



## Agricultural Problems in Gujarat

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The position of agriculture in the economies of the developing countries of the world is very important and strategic. The contribution of agriculture in the total domestic production of the country is the highest and majority of the population is engaged in the agricultural sector either as a farmer or an agricultural laborer or a worker. The agricultural sector also provides food to the entire population. Moreover, development in the agricultural sector is also very important for industrial development as crops like jute, oilseeds, beet, sugarcane, cotton etc. are the raw materials for some important industries. Thus, development in the agricultural sector is a necessary pre condition for industrial development. The contribution of the agricultural sector into the total export of the country is also significant.

In any economy, the basis for agricultural development lies in the changes in the cropping pattern and in the levels of productivity of various crops. In addition, soil and its type also affect crop productivity. There are five types of soil in Gujarat state: (1) Medium black soil, which is more suitable for maize (2) Deep black soil, which is suitable for wheat, rice, jowar, cotton and plantation crops (3) Goradu soil which is found to be suitable for any crop (4) Shallow residual soil near riverbanks and (5) Soil near sea shores. The area of Gujarat can be classified into four groups as per the soil type. (1) North Gujarat (2) South Gujarat (3) Central Gujarat and (4) Saurashtra Kutchh area. Saurashtra and Kutchh area is more suitable for crops like groundnut and bajara, while the soil of Sabarkantha and Panchmahal districts is more suitable for maize.

### 2. Seeds

The contribution of quality seeds in increasing agricultural production is very important. The job of production, purchase, process, storage and distribution good quality seeds in Gujarat is done by the Gujarat State Seeds Corporation Limited, which was established in 1975. The working of the corporation regarding production and distribution of good quality seeds for the farmers of the state and of the other states has been noteworthy. During the year 2000-01, the corporation has distributed 108.5 thousand quintals of seeds valued at Rs. 33.53 crores, out of which 4,362 quintal seeds valued at Rs. 1,76 crore were sold outside the state, Moreover, the corporation under the brand name "Gurabini" has developed very high quality seeds and the farmers have taken advantage of these. The corporation connection as also established a laboratory at Gandhinagar for testing the quality of seeds. The corporation is very conscious about maintaining quality standard of its products and is very precise in the various processes connected with seed production and its grading. Further, the corporation has constructed godowns at various places to store seeds scientifically produced by it. The total capacity of such godowns is 1,20 lakh quintals. The main godown of its automatic plant is at Gandhinagar.

### 3. Fertilizers

The second important input for increasing agricultural production after seeds [is fertilizers. The fertilizers should be made available to the agricultural sector timely and at reasonable prices. Further, the farmers should be aware of importance of fertilizers and should have definite information about its balanced use. The agriculture department of the state government is the responsible unit for distribution of fertilizers and making arrangements for its timely supply at reasonable prices. In Gujarat, 70 per cent of the fertilizers used are distributed through the cooperative sector and the GAIC. For this purpose,

16 permanent and 5 mobile laboratories are functioning at present, in which the soil type is tested for the balanced use of fertilizers. A laboratory is located at Junagadh in which the quality of various fertilizers is tested.

#### 4. Irrigation

Another important and crucial input for agricultural production is irrigation and as it has been discussed in detail in the next chapter, it is not dealt here (See Chapter 3).

#### 5. Agricultural Implements

Among the agricultural implements, the most important is the tractor. In Gujarat, there is sufficient number of agencies for distribution of tractors. These agencies sell various types of tractors. The nationalized banks and the cooperative hunk provide funds to the farmers for buying tractors. Moreover, with an aim to provide good quality agricultural implements to the farmers of the state, the agricultural department publishes the list of recognized dealers and the state government also provides subsidies to buy agricultural [implements from the recognized dealers, In this regard, it is observed that the farmer of Gujarat due to his ignorance has no knowledge about the use of agricultural [Implements and their benefits and the small and marginal farmers are not able to the agricultural implements and tractors due to their weak economic condition, which may be considered as a factor hindering the growth of agricultural production.

