

An Overview of The Organic Farming Situation in Iran (Challenges and Solutions)

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Abstract

Having a long history of conventional agriculture and the prerequisites for organic farming, Iran can become one of the major Asian countries in the production of organic products. However, she has not succeeded in this. In order to investigate the state of organic agriculture in the country, analysis the problems and solutions; the information collect through examination of various scientific and research articles carried out by universities, organizations and private individuals. There are many reasons why Iran's farms have a good potential for the transfer of traditional agriculture to organic farming. Therefore, it is necessary to expand the cultural dimensions of organic agriculture, which is the optimal exploitation of resources and the protection of the environment and the production of healthy food. The main worries for producers are i) the yield decline of products due to the lack of fertilizers and chemical pesticides effective in increasing yield, ii) reduced farmers' income during the early years of organic farming, and iii) the easy access of farmers to chemicals. Consumers' problems include i) lack of familiarity with organic products, ii) uncertainty about the organic nature of products, and iii) lack of product ID. Proposed answers to these difficulties include training farmers in organic production; supporting producers' costs; monitoring production in farms and warehouses by the Agricultural Ministry; monitoring packaging and stores by the Standards Institute and Health Ministry; identification of organic products; promotion of organic products distribution and consumption culture; excerpts for the removal of subsidies belonging to fertilizers and chemical pesticides with the aim of preserving the environment; identification of virgin areas to produce organic crops in them, and developing long-term codified programs in the above-mentioned issues.

Keywords: Organic Agriculture; Difficulties; Resolution; Iran

Introduction

Organic farming is a comprehensive production management system that improves the health of agricultural system through the conservation and enhancement of biodiversity, biological cycles and soil bioactivity. The system emphasizes the use of management practices (organic fertilizer use, IPM) instead of foreign inputs (chemical application), taking into account regional climatic conditions and the use of environmentally friendly methods. Therefore, due to the diverse climates in Iran and the plentiful agricultural crops and livestock, there is a possibility to cultivate organic products widely in the country. According to the 2007 Organic Farming Research Institute, organic farming covers about 15,000 hectares of Iranian lands, and is estimated around 50,000 hectares in 2015.

Of the 66 agricultural products of the country, such as: figs, dates, pistachios, almonds, medicinal plants, pomegranates and the subsequent products (pomegranate seed oil and concentrate), rose water, flower oil, dried flowers, licorice, saffron, besides, some nomadic productions, some medicinal plants and non-arable food crops for example barberry, blueberries and wild pistachios are considered to be in the natural arenas [1]. Although in recent years, measures have been taken to protect and produce organic products, but their pace of development has not been dramatic and despite the potential of the country, there is little growth in the level of cultivation, yield, production and even consumption of these products. Some of the important reasons for neglecting organic farming in Iran is the increase in population and the decision of

policy-makers on more and more production to achieve food security and sacrificing quality to achieve quantity. On the other hand, lack of welcome to farmers going on production of organic crops because of anxieties about possible reductions in yields per unit area and consequently reduced earnings.

Studies have shown that in order to achieve the desired state of supply in the country, 300 to 400 thousand hectares of agricultural land should be cultivated under organic cultivation. In the fifth development plan anticipated around 25 percent of Agricultural lands and gardens (equivalent to four million hectares) are to be covered by the production of organic products. In any case, it should be hoped that with the proper planning and management of organic farming development, a significant share of agricultural production would be produced organically and delivered to the markets of Iran and the world. The present article is a narrative review of the organic farming situation in Iran that has examined some of the barriers and problems and provided solutions for the development of this agricultural sector in the country.

Main edition

Iran is weak in terms of sustainability of agricultural, environmental, rural communities and agricultural education, and in terms of agricultural progress has a modest sustainability [2]. The results of sustainable agriculture zoning in Iran showed that in 31 provinces of the country, only 5 provinces had medium and high sustainability (for example the provinces of Khorasan Razavi and Fars) and other provinces of the country stood unstable (such as Qom province) or be situated of low sustainability. Malik Saeedi, *et al.* [3] in a survey of professional attitude to sustainable agriculture in Iran reported that the impact of traditional agriculture on the environmental challenges had the most negative correlation.

