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Current Situation and Importance of the Family Farming in Agriculture of Turkey

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Abstract: For long time family farming has been neglected by policy makers, after 2008 price hike in food prices world turned its eyes toward agriculture and importance of family farming as a large component of agriculture was highlighted further in 2014, by celebrating it as a year of family farming. Family farming is a life style and tradition which make it different from other types of farming. Family farming plays an important role in agriculture and overall economy of both developed and developing countries. Although share of agriculture is declining in overall GDP, still agriculture contributes a lot to employment, providing raw material to agro-based industries and export in Turkey. Agriculture structure of Turkey is scattered and dominated with family farms, almost 88% farms are family farms. Small farms less than 2 ha land is major category in family farms constituting 32.8% of total farms. Family farms are lifeline of agriculture in Turkey, on other hand many problems are being faced by these farmers like; insufficient Micro-credit operations, inefficiency of cooperatives in dealing with small farms, many intermediaries in marketing, women as a informal labor, and coordination problem among organization and institutes providing extension services to farmers.

Key words: family farming, food security, sustainability, rural-urban migration, Turkey

1. Introduction

Family farming is a “life style” more than anything [1]. A life style, that provides 70% of global food supply. This category of farms involves poor and rich families in developing and developed countries, overseeing micro-plots or large-scale high-tech farms. For a very long time, secondary importance was given to this farming category, even many experts have recommended to push aside family farms and pave the way for production-oriented, modern, and capitalist agribusiness. After years of unsuccessful attempts to eliminate hunger from world, international research institutes, development agencies, non-profit organizations, and the donor and funding agencies now see family farms a potential farming to eradicate poverty and hunger globally. Until awareness about the qualitative and quantitative importance of these farms the long-standing narrative of death of family farming prevailed [2]. Agriculture can play a major role in reducing poverty level especially smallholder agriculture. According to estimates of World Bank, a 1% increase in agriculture GDP reduces poverty by 4 times as much as the same increase in non-agricultural GDP [3]. In resolving world hunger problem family farms play an important role, at the same time they are also those to be fall victim of poverty and hunger. Almost 800 million people working in agriculture are living below the global poverty line [4].

As a result of food price spikes of 2007-2008, world’s attention turned to agriculture after decades of neglect. It is great opportunity for family farms to transform it into viable business. More than 500 million family farms in the world dominate agriculture, providing employment to 100s of millions of people and ensuring food security. By improving competitiveness and productivity of family farms, they

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can help in addressing issue of food security and contribute to sustainable economic growth in developing countries. Keeping in view above mentioned potential of family farming, 2014 was declared as International year of Family Farming (IYFF) by United Nation in the light of proposal put by the Government of Philippines in 37th session of FAO conference. Family farming is dominant form of farming in both developed and developing countries.

2. Family Farming-backbone of Agriculture

Globally, there are more than 570 million farms and 500 millions are family owned. Almost 98% of agricultural producers (500 million agricultural producers) are family farmers. Family farms consist of 1.3 billion individuals, 40% world resources and 70% world's food production. While there are numerous definitions for small farms or family farms, FAO (2014) defined family farm as "An agricultural holding which is operated and managed by a household and where farm labor is mainly supplied by that household" [5]. According to Hazell et al. (2007) [6], a small farm (family farm) is a farm where the primary aim of the farm is to produce the households' consumption of staple food and for which most of the labor depends on household members. When we discuss features that distinguish family farms from organizations of other farms, one alone feature is good enough to differentiate. That feature is freedom which is provided with self-employment, and intergenerational continuity of family farms. Farm ownership and managerial control is by so-called principles, who can be the farmer alone, farmer and spouse [7]. Another salient feature of this type of farms is residence, owner (household) lives on the farm or in nearby villages, thus family farmers populate rural areas. Van der Ploeg also listed some features of family farming; Key to success of family farming is the family, main means of production like, Land, Livestock, equipment and labor are controlled by family. Bulk of the workforce is supplied by family, but sometime temporary paid or unpaid labor can be used. Another quality is the balance between the family and the farm. As the farm is the main source of income and food for the family, a balance between mouth to eat and hands to work is necessary. Family farms are living environment not just production units, with history and tradition. Importantly, they are also vital part of the landscape and have important role in biodiversity conservation [1]. In short, family farming reflects a lifestyle based on tradition and beliefs about living and work, and it is more than occupational choice (Council of the EU, 26 July 2013).

