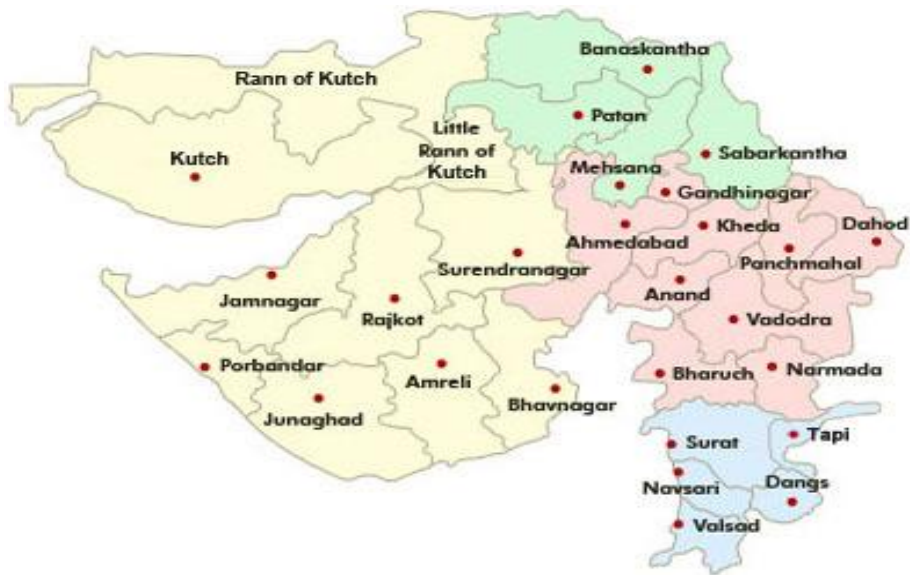
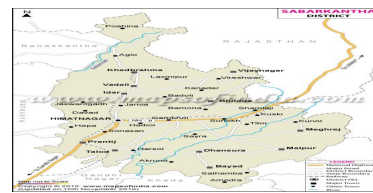
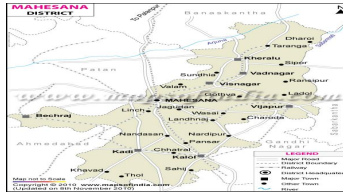
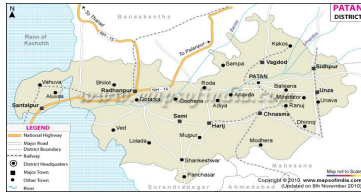


**Report of the Joint Inspection Team on their inspection visit to Mehsana, Patan, Sabarkantha and Ahmedabad districts of Gujarat during June 2012 (23<sup>rd</sup> June, 2012 to 26<sup>th</sup> June 2012).**



**National Horticulture Mission  
Department of Agriculture and Cooperation  
Krishi Bhawan, New Delhi-110001**

**Review Report of Joint Inspection Team visit during June 2012 (23rd June,2012 to 27<sup>th</sup> June,2012) Patan, Mehsana, Sabarkantha and Ahmedabad districts of Gujarat.**

The Joint Inspection Team (JIT) to visit and monitor the centrally sponsored programmes for Horticulture Development comprises following members:

S.N	Name & Designation	Address
1	<b>Dr. R.C.Upadhyaya, Chief Consultant (NHM)</b>	<b>Ministry of Agriculture, Government of India Krishi Bhawan, New Delhi</b>
2	<b>Dr L.R.Verma, Principal &amp; Dean,</b> <b>Dr M.C.Patel, Asst Professor,</b>	<b>Sardarkrushinagar Dantiwada Agricultural University, Dantivada</b> <b>Sardarkrushinagar Dantiwada Agricultural University,Dantivada</b>
3	<b>Sri C.M.Patel,Joint Director&amp;Nodal officer SHM</b>	<b>Horticulture,Department of Horticulture and food processing,Govt. of Gujarat</b>
3		
4		

Shri N.D.Patel, Asst. Dir of Horti, Sabarkantha, Shri K.G.Patel, Dy. Dir of Horticulture, Mahesana, Shri Dhaval Bhai, Horti Officer, Banaskantha, Shri D.M.Vaghela, Dy. Dir of Horticulture, Ahmedabad, Shri H.M.Chavda, Joint Dir of Horti, Gandhinagar, Shri S.S.Ganvit, joint Dir of Horti, Vadodara and Shri Amit Tuli, Branch Manager, BOB, Ahmedabad also accompanied the team at various locations.

**Component for review:**

- Crop specific cluster at district level.
- ☐Nurseries management and progress including accreditation of nurseries.
- ☐Vermin compost units under SHM.
- ☐Flowers and vegetable production under protected conditions.
- ☐Micro irrigation scheme and use of plastic in mulching, irrigation and precision farming.
- ☐Placement of technical Staff at Management and also at field Level.
- ☐Other activities and KVK, s support including Financial Progress: (Rs. in lakhs).
- National Mission on Micro Irrigation.
- National vegetable Initiative.

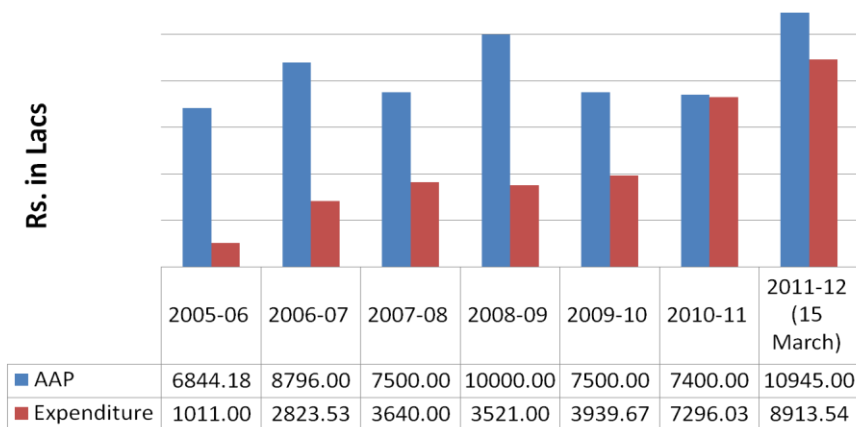
### Financial Summary:

Released Grant & Expenditure as per GOI 85% Share.

(Rs. in Lakhs)

Sr. No.	Year	Approved Action Plan by GOI	Release of Grant by GOI	Total available grant for use	Expenditure incurred (85% share)
1	2005-06	6844.18	3239.29	3239.29	859.35
2	2006-07	8796.00	2577.03	4872.31	2400.00
3	2007-08	7500.00	1954.24	4041.84	3064.00
4	2008-09	10000.00	3530.83	3935.39	2992.85
5	2009-10	7500.00	2521.32	2898.35	3348.72
6	2010-11	7400.00	5400.97	6361.67	6290.00
7	2011-12 )	10945.00	7625.00	7831.08	7576.51

### Mission Performance



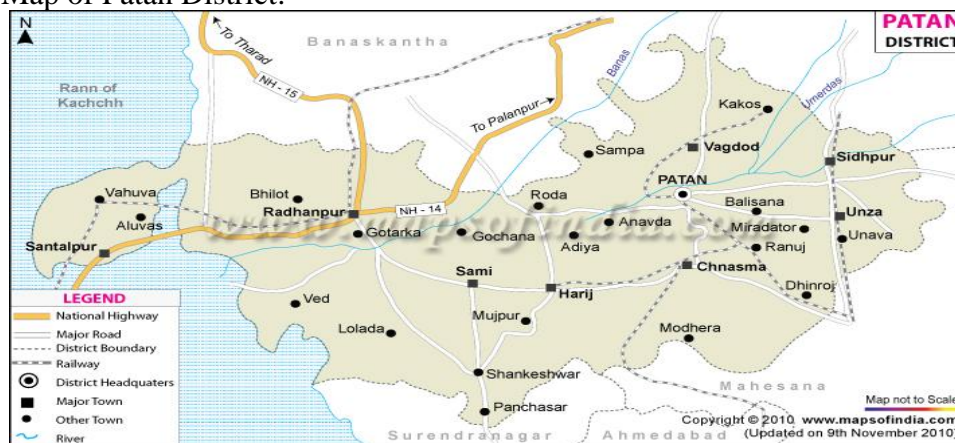
### Patan District:

