



## The Role of Organic Farming in Improving Food Security in Fars Province

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**ABSTRACT:** The present investigation was undertaken to study the role of organic farming in improving food security in Fars province. Out of a total of 187 samples collected. A questionnaire was developed to collect data. The validity of the questionnaire confirmed by experts and reliability was measured using Cronbach Alpha coefficient and 98% was estimated by the SPSS16 software. Evaluation showed that rate of food security among majority of respondents was in moderate level. The results indicated that reliance on locally available production assets were determined as the most important capability of capacity building in enhancing food security. Based on the results of the study, it is recommended to use organic farming to improve Food security.

### INTRODUCTION

Access to desirable, sufficient, safe and nutritious food is a basic component of development and health of a society. Thus, when developing country goals and priorities, food security is of utmost importance (Lashgarara *et al.*, 2009). Food insecurity is one of the most pressing challenges, particularly in developing countries (WHO, 2013).

There is a general movement in the agricultural sector aimed at developing sustainable agriculture as a means of improving peoples' livelihoods. Many NGOs, CBOs and the government promoted an approach to agriculture which would allow for the safeguarding of food security, help to provide income, maintain soil fertility and control pests. From here, it was only a small step towards embracing organic agriculture, which, with its emphasis on nature, was found to be palatable (Taylor, 2006).

However, hunger, poverty and environmental degradation persist even as concerns about global human security issues continue to increase. Moreover, the last decades provide uncompromising evidence of diminishing returns on grains despite the rapid increases of chemical pesticide and fertilizer applications, resulting in lower confidence that these high input technologies will provide for equitable household and national food security in the next decades. Overall, global cereal output is declining, mainly among the major producing and exporting countries (Scialabba, 2007).

According to WHO (2013), food security is achieved when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active

life. Food security can also be considered as a function of food availability, food accessibility, food stability and food utilization (WHO, 2013).

Food security can be summarized according to three factors: food availability, food accessibility and food utilization. Food availability is achieved when a sufficient amount of food is constantly available for all members of society. This kind of food can be obtained through household production, local production, imports or food aids. Food accessibility is obtained when households and individuals have sufficient sources to consume a suitable diet. In other words, food accessibility is possible if the household income allows for the preparation and purchase of enough food (Bakhtiari & Haghi 2003).

Organic agriculture as a holistic production management system that avoids use of synthetic fertilizers, pesticides and genetically modified organisms, minimizes pollution of air, soil and water, and optimizes the health and productivity of interdependent communities of plants, animals and people. Finally, "organic agriculture" is not just about production. It includes the entire food supply chain, from production and handling, through quality control and certification, to marketing and trade (Scialabba, 2007).

Organic farming seems to be a viable option to improve food security of smallholding farms by increasing income/decreasing input cost; producing more for home consumption, and adopting ecologically sustainable practices with locally available resources but, improvement is needed further for all dimensions of food security (Panneerselvam *et al.*, 2011).

Organization (FAO) defines organic agriculture as a holistic production management system that avoids use of synthetic (in-organic or chemical) fertilizers, pesticides and genetically modified organisms, minimizes pollution of air, soil and water, and optimizes the health and productivity of interdependent communities of plants, animals and people. The term "agriculture" is used in its wider sense to include crop/livestock systems, organic aquaculture and organic harvesting of non-timber forest products. Agricultural "products" include food, fibre and medicinal and cosmetic raw materials. Organic agriculture includes the entire food supply chain, from production and handling, through quality control and certification, to marketing and trade. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved (Roeder, 2012).

Organic system produced more food and income per unit time-area compared to conventional system. Increasing income of small farmers will improve food security through food access components. Organic agriculture seems to be a viable option for improving food security of small holding farms by - under certain circumstances - to increasing total farm yield, income and by reducing input cost (Höök, 2013).

Hall and Mogyorodó (2001) pointed out that organic foods are health in quality, and cause personal health, family health, consumer health.