The importance or place of agriculture considerably differs depending on the geographic of a country and their position in economic transition process. While, the level of active agriculture worker have fallen to 5% in Europe and North America, which were the first region to began their structural transformation, there is much more different situation in rest of the world. Due to massive population of Asian continent, almost 78% (more than a billion) of world total agricultural worker are in Asia, including 497 million in China, 267 million in India, and 258 million in other Asian countries. Remaining 15% (203 million) of active agriculture worker are in sub-Saharan Africa, rest of the world has 7% of the global total (83 million) active workers. Agricultural population in the world is going to increase continuously, there has been increase of 350 million people over the past 30 years, and this growth varies depending on the location of the country. Asia integrated (84%) majority of its new active workers, Sub-Saharan Africa (28%), whereas rest of the world has lost employment in agriculture.

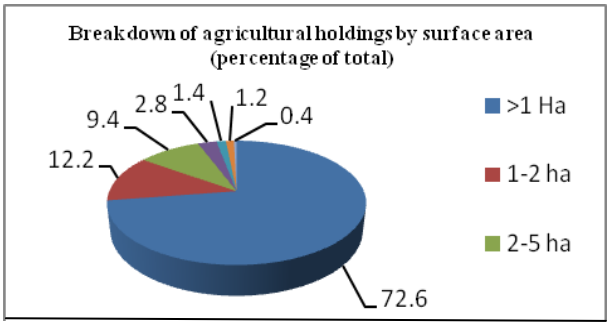

Fig. 1 Breakdown of agriculture holdings by surface area (% age of total) [8].

Distribution of holdings by size gives a useful picture of world's agricultural Structure (Fig. 1). From available data, 73% of holdings use less than 1 ha (316 million); 85% have less than 2 ha and 94% have less than 5 ha. Vast majority of agriculture workers works on very small holdings, more than 10 ha holdings notably exist in Americas (north and south) and Europe (20%). Therefore, it is family workers that provide bulk of agriculture work force. Large scale holdings (> 50 ha) which use paid labor employ few million of 1.3 billion active agriculture workers. An essential contribution to livelihood and income of the population is made by family farms due to importance of these farms in the structure of global activity. Agricultural activities performed on holdings make a considerable contribution to the incomes of the agricultural households. Huge majority of family farms consists of small amounts of land, have limited technical means and very first attempt is to meet their food needs. The scale of rural poverty at global level reflects that of agricultural households [9]. Low level of return which is characteristics of agriculture generally is due to reduced labor productivity (value added per worker), it has substantial disparities with the other sectors: in the range of 1-10 in OECD countries and up to 150 in the poorest countries [10]. Family farmers are not forever restrained to poverty, 5 percent of family farmers are modern, rich, productive and in general based in developed countries [2]. Their improved living conditions underline that model can be feasible for developing or under developed countries too. The observed developments in OECD or emerging countries like, modernization of farm, efficient information system and fluid markets, external support and assistance, can facilitate convergence and catching up towards the income levels of the other sectors of economy. Furthermore, family farms significantly contribute to world agricultural production. At global level, for all basic food production like; cereals-wheat, rice, millet, corn, sorghum, tubers and plantains, family farms are the source of bulk of the volumes [11].

Table 1 Estimates of the share (%) of family farms in production of different crops [12].

Crop/sector	Corporate agriculture	Family Farms	Family businesses
Rice	2	94	4
Cotton	3	89	8
Bananas	13	69	18
Plantains	2	82	16
Coconut (ha)	4	96	-
Coffee (vol.)	5	95	-
Cocoa (vol.)	5	95	-
Rubber (ha)	24	76	-
Oil Palm (ha)	59	41	-
Sugar cane (ha)	60	40	-

Production of cotton coffee and cocoa is dominated by family farms; corporate agriculture plays an important role in production of tropical commodities. Although this trend differ from region to region and country to country, these figures shows important role played by family farms in the supply to large agricultural markets. World population is increasing with passing day; consequently food demand is also increasing. According to FAO estimates, globally food demand will increase 40% in 2050 [5]. Family farming has the capacity to fulfill increasing demand, due to population growth and trends in foods in consumption. Small producers are crucial for global food security, as large numbers of them are in developing countries and they are the ones who feed the world's urban and rural population by producing food crops [13].

All these above mentioned important role played by family farms highlights the importance of family farm in global activity. Family farms offer solutions to global challenges, rather than being a problem. There is need for recognition of the vital role played by family farms. Family farms can have more productive and secure future, by accepting farming as a business, joining efficient value chains, and finding support from regional and local organizations.