Patan District is situated between 20° 41' to 23° 55' north latitudes and east longitude of 71° 31' to 72° 20'. The area of Patan District is 5600 sq. k.m. In the north and north-west borders there is Banaskantha District and in the west there is the border of Kutch district. In the south and south-east there is Desert of Kutch and some part of Surendranagar District. Besides this, there is Mahesana District situated in the east part of Patan. According to the 2011 census Patan district has a population of 1,342,746

District profile:

Total area	566755 hectare (Urban area 11284 hectare and Rural area 555471 hectare)
Subdivision	(1) Patan province (2) Radhanpur province
Number of talukas	(1) Patan (2) Siddhpur (3) Chanasma (4) Harij (5) Sami (6) Radhanpur (7) Santalpur
Cultivable land	459488 heactare
Non cultivable land	107267 heactare
Irrigated land	124800 heactare
Non irrigated land	334688 heackare
Land type Geo-structure	Maximum land of district is saline and Bhasmic. The land type is sandy and Goralu
Weather	Maximum dry weather .In Radhanapur, santalpur and sami talukas, wind storm and cyclone witnessed in summer season,
Rain	Average rain fall 518.63 m.m
Rivers	1. Saraswati. 2. Khari, 3. Pushpanvati, 4. Roopen, 5. Banas
Agriculture, vegetable co-operative society	17
Milk producers society	484

Map of Patan District:



#### Land Utilization Statistics:

Total geographical area of the district is about 5.66 lakhs hectares. It is noteworthy to find that 70 % of the geographical area is under cultivation in the district. Patan, Harij and Chansma talukas have more than 70% of their geographical area under cultivation). However, the coverage of forest area is almost nil in Sidhpur, Chansma and Patan talukas with only 8% of area under forest in the district and hence, there is need to increase the coverage of forest. The district has 8% of their land as waste land and the same may be effectively used under various watershed projects. Pasture land forms 8% of geographical area and it is very significant from the point of view of growth of animal husbandry.

## **Report on visit to the Farm of Sri Dilipbhai Pandya, Member of Parliament (Rajya Sabha) from Gujarat**

Visited as per VIP reference No. 25-32/2012-NHM to assist in planning of farm “Sidhdhpur Mahajana Panjarapol Gauseva Trust” of Sri Dalipbhai Pandya, MP (Rajya Sabha), Sidhpur (Patan). A team comprising of Dr. R.C. Upadhyaya, Shri J.B. Suthar, Asst. Director of Horticulture, District Patan (Gujarat), Prashant Kevadia, Horticulture Officer (NHM), Shri H.B. Patel, Horticulture Officer, District Patan and accompanied by Sri Dalipbhai Pandya, M.P. visited agriculture farm. Team discussed about farm planning with Sri Dalipbhai Pandya Ji and his field staffs who supervise farm activities. Team provided technical advisory for farm planning and establishing fruit orchards and vegetables cultivation as inter crop. Quality planting material will be made available with the help of Assistant Director Horticulture, Patan and Saraswati Vidyapeth KVK, Samoda (Sidhpur). Team visited Krishi Vigyan Kendra, Samoda and his farm. It was requested to KVK In charge to provide technical guidance, quality plant material of fruit crops and field supervision at farm of Sri Pandya Ji. Team also suggested to initiate field demonstration to support the training programme and provide off campus training to their field staff on production technology of horticultural crops. Farm of 292 acres at one location is maintained by 35 farm workers and two field supervisors. Trust maintain total 383 animal in which 87 Kankarej cows and 45 shankar cows. Daily 100 liters milk produce from 18 cow. About 300 herd of animals and about 25 milch cows are maintained at farm supported by fodder crops cultivated at farm. Existing fruit crops are Mango Var. Kesar (1.5 acre), Kagzi lime var. local (1.75 acre), Anola and Sapota var. cricket ball (1 acre). Farm needs proper maintenance and care. Orchard of Kagzi lime needs rejuvenation of unmanaged orchard. Accordingly Assistant Director Horticulture and KVK Incharge agreed to provide technical write up and support in technological know-how of crops suggested to be cultivated in large area at the farm.

Existing fruit crops:

Mango, Anola, Kagzi lime and Sapota

Fruit crop suggested for large scale plantation:

- i) Mango Var. Kesar and Amrapali.
- ii) Guava var. Allahabad Safeda (High density plantation)
- iii) Pomegranate var. Bhagwa, Ganesh and sinduri
- iv) Kagzi Lime var. Pati nimboo and Pusa seedless
- v) Jamun on fencing of var. released from Anand Gujarat
- vi) Vegetable production with drip and as inter crop.
- vii) Vermin Compost Unit- 4 units
- viii) Bordeo pasting of tree trunk and spray of Copper fungicides in fruit crops.
- ix) Mango Management: Micronutrient spray, Termiticides application, and canopy Management. Repair of water harvesting unit by black alkathine for stopping water seepage.

### **Suggestions:**

- Since large no of animals are maintained at farm efforts should be made to produce shade loving fodder crops in the existing orchards. Vermin compost unit may also be established



with the use of farm wastage and cow dung which will provide good quality manure. KVK may support for training to the farm supervisor in establishing Vermin compost unit.

- Plant material may be procured from Government nursery, KVK farm and from Sardarkrushinagar Dantiwada Agricultural University of Pomegranate, Mango, Kagzi lime and other minor fruits.
- Recommended package of practices from Sardarkrushinagar Dantiwada Agricultural University should be adopted for cultivation of fruit crops, canopy management and rejuvenation of Kagzi lime.
- Horticulture department with the help of KVK will provide technical support, field supervision and training to the field staff at “Sidhdhpur Mahajana Panjarapol Gauseva Trust” farm .



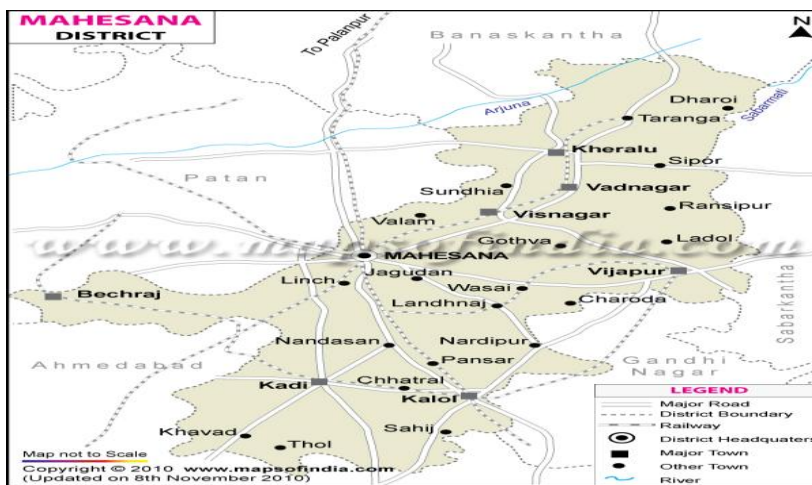
Farm visit of Sri Dalipbhai Pandya, MP (Rajya Sabha ) at Sidhpur (Patan)

Visit Saraswati Gram Vidyapeth Krishi Vigyan Kendra, Samoda (Sidhpur): Visited KVK farm and infrastructural facilities developed by them for production of quality planting material.

#### **Mehsana District:**

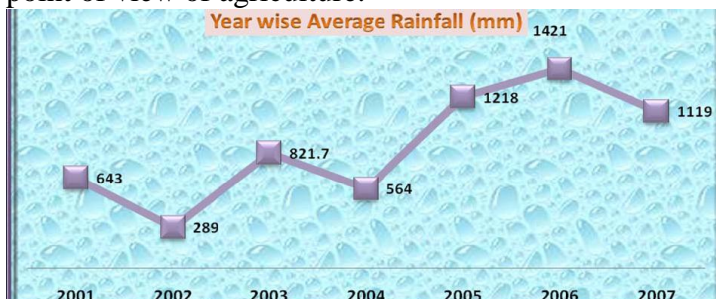
Mehsana District is one of the 26 districts in the heart land of Gujarat state. Its geographical position is between 23° 15' to 23° 53' N. Latitude and 72° 46' to 72° 26' E Longitude. The district has a population of over 18.4 lakhs and an area of over 4,500 km<sup>2</sup>. Mehsana District is an important

district in middle Gujarat region. The district has 9 talukas with 604 villages. District borders with Banaskantha district in the North, Patan and Surendranagar districts in West, Gandhinagar and Ahmedabad districts in South and Sabarkantha district in the East. The commercial Center of District is Unjha with world famous markets of Fennel, Cumin seed and Isabgol. Dudhsagar and Sardar milk dairies have created white revolution in field of animal husbandry by forming 671 milk co-operatives of milk producers and cattle breeders. Mehsana has integrated urban and rural values in the life styles of its people. Total geographical area of the district is about 4.4 lakhs hectares. It is noteworthy to find that 80% of the geographical area is under cultivation in the district. Mostly all talukas have about 80% of their geographic area under cultivation. (Except Vijapur- 71.91%, Satlasna-48.75%) However, the coverage of forest area is only 2% and hence, there is need to increase the coverage of forest. The district has only 1% of their land as waste land. Pasture land forms only 6% of geographical area.



