect of the evolution of price and income on access to food in the period 1998-2002. Official figures show that until 2000, prices increased at a higher rate than per capita GDP at current prices, causing a negative income effect. However, after 2000 there was an overall improvement especially in 2002. Based on indices of price and per capita GDP, the access to food has not been impacted negatively by the evolution of price and income during the period under study. This has been possible because of the price policies followed by the government to support consumer and producer income (SOFA, 2005).

3.2.5 Undernourishment at national level

Syrian government and the UNDP implemented a project aimed at establishing a system to follow up and monitor the progress of achieving the millennium development goals in Syria. The project conducted two specialized multi-purpose surveys published between 1993 and 2000 and provided a wide base of official data and indicators to measure the progress. Children's nutritional condition were measured by collecting data concerning their weight and height and by using data to obtain standard indicators to gain insight into their physical growth and to describe their nutritional condition.

Table 4. Percentage of the Syrian children who suffer from hunger between 1993 and 2015.

	1993				total	2000				total	2015
	Place of residence		sex			Place of residence		sex			
	urban	rural	Male	female		urban	rural	male	female		
Extreme thinness	2	2.1	2.6	1.5	2.1	0.9	0.8	1.2	0.5	0.8	0.4
Medium thinness	6.7	5.4	5.9	6.2	6	3.2	2.8	3.4	2.5	3	1.5
Extreme underweight	2.7	3.3	2.8	3.2	3	1.3	1.9	1.9	1.7	1.7	0.9
Medium underweight	8.8	9.5	10.1	8.1	9.1	4.3	5.8	5.5	4.8	5.2	2.6
Extreme shortness	11.4	12.6	12.9	11.0	12	6.4	9.6	8.8	7.9	8.2	4.1
Medium shortness	14.6	15.1	14.9	14.8	14.9	8.8	12.1	10.5	10.8	10.6	5.3

Source: CPS & UNDP, 2004.

By comparing the results of 1993 and 2000 child health surveys and applying the standard deviation measures recommended by WHO, which is less than 3% for extreme thinness, 2% for medium thinness, it was shown that thinness among children dropped from 2.1% to 0.8% in the same period. The rate rises, however, among children aged 10 to 12 months, which is the weaning stage. Thinness rate is higher in urban areas than rural areas and higher among males than females (table 5). Rural women, among the most economically disadvantaged in the country, are 65 percent of development beneficiaries.

WFP Syria Community Food Security Profiling (CFSP) within Arid and Semi-Arid Regions, a specific exercise was implemented in Syria, whose primary objective was to profile some of Syria's poorest and most food insecure communities within arid and semi-arid regions. The results showed that approximately 19% of Syria's population living in the poorest regions of the country (i.e. the arid and semi-arid climatic zones 3, 4 and 5) were estimated as food insecure. There were some geographic concentrations of relatively moderately low food insecurity located within the governorates of Deir ez-zor and Al Raqqa. A second relatively better off area was found just north and east of Damascus not far from the main road connecting Damascus with Homs. The sub-regions of Al-Hassakeh, Aleppo, Sweida, and Dara'a governorates, similarly, were registered with relatively suitable food security levels. The reasons and causes of poverty and food insecurity are complex and multi-dimensional with numerous factors at work that generally cannot be addressed by a single agency or institution. As such, there is a strong rationale to create alliances and effective partnerships to achieve the common goal of eradicating food insecurity and poverty in the country (World Food Programme of the United Nation, 2004).

4. Conclusion

As mentioned previously, food security issue has three dimensions: availability, stability, and accessibility. The so far literature review have assessed food security in Syria in terms of variables at macro economy level, e.g. income distribution and food supply, variables related to the household and food consumption, and in terms of individual status, food intake and anthropometric measurements.

Back to answer the main question “Is there a food security issue in Syria”, the assessment has been made in terms of the three dimensions:

4.1. Food availability

Self-sufficiency in agricultural production has been realized in the last decades and enabled the country to meet the fast growing demand for food ratios improved for a wide range of food commodities. There were even large surpluses in some commodities, which started being exported such as wheat, vegetables, and fruit (FAO, Syrian Agriculture at the Crossroads, 2003). In addition, average per capita availability of basic food commodities (cereals, fruits, vegetables and poultry meat) increased by high percentages in the last five to six years (table 3). Per capita calories intake remained stable during the same period. The protein intake increased in this period by 2.6%, while the fat remained almost stable. The largest share of calories consumed is from vegetable origin (86.4% of total daily calories). Livestock products represented 13.6% of total daily calories intake (table 4). However, available food for consumption declined: Summer vegetables, some fruit such as apples (-16%) and pears (-17%) due to a decrease in cultivable area because of the drought and a reduction in water resources availabilities. Cattle, sheep and goats meat declined by 5%, 34%, 43% respectively.