3. Global Warming and Family Farming

Rapidly increasing population has led to

urbanization, economic activities and diversification of consumption activities. This has increased pressure on environment and natural resources [14], and this rapid development created many social and environmental problems in past century. Today, these problems have become threat to human life and globe. According to estimates and studies in recent years, global warming which is result of industrial developments is threatening global food security in near future [15]. Situation is such that, increase in average temperature which is sign of global warming has global acceptance, and has brought global warming to concrete agendas of states, societies and economic sectors. In this regard, United Nation prepared a protocol (the UN framework Convention on climate change), and signatory countries of this protocol agreed to reduce greenhouse gases [16]. At present, all nations are facing and affected by these problems at different scales according to their development level. As a result of global warming climate change is expected to emerge in coming years. The global temperature is increasing every year and it is estimated that by 2050, it will destroy a quarter or more than 1 billion of plant and animal species [17]. Each country will be affected by climate change at different level as documented in United Nation's Intergovernmental Panel on climate change Report (IPCC). This change will affect every sector at different dimension, especially agriculture sector. According to projections, global climate change will affect agricultural production system, product design and food production as a result. Climate change and agriculture both has effects on each other, energy has 49% share in global warming, followed by industry (24%), deforestation (14%) and agriculture (13%) [18]. Since the main source of food production is agricultural production activities, the issue has become an important area of discussion now a day. Accordingly, likely effects of climate change on every area will be important for agriculture producers, agricultural sector, and agricultural policy. Global warming will affect climate change, climate change will change agriculture production, and change in agriculture production will limit food production, which will further affect human life, economy and the future of locality. Economic, social and environmental impacts of drought which will stem due to climate change will have significant consequences. As seen in Table 2, along with economic problems from producer and household perspective at micro level, there will be negative effects at macroeconomic indicators too (industrial losses directly related to agricultural production, decline in production, unemployment, losses in national income and taxes). In relation to mentioned problems, there will be important problems from social and environmental perspective [15].

Taking into consideration negative effects climate change will have on agriculture and related sectors, it is

Table 2 Expected multidimensional effects of drought [19].

1) Economic Effects	**2) Environmental Effects**
• Product losses • Insect attack, plant diseases • Low product quality • Losses in livestock (animal husbandry), losses in fisheries • Decrease in productivity of pastures • No supply of food and water for animals • Loses in forestry, fire • Tree diseases, insect infestation • Decrease in productivity of forest area • Decrease in food production, decrease in food stocks • Difficulty in finding financial resources, credit risk • Expensiveness in development of new and additional water resources • Losses in farmers' income • Losses in tourism • Decrease in energy production • Industrial losses related to agricultural production • Unemployment due to decrease in production • Losses in economic growth, delay in economic development • Losses in tax collection	• Water and wind erosion in ground • Disappearance of plant habitats • Degradation in water quality • Impairments in animal quality • Shrinkage in natural habitats of animals' **3) Social Effects** • Social unrest • Increase in migration incidents • Increase in poverty

important to carry necessary measures at national and international level. Almost 88% of total holdings which are small farms or family farms will also face these threats. With other problems like natural disaster, access to financial markets, un-favourable macro-economic policies; climate changes is major problem threatening the prosperity of small farms [20]. In order to cope with above mentioned problem at global level family farming can also play an important role [15].

4. Family Farming and Food Security

It is estimated that world population will reach 9 billion in 2050. In that period where hunger will be major threat, it will be important to ensure continuity of agriculture production and maintaining strategic importance of agriculture. With 80% of world food production coming from family farming, its role in ensuring food security can't be underestimated. In many countries family farming is playing crucial role in fight against hunger as it has highest share in food production, for example; in Brazil, 57% of total milk production, 70% of total beans production, and 46% of total maize production is done by family farmers [21]. In terms of productivity successful results can be obtained from family farms contrary to what is thought about small farms. While the topic of relationship between farm size and productivity is under discussion and studies done on this topic has confirmed both inverse and positive relationship between both. Due to cheap labor small farms have high labor to land ratio, due to low opportunity cost small farms can exploit more land and can cultivate large part of their land and as result achieve higher yield and output [20]. The 250 million family farms of China have 20 percent share in total world food production, despite having 10 percent of world's cultivated land [22]. There are many examples of how family farming played role in food security, Fome Zero (Zero Hunger) program of Brazil is the prominent example of how food security and family farming are interconnected. Under this program Brazilian government supported small farms with different tools such as, declining interest rate to such extent that even negative, insurance to protect farmers in semi-arid region from drought, and these programs boosted production. On the other hand, Fome Zero Program worked to create and strengthen new markets for family farmers, through local food purchase program (PAA). At least thirty percent of the food purchased for school meals by public schools needs to be purchased locally form family farmers. This program has been expanded to many Brazilian states and cities, and it just not only cover school meals but also food for hospitals and other public institutes. Apart from supporting family farming, Fome zero has proved out to be a mean to ensure access to food to poor families, local food supply arrangements, and health and nutrition monitoring system. This win-win situation is now implemented by many countries [2].

