



Horticulture Schemes and Benefits of Farmers: A Review.

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Abstract

The Gujarat government have developed various horticulture schemes for the farmers under the directorate of horticulture, krishi bhavan, gandhinagar. The I – khedut portal helped the farmers to aware the various scheme and provide the guidelines for the various subsidies. These reviews were drawn to make sure that all the farmers can get all information about I-khedut Portal and all the subsidies related to the farmers. The decision was taken through a face-to-face meeting with the farmers under the guidance of the Directorate of Horticulture (DoH) along with a series of questions with them to find out their views. This work was done to take into consideration the interest of the farmers as well as the problems faced by the farmer friends and the assistance being provided to the farmers by us. The conclusions were drawn on the basis of farmer's response.

Results revealed that the farmers are well informed about the I - khedut portal and they used the application for applying the horticulture scheme and subsidies provided by the government of Gujarat.

Keywords: Horticulture Schemes, Branches of Horticulture, I- Khedut Portal, Field Survey.

1) Introduction

India is the seventh largest country in the world with a total geographical area of 328.73 m ha and has second largest population 121crores (2011), after China. The total arable land available is 144 million hectare of which 70% is under rainfed cultivation. Around 55 - 60 per cent of the total population depends on agriculture and allied activities. Horticulture crops constitute a significant portion of total agricultural production in the country. The term Horticulture is derived from the Latin words: “hortus” meaning garden and “cultura” meaning cultivation. In ancient days the gardens had protected enclosures with high walls or similar structures surrounding the houses. The enclosed places were used to grow fruit, vegetables, flowers and ornamental plants. Therefore, in original sense “Horticulture refers to cultivation of garden plants within protected enclosures”. At present the horticulture may be defined as the science and technique of production, processing and merchandizing of fruits, vegetables, flowers, spices, plantations, medicinal and aromatic plants. [1]. Horticulture is a wide field and includes a great variety and diversity of crops. The science of horticulture can be divided into several branches depending upon the crops it deals with.

The following are the branches of horticulture.

1. Pomology: refers to cultivation of fruit crops.
2. Olericulture: refers to cultivation of vegetables.
3. Floriculture: refers to cultivation of flower crops.
4. Plantation crops: refers to cultivation of crops like coconut, arecanut, rubber, coffee, tea etc.
5. Spices crops: refers to cultivation of crops like, cardamom, pepper, nutmeg etc.
6. Medicinal and aromatic crops: deals with cultivation of medicinal and aromatic crops.
7. Post-harvest technology: deals with post-harvest handling, grading, packaging, storage, processing, value addition, marketing etc. of horticulture crops.
8. Plant propagation: deals with propagation of plants.

Fruit crops: India is the second largest producer of fruits after Brazil. A large variety of fruit crops are grown in India. Of these, mango, banana, citrus, papaya, guava, pineapple, sapota, jackfruit, litchi, grapes, apple, pear, peach, plum, walnut etc. are the important ones. [2]

India accounts for 10 per cent of the total world production of fruits. It leads the world in the production of mango, banana, sapota and acid lime besides recording highest productivity in grape. The leading fruit growing states are Maharashtra, Karnataka, Andhra Pradesh, Bihar and Uttar Pradesh.

Vegetable crops: More than 40 vegetables belonging to Solanaceaeous, cucurbitaceous, leguminous, cruciferous, root crops and leafy vegetables are grown in Indian tropical, subtropical and temperate regions. Important vegetables grown in India are onion, tomato, potato, brinjal, peas, beans, okra, chilli, cabbage, cauliflower, bottle gourd, cucumber, watermelon, carrot, radish etc. India ranks second in vegetable production next to China in area and production contributing 13.38 per cent to the total world production. India occupies first position in cauliflower, second in Onion, third in cabbage in the world. [10] West Bengal, Orissa, Uttar Pradesh, Bihar, Maharashtra, Karnataka are the important states for horticultural crop production.