Lahmar [4] stated that the main stimulus and obstacles to the acceptance of conservative agricultural protection in Europe are market and farm conditions, physical and biological conditions, political, institutional, technological and cultural-social conditions and the effects of the environment and community health, and there is no doubt that increasing organic production is one of the most important requirements for the achievement of sustainable agricultural development.

In Iran, considering the dry and semi-arid weather conditions and the abundance of labor force, organic products are more eco-

nomical and more comfortable than the developed world. Although the results of the studies indicate that the cultivation level of these products in Iran has reached more than 50 thousand hectares, there are many obstacles and problems for producing these useful products [5]. Einali, *et al.* [6] in the study of the level of knowledge and biological performance of farmers, in the southern Barandoz-chai village of the central city of Urmia, despite the high correlation between knowledge and biological functioning of the farmers, they are forced to use fertilizers and pesticides to combat pests. Moreover, due to financial difficulties and constraints they were not able to use modern irrigation practices.

Prerequisite of changing conventional agriculture with organic farming

Iranian farmers, before the arrival of new technologies and chemical inputs, based on the use of diversified crop plants and animals in the field, use of organic materials in plant nutrition, biological control of pests and diseases, and finally, group and family work and provision of their products in local markets, which is now the basis for a modern social organic farming, has led to organic production [1]. Currently, part of the country's products are produced in the form of traditional organic products, but these types of products are ignored in the world of trade, and so-called "forgotten biological products" [7]. A comparison of conventional agriculture with organic farming is presented in table 1 [1].

Conventional agriculture	Organic agriculture
Centralization	Decentralization
Energy dependency	Energy independence
Competition between living organisms	Co-operation between living organisms
Environmental degradation	Environmental protection
Single cropping	Multiple cropping
Exploitation of nature	Profit to the nature

Table 1: Comparison of conventional agriculture with organic farming.

In the whole, traditional Iranian agriculture, in many respects, it is similar to organic farming, as the production of figs in the Fars province that is a good for scrutinizing this issue [8]. In their study of the opportunities and threats of the organic production of figs in Istahbanat (Fars province) stated that the cost of low production and the healthy figs form the strengths whereas, the shortages of

native cultivars and lack of lego and the required standard are the weak points of organic fig cultivation in this area. Citrus of northern Khuzestan province is another example of organic gardening in Iran due to the ideal conditions of the climate, as well as fertile soil and water [7].

Many of the country's agricultural and livestock products have priority and privilege to become certified organic farming:

1. Central and southern country's palm trees are largely based on organic farming principles and low inputs, and the use of inputs and foreign operations is negligible and in some cases zero. Even in many of these systems, machinery is not used and operated, and the harvest is carried out by labor without the use of the machine.
2. Nomadic production: Tribes depend more on livestock than on farming because of the dynamic nature of their nomadic (semi-nomadic) social life. Agronomy among tribes is based on periodic agricultural principles.
3. Natural areas of the country: Exploitation by local people, mainly medicinal plants and non-arable food crops, such as barberry, blueberries, wild boar.

There are many reasons why Iran's farms have a good potential for the transfer of traditional agriculture to organic farming. Therefore, it is necessary to expand the cultural dimensions of organic farming, which is the optimal use of resources and the protection of the environment and the production of healthy food [9].

Targeted studies aiming at recognizing opportunities and analyzing the potential for organic production for domestic and export markets is essential. In identifying the tools for the development of the organic sector in Iran's agriculture, the main factors that explain the development of this sector can be the creation of sub-structures, provision of financial support, policy-making and targeting, and training and advice to producers (Table 2).

Popzan and Shiri [10] in studying the problems of organic farmers in Darreh city, Ilam province, reported that infrastructure problems (lack of suitable market for organic products, lack of institutional or organizational confirmation of organic production), economic issues (lack of capital required for organic farming, lack of people interest in the consumption of organic products), lack of knowledge and awareness of farmers (how organic products are grown and kept), technical and managerial issues (techniques

Understanding areas that have the greatest potential for organic farming
Teach farmers about concepts and operations of organic agriculture
Consumer education aimed at raising their awareness of organic products
Providing the necessary infrastructure for agricultural research and education
Formulation of standards and rules for the production, processing and market of organic products
Application of native knowledge in the process of organic production

Table 2: Prerequisites for the expansion of organic agriculture in Iran.

