



Rijksdienst voor Ondernemend
Nederland

Horticulture sector in Gujarat State - India

NBSO Ahmedabad

*>> Duurzaam, Agrarisch, Innovatief
en Internationaal ondernemen*



Colofon

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NL Enterprise Agency is a department of the Dutch ministry of Economic Affairs that implements government policy for agricultural, sustainability, innovation, and international business and cooperation. NL Enterprise Agency is the contact point for businesses, educational institutions and government bodies for information and advice, financing, networking and regulatory matters.

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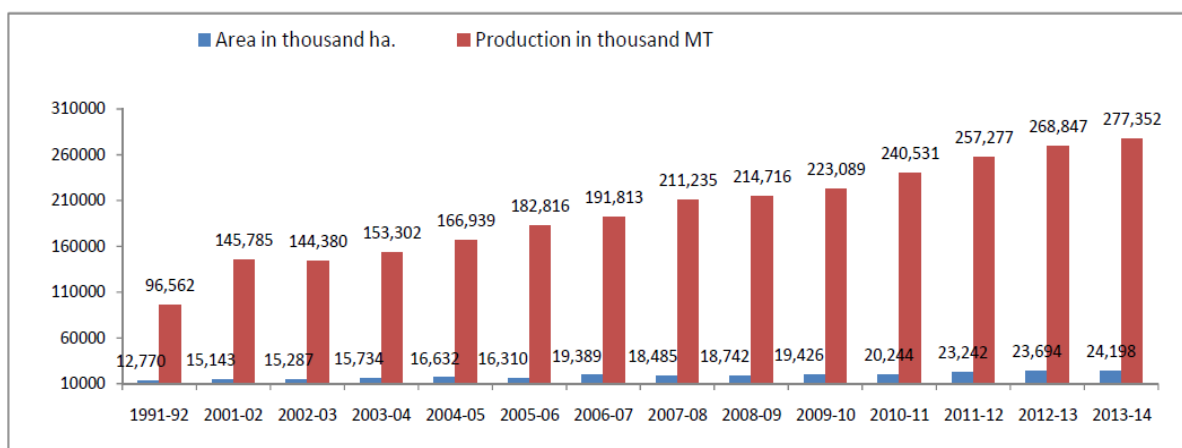
1. Scope and definition of Horticulture Sector in India

It is a science of growing and management of fruits, vegetables including tubers, ornamental, medicinal and aromatic crops, spices, and plantation crops their processing, value addition and marketing.

The term "horticulture" comprises the cultivation of fruits and vegetables, ornamental flowers, medicinal and aromatic plants and their post-harvest management. Presently our country is next to China in area and production of fruits and vegetable crops and has been contributing 10% of fruits and 14% of vegetable of the total world production. India leads the world in the production of mango, banana, sapota, acid lime and cauliflower while the highest productivity of grape is also recorded here. India occupies second position in production of onion and third in cabbage production globally. Fruits such as mango, banana, citrus, guava and apple account for 75 per cent of the total fruit production in the country. India produces about 70 different varieties of various vegetables. The horticulture sector constituted nearly 20 per cent of agricultural GDP and contributes 4 per cent in the national economy. Despite having all the favourable factors, the desired level of development in horticulture has not been achieved because of a number of constraints like low productivity of many fruits and vegetables than international averages. Non-availability of good planting material, lack of post harvest management and less value addition etc. As of today, horticulture is considered, one of the fastest growing sectors in agriculture and is a thrust area to stimulate agricultural growth, spurred by the changing domestic food habits towards more nutritious food and increasing overseas demand.