#### 6. Electricity

According to 1991 census, out of 18,028 villages of Gujarat, 17,940 have been electrified. In order to supply, adequate electricity for agricultural production, [Jill<sup>1</sup> Gujarat Electricity Board has declared a "Tatkal Yojana" for electricity connection in agricultural sector under which any farmer can get a connection within a very short time alter applying. In this scheme, the farmer has to pay Rs. 500 as connection fees along with the application. Under this scheme, 12,368 wells were electrified during the year 2000-2001 and at the end of March 2001 a total of 29,862 wells were electrified under Talkal Yojana.

#### 7. Position of Gujarat in Agricultural Productivity

We shall now discuss what is the position of Gujarat in India with regard to productivity of various crops, what the total production is and which are the other states that are ahead of Gujarat in productivity of these crops.

1. Gujarat occupies the first position in respect of productivity of crops like onion, potato, banana, sisam and castor seeds. The productivities of these crops in Gujarat (in kgs/hectare) are 29,617, 21,892, 59,199, 599 and 1972 Respectively while the corresponding figures for India are 10,810, 14,602, 10,810, 345 and 1,292 respectively.
2. In respect of crops such as groundnut, rape seed, cotton, isabgul, tobacco and chikoo, Gujarat occupies the second position, while the first position is occupied by Tamilnadu in groundnut (1,630), for rape seed Haryana (1,458}, for cotton Punjab (440), Rajsthan for Isabgul, Uttar Pradesh for Tobacco (6,834) and Karnataka for chikoo (17,700). Productivity of groundnut in Gujarat (in kgs / hectare) is 1,358, while in India it is 1,078, and the same of rape seed is 1,364 and 1,017, for cotton the respective figures are 356 and 213, for tobacco 1,657 and 1,394 and for chikoo 12,000 and 12,878.
3. Examining the position of Gujarat in India in terms of productivity of other crops one may note the following points:
  - 3.1 Gujarat occupies 11th rank as far as productivity of rice is concerned. In Gujarat productivity of rice is 1,540 kgs/hectare, while in India it is 1,895 kgs/hectare. Punjab occupies the first rank in India where productivity of rice is 3,465 kgs/hectare.
  - 3.2 The rank of Gujarat in wheat productivity is fifth. Wheat productivity is 2,373 kgs/hectare in Gujarat, while in India it is 2,470 kgs/hectare. Here again Punjab occupies the first rank in India with productivity of 3,853 kgs/hectare.

3.3 As far as productivity of maize is concerned, Gujarat occupies 8<sup>th</sup> rank. In Gujarat, productivity of maize is 1,646 kgs/hectare, while for India the Figure is 1,721. West Bengal with a figure of 2,998 and Karnataka with 2,984 are the leading states as far as productivity of maize is concerned.

3.4 Gujarat's position in productivity of chana (grams) is seventh. In Gujarat its productivity is 801 kgs/hectare, while in India it is 812. In this case Haryana occupies the first position with a productivity of 1,087 kgs/hectare.

3.5 With a productivity of 749 kgs/hectare for Arhar, Gujarat occupies the sixth position in India. Its productivity is 562 kgs/hectare in India as a whole, while in Haryana it is 1,212 kgs/hectare and thus is the number one state.

## 8. Facilities for Agricultural Education in Gujarat

Gujarat Agricultural University imparts graduate and post-graduate level education through its 11 affiliated colleges. Its educational headquarter is at Sardar, Krushinagar, Dantiwada. In this university, education is provided in the fields such as agriculture, veterinary science, dairying, home science, agricultural engineering, plantations, forestry and fishery. Further, in the affiliated training centers, there are facilities for diploma and certificate courses in agriculture, home science, livestock, rearing, bakery, agricultural machinery, poultry, etc...