Small family farms can contribute to food security globally by supporting agricultural industry. In Kenya, development of the dairy industry has got momentum with distribution of milk from small farms through school programs and campaigns, and these small farms has contributed in development of agriculture industry in the country [23]. In countries where large portion of population is employed in agriculture or if living in cities and hasn't broken there connection with rural areas, family farming works as an insurance and assurance against hunger [24]. The people who have migrated to urban centers by leaving rural areas and loss their jobs due to economic crisis, by returning to villages and farming they can be able to protect their own food security and will contribute to flexibility of the economy [21]. Small family farms have great importance in fight against hunger and malnutrition as it has in guarantee of food supply. Due to these reasons, protection and success of family farms has importance for food security and in implementations and policies for food security.

5. Family Farming in Turkey

As in rest of the world, family farm in Turkey are

very important mode of farming, performing agricultural production activities in rural area and consists of large number of holdings. Share of Turkey is 0.54% in total agricultural holdings (570 million). Approximately 88% of these holdings are family farms and 95% of these family farms are less than 2 ha. The success of policy aimed at increasing farm size in developed countries has not significantly affected existence of family farms [25]. For example, in 1950 number of agricultural holdings in USA was 5.4 million, which decreased to 2.2 million in 2002 [26]. Today, despite having on average large size agriculture holdings, number of family farms is still high in USA [5]. During same period, number of holdings in Turkey has increased from 2.5 million to 3.1 million. This situation shows; shrink in size of agriculture holdings, which has almost 88% of total agriculture holdings as a family farms [25, 27]. In world, 85% of holdings in Asia are family farms, 62% in Africa, 83% in North and Central America, 68% in Europe, and 18% in South America. Family farming is one of the most effective elements of agriculture in food production sector of developed and developing countries. Like for other countries, family farming has great importance for Turkey from socio-economic, environmental and cultural perspectives. In Turkey, agriculture has played significant role in providing employment to population, approximately 2.2 million farmers are earning livelihood from agriculture. Though share of agriculture in employment is decreasing, still a significant proportion of population is employed in agriculture sector directly or indirectly. In 1990, 46% of employed population was working in agriculture; today share is 21% (Table 3). Despite decrease in share of agriculture in employment, still 1 out of 4 workers is employed in agriculture sector. Total economic size of agriculture sector in Turkey is 63 billion dollar, and volume of export is 15 billion dollar. Agriculture population is 22.8% of total population, share of agriculture in national income is 7.4, and share of agriculture export in total export is 3.83%, which makes agriculture an important sector [28].

Table 3 Sector-wise distribution of employed population (1,000 Person) [28].

Year	Agriculture		Industry		Construction		Services		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
2005	5,014	25.54	4,241	21.60	1,097	5.59	9,281	47.27	19,633	100.00
2006	4,653	23.34	4,362	21.88	1,192	5.98	9,726	48.79	19,933	100.00
2007	4,546	22.50	4,403	21.79	1,231	6.09	10,029	49.63	20,209	100.00
2008	4,621	22.43	4,573	22.02	1,238	6.01	10,208	49.54	20,604	100.00
2009	4,752	23.05	4,179	20.27	1,305	6.33	10,380	50.35	20,615	100.00
2010	5,084	23.26	4,615	21.11	1,434	6.56	10,725	49.07	21,858	100.00
2011	5,412	23.26	4,842	20.81	1,680	7.22	11,332	48.71	23,266	100.00
2012	5.301	22.15	4,903	20.48	1,717	7.17	12,016	50.20	23,937	100.00
2013	5,204	21.15	5,101	20.73	1,768	7.19	12,528	50.93	24,601	100.00

Turkey's agricultural structure is dominated by scattered small family farms. Almost, 88% of farms in Turkey are family farms, number of small farms (under 2 ha) is more than 1 million, and it is 32.8% of total holdings (Table 4).

