

Nirali Shah, Student Participant
Winterset Rotary International Club
Surat, Gujarat, India

Vibrant Gujarat, India

The **Indian subcontinent** includes Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Srilanka. The Indian subcontinent can be divided into the following regions:

The Himalayas/Himalayan states
The Peninsular India/Deccan Plateau
The Indian Ocean states

The term Indian subcontinent includes only those regions which geophysically lie on the Indian Plate. Geopolitically, however, regions with cardinal directions – South Asia or Southern Asia – aptly include territories found external to the Indian Plate and in proximity to it. Myanmar (formerly Burma), for instance, is sometimes grouped in the region due to the fact that it was a part of British India for nearly a century and has historical and cultural ties to India. The subcontinent is surrounded by three water bodies-The Bay of Bengal, The Indian Ocean and The Arabian Sea.

The climate of South Asia is called the monsoon climate. It is quite opposite of the Mediterranean climate. For the monsoon climate, the weather in this region remains humid during summer and dry during winter. Instead of four seasons, it basically has two main seasons, the wet and dry. The monsoon climate favours the cultivation of jute, tea, rice, and various vegetables in this region.

India is situated in Southern Asia, bordering the Arabian Sea and the Bay of Bengal, between Burma and Pakistan. It is a peninsula. The population in India is 1,095,351,995 (July 2006 est.). The population growth is 1.38% (July 2006 est.). 700 million people are included in the young generation. The area in India is total: 3,287,590 sq km land: 2,973,190 sq km water: 314,400 sq km. It has a coast line of 7,000 km. The climate in India varies from tropical monsoon in the south to temperate in the north. In the summer the winds blow from the land to the sea, and in the winters the wind blows from the sea to the land, which brings rains throughout India.

India was united in the 16th and 17th centuries under the mogul emperor. Then, in the 18th century, the country became the part of the British Empire. India gained independence from Britain in 1947, when it was divided into two countries with different religions: Muslim Pakistan and Hindu India. During the British rule India was one of the richest countries in the world. Today India and Pakistan are the most industrial countries of the Indian subcontinent. India produces oil, coal, iron ore, manganese, copper, and has a variety of industries, including iron and steel, car manufacturing, and computers.

India is an agricultural country. About 80% of the people are engaged with agriculture. There cannot be any doubt that a majority of the Indian population depends on agriculture for its livelihood (about 80%), but it is equally true that most of them cannot get a square meal out of it. The poverty rate has fallen down from 44% in 1980s to 26% in 2000s. The education level among the people has increased by 65%. The cash crops grown in India are tea, coffee, sugar cane, tobacco, cotton, etc.

According to the data available with the Registrar General of India, Delhi, 23.8 per cent of the population of the country is involved in agricultural labour, based on the 1991 Census Report. Another 35.2 per cent of the population is involved in cultivation. This is the direct employment of the labour force in the agricultural sector. There is a large section of the population directly or indirectly dependent on agriculture. The provisional figures of the 2001 Census show that nearly 72.22 percent of the country's population lives in the rural areas.

The population of **Gujarat**, one of the states in India is 4.12 core < 1 core=100,000,000>. Gujarat is situated on the Western Indian coast between 20.6 and 24.42 degrees north latitude and 68.10 and 74.28 degrees east longitude having a 100 kms. long Arabian sea-coastline almost 1/3 of the total sea-coast of India Its total area consists of 196,000 sq. kms. (6.10% of that of the Indian Union) from Katchchh in the West to Daman in the South - the hilly tract from Arravli in the East to the Western hills with lush green forests, thick and thin rivers as well as the plains in the middle. Gujarat State administratively consists of 19 districts divided into 184 talukas with about 8,114 villages. Gujarat experiences maritime climate, i.e. not too cold during winters, and not too hot during summers. It usually has three seasons: winter, summer, and monsoon. Each season last for 4 months. The total geographical area in Gujarat is 188.12 lakh < 1 lakh= 100,000 > ha and from that 124.05 lakh ha is cultivated. The major crops grown in Gujarat are mango, banana, sapota, lime, guava, tomato, potato, onion, cumin, garlic, isabgul, and fennel. Gujarat has highest productivity in, guava, potato, onion, cumin and fennel, third highest productivity in banana and isabgul in the country. One third of people's livelihoods in Gujarat are directly based on agriculture.