Kubala et al. (2008) pointed out that organic farming results in higher quality of food products and they are more delicious.

Pterson *et al.* (2012) pointed that the principles of sustainable agriculture that underlie organic farming call for economic viability of farms along with social justice and environmental stewardship.

Most certified organic food production in developing countries is exported, potentially encroaching on local food needs. However, when organic cash crops systems lead to agro ecological improvements and better incomes for poor small holders, they also lead to improved food self-reliance. Diversified and productive agricultural systems reduce household market dependency and import requirements. However, domestic market development in developing countries is a precondition for a healthy organic sector, although higher prices may be a constraint to poor urban dwellers. By managing biodiversity in time (rotations) and space (mixed cropping), organic farmers use their labor (the most readily available capital they have) and environmental services (e.g. predation, pollination, soil nutrient cycling) to intensify production sustainability. These low cost farming practices reduce cash needs and, thus, credit dependence. Although organic enterprises increase returns on labor inputs and offer rural employment opportunities, organic management remains (as in conventional agriculture) a constraint if labor is scarce (Scialabba, 2007).

Omid Najafabadi (2014) pointed out that some of the motivations of organic farming collected included

improvement of soil fertility, protecting the environment, low cost of production because of reduction of input costs, farm profitability, earn higher income especially for small farmers, higher prices for organic products and general encouraging farmers to convert by the government.

In the consumer's mind, organic produce must be better and healthier than that produced under conventional farming system. In contrast to conventional produce, organically produced products should be environmental-safe and healthier, and the risk of produce grown organically being contaminated with pesticide residues is much smaller than with conventionally produced crops (Biao *et al.*, 2003).

Azadi & HO (2010) stressed that it has been observed that implementing organic farming in some developing countries causes higher yield of productions. Organic farming by avoiding the risk of failure, instead of increasing the production, provides better food security. Organic farming has some potential to do so, as the diversity of crops grown in it reduces the risk of crop failure from particular pests and diseases. By educating the South farmers about organic farming, they may attain the capability of self-sufficiency and thus a more secure and stable supply of food. On the other hand, organic farming can potentially produce higher yields than conventional methods if the farmer knows how to "manage" his farming system. Furthermore, a global transition to organic may not only have the potential to promote food production levels but also conserve agricultural soils and improve soil fertility and health.

Ecological agriculture holds significant promise for increasing the productivity of smallholder farmers, with consequent positive impacts on food security and food self-reliance. Ecological agriculture, offer farmers and their families a real and affordable means to break out of poverty and achieve food security (Vaarst *et al.*, 2009).

Many studies have suggested that 'organic' agriculture could contribute substantially to farmers' food security and improve farmers' livelihoods. If organic agriculture is to play a role in providing sustainable food security and sustainable livelihoods, it needs to be accessible to poor farmers (Seufert, 2012).

Organic agriculture has a clear role to play in helping meet a range of global environmental policy objectives, including those relating to combating desertification, to maintaining biodiversity and offsetting the consequences of global warming (through carbon sequestration). Enhancing social capacity organic agriculture is a form of agriculture that is highly knowledge intensive and that integrates traditional and indigenous farming knowledge (Rundgren, 2006).

Organic agriculture will enable Iranian smallholders to achieve household food security and gain better incomes while regenerating the land, enhancing biodiversity, and supplying quality food to local communities (Mahmoudi & Damghani 2009).

## MATERIAL AND METHODS

This was an applied type study and descriptive method was used. The survey method was used to collect the data. The instrument that was used for data collection was a questionnaire. Content and face validity were established by a panel of experts consisting of faculty members. Minor wording and structuring of the instrument were made based on the recommendation of the panel of experts. A pilot study was conducted with 30 persons who had not been interviewed before the earlier exercise, which determined the reliability of the questionnaire for the study. Computed Cronbach Alpha score was 91%, which indicated that the questionnaire was highly reliable. The research population included 620 members of fund for supporting the development of agricultural activities from 6 clinics in Fars province. Using proportional stratified sampling and the results of the pilot test, a sample of 187 respondents was constituted. To analyze the collective data, the software SPSS 16 was used. The methodology used in this study involved a descriptive and quantitative research and included the use of regression and descriptive analysis as data processing methods.