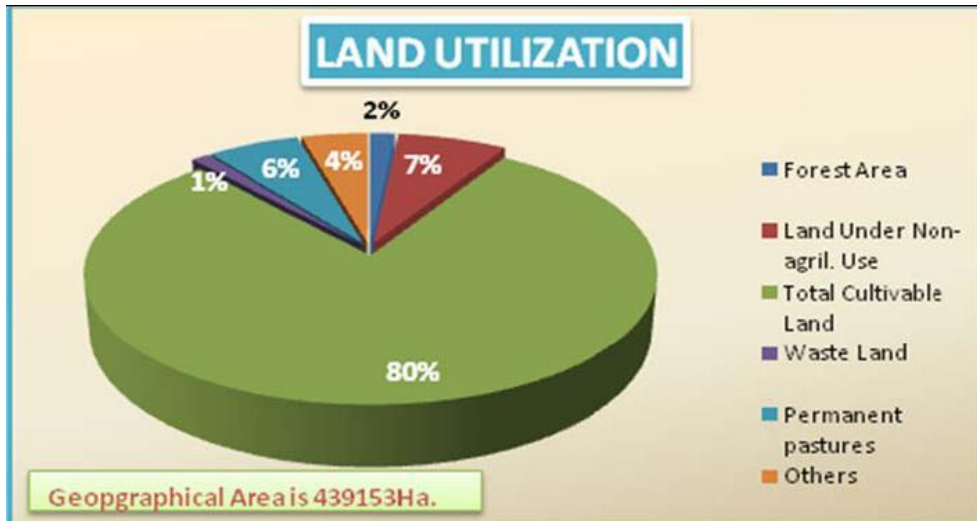
### Cimate and Soil:

The average rainfall during last 7 years has been more than 867 mm, . The general weather conditions are conducive to good agriculture harvest. The soil in Mehsana District in general is neutral pH (6.5-7.5). Electricity conductivity is low. Organic carbon is medium and Phosphorus content of the soil is low. Potash is high. So, Overall, the soil fertility indices are good from the point of view of agriculture.



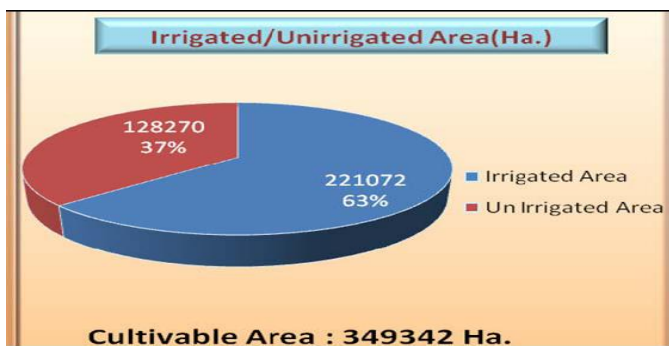
### Land Utilization:

Total geographical area of the district is about 4.4 lakhs hectares. It is noteworthy to find that 80% of the geographical area is under cultivation in the district. Mostly all talukas have about 80% of their geographic area under cultivation. (Except Vijapur- 71.91%, Satlasna-48.75%) However, the coverage of forest area is only 2% and hence, there is need to increase the coverage of forest. The district has only 1% of their land as waste land. Pasture land forms only 6% of geographical area.



### Irrigated/Unirrigated land

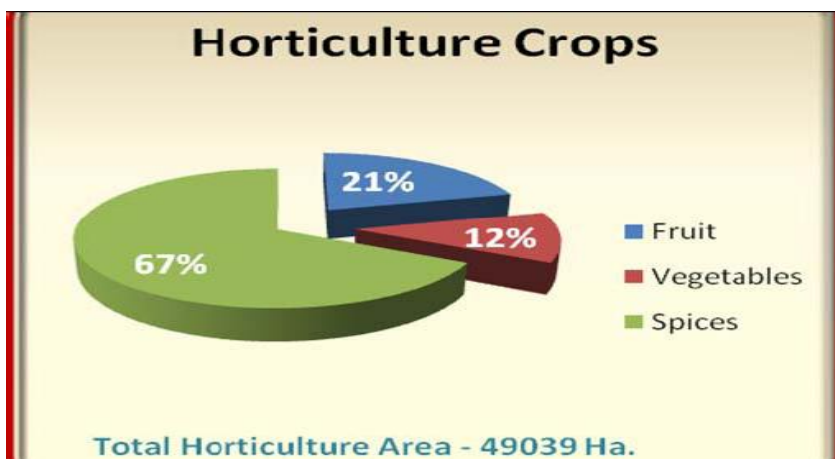
Out of 349342 hectares of cultivated land, 221072 ha (63%) are irrigated land. The remaining land (37%) is unirrigated one. Unjha, Visnagar and Vadnagar talukas stands very good at 80% of their land under 'irrigated' category but Bachraji and Kadi have only about 30% irrigated. The main source of irrigation is Open wells (80%).



### Major Horticultural Crops:

Main horticulture crops in Mehsana district are Lemon, Sapota, Fennel and Cumin. Area wise, Fennel is grown over an area of 20990 Ha, followed by Cumin and Lemon with an area of 12049 Ha and 8390 Ha respectively. In 2006-07, Mehsana produced 1.37 lakh Metric Tonnes (MT) of Fruits, 2.37 lakh MT of Vegetables and 4.65 lakh MT of Spices. Mehsana is the largest producer of lemon in Gujarat contributing 24% to total production of the State. The district is the third largest producer of Tomatoes with 9% share in total vegetable production of the State. Other major vegetables include Potatoes, Cluster bean, Okra and Brinjal. Mehsana is the largest producer of Fennel seed with 36% contribution in total Spice production of the State. Nine nurseries are established in the district over a period of 4 years and three nurseries are opened in 2008-09, followed by 2 in 2009-10. The remaining 6 nurseries will be opened in 2 years of plan period.





### Report on Visit of JIT of Mehsana district

S n	Name of the Farmers/O rganization	Address	Crop/Variety/ equipment	Area	Remark
1	Sri Khema Bhai Shiva Bhai Solanki	Village Ranipura ,District Mehsana	Poly house . Dutch rose	4000 Sq.m.	<ul style="list-style-type: none"> <li>• Poly house construction was of poor quality and shade net quality was also inferior.</li> <li>• Material procured from private nursery from Telegaon Maharastra plants were affected by mites and was of poor quality.</li> <li>• Planted single variety and farmer was not properly trained.</li> </ul>
2	Sri Riba Bhai Shiva Bhai Solanki,	Village Ranipura ,District Mehsana	Poly house. Dutch rose	4000 Sq.m	<ul style="list-style-type: none"> <li>• Poly house construction was of poor quality and shade net quality was also inferior.</li> <li>• Material procured from private nursery from Telegaon Maharastra plants were affected by mites and was of poor quality.</li> <li>• Planted single variety and farmer was not properly trained. Use insect proof net.</li> </ul>
3	Sri Ashutosh Bhai Govid Bhai	Village Dhanali, Block-Kadi,Mehsana	Poly house.	4000 Sq.m	<ul style="list-style-type: none"> <li>• Planted single variety and farmer was not properly trained.</li> <li>• Farmers should follow the proper plant protection measures.</li> <li>• Proper variety with different colours of cut roses should be planted taken from reputed nurseries only with technical</li> </ul>