Subsistence farming is a mode of horticulture in which a plot of land produces only enough food to feed the family working it. Depending on climate, soil conditions, agricultural practices and the crop grown, it generally requires between 1,000 and 40,000 meter² (0.25 and 10 acres) per person. The major food crops in the State of Gujarat are rice, wheat, jowar, bajra, maize, tur, gram, and groundnut while major nonfood crops are cotton, tobacco. In the year 1999-2000, the gross cropped area and net cropped area were reported to be 107.02 lakh ha. and 94.99 lakh ha. respectively. In the year 1999-2000, the total net area irrigated was 29.80 lakh ha. in Gujarat. In the year 1995-96 the average size of land holding was reported to be 2.62 ha. As per triennium average ending the year 2001-02, the production of the total food grains was estimated to be 38.28 lakh tonnes. The farming in Gujarat is well developed. Most of the farmers stay in villages; their lands are away from their home and usually they have a pair of bullocks which helps them in ploughing the fields. Mostly the farmers having a small land earn enough to feed their families. The condition of the farmers in Gujarat is really poor, as the farmers are fatalist and the farming depends on the rains. Usually the farmers are not well educated which effects the production of the crops again, as they do not know much about the irrigation facilities available in the modern times. And also because of low level of education anyone can cheat these farmers. From 196.12 lakh hectares of land, only 94.99 lakh hectares of land is cultivated and 36.27% of land uses the irrigation facilities.

Typically the rural subsistence families are composed of a large group of extended family including the mother and the father, their children, and younger brothers and sisters who are unmarried. Usually the male members in the family works on the farm and the females have to stay at home and do the household work. Mostly the sons in the same family share the land and works on it together, and because of this there are many family problems going on, which affects the agriculture. Most of the farmers here are uneducated or have studied a bit. Due to lack of education, they think that if they would have more children they would earn more, but this creates problems at a later time. Nowadays to improve the condition of the farmers, the government has started many different projects. One big project is the Sardar Sarovar Dam. It would solve the water problem in Gujarat and Rajasthan, which would be useful for irrigation. Most of the farmers earn enough to satisfy their families. The women in the family help with some of the work in the farms. Nowadays the farmers have started using the modern implements and the

chemical fertilizers and the insecticides. Nowadays oilseeds and sugarcane were recorded to 26.1 million tonnes and 232.3 million tones, respectively. The production of cotton was recorded to 17.0 million bales of 170 kgs.

The farmers are today at the mercy of the traders, who exploit the farmers. The traders are in a position to pick up the crop when the price is low and sell it off when there is a shortage, at a higher price, where the growers and the consumers are the losers. In order to take care of this, efforts should be made to encourage value addition to the produce. One way would be to bring processing units to the farm, rather than to expect the produce to be taken to the processing units in the urban areas, where a large part of the produce would be damaged due to improper handling and delays due to bad infrastructure. Small crushers and canning units mounted on trucks could be taken to farms growing fruits. The canned juice would fetch a better price to the farmers. Cost effective methods of agricultural production ought to be introduced. For this apart from technology, there is a need for proper infrastructure. Good roads and availability of plenty of electricity will help reduce the cost of production.

Though Gujarat is situated near the Arabian Sea the water scarcity is a big challenge for the farmers in Gujarat. Only 36.9% of land uses irrigation methods. The irrigation facilities have to suffer a lot. Nowadays this problem is being solved, but it is not fully eradicated. The government is working upon it. It has started building dams and channels for the irrigation purpose. In some of the dry parts of India they have started using the drip irrigation system which is helping the farmers a lot. By the measures taken by the government the water scarcity is getting controlled. Moreover, as India has monsoon type of climate the rains here are not reliable. In the northern Gujarat area, agriculture is the major economic activity. The climate is such that irrigation is essential for productive agriculture outside the monsoon season.