4.2. Food stability

After the mid 1980's, trade liberalization policies have led to considerable increases in agricultural trade. And export earnings grew at a fast rate to finance imports needed to ensure the stability in food supplies. The most important imported food commodities in the period 2001-2003 are sugar, rice and dairy products, while on the export side the most important food products are represented by sheep, vegetables, and olive.

4.3. Food accessibility

Evidences confirm literature argument that calories and protein of animal origin in total calories and protein intake increase therefore with the level of per capita income and reflect the income effect and the differences in consumption patterns (table 2). Monthly salaries in Syria increased, particularly in recent years, in the public and private sectors. Wage increases have concentrated in the past few decades on low income groups with the aim of achieving equality in income distribution, and reducing disparities between minimum and maximum wages. This was reflected in the lives of over 63% of the work force (as they work on wage base) and their consumption patterns as well. Nevertheless, this increase was not reflected in spending on families' durable and luxury goods and the rate of per capita consumption of animal protein has slightly increased.

4.4. Undernourishment

According to the Syrian Report of the National Millennium Development Goals, mortality rates dropped, particularly among children. Infant mortality rates dropped from 34.6 per thousand in 1993 to about 18.1 per thousand in 2001. The under five age group had a mortality rate drop from 41.1 per thousand in 1993 to 20 per thousand in 2002. Consequently, life expectancy at birth rose from 63 years in the early 1990s to 70 in 2001.

In the field of child nutritious status, further work is needed to ascertain the extent and depth of under-nutrition in rural areas at the household level as related to natural resource endowments. Monitoring child nutrition status as a way to target and assess the long term impact of technological policy and institutional interventions is highly recommended. It was shown in table 4 that thinness among children dropped from 2.1% to 0.8% in the same period. The rate rises, however, among children aged 10 to 12 months, which is the weaning stage. Thinness rate is higher in urban areas than rural ones (4.1 and 3.6 respectively) in 2000. It is also higher among males than females (4.6% and 3.6% respectively) in the same year.

4.5. Challenges and constrains

In other words, evidences of achieving a considerable part of food security were given by indicators shown by most of the studies, however, Syria still has challenges to achieve food security in many spots of the rural areas where many families not having enough food accession and availability. Challenges to achieve food security in Syria can be summarized as follows:

- The rise in population growth rates that exceed the growth rates of agricultural production.
- The high number of unemployed work force raises the actual dependency rate and reduces the per capita real income.
- Leverages of the work force from the rural to the urban areas in due to the low income of the agricultural labor compared to other sectors. This, inturn, affects the situation in the cities in terms of social services provision like health care and education.
- Irrational use of the limited natural resource base (land, water, forests and pasture) .
- Deterioration and contamination of the agricultural natural resources especially water, soil and natural pasture .
- Lack of agricultural mechanization due to land fregmentation and the difficulty in expanding the invested areas.
- Lack of integrated development projects among all economic sectors.
- Lack of feed for developing the livestock besides Al Badia deterioration.
- Inspite of the recognition of the scientific research development, still is laging behind meeting the agricultural development needs.
- Inability to benefit from the value added in exporting the agricultural product .
- Inability of the processing and marketing activities to cope with the foreign markets conditions.
- Poor investment in the agricultural sector because of the risky conditions and its long run returns.

4.6. Proposals for future work

In the light of these facts, physical solutions (i.e., upgrading of the quality of housing and infrastructure networking) are not sufficient. Nevertheless, more efforts are needed to address the

depth of food insecurity and to focus on rural areas, where poverty rates are higher, through directing social services and public investment to urban slums and squatter settlements because, in some definitions, such areas are associated with certain vulnerable groups of the population who are marginally employed. Such proposal policies may be perceived as:

- Distribute the available natural resources and rationalise their use in order to achieve economic investment.
- Use new techniques to develop and to reduce the costs of the agricultural production and maintain a sustainable use of the natural resources.
- Rationalise the use of the un-renewable water resources through adopting new irrigation techniques instead of the traditional methods in the irrigated areas.
- Treat the polluted and deteriorated agricultural resources especially water and soil and use them in more sustainable and economic way.
- Provide the feed for livestock and protect the natural pasture in Al Badia.
- Creating new job opportunities in the rural areas in order to improve income levels of the rural population.
- Continue the work on improving the living standards of limited income families, and distributing national income in a manner that achieves social equality.
- Develop the agricultural scientific research to activate the application of the new technology in the agricultural production development.
- Improve marketing and exporting and facilitate the process after harvest.
- Conduct comprehensive studies and specialized surveys which focus on all aspects of poverty in Syria. Such surveys require technical and financial support.
- Continue efforts in the area of development of rural areas and the Badia, and expanding the network of infrastructure facilities and services there.

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Annexes: (List of references)

Annex 1: List of the so far available references that related to rural poverty and to the food security issue at global and national Syrian levels.