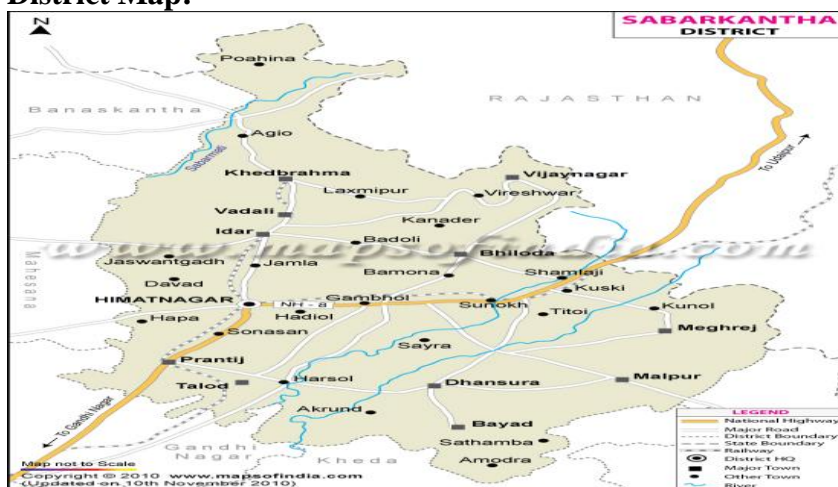
S n	Name of the Farmers/O rganization	Address	Crop/Variety/ equipment	Area	Remark
					backup.
4	Ch Rabji Bhai Kesar Bhai	Village Megalsian a Block-Bis Nagari,Mehsana	Kagzi lime Local cultivar	3.5 Ha. Plant ed 2011-12	<ul style="list-style-type: none"> <li>Planting material should be taken from Govt. Source or accredited nurseries.</li> <li>Timely gap filling should be done to replace dead seedlings.</li> </ul>
5	Ambalal Hort. Nursery and farm	Village Pamole Block-Bejapur, Mehsana	Nursery of Mango,Gua va,Sapota ,Jamun and other minir fruits and floriculture plants .	One ha.	<ul style="list-style-type: none"> <li>A nursery is properly maintained and producing quality planting material. It is accredited with one star, but needed to be re accredited.</li> </ul>
6	Himalayan International vegetable and Mushroom processing unit.(Sri Manmohan Mullick)	Daipur Mehsana	Production of Mushroom in 80chambers (50tons Cap )per week	45ch. cham bers are worki ng.	<ul style="list-style-type: none"> <li>A big unit for commercial button mushroom production for domestic and export market.</li> <li>Planning for processing of potato for French fry.</li> </ul>

### **Sabarkantha District:**

The administrative headquarters of the district is Himmatnagar, about 80 km from Ahmedabad. The district derives its name from the Sabarmati River that separates Sabarkantha from the neighboring districts. Geographical location of the district is 23.03 degree North (Latitude) and 73.39 degree East (Longitude). District is bounded by Rajasthan state to the northeast, Banaskantha and Mehsana districts to the west, Gandhinagar and Kheda districts to the south and Panchmahal District to the east. According to the 2011 census district has a population of 2,427,346 and the area is 7390 sq. km. Its population growth rate over the decade 2001-2011 was 16.56%. The Ministry of Panchayati Raj named Sabarkantha one of the country's 250 most backward districts (out of a total of 640) It is one of

the six districts in Gujarat currently receiving funds from the Backward Regions Grant Fund Programme (BRGF)

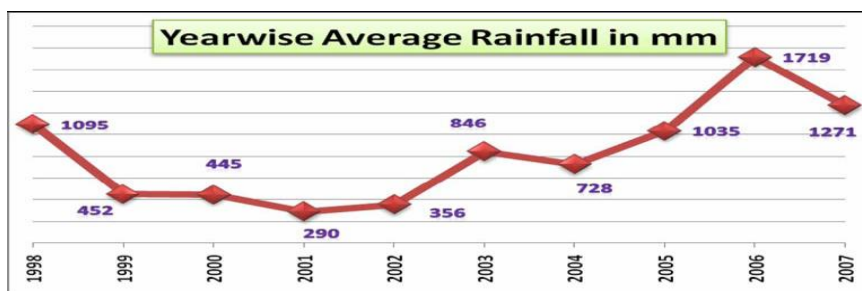
### District Map:



### Climate and Soil:

The maximum temperature of the place recorded 40.5 degree centigrade and the minimum temperature is 9.04 degree centigrade. Hathmati, Sabarmati, Khari, Meshwo, Vatrak, Mazum, and Harnav are the main rivers flowing through this district. Average rainfall recorded here is 500-1000 mm. Districts under Plains and Hills Region Agro Climatic Zone and North Gujarat Agro climatic zone.

### Year wise average rainfall (in mm)



### Soil Types:

Major Soils (common names like red sandy loam deep soils (etc.,)*)	Area ('000 ha)	Per cent (%) of total
Sandy loam (Goradu)	191.1	26.18
Medium black	412.0	56.44
Hilly Soils	126.9	17.38

The soil has pH value in range of 6.5-7.5 and hence neutral. The content of Organic Carbon and Nitrogen in the soil is low and strategy should be evolved to bring it in high range. Phosphorus content of the soil, too, is medium and hence satisfactory. Potash content is high .So, overall, the

soil fertility indices indicate that there is need for paying attention on increasing the nitrogen content.

#### **Economy:**

The economy of the district is to a great extent dependant on Agriculture and Dairy Farming. Sabar Dairy in Sabarkantha district manufactures and distributes different types of milk products. Food processing and textiles are the other emerging sectors which have opened up new opportunities for investment. There are at present forty two medium and large scale industries in Sabarkantha district. Walls and floor tiles (ceramics), chemicals, plastic and plastic products and commercial office and household equipments are some of the major small scale industry sectors of the district. The economy of the district is heavily dependant on Agriculture and Dairy farming. District is highest producer of Cereals, Ber (Indian Jujube) and Pomegranate in the State. Sabar Dairy in Sabarkantha district manufactures and distributes different types of milk products

#### **Horticulture:**

The district will focus on increase in seed replacement rate by introducing HYV/hybrid seeds for both food (including horticulture crops) and cash crops and strive for increase in productivity by making available HYV seeds to the farmers, either procuring it from ICAR/Universities or producing seeds in their seed farms or both. Soil health will be improved by strengthening /establishing soil testing facilities, micronutrient training, organic farming and promoting use of vermin compost through promotion of animal husbandry and development of land.

#### **Land Utilization:**

Total geographical area of the district is about 7.3 lakhs hectares. It is noteworthy to find that 60% of the geographical area is under cultivation in the district. Dhansura, Bayad, Prantij and Talod talukas have about 70% of their geographical area under cultivation. However, the coverage of forest area is 17% and hence, there is need to increase the coverage of forest. The district has 5% of their cultivated land as waste land and the same may be effectively used under various watershed projects including development of pasture land as present pasture land forms only 5% of geographical area.

#### **Irrigated/Unirrigated land**

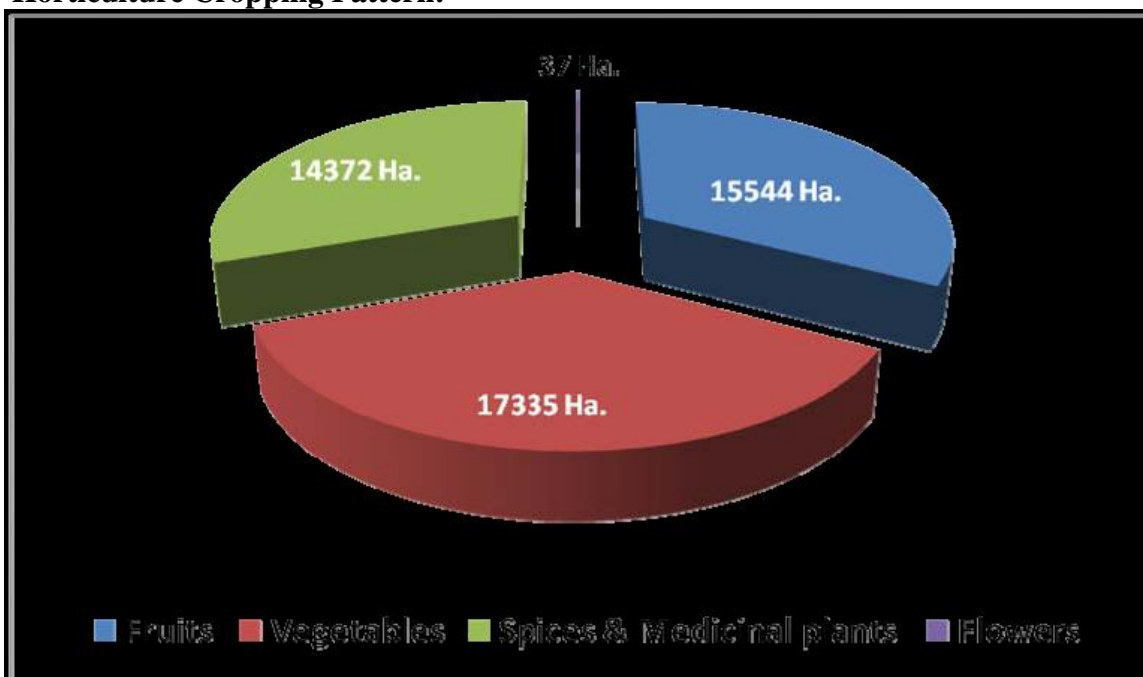
Out of 441103 hectares of cultivated land, 112913 ha (26%) are irrigated land. The remaining land (74%) is un irrigated one. Bhiloda taluka stands good at 42% of their land under 'irrigated' category. However, in Modasa taluka, only 18% of cultivable land is irrigated. Borewell and Open well are the main source of irrigation for about 76% of irrigated land.