Horticulture is an extremely diversified field with nearly unlimited career opportunities in a variety of job settings. A large number of jobs require knowledge and training in horticulture. The level of training could be vocational or at the school/college/KVK level. Generally a good job in horticulture sector requires degree in this discipline. College level education provides more in depth knowledge of the field and offers job opportunities at supervisory or managerial levels while post graduation and doctorate level degree provide very good jobs in the field of horticulture to conduct research or impart teaching. Horticulture is a vast subject in the field of agriculture and it is divided in three major branches: Floriculturist(cultivation of flowering and ornamental plants), Olericulturist (study of vegetable culture), and Pomologist (focuses on the cultivation, production, post harvest, storage, processing and value addition of fruits plants). Though there is a large number of agricultural educational organisations are active, an adequate number of agricultural research institutes are still lacking in India.

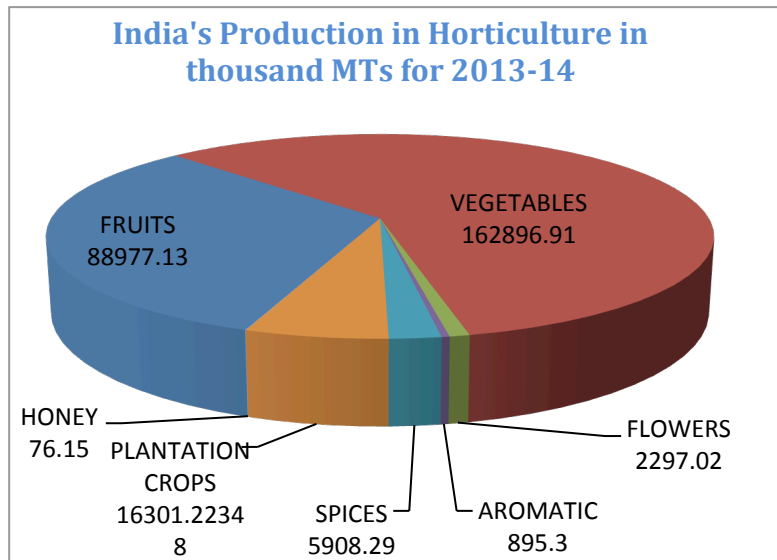
Total area under horticulture cultivation in India during 2013-14 was 24198.48 thousand Hectares producing total of 277352.04 Thousand MT of horticulture produce.



Despite increase in production of Horticulture Produce, India is still facing major challenge in exportability of produce due to lack of good quality produce.

Post-Harvest Management is one of the major concerns as it hinders the goal food security and Price Stabilization.

This report focuses on overview of horticulture sector and highlights opportunities for Dutch companies in various fields like Protected Cultivation, Seeds, Irrigation Technologies, and Human Resources Development etc.



Over 60 per cent of Indian population depends on horticulture in order to survive and build their career in life. There is an immense scope for modernisation and development in this horticulture sector of India. As and when these dependent learn to perform with scientifically methods, the economy of India will also grow exorbitantly. Therefore, Agriculture is the growth engine of India.

2. Horticulture Sector Overview in Gujarat

Gujarat 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. 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. 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 it's 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.

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.



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

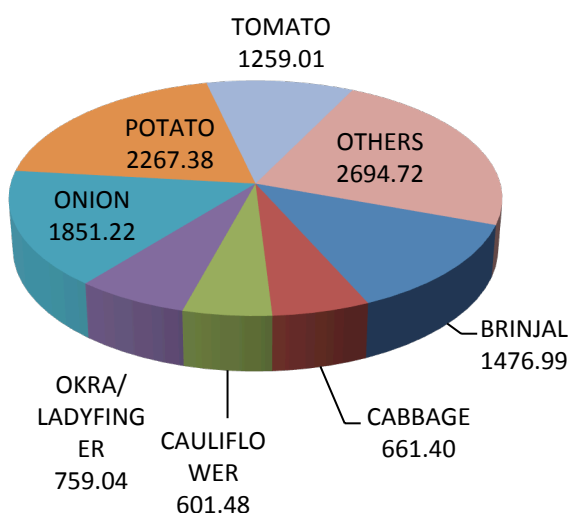


Gujarat has taken a lead in the sector of establishing Greenhouses by producing high value flowers like; Dutch Roses, Gerberas and Carnation and vegetable crops like; Capsicum, Khira, Cucumber and Tomato. The state is in leading position in Onion, Potato, Banana and Papaya. The State also introduced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

