Evaluation of Food Security About Some of the Main Food Products in Turkey

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Abstract
Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. This widely accepted defination points to the following dimensions of food security; food availability, food access, utilization and stability. However, it is possible to say that the main dimensions of food security are focused food production and consumption. According to Food and Agricultural Organization (FAO)'s data, there are enough supply quantity for daily dietary energy per capita in Turkey. But, food insecurity generally occurs because of that; lack of animal products consumption in Turkey. Turkish feeding behaviour mostly based on bread and other products which are produced from cereals with regard to previous studies. Thus, 50% of daily energy demand provides by bread and the other cereals products. Even though meat and meat products are important sources of protein, the rates in total food consumption is only 10% for 2007-2009 years in Turkey. The aim of this study is to evaluate food security in terms of food availability and food accessibility for basic agricultural and food products (such as cereals, sugar, meat and egg, milk and milk products) which are important for Turkish feeding behaviour. Food availability go about degree of sufficiency* and food economic access to put forward the rate of poverty, food expense rate for total expenses.
Keywords: Food security, milk, meat, cereals, sugar.

Introduction

Consumption of food is an obligatory and necessity to survive, that is non elastic. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (GPO, 2001; GPO, 2003; FAO, 2009; WHO, 2014). This widely accepted defination points to the following dimensions of food security; food availability, food access, utilization and stability. (FAO, 2006). Food security is assured depend on adequate amount of food available, stability of supply and obtaining ability of food (Demirbaş ve Atış, 2005).

This study aims to evaluate availability and accessibility dimensions of food security in Turkey, based on basic food groups such as; cereals, sugar, red and white meat, egg, milk and milk products.

Material and Methods

Currently five methods are available to measure food security and these methods are; FAO methods, household incomes and expenses surveys, personal food purchasing surveys, anthropometrics methods and qualitative methods (FAO, 2002; Keskin and Demirbaş, 2012). But, all these methods are money and time consuming. For this reason, two dimensions of food security (food availability, food access) are viewed in this study. This study is consist of secondary data. Macro data are collected from FAO and TSI (Turkish Statistical Institute). Self-sufficiency degree is calculated as ratio according to these data for last decade. Results are supported by literateur researches.

Results

In this part of the study, quantitative sufficiency of basic food groups is evaluated on Turkish people's diet. These food groups are defined as; cereals, sugar, red and white meat, egg, milk and milk products.

*Degree of sufficiency: (Available production/Domestic access)*100

Table 1. Suffiencіey ratios of the seleceted products (%)

	Red meat (%)	White meat (%)	Egg (%)	Milk (%)	Cheese (%)	Butter (%)	Cereals (%)	Sugar (%)
2000	100.20	100.34	100.24	99.19	99.25	96.90	103.20	144.82
2001	100.21	103.50	102.60	99.81	100.83	98.62	93.16	118.71
2002	100.37	102.89	99.85	99.48	102.38	96.88	97.57	133.33
2003	100.38	102.90	100.66	99.08	104.77	96.06	92.04	117.32
2004	100.34	103.38	101.18	99.07	103.98	96.73	97.42	115.85
2005	100.38	105.06	101.24	99.51	106.14	100.58	109.25	119.57
2006	100.47	104.27	101.53	99.08	109.44	95.47	104.45	93.70
2007	100.68	105.05	106.10	99.38	108.86	96.11	92.55	99.71
2008	100.50	107.75	110.24	99.22	112.43	95.30	92.17	114.60
2009	101.21	109.65	111.43	99.12	112.82	91.42	103.03	125.47

Reference: Food and Agriculture Organization, (2014). www.fao.org, *Erişim: 07.08.2014.*

Turkey has self-suffiency for red meat when you look at the data for the last decade. But the reason of self-sufficiency is importation. Shortage of feed crop (Tosun and Demirbaş, 2012), insufficiency of subvention to the animal products (GPO, 2007), privatization of State Owned Enterprises like Meat and Fish Board, Milk Industy Board, Feed Industy Board (Anonymous, 2005), be supposed to meat importation (TEPRD, 2010) caused to increase on importing and reduction on production.

Another important protein source; white meat is increasing over years along with exportation. Increase in production of white meat is assumed to be arising because white meat is cheaper alternative of red meat and more accessible for people with lower income.

Egg production is increasing on last decade in Turkey. Egg is an important nourishment and there is no problem like being lack of egg in Turkey.

Turkey can provide its own milk demand mostly but not all. The data of yogurt can not be found neighter FAO nor TSI. That's why excluding yogurt, when we look at average of milk products quantity within 2009-2011 years, butter production ratio is 49.97%, and cheese %49.84 in total. Turkey has self-sufficiency of cheese production. Unfortunately, Turkey has not self-sufficiency of butter production, even though constant increasing of production and exportation.