The soil in Sabarkantha District in general is neutral pH. Electricity conductivity is medium. Organic carbon and nitrogen content of the soil is low. Phosphorus content of soil is medium. Potash is high. So, overall, the soil fertility indices indicate that soil health may be improved by increasing nitrogen content. The average rainfall during last 5 years has been more than 1100 mm.

#### **Major Horticulture Crops:**

Mangos, Pomegranate, Ber, Cumin, Fennel, Potato, and Cabbage are other important horticultural crops in the district. More than 46000 ha. of area are under cultivation of Fruits, Vegetables and Spices

### Horticulture Cropping Pattern:



### Horticulture Planting Material:

To boost the horticulture and make available good quality saplings/seeds for horticulture Crops, it has been proposed under the plan that one small sized nursery of 1 Ha area will be established in every taluka of Sabarkantha district. So, 13 small nurseries will be developed in Sabarkantha district over a period of 4 years. 4 nurseries will be opened in 2008-09, followed by 3 in 2009-10. The remaining 6 nurseries will be opened in last 2 years of plan period. Regarding operation and management of nursery, it is envisaged that the lead Farmer's Club/SHG in the taluka will take care of all the operations of nursery. The nursery will be managed on sound business principles, with government playing the role of facilitator.

### Report on Visit of JIT of Sabarkantha district

S n	Name of the Farmers/O rganization	Address	Crop/Va riety/ equipme nt	Area	Remark
1	Sri Praneenbha i ji	Village Manpur,B lock Ider District Sabarkant	Barun Cold Storage Potato	5000 Ton capacit y Multich	<ul style="list-style-type: none"> <li>• Cold Storage is functional and mostly storing red variety (LR)of potato used for chiops making..</li> <li>• Poatto Stored @ Rs.140/ quintle.</li> </ul>



S n	Name of the Farmers/O rganization	Address	Crop/Va riety/ equipme nt	Area	Remark
		ha		amber In fuction	
2	Md.AliGul am Ali	Village Manpur,B lock Ider District Sabarkant ha	Poly house. Crop Muskmel on (Hy.)and Genocoe us cucumber	4000 sq.m.ea ch two units	<ul style="list-style-type: none"> <li>• Musk melon variety was not suitable for protected condition and technology was not known to the grower.</li> <li>• Grower should be provided Farmers need proper guidance.</li> </ul>
3	Sri Naresh Bhai	Village Manpur,B lock Ider District Sabarkant ha	Banana Var.Poov an and also water melon with mulch and drip irrigation	2ha. 1ha.	<ul style="list-style-type: none"> <li>• Crop was well maintained in field. Farmers prefer Var.poovan since get good price in local market.</li> <li>• Watermelon cultivated off season to capture market during Ramjan</li> </ul>
4	Sri Sidarth Singh	Village &Block Palanpur District Sabarkant ha	Tissue Culture Lab. Pvt.	1unit 50% advanc e paid	<ul style="list-style-type: none"> <li>• Tissue culture unit was not functioning and maintained as per guidelines.</li> <li>• Unit is not having qualified staff and not able to generate plant material. Unit established hardening centre elsewhere.</li> </ul>
5	Govt Nursery	Deesa	Nursery of pomegran ate,mang o and Kagzi lime	200 sq.m shadene t	<ul style="list-style-type: none"> <li>• Nursery is not properly maintained, since staff was not posted, recently they posted newly recruited technical staff.</li> <li>• Mother block have old plantations of Mango and needs rejuvenation</li> <li>• Suggested to strengthen infrastructure for establish nursery properly.</li> </ul>
6	M/S CA/MA storage,Dee sa	Deesa	CA/MA storage 6chamber rs unit	Project Costing 10caror e and sanctio ned	<ul style="list-style-type: none"> <li>• Unit is multi chamber, but presently storing only Potato (RL) for supply to Pepsi Co. as per their technical advice.</li> <li>• CA/MA storage needs to be utilized properly and construction should be completed as per project guidelines.</li> </ul>

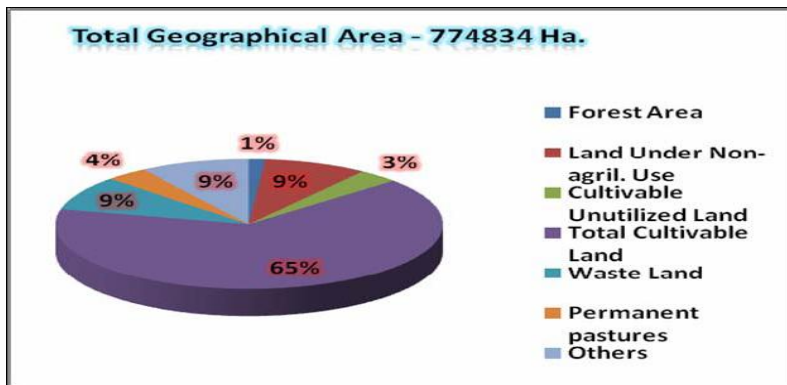
S n	Name of the Farmers/O rganization	Address	Crop/Variety/ equipment	Area	Remark
				Rs.3.4C are.	
7	Sri Gyan Ji BhaiDargah Ji Bhai	Village Aagthala Block Deesa District Sabarkantha	Pomegranate fruit crop. Var Sabati	4ha.	<ul style="list-style-type: none"> <li>• Crop is well managed as per scientific guidelines. Pomegranate Cluster has been developed in the area of 300 ha. with the technical support of this progressive farmer.</li> <li>• Inter cropped with Berseem fodder. Farmers also apply Ethrel for shading of leaf and flower of rainy season crop to get better yield of winter crop.</li> <li>• Rajasthan farmers also visit for technical knowledge to this cluster and sri Gyan Ji bhai.</li> </ul>
8	La Chandra Tissue culture Lab.(LTCL)	Sir Priyvarat Gadhvi,Dantevada	Tissue Culture unit at Pvt.	Tissue culture unit and hardenind units(2 nos.)	<ul style="list-style-type: none"> <li>• Staff is qualified and Unit establishment is at preliminary stage. It will take six months to be functional .Equipments Tissue culture racks and chemicals are procured.</li> </ul>

### Ahmedabad District :

Ahmedabad District is surrounded by Mehsana, Sabarkantha, and Gandhinagar districts to the north, Kheda district to the east, the Gulf of Khambhat (Gulf of Cambay) and Bhavnagar district to the south, and Surendranagar district to the west. Its headquarters is the city of Ahmedabad. According to the 2011 census Ahmedabad district has a population of 7,208,200,<sup>[1]</sup> roughly equal to Hong Kong or the US state of Washington. This gives it a ranking of 8th in India (out of a total of 640). The district has a population density of 890 inhabitants per square kilometre (2,300 /sq mi) . Its population growth rate over the decade 2001-2011 was 22.31 %. Ahmedabad has a sex ratio of 903 females for every 1000 males,<sup>[1]</sup> and a literacy rate of 86.65 %..The language people speak in Ahmedabad is Gujarati which is the mother-tongue of the State of Gujarat, in addition to Hindi which is also quite popular among the people.