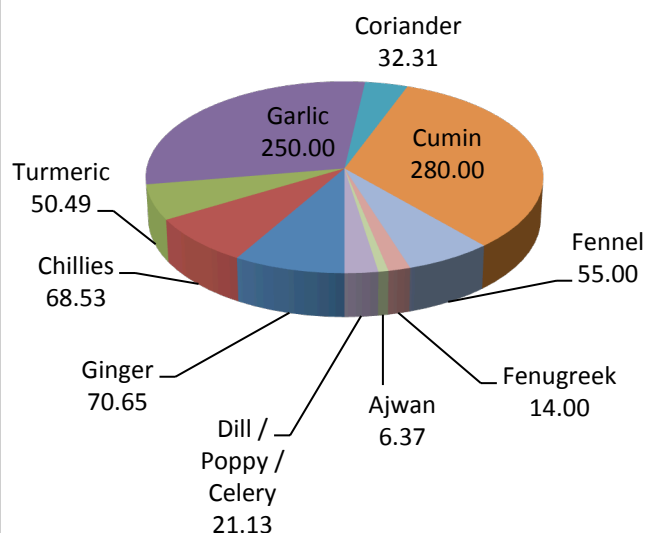
The climate is favourable for development of Alphonso mango in South Gujarat and Kesar in Junagadh areas. Date palm in Kutch is monopoly crop in country. Besides, Banana, Lime, Ber, Sapota, Coconut have also occupied area in the State.

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.

Gujarat State Vegetables Production in Thousand MT for year 2013-14



Gujarat State Spices Production in Thousand MT for year 2013-14



3. New Policy Initiatives in Horticulture sector in Gujarat

The agricultural credit is likely to touch INR 7350 Billion in the current year. Govt. has increased it by INR 350 Billion in current union budget.

INR 5.30 Billion allocated in Union budget 2015-16 to support micro-irrigation, watershed development and the 'Pradhan Mantri Krishi Sinchai Yojana'.

Mission for Integrated Development of Horticulture

During 12th Plan 2012-17, the central Government launched the Mission for Integrated Development of Horticulture to integrated all the government initiatives (MIDH) having following components: National Horticulture Mission (NHM), Horticulture Mission for North East & Himalayan States (HMNEH), National Bamboo Mission (NBM), Central Sector Scheme of National Horticulture Board (NHB), Coconut Development Board (CDB) and Central Institute for Horticulture (CIH) for holistic development of sector.

The main objectives of the scheme are:

- Promote holistic growth of horticulture sector, through regionally differentiated strategies.
- Enhance horticulture production; improve nutritional security and income support to farm households and other.
- Establish convergence and synergy among multiple on-going and planned programmes for horticulture development.
- promote, develop and disseminate technologies
- Generate employment for skilled and unskilled persons, especially unemployed youth.
- Establishment of Six high-tech vegetable plus nurseries (Valsad, Navsari, Vadodara, Petlad, Talala, and Sabarkantha).
- Promoted High-density plantation (Pomogranate – (4 x 3 Mtr) & Mango (5 x 8 Mtr)).
- 76 On-farm grading/sorting units for potatoes / round vegetables
- Concentration on project based activities
- Integrated projects on F & V Cold chain (grading-sorting, packaging, pre-cooling, pack-house, ripening, multi commodity cold storage-refer van facilities)

Soil Health Card

A scheme of "Soil Health Card" has been initiated to provide farmers status on soil nutrient of their soil and recommendation on appropriate dosage of nutrient to be applied for improving soil health and its fertility.