With the expansion in agriculture land, the number of agriculture holdings also increased and average land holding reached to 6 ha in 2014. According to reports of Ministry of Agriculture and Livestock, number of agriculture holdings in 2001 was 2.18 million, which increased to 2.21 million in 2014. Highest increase in number of holding was seen in 2002 (18.6%) with comparison to other years. There were 2.2 million agriculture enterprises and 14.89 million ha agriculture land in 2014. Size of the agriculture holdings has been increased from 5.6 ha in 2011 to 6.7 ha in 2014 with an increase of almost 20 percent (Table 5).

Table 4 Status of small farms in Turkey (percentage of total holdings) [15].

Holding size	1950	1963	1980	1991	2001
0-2 ha	30.6	40.09	28.5	34.9	32.8

Table 5 Number of holdings, total cultivated area, and average size of holdings (2001-2014) [28].

Year	Number of holdings (million)	Area (million ha)	Average holding size (ha)
2001	2.18	12.19	5.6
2002	2.58	16.49	6.4
2003	2.76	16.73	6.1
2004	2.74	16.70	6.1
2005	2.67	16.58	6.2
2006	2.60	16.49	6.3
2007	2.61	17.72	6.4
2008	2.38	15.76	6.6
2009	2.32	15.43	6.6
2010	2.32	15.10	6.5
2011	2.28	15.62	6.8
2012	2.21	15.34	6.9
2013	2.18	14.72	6.7
2014	2.21	14.89	6.7

By analyzing structure of crop production, animal husbandry and fisheries in Turkey it is found that, Family farming has high potential for food security and rural employment.

6. Challenges Faced by Family Farms in Turkey

Small and fragmented agriculture holdings are characteristics of Turkish agriculture sector. Agriculture is dominated with small and family farms; these family farms are facing several problems like cooperation, marketing, women and child labor, extension and advisory services.

Though, family farms are member of more than one organization to benefit from subsidies and market their products, efficiency of opportunities provided by these organizations is low. Moreover, micro-credit operations don't include family farms, desired conditions to benefit from agricultural subsidies are hard for small farms, and existing procedure for financing is complex. Cooperatives formed for agriculture purposes failed because of insufficient information to family farms about organization and its objectives. Secondly, number of intermediaries in marketing is over. Family farms can't perform marketing activities of produced products themselves; they need help in product processing and evaluation stages. Access to markets for crops and animal products produced by family farms is limited, farmers can't access to markets with its own resources and investment supports and grant scheme are not available. Thirdly, more than 90% of women working in agriculture are informal labor, due to that women's participation in social security system is very low. Free family labor is common in agriculture especially among women, young people prefers to work in other sectors. Women are not sufficiently benefiting from education and extension, working in labor-intensive rather than advanced technology jobs, and organization among them is very low. Finally, like every sector there is fast technological change and information flow in agriculture too. With time quick and effective transfer of this knowledge accumulation and technology to those involved in agriculture is becoming important. According to prevailing conditions, agriculture extension and advisory services should be provided to family farmers. Generally, extension and advisory services are provided by Ministry of Food Agriculture and Livestock. There are coordination problem among institutions and organizations providing training and extension services to farmers [29]. Among all farming type family farming is majorly affected by these problems. Family farming is mostly ignored by private extension and advisory service providers, sometimes even from public extension. Low income level of family farm is major obstacle in accessing such services. Recognition of family farming as a different farming category at national level will help in removing these hurdles in sustainability and progress of family farming.

7. Conclusion

Globally importance of family farming from environmental, socio-cultural and economic perspective is highlighted by celebrating 2014 as a year of family farming. Family farming is now seen to be very important for rural development and sustainable agriculture. This type of farming is contributing in food security and supply of nutrients. Sustainability of family farming is a big problem as large and commercial farming as threatening the existence of family farming.

Family farming is very important to Turkey as it is to world in; preserving traditional agriculture, sustainability of rural life, ensuring food security, preserving biological diversity and natural resources. Additionally family farming has potential to give life to local economy, decreases rural to urban migration and transfer local culture to future generations. Family farmers in Turkey and also in whole world generally and developing world particularly are facing same problems. Family farming is a different mode of farming as compared to others. In order to ensure development and make it traceable, it is necessary to define family farming nationally. In this way problems of family farms will be sorted out easily and effectiveness of agricultural policies will be increased. Those who are earning their livings from family farming by providing basic organization and advisory-consultancy services, technical support should be provided in marketing of products and entrepreneurship studies (particularly to women and young participants). Technical consultancy should be provided to those family farms who want participate in cooperative or other organizations. Ensuring reduction of losses and insurance against risks during transportation of products produced by family farmers to markets will help in increasing returns from produce. A separate unit in public extension department should be established to analyze needs of family farms and provide services and programs accordingly.

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