

Annexure - I **Executive Summary**

The Dahej – Bharuch - Umbergaon Corridor Study has been initiated by GIDB to assess the Economic Development Potential of the Corridor. The objective of study is to assess the existing strengths of human and natural resources, industry base and net worked infrastructure in the Corridor with a view to leverage it for further economic development in the Corridor. The scope of work of the study is as follows:

1.1 SCOPE OF WORK

□ MODULE I

- 1. Assessment of natural resources – forest, agriculture, mineral and human resources**
- 2. Estimate level of income and purchasing power of local population**
- 3. Assess existing infrastructure available such as water, road, rail, ports, communication, industrial parks, education facilities, health care, prospective market consumption centres, manpower availability etc.**

□ MODULE II

- 4. Review present status of industrialization in Corridor.**
- 5. Suggest measures for attracting further investment in existing industrial sectors**
- 6. Identify additional infrastructure facilities required for attracting further investment in existing industrial sectors.**
- 7. Identify new sectors for industrial investment.**
- 8. List actions required for promotion of industries in new sectors**

□ MODULE III

- 9. Suggest action plan to attract industrial investments.**
- 10. Suggest policy interventions commensurate with corridor development.**
- 11. Provide suggestion(s), if any, to improve level of economy of the Corridor.**

1.2 MODULE I: DIAGNOSTIC ASSESSMENT

Diagnostic assessment calls for study and evaluation of Corridor's natural resources viz. Minerals, Agriculture, Forestry, its Socio-Economic profile and economic resources comprising industry and infrastructure.

1.2.1 Agriculture Resource Assessment

The principle agricultural crops of the Corridor districts comprise pulses like Tur, sugarcane, Tobacco, cotton spices like chillies and horticulture products like fruits and vegetables. Corridor has 37% of its gross cultivated area under irrigation.

Table 1: Potential for principal crops of Corridor

Crop	Producing Districts	Production ('000 tons)	Share in Gujarat's production	Potential
Tobacco	Vadodara	31.4	17%	Bidi Manufacturing, Insecticides, Furfural, organic acids
Spices	Surat	2.4	11%	Chilly processing & exports
	Vadodara	1.2	6%	Units using medium and superior long fiber
Cotton	Bharuch	30.42	4%	Cotton extracted oil, animal feed, linters
	Vadodara	55.25	8%	Cultivation of organic cotton
Banana				Export of fresh fruits
Mango				
Marine Fisheries	Valsad	70.9	12%	Processed Fish products
Inland Fisheries	Bharuch	26.9	45%	Farming exotic fish
	Surat	5.9	10%	
	Valsad	3.6	6%	
	Vadodara	3	5%	

1.2.2 Mineral Resource Assessment

Oil, Natural Gas & Lignite are the three important minerals of the Corridor. Besides, the Corridor also produces large quantities of minor minerals like Fluorspar, Silica sand, Dolomite, Fluorite, Quartz, Marble, Granite.

Mineral	District
Oil & Gas	Bharuch, Surat
Marble	Vadodara
Lignite (ranks second in India in terms of production)	Surat & Bharuch
Fluorspar (ranks first in India in terms of production)	Vadodara
Dolomite	Vadodara
Silica Sand (ranks first in India in terms of production)	Bharuch

Availability of oil / natural gas reserves onshore and in the sea off its coast, provides opportunity for increased industrial and domestic use. Lignite has a huge demand in all industries because of the need for cheap energy. Fluorspar

has a possibility of commercial exploitation because of large deposits being available at Ambadungar near Vadodara.

1.2.3 Forest Resource Assessment

The districts of Surat and Valsad exhibit fair forest cover. There is a limited availability of herbs in the Corridor. The identified districts in the corridor in Gujarat that have some possibilities for the growth of herbs are Bharuch and Valsad.

The Government of Gujarat has established herbal gardens at Rajpipla and Jitnagar in Bharuch and Rupvel in Valsad. The herbal gardens' produce is sent to Vanaspati Collection Centers, promoted by the Government of Gujarat.

The prospects for forest resource based activities are in following areas:

- Potential for growth in medicinal applications considering that Gujarat holds a 30% share of the Ayurvedic remedies market in India.
- Production of Natural dyes & dyeing auxiliaries from plants for application in textile industry under '**Eco Labels**'.
- Recommendations for realizing potential in these areas are as follows:
- Research in natural dye applications - fastness parameter, time saving & simple application technologies.
- Targeted Programmes for supporting eco-friendly textiles segment.
- Encourage commercial cultivation of natural dye producing herbs.