4. Major Companies active in Gujarat

Jain Irrigation System Limited

Jain Irrigation Systems Ltd. (JISL) is pioneer in the Micro Irrigation Industry in India. The Corporation has multi product industrial profile and are manufacturers of Drip and Sprinkler Irrigation Systems and Components; PVC Pipes, Polyethylene (HDPE, MDPE) & Polypropylene Piping Systems; Plastic Sheets (PVC & PC sheets); Agro Processed Products includes Dehydrated Onions and Vegetables; Processed Fruits (Purees, Concentrates & Juices); Tissue Culture, Hybrid & Grafted Plants; Greenhouses, Poly and Shade Houses; Bio-fertilizers; Green energy solutions includes Solar Photovoltaic (Solar lighting and appliances, Solar pumping systems), Solar water heating systems, Bio-Energy sources; Financial Services and other agricultural inputs.

Website: <http://www.jains.com/>

Neel Agrotech Private Limited

Neel Agrotech Pvt. Ltd. Is a professional company, diverse business activities like marketing of agri-products, Provider of Greenhouses / Playhouses, Consulting & Turnkey Project on agriculture Cultivation, Contract Cultivation on Different Crop & Export of Food products. Website: <http://www.neel.co.in/>

Champion Agro Limited

Champion Agro Ltd is a leading Agro Retail Company that has introduced the concept of Agro retail malls in Gujarat. Company has set up 34 agro clinics in short span of three years. This chain of agro centres served as one stop shop for farmers by providing Agri-Inputs, Farm Machinery, Cattle Feed and other agri allied products. Under the umbrella of services, company provides agronomic services including soil testing, crop inspection, weather forecasts and advisory services on farm credit, crop loan, life insurance and medical Insurance etc. The company is pioneered in providing quality fresh produce to the market through its subsidiary Champion Agro Fresh and has diversified itself in the line of Contract farming for Baby corn, Banana, Pomegranate and other Horticulture products as well as wheat and oilseeds.

Website: <http://www.championagro.com/profile.htm>

Desai Fruits & Vegetables



India's leading banana producer, focused on both the strongly growing Indian domestic as well as export markets. DFV has long established links to farmers and is the benchmark for sustainable and socially responsible farming: currently approx. 1,000 farmers are under contract with a production volume of over 50,000 tons in FY10/11 and nearly doubling year after year.

With over 4000 containers exported over last 4 years, DFV is one of India's largest exporters of bananas. Its major international markets are Dubai, Iran, Kuwait, Saudi Arabia, Iraq, and Oman with several other countries in the Middle East keen to import the product. DFV is also the first company from India to successfully supply to Ukraine. In the long term, the vision is to expand into markets in Eastern Europe and the Mediterranean rim countries.

Website: <http://www.desaifv.com/contactus.php>

5. Challenges for the sector, as opportunities for Dutch Companies

Challenge 1: Unpredictable rain and frequent draught situation

Gujarat faces major challenge of crop failure due to unpredictable rain hence there is strong need of adoption of Modern irrigation technologies and protected cultivation. Small land holding hinders farmers from purchasing costly equipment due to lack of resources this leads to the demand of economically viable irrigation technologies.

Opportunities for Dutch companies: Offer economically viable innovative irrigation and protected cultivation technologies for the development of Horticulture.

Challenge 2: Lack of Good Agriculture Practices

Gujarat as well as India's products are facing challenges of fetching acceptance and good prices in domestic as well as international market due to lack of good agriculture practices. Over use of chemical fertilizers and residue contamination above acceptance level are major challenges of sector.

Opportunities for Dutch companies: Offering good quality seeds leading to lesser need of pesticides and providing innovative technologies for organic farming.

Challenge 3: Lack of Knowledge, Skills and Ability (KSA)

There are four agriculture institutes in Gujarat but still there is strong need of KSA development at farm level. Farmers are still having bias toward traditional cultivation methods.

Opportunities for Dutch Companies: Collaboration with Government organization and Agricultural Institutes for Training of farmers, Students, and Government officers.

Challenge 4: Small Land Holding of Farmers

Average land holding of farmers in Gujarat is of only 2.1 hectares. This leads to viability issues when farmer thinks of technology adoption or farm mechanization. Various concepts of Contract farming and Co-operative Farming are at emerging state in Gujarat.