When we look at to tend to eating, cereals and cereal products are mostly consumed in Turkey. Wheat is usually consumed as bread, cracked wheat and pasta (GPO, 2001). One third of cereals are used as animal feed. This situation demonstrates importance of cereals in terms of food security (Demirbaş and Atış, 2005). Considering importance of cereals as nourishment in Turkey, food security is not totally provided during last decade.

Sugar is raw material for most of the food stuff. Sugar is really important especially for the food industry. When sugar production of Turkey is examined, Turkey produced excessive amount during last decade except 2006-2007.

Most important matter in terms of accessibility of food in Turkey is financial. Thus, 8.4% of people lives below poverty line. Lowest 20% of income distribution spend more money on cereals based products, sugar, oil, tea and coffee and spend less on meat, fish, juice and pastry while there's not much difference on milk, milk products and egg (GPO, 2003) (See: Table 1).

TSI has reported that individuals poverty ratios has decreased from 1.35% in 2002 to 0.48% in 2008, which is calculating by method of poverty line. Food related and non-food related poverty ratio decreased from 26.96% in 2002 to 18.08% in 2009. Even though ratios indicating poverty has decreased, increase in population must be considered. Expenses based poverty ratio increased in contrast to other two ratios; from 14.74% in 2002 to 15.12% in 2009.

According to Engels principle, as consumers have more income they spend less for food and more for health and cultural activities (Anker, 2011; Chakrabarty and Hildenbrand, 2011).

Empirical data tells us as society has more income, tends to spend less for food. During last decade in Turkey household consumption ratio reduced from 26.7% in 2002 to 20.7% in 2011 for food. Even though this reduction is an improvement, 20.0% is still high ratio considering other expenses.

To determine Turkey's ranking in terms of food security among world, FAO's food security indicators are scanned. According to FAO 2012**,** indexes of domestic food prices; South Africa (231.3) Ethiopia (113.2), Somali (80.7), Turkey (50.7), United Kingdom (24.7), Canada (9.0), Italy (6.9), France (6.2). These numbers demonstrates in Turkey, food stuff is cheap compared to non-developed countries but expensive compared to developed countries. Production index per capita South Africa (11.8), Ethiopia (3.6), Somalia (5.8), Turkey (9.9), United Kingdom (4.0), United States of America (14.2), Canada (18.9), Italy (14.7), France (12.9). Turkey can be considered successful in terms of production per capita. Consumption index per capita; South Africa (8), Ethiopia (19), Turkey (30), United Kingdom (20), United States of America (13), Canada (26), Italy (45), France (43). This data tells us Turkey is considerably good in terms of consumption per capita.

After scanning food based poverty and consumption expenses of household in Turkey, meat consumption, which is important parameter food security, is evaluated.

When we look at ''the status of eating food; which is included red meat, white meat or fish, every other day'' of Turkish people, within 2006-2011 years that are indicated 60% of Turkish people could not meet this situation. This data tells us also food security in Turkey is not totally met.

Discussion

Problems about Turkish agriculture are agricultural structural problems such as instability of agriculture policies, complications during application of policies, insufficiency of subventions, high income costs, ambiguity of production pattern, fluctuation of product prices. All of these problems named above are important problems on ensuring food security.

Food security is achieved in Turkey when considering availability and accessibility on basic agricultural products and food products. Yet, it's observed that Turkey for cereals, which is very important for Turkish people's diet, hasn't got self-sufficiency. There is a risk of external dependency on such specific products. Therefore, food security in Turkey doesn't met in terms of cereals quantity. For milk and butter case, self-sufficiency doesn't met totally in Turkey. For sugar, even though it's not stable year by year, self-sufficiency of Turkey can be agreed.

Red meat, white meat, cheese and egg exist sufficient, but economical accessibility of these products, especially meat, cannot be considered in food security. Meat prices are fluctuating and increasing suddenly. As it's stated in result part, Turkish people who cannot eat meat, chicken or fish once in every two days is double number of who can.

Location of Turkey is convenient for almost all kinds of agricultural product. As quantity of basic food products Turkey is self-sufficient but food security is not ensured because of equally income distribution issue. Even though there is excessive supply on agricultural products, big portion of people cannot access to food. To overcome food security issue in Turkey, fluctuation of food prizes must be taken under control and average income must raise.

Professionalization of food products market would control sudden fluctuations on food prizes. stock markets and warehouse receipt system must be applied. Beside reduction of input costs, or supported by government, of agricultural products would cause reduction of food prizes

Income distribution inequality is important is issue all over the world. The incomes of the poor people must be increase with increasing transfer expenditures ratio for the short term.

For long term adjustment, income of individuals must be raised above life demand cost, such as food, housing, education etc.

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