Floriculture: Flower cultivation is being practiced in India since ages. It is an important/integral part of socio-cultural and religious life of Indian people. It has taken a shape of industry in recent years. India is known for growing traditional flowers such as jasmine, marigold, chrysanthemum, tuberose, crossandra, aster, etc. Commercial cultivation of cut flowers like, rose, orchids, gladiolus, carnation, anthurium, gerbera is also being done. The important flower growing states are Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, West Bengal, Sikkim, Jammu & Kashmir, and Meghalaya etc.

Plantation crops: This is one of the important sectors contributing about Rs.7500 cores of export earnings. The major plantation crops include coconut, arecanut, oil palm, cashew, tea coffee, rubber cocoa, betel vine, vanilla etc. The leading states are Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra, Goa, Assam etc.

Spices: They constitute an important group of horticulture crops and are defined as vegetable products or mixture thereof, free from extraneous matter used for flavouring, seasoning and imparting aroma in foods. India is known as home of spices producing a wide variety of spices like black pepper, cardamom, ginger, turmeric, chilli, Coriander etc. Major spice producing states are Kerala, Andhra Pradesh, Gujarat, Rajasthan, Maharashtra, Karnataka, Orissa, Tamil Nadu etc.

Medicinal and Aromatic plants: India has diverse collection of medicinal and aromatic plants species distributed throughout the country. It has more than 9500 species with medicinal properties. Demand for these crops is increasing progressively in both domestic and export markets.

Important medicinal plants are Isabgol, Senna, Opium poppy, Periwinkle, Coleus, Ashwagandha, etc. and aromatic plants are Japanese mint, Lemon grass, Citronella, Davana, Patchouli etc.

2) Horticulture Sector Overview in Gujarat

It has a total geographical area of 19.6 M ha of which about 9.7 M ha is utilized for agricultural purposes. It is about 49% of the total area of the state are under cultivation. [3] Out of the total geographical area, the area covered under command area is about 3.8 Million ha. Rain fed area of the state is about 6.6 Million ha. Average land holding of Gujarat is 2.03ha compared to 1.16ha of total of India. [3] The area under irrigation is about 33% of the net area sown, while rest of area is cultivated under rain-fed conditions. Thus, there is large area dependence on rain in the state. Horticulture is a priority sector in Agriculture by virtue of its vast potential in improving the Socio - economic conditions of the farmers. The horticulture sector is supplier for large number of agro-based industries, which has high avenues for generation of skill full employment and self-employment opportunities both in rural and urban areas. Gujarat has a wide variety of soil, rainfall pattern, temperature regimes and irrigation availability. The major fruit crops grown in Gujarat are Banana, Mango, Citrus, Papaya and Sapota. In the year 2013-14 the productivity of fruit crops is estimated at 21.18 MT/Hectare. [4] The major vegetables grown in Gujarat are Onion, Garlic, Potato, Brinjal, Tomato, Okra and Cucurbits. In the year 2013-14, the average productivity of vegetables is estimated at 19.90 MT/Hectare. [4]