Opportunities for Dutch Companies: Dutch can still have benefit earlier entry by looking in to scope for contract farming and Co-operative farming. Development of this kind of concepts and government focus for subsidies in technology adoption bring opportunity for Dutch to be knowledge and technology partner for Gujarat as well as India.

Challenge 5: Lack of research support and less productivity

Our farmers are having lack of adequate support on research in developing indigenous farm equipment and crops. Therefore, the productivity and yield is not comparable with many advanced region.

Opportunities for Dutch Companies: Dutch companies can focus this area and supply their innovative implements and equipments. Dutch can introduce new high yielding variety of seeds and planting materials.

6. Relevant trade fairs and Conferences

Agri Asia 2015 - International Agriculture Technology Exhibition and Conference

The Agri Asia exhibition, held once in a year, is one of the leading international Agriculture Events of its kind to showcase international agriculture technologies. This Agriculture Exhibition traditionally attracts many Ministers of Agriculture, decision-makers, experts, practitioners and trainers in agriculture, as well as thousands of visitors from all around the globe.

Dates: 10th -12th September 2015

Venue: Mahatma Mandir, Gandhinagar, Gujarat, India.

Website: <http://www.agriasia.in/>

Agri talk India

It is The 5th Edition of AgriTalk India exhibition on agriculture that will showcase the latest Technological Advancements, Products, and Services in the Field of Agriculture.

Date: 23rd to 26th December

Venue: Shastri Medan, Rajkot, Gujarat, India.

Website: <http://www.agritalkindia.com/>

Krushhi Mahotsav

Krushhi Mahotsav is an intensive convergence and mass contact strategy held every year for one full month during May-June. Its critical components include Krushi Mela, Exhibition and Seminars/Talks. Experts from agricultural universities directly interact with farmers at the village level and area specific and crop specific issues and concerns of farmers are attended to.

Link: <http://dag.gujarat.gov.in/krushi-mahotsav.htm>

7. Relevant Authorities

Agriculture and Co-operation Department, Government of Gujarat

The Agriculture & Co-operation Department of Gujarat Govt. takes care of agriculture and related matters in its charge like horticulture, soil conservation, dairy development, animal husbandry, and formation of policies / schemes in co-operative activities as well as implementation, monitoring and supervision.

Website: <http://agri.gujarat.gov.in/>

Gujarat Agro Industries Corporation Limited

Gujarat Agro Industries Corporation Ltd.(GAIC) was set up in the year 1969, under the Companies Act-1956, with the objective of promoting agricultural activities and development of agro based industries in the State of Gujarat.

Website: <http://www.gujagro.org/>

National Horticulture Board

National Horticulture Board (NHB) was set up by the Government of India in 1984. NHB implements various schemes under overall supervision and guidance of the Board of Directors of NHB as well as the Department of Agriculture & Co-operation, Ministry of Agriculture, Govt. of India.

Website: <http://www.nhb.gov.in/>

Mission for Integrated Development of Horticulture (MIDH)

A Centrally Sponsored Scheme of MIDH has been launched for the holistic development of horticulture in the country during 12th five year plan. The scheme, which has taken take off from 2014-15, integrates the on-going schemes of National Horticulture Mission, Horticulture Mission for North East & Himalayan States, National Bamboo Mission, National Horticulture Board, Coconut Development Board and Central Institute for Horticulture, Nagaland.

Website: <http://midh.gov.in/>

National Bank for Agriculture and Rural Development (NABARD)

NABARD is a device established for providing undivided attention, forceful direction and pointed focus to the credit problems arising out of integrated rural development the bank came into existence on 12 July 1982 by transferring the agricultural credit functions of RBI and refinance functions of the then Agricultural Refinance and Development Corporation (ARDC).