and methods of cultivating organic products), supportive issues (technical and advisory services) and motivational and attitudinal barriers to development organic agriculture was the most farmers challenges in the area. Yaghoubi and Javadi [11] investigated the barriers of organic farming production in Zanjan province that high production costs, lack of adequate knowledge of production and market of organic products, lack of information and promotion are among the most important reasons for the deficiency of organic farming development in this province. Babajani, *et al.* [12] in a study of rice cultivars organic farming in rural areas of Gilan and Mazandaran provinces stated that among the strategic factors, economic factor had the most effect on acceptance of organic cultivation of rice in these areas. The most important obstacles of adoption of organic farming are inadequate government financial support for farmers, and costly control of weeds and pests on farms.

Food health

One of the most important concerns of consumers is the health of food products and is essentially one of the origins of organic agriculture, which has responded to these concerns [13]. According to the Fifth Development Plan (2011-2016), the Productivity and Instruction Act of the Ministry of Agriculture, 25 percent of agricultural production has been targeted in a healthy manner, based on pest management. The two biological work necessary to create a healthy production area for agriculture in the country is the first step in monitoring the determination of the limit and identification of pesticides and heavy metals on products that have been carried out with the participation of Agricultural Ministry, standard and medical sciences and other institutions, as well as coding Products, a plan that follows the sixth program (2016-2021), will be fol-

lowed more precisely so that each farmer produces a 16-digit code that can be tracked throughout the country, which has the ability to connect to national systems. Substitution of low-risk toxins instead of high-risk toxins is the next step, so that more than 70% of the current pesticides in the agricultural sector are toxic and even safe [14].

Regardless of the relatively large amount of organic farming in Iran, unfortunately, there is no official statistics due to the lack of coded information in this area. The desire to consume organic products has grown steadily due to growing concerns about the pollution of conventional and environmental products, and the export market for such products has grown significantly among affluent societies. In addition, in order to facilitate community access to healthy food, monitoring the quality of food produced from agricultural products and livestock has become increasingly important.

Conclusions and Suggestions

In Iran, considering the dry and semi-arid weather conditions and the abundance of labor force, organic products are more economical and more comfortable than the developed world. Although the results of the studies indicate that the cultivation level of these products in the country has reached more than 50 thousand hectares, there are many obstacles and problems for producing these useful products. The most important obstacles of adoption of organic farming are inadequate government financial support for farmers, and costly control of weeds and pests on farms. High production costs, lack of proper market, inputs, supporting bodies and specific standards for the development of organic agriculture are among the other strategic factors. Therefore, in order to maintain the production process and prevent the emergence of possible tensions caused by the elimination of inputs and the reduction of production on the one hand and the reduction of residues of pesticides and chemicals in manufactured products, on the other hand, a balanced and intermediate vision can be designed to the first step in this direction is to implement the standards defined in this area. Therefore, it is essential that the standards be considered and evaluated:

- o A: International rules and standards.
- o B: National rules and standards.

Therefore, in order to draw conclusions from cross-sectional planning, activities and actions undertaken in the field of organic agriculture in the country, the following suggestions are possible:

1. Make more use of the structure and composition of the "National Committee of Organic Products" and the presence of relevant NGOs in it.
2. There are no statistics on organic farming in Iran, or very small, so the National Organic Committee, after compiling and documenting national information is about registering Iran on the international list of organic farming countries.
3. Increasing the technical knowledge and information of farmers about the benefits of organic agriculture and the consequences of reliance on inputs, especially fertilizers and toxins.
4. Application of agronomic management such as proper tillage, appropriate fodder, mixed cropping, crop rotation to increase soil fertility, using resistant cultivars and biological control with pests and pathogens.
5. Use of agricultural experts as farm advisers to improve technical knowledge and public information.
6. Expand educational programs through audio, video, and publishing brochures on these institutions.
7. Applying supportive policies for organic products and manufacturers, strengthening non-governmental institutions and monitoring the production of input factors.
8. Increased prices of subsidiaries, such as fertilizers and pesticides, and careful monitoring of how they are distributed and consumed.
9. Definition and implementation of the required standards in the field of production and distribution of inputs, the manner and amount of consumption, as well as the amount of the available product in the consumer market, as well as the determination of standards for the evaluation of manufactured products.

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