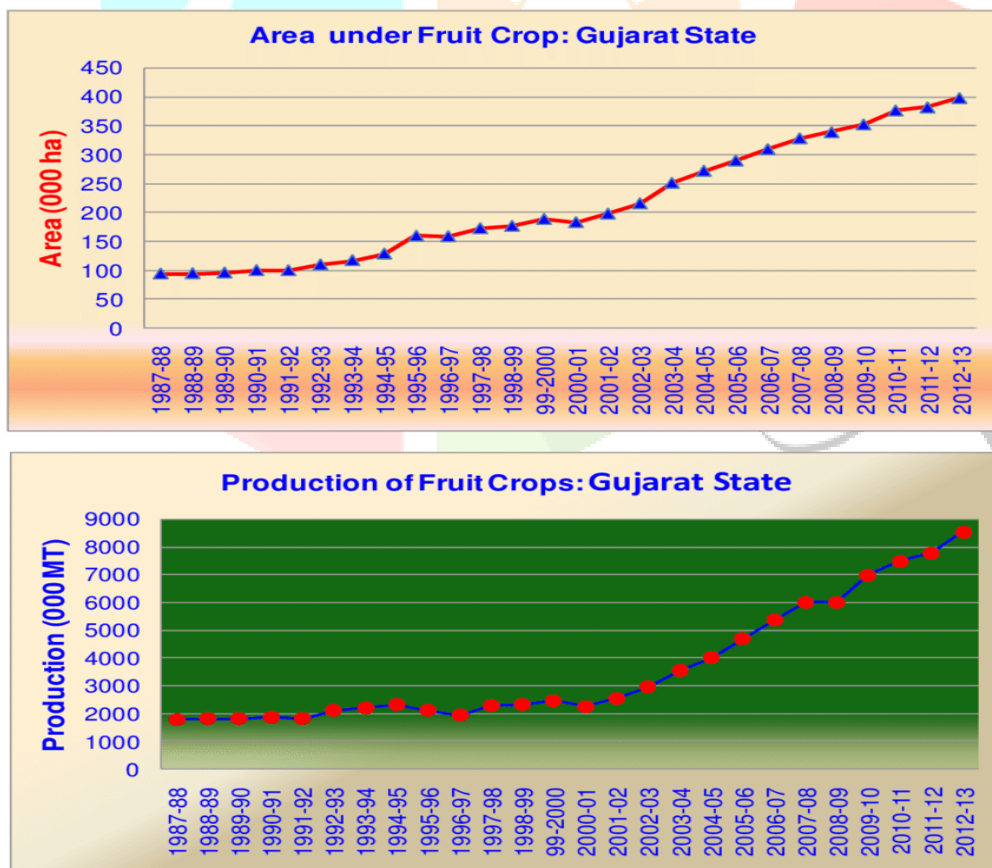


Figure 1.1: Area and production of fruit crops (Gujarat State)

Gujarat state mainly produces spices viz. Cumin, Fennel, and Garlic. The State enjoys monopoly in seed spices. Isabgul is prominent medicinal crop grown in the State. Area under flowers like; Rose, Lily and

Marigold is increasing day by day in the State. The cultivation of medicinal plants like; Allovera, Sena, Gugal is scattered in the state.

Gujarat Horticulture Production – District Wise

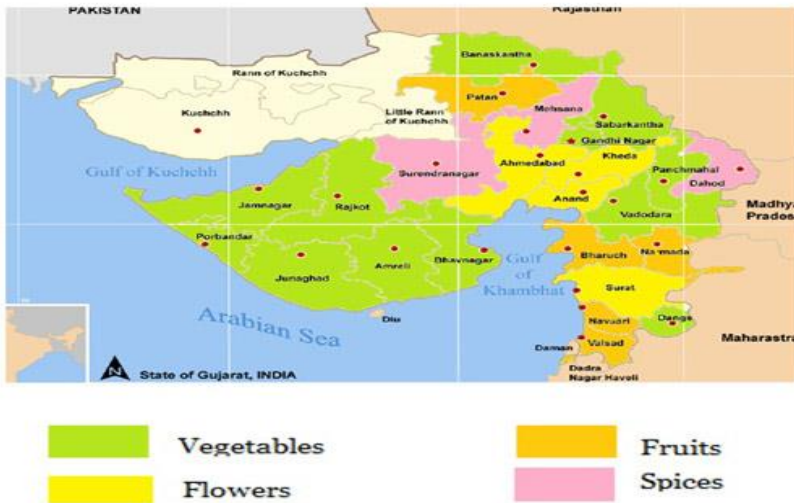


Figure 1.2: Gujarat Horticulture Production - District Wise

Gujarat has taken a lead in the sector of establishing Greenhouses by producing high value flowers like; Dutch Roses, Gerberas and Carnation and vegetable crops like; Capsicum, Khira, Cucumber and Tomato. The state is in leading position in Onion, Potato, Banana and Papaya. The State also introduced new horticulture crops like; Cashew Nut, Pamaroza, Sweet Orange and medicinal crops. [9]