Website: <https://www.nabard.org/>

8. 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.htm>

Appendix: Overview of Gujarat State

Geographical Overview of Gujarat

Gujarat is a state having 1600 KMs coastline located in west coast of India. The Arabian Sea borders the state both to the west and the southwest. Gujarat is also a Gateway to the rich land-locked Northern and Central Vicinity of the country. Gandhinagar, the capital city of Gujarat is located close to Ahmedabad, the commercial capital. The state currently has 33 districts (248 *talukas*, 18,618 villages, 242 towns).

One of the reasons for good Infrastructure facilities in Gujarat is its flat landscape that makes infrastructure development easy compared to other states of India.



Socio Economic Overview of Gujarat

Gujarat has population of approximately 60.3 million accounting for about 5% of the India's population. It accounts for 6% of land area of India and is India's most progressive States with a positive development quotient that has always capitalized on its strength to leverage strategic opportunities. Its continued progress is based on business friendly policies and proactive administration, which has led to the State being a preferred investment destination. Gujarat is a strong Economy with the SDP rising at an average growth rate of 10.1% since 2005 to 2013, more than the national average. Gujarat pays a 27% tax of India. Gujarat achieved an annual growth rate of 9.51% during 2007-2012.

Gujarat is located on the western coast of India and has the longest coastline of 1,600 km among all states in the country. The state shares its borders with Rajasthan, Madhya Pradesh, Maharashtra and the Union Territories of Daman & Diu and Dadra & Nagar Haveli. The Arabian Sea borders the state both to the west and the southwest.

Gujarat is one of the leading industrialized states in India, which attracted cumulative FDI worth US\$ 11 billion from April 2000-March 2015 and is the second highest recipient of FDI in India after Maharashtra. At current prices, Gujarat's gross state domestic product (GSDP) was about US\$ 142.38 billion over 2014-15. Average annual gross state domestic product (GSDP) growth rate from 2004-05 to 2014-15 was about 12.11 per cent.

Gujarat is considered the petroleum capital of India due to presence of large refining capacity set up by private and public sector companies. The state is the world's largest producer of processed diamonds, accounting for 72 per cent of the world's processed diamond share and 80 per cent of India's diamond exports. With a contribution of 65 to 70 per cent to India's denim production, Gujarat is the largest manufacturer of denim in the country and the third largest in the world. Gujarat contributes around 19.1 per cent to India's total exports of goods in 2014-15. The state has excellent infrastructure as compared to other states. There are 45 ports, 18 domestic airports and one international airport. There are 106 product clusters and 60 notified special economic zones (SEZs). Large-scale investment is expected in Gujarat as part of the US\$ 90 billion Delhi-Mumbai Industrial Corridor (DMIC).

Gujarat's Industrial Policy, 2015, offers attractive incentives and concessions for prospective investors.

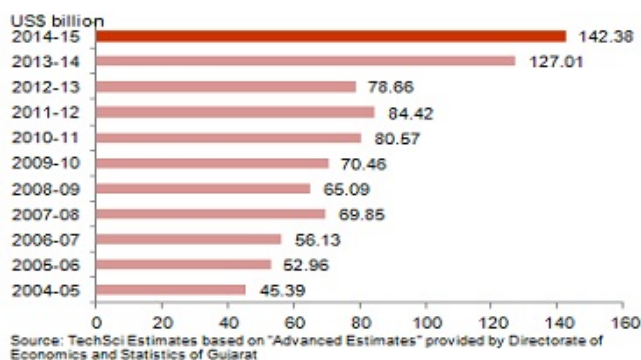
Gujarat is one of India's most industrialised states in India, with an enviable track record of attracting investments over the last decade to become the 'most favoured investment destination' of Indian Republic. Gujarat has a variety of industries including engineering and auto manufacturing, food and agri-business, textiles, gems and jewellery, mineral and mining and ports and shipbuilding. Some of the other important industries in the state include chemicals and petrochemicals, pharmaceuticals and tourism, with nearly 30 per cent of India's petrochemicals business being conducted in Gujarat, while those of chemicals and pharmaceuticals account for almost 50 per cent. Gujarat's share in manufacturing of soda ash, salt and caustic soda is around 90 per cent, 70 per cent and 20 per cent, respectively. Some of the Identified industrial projects in Gujarat are: Agro Based & Food Processing Industry; Chemical & Petrochemicals; Information Technology; Mineral-Based and Allied Industries; Plastic and Allied Industries; Port-Related Activities & Infrastructure; Textile & Apparels Industry; Gems and Jewelry.