Type of document	Title	Author	Institution	website
1. Research study	Poverty, Household Food Availability and Nutritional well-being of Children in Northwest Aleppo, 2004, Syria.	Shibani Ghosh	ICARDA and International Nutrition Foundation.	mailto:ifpri-webmaster@cgiar.org
2. Research study	Food Security, 2000. Syria.	Hamdy Salem.	NAPC	
3. Project report	Defining national goals and targets for the reduction of overall poverty and the elimination of extreme poverty.		UNDP	www.undp.org/poverty/povertyarchive/initiatives
4. An article in the "CHOICES".	Syrian Communities devastated by Dam collapse work to rebuild. An article in the "CHOICES", the Human Development Magazine, edition of Sept., 2004.		UNDP	www.undp.org/dpa/choices/syria
5. Project report	Development programmed villages in the Jabal el-Hoss region of the northern Syria, 2002. Supported project to promote rural development and reduce poverty.		UNDP	www.undp.org/dpa/frontpagearchive .
6. Research study	Poverty strategies initiatives, Syria, 2002.		UNDP	
7. Research study	Reducing poverty among the remaining "hard-core" poor, 2001.		UNDP	
8. A scoping study	Beyond Remittances: The role of Diaspora in poverty reduction in their countries of origin, 2004.		The Migration Policy Institute for the Department of International Development	

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9. Project report	The Global Telefood Campaign, 1997.		www.fao.org/food	
10. Project report	Reducing the impacts of AIDs on food security and the rural poverty, 2002.		FAO+ UNDP.	
11. Annual report	Trends of food insecurity, FAOSTAT, 2004.		FAO	
12. Annual report	The State of Food Insecurity (SOFI) in the World 2003.		FAO	
13. WB Discussion Papers	Agriculture, Poverty, and Policy Reform in Sub-Saharan Africa, Washington D.C, 1995.		World Bank Discussion Papers (WDP), Africa Technical Department series	
14. An article in the Black and White Magazine.	An Arabic article titled: "How do poor participate in the Development, the poor villages in Syria", a Daily bulletin of the Black and white Magazine, edition of 27/10/2004.		The General Commission of Planning (GCP).	
15. Report	Fund for Integrated Rural Development of Syria, An Overview 2001-2003.		NGO: Fund for Integrated Rural Development of Syria (FIRDOS).	
16. Working Paper	Understanding Vulnerability to Food Insecurity, Lessons from Vulnerable Livelihood Profiling, FAO 2004.		FAO	
17. Report	National Millennium Development Goals of the Syrian Arab Republic, 2003.		State Planning Commission of Syria+UNDP.	
18. Annual report	Human Development Report, 2004.		UNDP	www.undp.org/publication&reports/

19. Annual report	Partnerships to Fight Poverty, 2001+2004.		UNDP	www.undp.org/publication&reports
20. Essay	Agriculture, Food Security, Nutrition and the Millennium Development Goals. Essay from the forthcoming IFPRI Annual Report 2003-2004.	Joachim von Braun, M. S. Swaminathan, and Mark W. Rosegrant	Available at: http://www.ifpri.org/pubs/books/ar2003/ar2003_essay.htm	mailto:ifpri-webmaster@cgiar.org
21. Book	Seasonal Variability in Third World Agriculture: The Consequences for Food Security.	David E. Sahn	Available at: http://www.ifpri.org/pubs/books/sahn89.htm	mailto:ifpri-webmaster@cgiar.org
22. Lectures of a training course.	Poverty and Food Security: Concepts, Policy Analysis and Design, 2002.	Mohan Rao	NAPC.	
23. Annual report	State of Food and Agriculture in Syria (SOFA), 2002+2004.		NAPC	
24. Study	Syria Farming Systems, FAO Project GCP/SYR/006/ITA/Syria, Damascus, 2004.		NAPC, FAO	
25. Study	State of Food Security in the Syrian Arab Republic (Arabic language study).			
26. Study	Can the poor influence policy? PPAs in the developing world. 1999.	Robb, C.	WB	www.worldbank.org/html/extpb/canpoor/frntmat.pdf

27. Study	Can anyone hear us? Voices from 47 countries. Washington D.C:World Bank. 1999.	Narayan, D. et al.	WB	www.worldbank.org/poverty/voices/reports.htm
28. University Paper	Agricultural trade reform and poverty reduction in developing countries, October 2003.	Kym Anderson	CEPR, and School of Economics and Centre for International Economic Studies University of Adelaide Adelaide SA 5005 Australia	Phone (61 8) 8303 4712 Fax (61 8) 8223 1460 kym.anderson@adelaide.edu.au
29. Research	Syria Community Food Security Profiling (CFSP) within Arid and Semi-Arid Regions, 2004		WFP, VAM Unit, ODC Syria Country Office	wfp.org