## 9. Agricultural Extension Services

Various activities connected with Agricultural Extension Services are under taken by the Gujarat Agricultural University at Krushinagar, Dantiwada, under the overall leadership of the Director of Extension Education. A Deputy Director on Zonal Seat assists him. There are 59 extension education centers under them. The (Gujarat Agricultural University is undertaking the following activities at present.

1. Providing training to the extension officers of the line departments and of the non-governmental organizations.
2. To give services by advising in agricultural matters.
3. To plan vocational training programmes for farmers, who are engaged in cultivation and other ancillary activities and for women and youth who are participating in ,the agricultural sector.
4. To publish literature concerning agriculture.
5. To prepare agricultural programmes for radio and television.

The government of Gujarat is active in implementing various cooperative policies for agricultural development and its extension, through its agriculture department. Moreover, the agricultural extension officers and village level workers are trained for making the farmers aware of modern agricultural techniques and for implementing various programmes in the best manner. For this purpose, various methods like classroom education, audio-visual education and visits to farms are used. For using new varieties or the new techniques specially developed by the Gujarat Agricultural University, help of the trained extension officers and village level workers is taken.

In addition, in order to give various types of training to the farmers, the agricultural scientists remain in constant touch with the officers of the agricultural Department of the state government and prepare guidelines for the development of the agricultural sector. Village level workers in Gujarat provide services to about 1,400 farmers. The village level workers have provided benefits to 804 farmers off South Gujarat and 5,052 farmers of South Saurashtra region.

Some of the characteristics, of agriculture in Gujarat are: there are a large number of small and marginal farmers, the economic and social status of farmers is very low, there are frequent droughts in the state, and most of the farming is rain fed. In some parts of the state land is barren and saline. Such characteristics are found to exist in various parts of the state in more or less degree, but still due to spread and development of education and training in the agricultural sector, there has been a significant increase in production of oilseeds. In 1992-93, the production of oilseeds was 33.32 lakh million tons, which increased to 38.29 lakh

million tons 1997-98 and production of cotton was 20.61 lakh bales (each of 170 kgs) which increased to 31.8 lakh bales in 1997-98. This increase in productivity was made possible due to a positive approach of the state government towards agricultural development and widespread use of modern techniques.

Even today it is necessary to bring about increase in production of certain other crops for which if the farmers are motivated to adopt scientific approach by giving them special training about use of modern techniques in agriculture and of modern bio-technology, then the state can make rapid advances in agriculture by increasing production of other crops and obtain top position in India and even if the world.

### **10. Use of Modern Technology (Internet) in the Agricultural Sector**

In day-to-day life, the latest information about several aspects of life can be obtained from the Internet. Similarly, the Internet has also opened up new horizons in the agricultural sector. In agriculture, Internet can be used to full extent. In Gujarat, spread of knowledge about agriculture using Information Technology should be done in Hindi and Gujarati as far as possible so that it benefits a larger mass of the farming community. In the context of Information Technology, the first experiment of providing agricultural information through Internet that is called 'Farming Online' (FOL) was conducted by Metric Mercer.

In the early 1990's Merric was working for the Merchants Bank in London and there he was introduced to 'Financial Information Systems' used in the cities. He experienced that the busy people of the cities got news about the city even when they were travelling by cars. So he thought that if such an Information Technology is developed for the agricultural sector, the people connected with agriculture could get the latest information about agriculture in spite of their busy routine and this information may become very useful in various stages of agricultural development/Initially, Merric started FOL at domestic level in 1995 with an aim to connect with the organizations dealing with assimilation of information in the Information Technology Sector. Merric obtained cooperation from Dr. Jones in his work. Due to FOL and a wide and efficient network of Dr. Jones, the farmers of the U. K. started getting news about agricultural prices and about agricultural goods.

Further, Merric also entered into a contract with the Meat and Livestock Commission and the information-based programme with its cooperation was the only source of getting daily prices of livestock and for knowing the average prices in about 200 livestock markets. By November 1997, more than 44 agricultural organizations widely used this type of FOL to obtain information of agricultural prices and other information about agricultural markets etc.