About Gujarat: Industries, Economy, Ports, Exporters, Climate, Geography

Latest update: August 2015

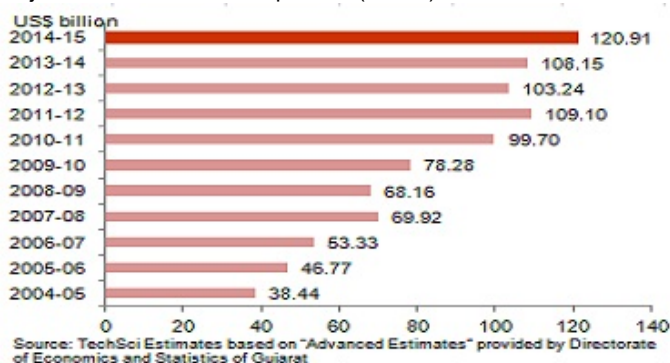
Economic Snapshot: GSDP of Gujarat

Gujarat's gross state domestic product (GSDP) was at US\$ 142.38 billion over 2014-15



Economic Snapshot: NSDP of Gujarat

Gujarat's net state domestic product (NSDP) was at US\$ 120.91 billion over 2014-15



Indian Economy is expected to grow at the rate of 7.5% surpassing china in financial year 2015. Indian economy is being investment destination for foreign player and FDI in India grew by 40% to reach 1760 Billion INR for the year 2014-2015.

India's biggest asset is huge size of its young and working population class. The proportion of population in the working age-group 15-59 years is expected to rise from 57.7 per cent in 2001 to 64.3 per cent in 2026.

As per the report by United Nations published in November 2014 India has 356 million people between ages of 10-24 years making it largest country in terms of young population.

India has been ranked world's No 1 investment destination by the World Bank, based on baseline profitability ranking methodology.