The climate is favourable for development of Alphonso mango in South Gujarat and Kesar in Junagadh areas. Date palm in Kutch is monopoly crop in country. Besides, Banana, Lime, Ber, Sapota, Coconut have also occupied area in the State. Horticulture in Gujarat, today, has become a sustainable and viable venture for the small and marginal farmers. It is a matter of satisfaction that their food consumption levels and household income have increased. Gujarat in the overall horticulture production of the country, which was ranked at eighth positions in 2011-12, has jumped to the fifth spot in the 2012-13, increased almost 8%. The maximum production was in fruits and flowers. [5]

- Farmers usually find it difficult to get the basic information they need to apply for any assistance. But now the I - Khedut portal has been made available by the government so that the farmers of the state have access to agricultural information at their fingertips as well as the benefits of various welfare schemes can be availed by the farmers at home.

3) Field Survey of Various Area of Gujarat.

The survey was taken about the I-khedut Portal under the guidance of directorate of horticulture, Gandhinagar, Gujarat. Researcher visited the different farm of various talukas of gandinar district. The questionnaires were made by the researcher to question with the farmers. It includes the various questions related to the farmer along with the different component.

I - Khedut portal offers to the farmers for benefit of the scheme in two ways

1. Government Gujarat Horticulture Scheme For The Farmers Government Gujarat helps farmers in three type of horticulture scheme like HRT - 2 , second HRT - 3, and third HRT - 4 it mean Horticulture - 2,3,4 . It is provide horticulture related scheme for the different cast wise farmers.
2. Central government horticulture Scheme for the farmer's central government also helps farmers in three type of horticulture scheme like Horticulture - 14,13,9. It is provide horticulture related scheme for the different caste wise farmers.

I – khedut portal consist of the different components of the farm which are directly/indirectly beneficiary for the farmers. Some components of the I – khedut portal taken in to consideration during the survey programme are mentioned below.

- **Net House Cultivation Area**



Plate 1.1: Cultivation of Crop under net-house

Net-houses are frames of inflated structure covered with a transparent material in which crops are grown under controlled environment conditions. Net-house cultivation as well as other modes of controlled environment cultivation has been evolved to create favourable micro-climates, which favours the crop production could be possible all through the year or part of the year as required. Nethouses and other technologies for controlled

environment plant production are associated with the off-season production of ornamentals and foods of high value in cold climate areas where outdoor production is not possible. The primary environmental parameter traditionally controlled is temperature, usually providing heat to overcome extreme cold conditions. However, environmental control can also include cooling to mitigate excessive temperatures, light control either shading or adding supplemental light, carbon dioxide levels, relative humidity, water, plant nutrients and pest control. The farmers of ramnagar village, taluka kalol have taken the advantages of I – khedut portal by achieving various subsidies.

- **Dragon fruits Fields**

Dragon Fruit can be grown on almost any soils however Sandy soils that have good irrigation are generally preferred. The ph of the soil should be between 5.5 to 6.5 for a good crop. Beds should be at least 40-50 cm high. [6]

One of the major merits of these crops is that it can grow in the extremes of temperature and the poorest of soils but is best suited for the tropical climate with an annual rainfall of 40-60 cm best suited for growth. Temperature ranging from 20°C - 30°C is considered best for the crop to grow. [6]



Plate1.2: Dragon Fruit Cultivation

The land should be treated with fertilisers in mounds. The fertilisers used should be 20-kilogram organic fertiliser's 0.5 kilograms superphosphate and 1kg of NPK16-16-8 should be used per 50 postings before the actual plantings of dragon fruit plants. [6] Since the plant requires less water irrigation is recommended once a week and drip irrigation should be used for better efficiency. The farmers of asodiya village, taluka Manasa have taken the benefits of I – khedut portal by achieving various scheme. They also said that the I – khedut portal is the beneficiary for the farmers.