1. Books, documents and other things like videos can be made available to the rural people with the help of Online Multimedia Library.
2. Details about research done in one rural area can be exchanged with the details of other areas.
3. Experiences about agricultural research at the international level can be exchanged.
4. The policy makers in agricultural sector can get details about agriculture at the local level; they can also give opinions about it, using which they can organize meetings for discussion and can get benefit from voluntary agencies, international organizations, and newly formed institutions for formulation of policies.

As of today, the use of traditional agriculture software in Gujarat is quite less. Such software should be developed at least for large farmers and agro-industries for increasing productivity and for management. Use of agricultural softwares in management of livestock, crop and dairy, production and prices in the past years, information about local, national and international markets, information about weather and its effects on crops, information about availability of water, types of high-yielding seeds, types of fertilizers, their optimum use and all information regarding techniques of cultivation can be very fruitful. If the beginning is made with large farmers, by making them aware of Information Technology and if they are taught about use of Internet, then this will bring about a revolutionary change in the

agricultural sector of the state in future.

### 11. Development of Organic Farming in Gujarat

In Gujarat, about 80 per cent of the total cultivated area depends upon rain for irrigation. In such areas, due to shortage of water for irrigation, the farmers grow crops without using insecticides/pesticides and chemical fertilizers. Sometimes some farmers may use negligible quantity of fertilizers, but they do not use insecticides at all. Due to rainfed cultivation and weak economic condition of the farmers, in about 25 per cent of the total cultivated land, the farmers are compelled to resort to organic farming.

As per the norms decided for the capacity and development of organic farming in the state:

1. The agricultural production should have large tradability.
2. There should be permanent domestic tradability and exportability and
3. There should be adequate supply and state regulation, per day per capita tradability of goods, level of savings in the traditional production, vulnerability of domestic consumers for consuming traditional production, shelf life etc are dependent on the value of consumption (e.g., supply x price)

In other words,

Tradability = f (consumption value/person/day, resident's vulnerability, shelf life)

Moreover, exportability depends upon international trade and international pattern. In 1998, four commodities viz., tea, coffee, cocoa and cotton were dominant in international trade. Among these four commodities, as only one commodity cotton is being produced in Gujarat, it has a very important role to play as an organic crop in the international market. Further, Dholka taluka of Ahmedabad district and its surrounding area which is known as 'Hal' area is famous for wheat which are grown without using insecticides. Even though organic wheat are costlier than traditional wheat by about 20 to 30 per cent, demand for it is more. In the modern times, when pollution level is increasing, the health-conscious customers wish to buy organic food. In these circumstances, production of organic wheat can easily be increased in areas such as Hal.

In connection with organic crops, if one looks at groundnut, one finds that it is produced in Junagadh district situated in the Saurashtra region. Similarly production of organic oil seeds is also possible. If fruits and vegetables are also produced using organic methods, the health-conscious customers in domestic and international markets are ready to buy them. Of course, one may find less number of such customers in the domestic market, but if the farmers are given training regarding organic farming in a scientific way, then not only those organic crops will be purchased in the domestic market but also they can be exported to other countries and higher prices can be obtained. This will definitely lead to better economic condition of the farmers. In many parts of Gujarat, voluntary agencies are very active in this direction, but it is necessary to speed up this process and to make the customers aware about them. With cooperation from NGOs like Gujarat Grass root Installation Augmentation Network (GIAN) and SEWA (Self-employed Women's Association) pulses like Grams (chana), Tuver, etc are old in small-scale under the brand name 'Shashwat'

### 12. New Agro-Industry Policy 2000

The state government has declared the new agro-industry policy 2000, which will be implemented for 5 years beginning from 2<sup>nd</sup> January 2001. The objectives of this policy are as follow:

1. To establish agro-industries using modern technology in the state.
2. To establish infrastructure in the agricultural sector.
3. To increase employment opportunities in the agricultural sector.
4. To improve quality and productivity of agricultural produce.
5. Farmers should get reasonable prices for agricultural products,