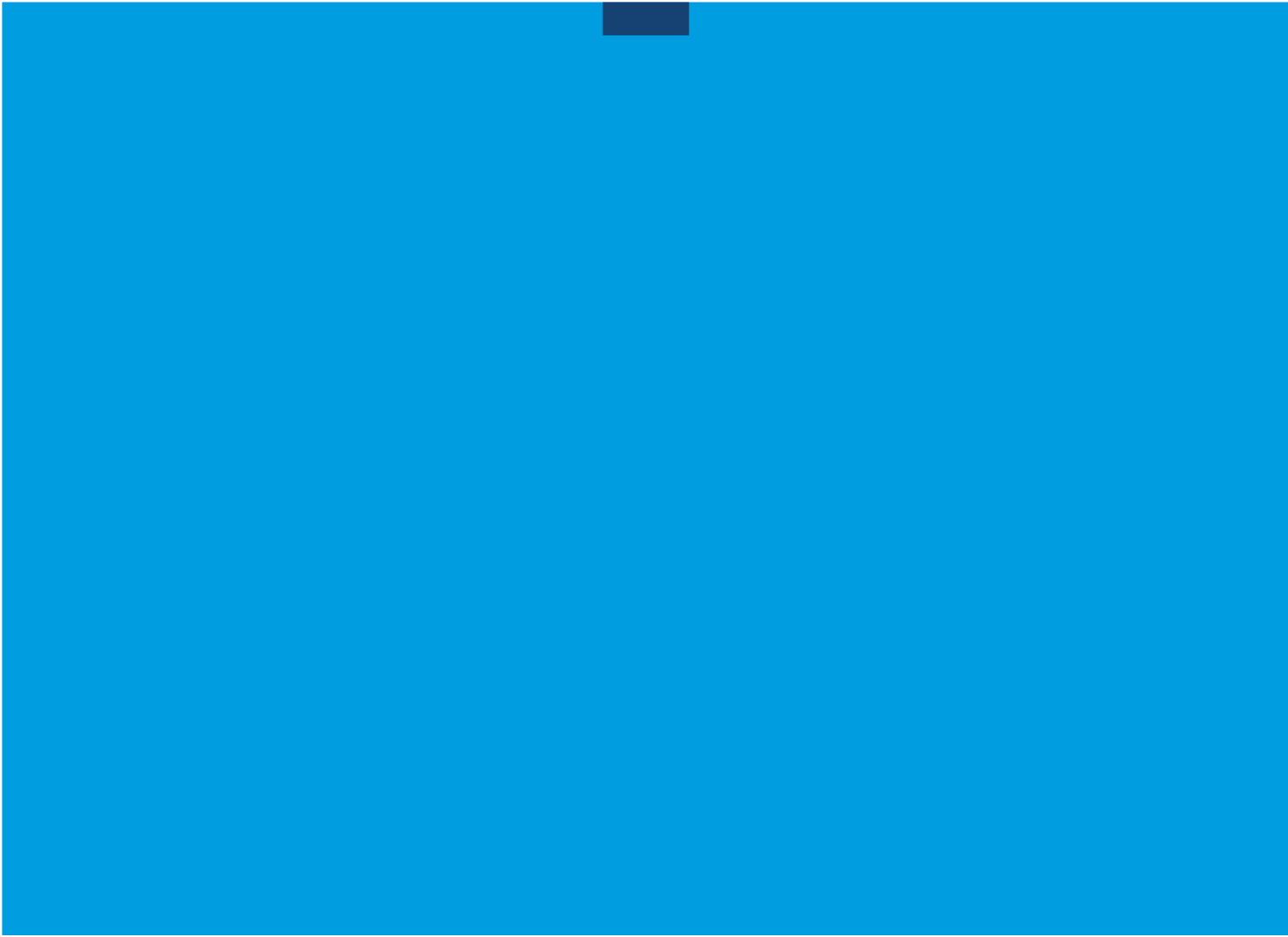
The Netherlands Business Support Office (NBSO) in Ahmedabad supports trade and investment of Dutch enterprises in Gujarat State in close cooperation with the Embassy of The Netherlands in New Delhi. Gujarat and the Netherlands have a close business relationship in Agriculture, Ports, Shipping & Logistics, Chemicals, Water & Life Sciences & Healthcare, Minerals, etc.

Gujarat is the best Indian State to do business in, shows the World Bank's 'ease of doing business' ranking of the Country's states. The State, which has topped the list with 71.14 per cent score.

Rank	State	Score	Rank	State	Score
1	Gujarat	71.14%	17	Himachal Pradesh	23.95%
2	Andhra Pradesh	70.12%	18	Kerala	22.87%
3	Jharkhand	63.09%	19	Goa	21.74%
4	Chhattisgarh	62.45%	20	Puducherry	17.72%
5	Madhya Pradesh	62.00%	21	Bihar	16.41%
6	Rajasthan	61.04%	22	Assam	14.84%
7	Odisha	52.12%	23	Uttarakhand	13.36%
8	Maharashtra	49.43%	24	Chandigarh	10.04%
9	Karnataka	48.50%	25	Andaman and Nicobar Islands	9.73%
10	Uttar Pradesh	47.37%	26	Tripura	9.29%
11	West Bengal	46.90%	27	Sikkim	7.23%
12	Tamil Nadu	44.58%	28	Mizoram	6.37%
13	Telangana	42.45%	29	Jammu and Kashmir	5.93%
14	Haryana	40.66%	30	Meghalaya	4.38%
15	Delhi	37.35%	31	Nagaland	3.41%
16	Punjab	36.73%	32	Arunachal Pradesh	1.23%

The World Bank report, 'Assessment of State Implementation of Business Reforms', was released in New Delhi on Monday 14th September, under the aegis of Confederation of Indian Industry.

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