Irrigation using surface water is limited as there are few rivers in the area, and those that exist are short and highly erratic, with little storage capacity. Groundwater development is therefore extensive, and aquifers are declining rapidly and unsustainably. Sometimes they have heavy rains which cause floods and soil erosion. This causes damage to standing crops and sowed land, loss of implements and other farming equipments, and damage owing to silting of farm land, water logging and washing away of fertile top soil. Due to this the farmers have to suffer a lot.

Financial data for a typical deep tube well, Gujarat	
Parameter	Not available
Water sources	Tube well
Nominal command area (ha)	20
cost (US\$ / ha)	300
Annual actual allocation from Treasury (US\$ / ha)	0
Current fee (US\$ / ha)	300
Fees recovered (US\$ / ha)	300
Net farm income (US\$ / ha)	800
Average farm area (ha)	5
Water fee as % of net income	37%

Sometime there are no rains and there are chances of drought. This is again a big problem for the farmers in Gujarat. Frequent occurrence of droughts in large tracts of Gujarat in India has a significant bearing on poverty and people's livelihood strategies. Over the last 50 years, droughts have occurred almost once in three years. While there have not been any significant changes in rainfall patterns in the country since more than a century, there seems to be an increase in the severity of the impact of droughts on people's livelihood. Apart from the demographic factors, increased severity of the impact of drought can be attributed to the

two interrelated factors namely: unequal distribution and inefficient use of water. As a result, droughts not only lead to transient poverty among a large number of rural households—both landed as well as landless—but, in the long run, may also result in perpetual decline in groundwater resources. This might happen because the drought relief operations are undertaken as fire fighting measures and with little concern for the irreversible impact on aquifers. The outcome is increased dependence on transported water. Alternatively, a large number of initiatives have been undertaken in some of the dryland regions in India to construct small water harvesting structures like check dams, farm ponds, nala bunds etc. These initiatives have received a special policy thrust under the modified watershed projects, which since the mid-nineties, have assumed primary responsibility of drought proofing in the large tracts of Gujarat regions in India. The consecutive droughts in most of these regions during the last two years have provided further concept of harvesting of rain water. Hence, a large number of water harvesting structures have been built with financial support from the state especially under the relief works program. It is expected that these structures will reduce, if not completely solve, the problem of water scarcity initially during the normal years and eventually during the drought years. This, essentially, signifies locally managed self sufficient system of water resource management and drought proofing in these regions.

The national government should educate the farmers and try to make them learn family planning. They should try and develop new technology which would get more grains with fewer efforts. They should provide the farmers good quality seeds and other new farm implements so that they can increase the production of the grains. They should provide protection against risk and uncertainty of climate. They should make some plans to conserve the rain fed water as underground water resources adopting various methodology of water harvesting. Their another goal should be to ensure remunerative prices for each crop to the farmer, ensure that they have adequate incentives to produce and to improve productivity, keeping in view the overall needs of the farmers' n interest of the consumer. And in addition to that they should make use of some good insecticides and weedicides in order to keep the quality of the crops. They should see to it that the farmers are getting good quality of seeds and the insecticides used are safe to the people consuming them. They should see that the chemical fertilizers used should be in appropriate quantity. They should develop more mechanical instruments to be used in the farms. They should give more importance to farming in the five year plans. They should start using the green revolution techniques and try to improve them more. They should also see that the women get the same education as men and help the women in that.

The international community should see that if there is a drought or flood or any other natural disaster they should come and help the farmers living in the rural part of the country. Whenever there is an invention of some new agricultural implement it should be shared in order to improve the agriculture all over the world. They should try and set an example for other countries in the world, so that even they can follow their footsteps. As no country is independent and all the countries have to depend upon each other, why not should not all work together and try to remove all the difficulties we are facing in agriculture today. Thus working together can give a drastic change in agriculture and solve the food problem everywhere.

Bibliography

“Department of agriculture & co-operation” <http://www.agri.gujarat.gov.in/DAG/gad.htm>

“Alam Guebert” Fri, April 9, 2004 <http://www.foodroutes.org/fwissue.jsp?item=104>

“Girija Sharma” <http://ideas.repec.org/p/iim/iimawp/421.htm>

Article: <http://oep.oxfordjournals.org/cgi/content/abstract/49/2/307>

www.ruralpovertypostal.org