## RESULTS

The results of descriptive statistics indicated that the average age of respondents was 48 years. It was also reported that most of the respondents (97.3%) were men, and 2.7% were women. and majority of them had only completed the diploma level. In order to measure the perception of respondents about their food security, they were asked to respond to questions based on the Likert scale. Results showed that the food security level for majority of respondents was in medium range (45.5%) (Table 1).

In order to measure the perception of respondents about the capability of capacity building, they were asked to respond to questions based on the Likert scale. Results showed capability of capacity building level for majority of respondents was in medium range (48.1%) (Table 2). Based on the perception of respondents in this study, reliance on locally available production assets (CV = 26.91) and empowerment of farmers through partnerships with farmers and other groups (CV = 29.40) were determined as the most important capability of capacity building in enhancing Food security (Table 3).

**Table 1: The perception of respondents about Food Security (n = 187).**

Food Security	Number	Percent	Cumulative percent
Very low	30	16	16
low	68	36.4	52.4
<b>medium</b>	<b>85</b>	<b>45.5</b>	<b>97.9</b>
high	4	2.1	100
Total	187	100	

**Table 2: The perception of respondents about capability of capacity building (n = 187).**

Capacity building	Number	Percent	Cumulative percent
Very low	7	3.7	3.7
low	59	31.6	35.3
<b>medium</b>	<b>90</b>	<b>48.1</b>	<b>83.4</b>
high	31	16.6	100
Total	187	100	

**Table 3: Means of respondent's views about the capability of capacity building in enhancing Food security (1 = the least important; 5 = the most important).**

Capacity building	Mean	CV
Reliance on locally available production assets	3.14	26.91
Empowerment of farmers through partnerships with farmers and other groups	3.04	29.40
Self-reliance in producing food	3.07	29.83
Valorization of indigenous knowledge	3.03	31.15
Helping farmers by reducing pesticide and fertilizer purchase	2.99	32.27
Respect the local culture	2.90	36.65

**Table 4: The perception of respondents about capability of job creation (n = 187).**

Job Creation	Number	Percent	Cumulative percent
Very low	13	7	3.7
low	40	21.4	35.3
<b>medium</b>	<b>93</b>	<b>49.7</b>	<b>83.4</b>
high	39	20.9	100
Very high	2	1.1	
Total	187	100	

In order to measure the perception of respondents about capability of job creation, they were asked to respond to questions based on the Likert scale. Results showed that the job creation level for majority of respondents was in medium range (49.7%) (Table 4). Based on the

perception of respondents in this study improving employment opportunities in rural areas (CV = 28.28) and Marketing and business (CV = 30.15) were determined as the most important capability of job creation in enhancing Food security (Table 5).

**Table 5: Means of respondent's views about the capability of job creation in enhancing Food security (1=the least important; 5 = the most important).**

Job Creation	Mean	CV
Improving employment opportunities in rural areas	3.20	28.28
Marketing and business	3.18	30.15
Increase agricultural employment	3.19	31.09
Non-agricultural employment	3.01	32.22
Attracts new entrepreneurial entrants	2.97	34.37

## DISCUSSION

Evaluation of the respondent food security showed that rate of food security among majority of respondents was in moderate level. The results indicated that reliance on locally available production assets were determined as the most important capability of capacity building in enhancing food security. Rundgren (2006) & Azadi & HO (2010) & Vaarst *et al.* (2009) also confirmed this finding.

Results also showed that the job creation level for majority of respondents was in medium range Scialabba (2007) also confirmed this finding.

Based on the results of the study, it is recommended to use organic farming to improve Food security. Regarding to the social aspects of organic farming can contribute to food security in the Long-term.

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