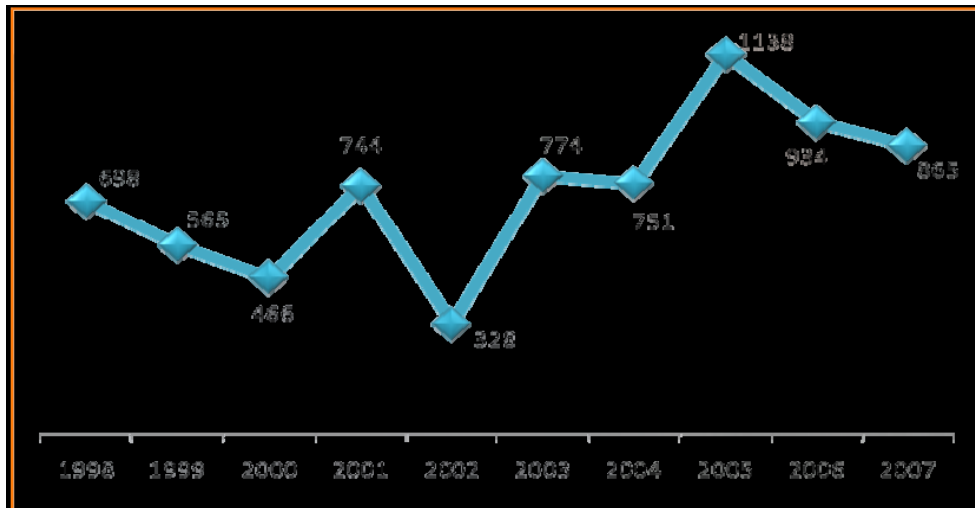


## Land Utilization Statistics;



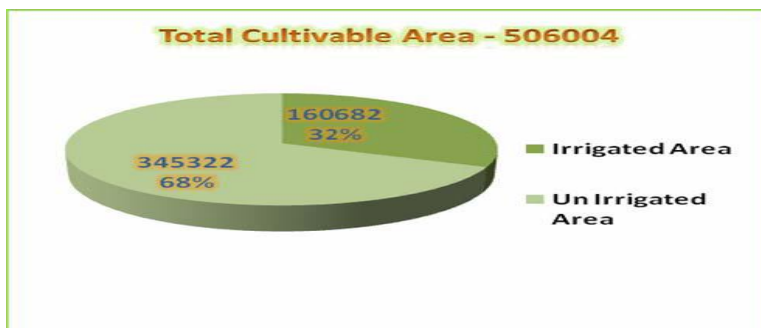
## Climate

Climate data for Ahmedabad													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	33 (91)	38 (100)	41 (106)	42.8 (109.0)	43 (109)	43.4 (110.1)	39 (102)	39 (102)	42 (108)	40 (104)	38 (100)	32 (90)	43.4 (110.1)
Average high °C (°F)	28.3 (82.9)	30.4 (86.7)	35.6 (96.1)	39.8 (103.6)	41.5 (106.7)	38.4 (101.1)	33.4 (92.1)	31.8 (89.2)	34.0 (93.2)	35.8 (96.4)	32.8 (91.0)	29.3 (84.7)	34.26 (93.66)
Average low °C (°F)	11.8 (53.2)	13.9 (57.0)	18.9 (66.0)	23.7 (74.7)	26.2 (79.2)	27.2 (81.0)	25.6 (78.1)	24.6 (76.3)	24.2 (75.6)	21.1 (70.0)	16.6 (61.9)	13.2 (55.8)	20.58 (69.05)
Record low °C (°F)	7 (45)	6 (43)	10 (50)	18 (64)	18 (64)	22 (72)	22 (72)	21 (70)	20 (68)	13 (55)	10 (50)	5 (41)	5 (41)
Rainfall mm (inches)	2.0 (0.079)	1.0 (0.039)	0 (0)	3.0 (0.118)	20.0 (0.787)	103.0 (4.055)	247.0 (9.724)	288.0 (11.339)	83.0 (3.268)	23.0 (0.906)	14.0 (0.551)	5.0 (0.197)	789 (31.06)
Avg. rainy days (≥ 0.1 mm)	0.3	0.3	0.1	0.3	0.9	4.8	13.6	15.0	5.8	1.1	1.1	0.3	43.6
Mean monthly sunshine hours	288.3	274.4	279.0	297.0	328.6	237.0	130.2	111.6	222.0	291.4	273.0	288.3	3,020.8

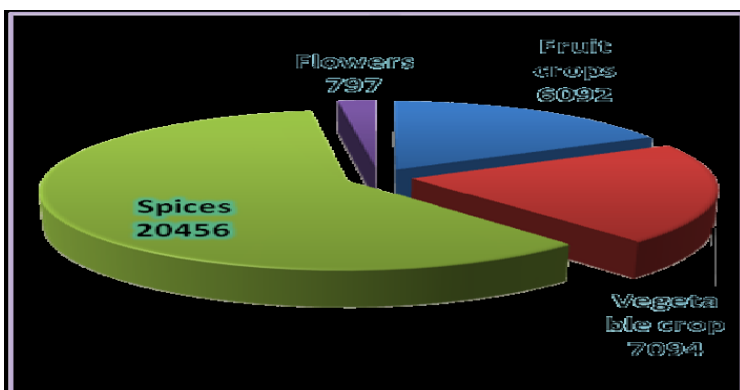


Total geographical area of the district is about 7.7 lakhs hectares. It is noteworthy to find that 65.30% of the geographical area is under cultivation in the district. 5 talukas out of 11 talukas have about 70% of their geographical area under cultivation. However, the coverage of forest area is only 1.36% (Mandal, Detroj, Viramgam, Sanand, Daskoi, Dholka, Bavla, Ranpur and Ahmedabad-city have no forest Area) and hence, there is need to increase the coverage of forest. The district has 3.39 % of their cultivable land as unutilized land. Pasture land forms 3.60% of geographical area and it is not significant from the point of view of growth of animal husbandry.

#### **Irrigated/Unirrigated Area:**



#### **Horticulture Cropping Pattern:**



**Report of JIT team and Horticulture Department Official for verification of use of Storage facilities of CA/MA Storage of M/S R.M,Shah & CO. subsidized from NHM**

Team comprising of Dr. R.C.Upadhyaya,Chief Consultant (NHM) , Shri H.M.Chavda, Joint Dir of Horti, Gandhinagar, Shri S.S.Ganvit, Joint Dir of Horti, Vadodara, Shri D.M.Vaghela, Dy. Dir of Horticulture, Ahmedabad , Dr.M.C.Patel, Asso. Professor, SDAU, Dantewada, Shri K.G.Patel, Dy. Dir of Horticulture, Mahesana, made a surprise visit to verify the produce stored in CA/MA storage of M/S R.M,Shah & CO.(Sri Rajesh Shah ) unit and recorded following observations:

- There are twenty eight chambers of total 5000 tons capacity of good quality construction with 24hrs supply of electricity and construction seems to be technically correct. The chambers have automatically controlled O<sub>2</sub>, CO<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>, N<sub>2</sub>, humidity and temperature.
- The fruits of Apple and dry fruits were stored in four chambers only, but not up to the full capacity of the chambers. It was informed that fruits are regularly supplied to the local market and storage capacity reduced accordingly. Presently twenty percent capacity of the storage is only utilized. It was informed by the proprietor that storage will be utilized up to 70-80% capacity in coming season of apple and also waxed Kagzi lime facilities will be created to be stored in CA/MA storage to regulate the market.
- Three chambers were given on sub let basis to the fruit company which was closed, since they store their material in the chambers. The item stored could not be verified by the Team, since chambers were closed. It was suggested that the officials of horticulture department will verify the store items and will report later. It was also suggested to have a surprise checks on storing materials regularly.
- Team after thorough visit to all chamber observed that the chambers were empty and any drug items were not stored. It was also informed that they have separate arrangements for storing medicines. Team advised to provide monthly stock position to the department and maintain all the records in register also (Stock position).