- **Sorting and Grading Unit**

Sorting

Sorting is done by hand to remove the fruits and vegetables which are unsuitable to market or storage due to damage by mechanical injuries, insects, diseases, immature, over-mature, misshapen etc. This is usually carried out manually and done before washing. By removing damaged produce from the healthy ones, it reduces losses by preventing secondary contamination. [7] Sorting is done either at farm level or in the pack-houses. In sorting, only sensory quality parameters are taken into consideration.



Plate 1.3: Sorting of Potato at Farm Level

Sizing

Before or after sorting, sizing is done either by hand or machine. Machine sizes work on two basic principles; weight and diameter. Sizing on the basis of fruit shape and size are most effective for spherical (oranges, tomato, certain apple cultivars) and elongated (Delicious apples and European pears are of non-uniform shape) commodities, respectively.

Grading

The produce is separated into two or more grades on the basis of the surface colour, shape, size, weight, soundness, firmness, cleanliness, maturity & free from foreign matter /diseases insect damage /mechanical injury.



Plate1.4: Grading Unit of Chandrala Village, dist- Gandhinagar

For eg.: Potato I. Extra Fancy II. Fancy III. Standard IV. Cull (for processing).

Grading may be done manually or mechanically. It consists of sorting product in grades or categories based on weight/size. [8]

4) Conclusion

The conclusions were drawn based on the survey which was taken in the month of January, February and March under the guidance of directorate of horticulture, Gandhinagar. The questionnaires were made to ask the farmers about the I – khedut portal. The results of survey clearly revealed that the most of the farmers are well aware about the functions of I – khedut portal and rest of the farmers having the medium knowledge about the I – khedut portal. The answers of questions indicated that the farmers getting good financial support by using the I – khedut portal for applying for the schemes and subsidies.

Reference

1. Bhalla, G. S and Gurmail Singh (2009), „Economic Liberalization and Indian Agriculture: A State-wise Analysis“, Economic and Political Weekly, Vol. 46, No. 52, pp-34-44, December 26.
2. GoG (1994), Season and Crop Report for 1990-91, Directorate of Economics and Statistics, Government of Gujarat.
3. GoG (2010a), Agriculture Statistics of Gujarat, 2009-10, Directorate of Economics and Statistics, Government of Gujarat.
4. GoG (2010b), National Conference on Kharif Campaign-2010, Department of Agriculture and Cooperation, Government of Gujarat.
5. GoG (2011a), Gujarat Agriculture Statistics at a Glance 2010-11, Directorate of Economics and Statistics, Government of Gujarat.

6. GoG (2011b), National Conference on Rabi Camping-2011, Department of Agriculture & Cooperation, Government of Gujarat, 14-15 September.
7. GoG (2012a), State Agriculture Profile, (http://agri.gujarat.gov.in/informations /state_agri_profile.htm, Accessed on 25th September), Government of Gujarat.
8. GoG (2012b), Socio- Economic Review, 2011-12, Gujarat State, Directorate of Economics and Statistics, Government of Gujarat.
9. GoG (2012c), Sector Profile: Food & Agri Business, (<http://www.vibrantgujarat.com/images/pdf/food-agro-details.pdf>, Accessed on 20th September 2012), Government of Gujarat.
10. GoG (2012d), Gujarat Agriculture Competitiveness Project, Department of Agriculture, Government of Gujarat, January. GoG (2012e), Krushi Mahotsav 2012: Achievements at a Glance, Central Monitoring Cell, Department of Agriculture and Cooperation, Government of Gujarat, Gandhinagar

Other Online Sources

National Horticulture Board Report “Indian Horticulture Database”

Link: www.nhb.gov.in/area-pro/NHB_Database_2015.pdf

Indian Council for Agriculture Research Various research reports

Link: <http://www.icar.org.in/en/information-resources.htm>

Department of Agriculture and Cooperation Various reports on Agriculture Sector

Link: <http://agricoop.nic.in/documentreport.html>

Mission for Integrated Development of Horticulture Presentations from various states and departments on Horticulture Sector

Link: <http://midh.gov.in/presentation.html>