Verification of use of Storage facilities of CA/MA storage of M/S R.M,Shah & CO

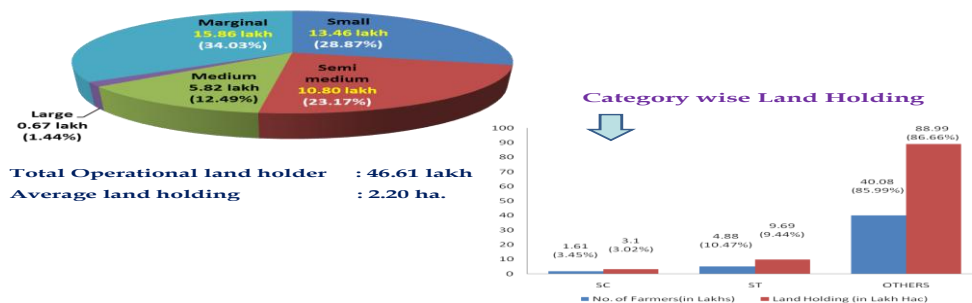
## Gujarat:

The Land of the Legends, stands bordered by Pakistan and Rajasthan in the north east, Madhya Pradesh in the east, and Maharashtra and the Union territories of Diu, Daman, Dadra and Nagar Haveli in the south. The Arabian Sea borders the state both to the west and the south west.

### Gujarat Agriculture at a Glance

- Total Geographical Area : 196 lakh ha.
- Agriculture Land holding : 102 lakh ha.
- Net Area Sown : 98 lakh ha.
- Total Cropped Area : 145 lakh ha.
- Total Area under Horticulture : 14 lakh Ha.
- Agro Climatic Zones : 8
- Gross Irrigated area : 44.71%
- Net Irrigated area : 43.24%
- Total Operational land holder : 46.61 lakh
- Average land holding : 2.33 ha
- Share in GSDP : 14-16 %
- Tent Five years growth : 9.90 %

### LAND HOLDING STATISTICS



## Geography & Climate

Gujarat is located on the west coast of India Surrounded by the Arabian Sea in the west Rajasthan in the North- East, Madhya Pradesh in the East and Maharashtra state in the south and south East. It is situated between  $20^{\circ}1'$  &  $24^{\circ}7'$  North Latitude and  $68^{\circ}4'$  to  $74^{\circ}4'$  East longitude covering geographical area of 196 lakh hectares, which is six percent of the country. Gujarat state has longest sea coast of 1600 km. Gujarat state comprised of 26 districts having 225 taluka and 18569 villages.

Agriculture is a backbone of state's economy and the agro-climate can be categorized as very heterogeneous as the state constitutes about 24.94 per cent of arid and 33.66 per cent of semi arid areas of the country (Next to Rajasthan). Vast area of Saurashtra and kutch falls under arid to semi arid (co-efficient of variation 55 per cent). Agro climate of the state divided into eight sub regions in respect of rainfall, temperature, humidity and geographical situation. The detailed information is as under.

Sr. No.	Sub Region	District	Rainfall in mm	Types of soil
1	Southern Hills	Dang, Valsad, Navsari	1500 and	Deep black with

			above	patches of costal alkali lateritic and medium black soil
2	South Gujarat	Surat, Bhrauch Narmada	1000 to 1500	Deep black clayey soils
3	Middle Gujarat	Panchmahal Dahod, Vadodara, Kheda, Anand	800 to 1000	Deep black to loamy snad (Goradu)
4	North Gujarat	Ahmedabad, Gandhi Nagar, Sabarkantha, Banaskantha, Patanm Mehsna	625 to 875	Sandy loan to sandy soils
5	Bhal & Costal Area	Coastal area of Surat, Bhrauch, Anand, Ahmedabad, Bhavnagar	625 to 1000	Medium black poorly drained and saline soil
6	South Saurashtra	Junagadh and Probandar	645 to 700	Shallow medium black & calcareous soils
7	North Saurashtra	Bhavnagar, Jamnagar , Surendranagar, Amreli, Rajkot	400 to 700	Shallow medium black soils
8	North West Arid	Kutch	250 to 500	Sandy and Saline Soils

#### **Horticulture Status of Gujarat:**

State has achieved considerable growth rate in horticulture during last five years because of serious efforts made by the State Govt. The area & production of horticulture crop was 5.89 lakh ha (5 %of total cropped area) & 59.49 lakh tons in 1998-1999 which increased in 2010-11up to 13.54 lakh ha.area & 173.00 lakh tons production respectively. Gujarat is occupying 4th , 6th and 3<sup>rd</sup> places in india in production of fruit, vegetable and spices respectively. The horticulture area is 14.46 lac Ha. Out of total agricultural area of 88 lac. i.e making around 16.5 %. The production of horticulture crop is Rs.11000 crores i.e 23% against Rs. 48000 crores of total agriculture production.State has strong cooperative credit & marketing structure, alongwith 265 cold storages having 12.50 lakh mt. storage capacities. About 42 fruit & vegetable co-operative marketing societies and 197 Agriculture Produce Market Committees (APMCs) dealing with selling & buying of horticulture produce in the State. These have been mandate to maintain utmost transparency for dealing to ensure farmers against exploitation by middlemen.

Agriculture Export Zone for dehydrated onion & for fruits has been established, which will be the back bone to boost horticultural development in the state. The main produce are fresh fruits which includes mangoes (Kesar and Alphonso ) , Sapota , Aonla and Dates (khalal). The vegetables viz. okra, beans, bitter gourd, onion fresh as well as flacks and powder, garlic powder and gourds.. The spices viz. cumin, fennel and garlic are also potential for export.

In floriculture, major flowers grown in the state are Roses (Deshi & Hybrid), Lily, Marigold, Jasmine & Tuberose. About 15000 ha. area is covered under floriculture. Flowers like carnation, gerbera & rose are also cultivated by using Hi-tech Green house technology in some of the districts. Isabgol , Aloe vera , Senna, Gugal, Safed musali, Ashvagandha, Kadu-kariyatu, Kaucha, and kalmegh etc. are being mainly cultivated in the different parts of the State. But the assure market is the major constraints for the development of these crops, however, Isabgul has find the way to the world market.Dehydrated vegetables, canned vegetables, Mango Pulp, Juices, Pickles - chutney (Sauce) & ketchup are the important processed products of the state. Onion dehydration industry of the state is biggest in the country & it comprises 80% of total onion dehydration units,

which process nearly one lakh ton onion and one lakh ton fruits and vegetables annually. Nearly half of the produce are being exported. Approximately 0.10 lakh ton of Isabgul husk is processed and 0.06 lakh ton of husk is exported to various countries. Mango, Banana, Guava, Chikoo, Papaya, Potato, Onion, Garlic, Cumin, Fennel, & Isabgul are the Focused crops for the value addition. Grapes, cashew, medicinal & aromatic crops like aloe vera, palmarosa are emerging as a potential- new crops in suitable areas of the state. Investment in Greenhouses, floriculture & medicinal plant projects, tissue culture units, fruit & vegetable processing units are initiated in the state which show shining future of horticulture in the state.

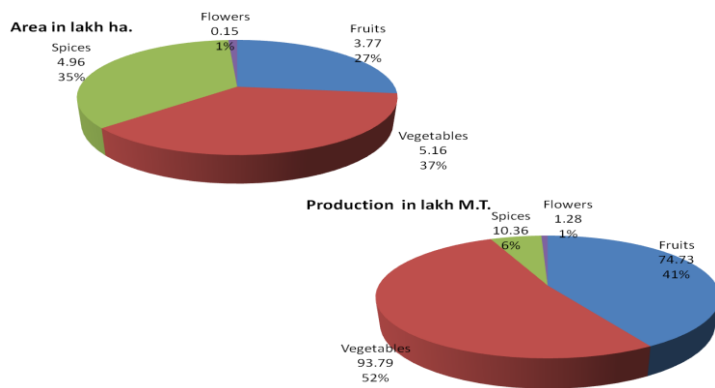
**Area and production of Horticultural crops:**

Years	Fruits		Vegetables		Spices		Total	
	Area lakh ha	Production lakh M.T	Area lakh ha	Production lakh M.T	Area lakh ha	Production lakh M.T	Area lakh ha	Production lakh M.T
2004-05	2.72	41.32	3.31	48.67	3.65	4.24	9.68	94.23
2008-09	3.39	59.9	3.95	68.07	5.77	9.99	13.11	138.03
2009-10	3.53	69.85	4.07	72.55	5.08	10.33	12.68	152.73
2010-11	3.77	5.16		93.80	5.11	11.64	14.04	180.17
2011-12	4.02	80.88	5.21	98.24	5.23	12.02	14.46	191.64
2012-13	4.17	85.89	5.22	101.70	5.62	10.57	15.01	198.16

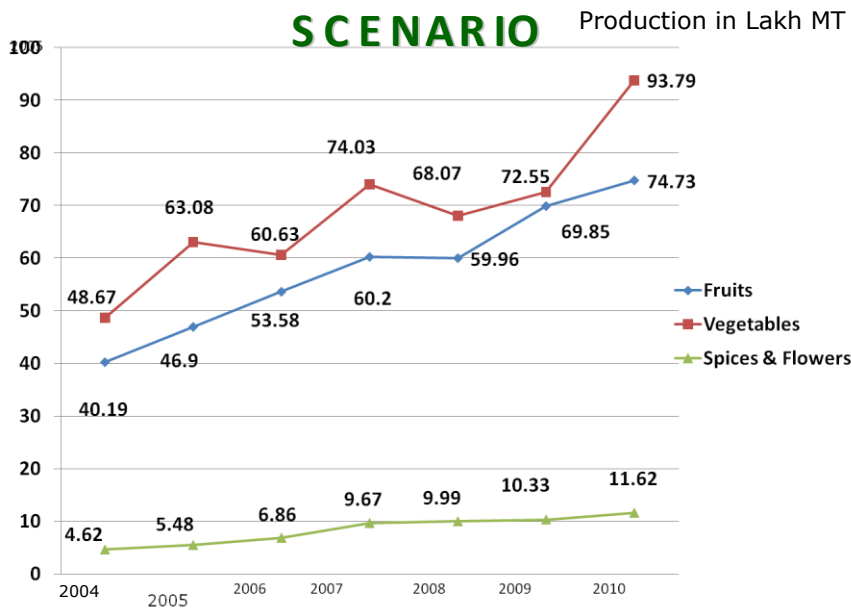
**Crop wise area and Production:**

Crops	Average of Five years	
	Area In 000 ha.	Production in 000 MT
Mango	119.21	749.50
Banana	59.16	3404.99
Papaya	14.62	754.39
Pomegranate	4.94	50.46
Sapota (Chiku)	27.33	268.72
Citrus	36.54	376.38
Date palm	15.80	113.93
Potato	61.89	1620.39
Onion	61.83	1560.14
Brinjal	64.06	1103.48
Tomato	33.49	826.38
Cumin	305.89	219.61
Fennel	58.75	101.75

## Crop Distribution



## HORTICULTURE PRODUCTION SCENARIO



### Scheme for women in horticulture:

Excellent development of horticulture can be done through fruits and vegetable preservation. The program provides for women empowerment through self employment. 15 days and 7 days short term training classes to the women for the preservation of fruits and vegetables will be imparted at all the 18 permanent and 17 mobile community canning and kitchen gardening centers for Urban and Rural women respectively. An outlay of 60.00 Lakh has been proposed during 2012-13. Various sub components included in this scheme are: House wives to be trained and to prepare preserved fruits & vegetable products.

### Sponsored programme for Oil Palm development:

Under this program Oil palm Development is carried out with the central assistance of 75% .State is to bear 25% share. For this program Rs.20.00 Lakh as State share & Rs.60.00 Lakh as central share hence total Rs. 80.00 lakhs has been proposed during 2012-13 for expansion of area by



providing assistance for planting material, Cultivation cost, Diesel pump sets, Development of Waste land, Drip irrigation, Training, Extension & Publicity, Establishment & Staff and Demonstration.

**Development of floriculture and medicinal & aromatic plants:**

Flowers and Medicinal / Aromatic plants are very important for domestic consumption and for export to earn foreign exchange. This program is also important for social upliftment of backward people and requires to be addressed differently and specifically. Considering the aspect of promotion of floriculture as well as Medicinal & Aromatic plants, Rs. 150.00 Lakh has been proposed.

**Sponsored programme for coconut development:**

For the expansion & allied activities for Coconut plantation in State proposed to be undertaken with 50% Central and 50% State share. For this program Rs.11.00 Lakh as State share ,11.00 Lakh Central share and The centre will also provide additional assistance of Rs. 44.00 Lakh as 100% share hence total Rs.66.00 lakhs outlay for C.D.B. as per CDB guideline has been proposed during 2012-13 Various sub components included in this scheme are : Area expansion of Coconut, Estt. of Large size nursery, Estt. of small size nursery, Demonstration, Organic manure units, Estt. of regional coconut nursery.

### **General Observations and Suggestions:**

- **Display board were not fixed at activities sites visited by JIT. It is suggested that Display boards with NHM logo indicating the name of beneficiary, activity, cost, assistance provided, year etc. are to be placed at site of field activities to ensure transparency in the implementation and publicity among the people visiting the unit.**
- **It was observed that nurseries established at private / public sector needs proper care and maintenance. These nurseries should be properly leveled with Varieties, date of sowing seeds, date of grafting and method of grafting etc. and should be accredited by National Horticulture Board.**
- **Since there is a large area under Kagzi lime and there are old and neglected plantations JIT suggested rejuvenation of declined and old orchards of kagzi lime in Mehsana and Sabarkantha districts on priority basis. There is an urgent need to train the farmers for scientific management of senile orchards and regular supervision in field by the field functionaries.**
- **Deputy Director (Horticulture) should ensure Disease free (Bacterial Wilt) quality planting material of Pomegranate before procurement from accredited nurseries. Team may be constituted to inspect the nursery before allow to purchase planting material. There is an urgent need to train the farmers for scientific management of pomegranate orchards.**
- **Tissue culture Lab., unit is not functional, and needs to be maintained as per guide lines of DBT. Unit should also have proper hardening unit. SHM should monitor the progress of proper function of this unit at Palanpur(Sabarkantha).**
- **Field functionaries' should be given trainings / refreshers course on protected cultivation and poly house management technologies.They should also be trained to provide basic knowledge of crops and varieties to be cultivated under protected structures with package of practices of such horticultural crops. MOU may be signed with manufacturer for maintenance of poly houses and with seed suppliers top provide technological back up. More efforts should be made to provide shade net for vegetable production under protected structures in less rainfall areas.**
- **JIT has a view that more attention should be given on vermin-composting, bee keeping, rejuvenation, mechanization, nursery establishment, post harvest management and marketing infrastructures. in future. The entire production cluster needs to be linked with PHM & marketing infrastructure.**
- **State Agriculture University (SAU) and Krishi Vigyan Kendras needs to be involved in implementation of establishment of model and small nurseries, technology dissemination through front line demonstration, rejuvenation and training of farmers.**

- To ensure transparency in implementation of various activities under NHM, details about the activities approved in the village, cost of work, subsidy available, name of beneficiaries, area covered and year of implementation needs to be displayed at the district level and at block level. Proper sign board with NHM logo indicating the name of beneficiary, activity, cost, assistance provided, year, etc. needs to be displayed at site. It is also observed that no boards are fixed at field level of activities with crop details.
- JIT inspected Control Atmosphere cold storage unit which was working to store red variety of potato for processing. Control Atmosphere cold storage units may be utilized as multi commodity units.
- The farmers may be provided training on management of green house, poly house, shade net, plastic tunnel, mulching for high tech. horticulture technology in respect of higher productivity of horticultural Crops. For construction of green house and shade net house in the Model Nursery, the technology, design and criteria adopted by the SAUs or KVK or ICAR ) may be adopted.
- Front line demonstration may be taken up on Bee production in specific horticultural crops to understand the role of Bee's as pollinator which helps in increasing the crop yield. The farmers may also be trained in the art of handling bees, transferring the hives and extraction of honey.
- Significant progress has been made in the activities such as protected cultivation, micro irrigation, Area expansion in cluster for fruit crops and floricultural crops, vegetable production and creation of infrastructural facilities under National Horticulture Mission programme. State has allocated more than 35% funds for protected cultivation and precision farming as priority area, but proper utilization may be assured.
- There is shortage of lower level Field functionaries at district level. It is suggested that more technical field staff may be provided up to block level for technical supervision and field monitoring.
- Mehsana and Banaskantha districts are known for cattle management and milk production. Therefore, it is suggested that more efforts should be made for creation of vermin compost unit in the districts as organic support .Since districts are producing quality spices(Cumin,corriender,fennugreeketc)for export .
- Horticulture Division of SD Agriculture university,Dantewada is having good nursery and fruit orchards more FLD programme may be given to university for technological demonstration in Banaskantha and mehsana districts of Gujarat.