1.2.4 Socio Economic Assessment

The Corridor, with a population of more than 13 million is characterized by a high population density of 258 persons per sq. km. With districts like Vadodara and Surat boasting a high urbanization ratio of more than 45%. However, the Corridor districts exhibit a comparatively lower literacy rate between 60%-65% inspite of being one of the most developed regions of the state.

The distribution of workers across various categories clearly highlights that the most industrialized districts in the Corridor are Surat, Vadodara and Valsad. Industries in these districts have a high potential for further investment due to higher industrial output per person representing better productivity in the districts based on its natural advantages.

Table 2: Socio Economic profile summary of Corridor Districts

PARAMETERS	DISTRICTS						
	Unit	Vadodara	Bharuch	Surat	Navsari	Valsad	Narmada
Area	Sq.km	7549.5	6527.0	7657.0	2209.2	3034.8	2755.5
Population	Lakh nos.	36.4	13.7	50.0	12.3	14.1	5.1

PARAMETERS	Unit	DISTRICTS					
		Vadodara	Bharuch	Surat	Navsari	Valsad	Narmada
Male	Lakh nos.	19.0	7.1	27.2	6.3	7.3	2.6
Female	Lakh nos.	17.4	6.6	22.7	6.0	6.8	2.5
Literacy	Per cent	71.3	74.8	75.0	76.0	69.4	60.4
Male	Lakh nos.	80.7	93.4	81.8	82.9	78.1	72.9
Female	Lakh nos.	61.2	65.4	66.7	68.7	59.9	47.2
Density	Sq.km	482.1	209.9	652.5	556.4	464.8	186.6
Primary Schools	'000 Nos.	1067	1144	2667	831	1067	744
Primary Students enrolled	'000 Nos.	84	339	211	448	84	367
Primary School Teachers	Nos.	2224	8910	4706	8235	2224	5311
Primary Students/Teacher	Nos.	38	38	45	54	38	69
Secondary Schools	Nos.	119	173	386	126	119	57
Primary Health Centre	Per lakh population	4.61	3.65	1.30		4.61	
Rural Families	Nos.	346978	214410	406044	149096	158898	88908
BPL Families	Nos.	132053	109593	195761	75512	85269	73494
% of BPL Fly	%	38.06	51.11	48.21	50.65	53.66	82.66
Urbanization	%	45.3%	25.7%	60.0%	27.4%	27.0%	10.1%
Per Capita Industrial Output	Rs.	45,615	42,011	32,205	2,754	14,071	5,272
Rank in the State		15	20	18	19	21	24

1.3 MODULE II: INDUSTRIAL SECTORS ANALYZED – EXISTING AND EMERGING

As part of this module the following industrial sectors have been analysed and sector specific recommendations have been made w.r.t to infrastructure projects, programmes and policy level initiatives. The industrial sectors studied comprise:

- Chemical Sector
- Textiles sector
- Gems & Jewellery

- Pharmaceuticals sector
- Agro processing
- Paper
- Engineering
- Glass & Ceramics

Sunrise sectors have also been analysed in the context of the Corridor and recommendations made for exploiting their development potential. These sectors comprise:

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- Biotechnology.
- Research & Development and IT in Manufacturing.
- Environment Goods and Services.

The summary of analysis and recommendations for each sector follows:

1.3.1 Chemical Sector

With its large chemical industry base, proximity to feedstock and global scale manufacturing facilities in basic petrochemicals the corridor exhibits substantial potential to emerge as the production, transportation & distribution hub for chemicals & value added products. It is estimated that chemical sector can grow to size of US\$ 16 billion by 2010 in the Corridor with correspondent increase in industrial productivity and has the potential to create employment for as many as 0.25 million people comprising around 0.05 million direct and 0.2 million indirect employments.

To achieve this vision following projects, programs, policies and administrative measures have been recommended:

1. Undertake programmes to stimulate demand growth in polymers, such as:

- Mission critical projects for plastic application in agriculture.
- Setting up “Project Benefit Demonstration Centres” in each district exhibiting benefits resulting from reduced Water usage, Power consumption Fertiliser consumption and yield improvements.
- Programmes for developing garment sector to drive demand for fibre intermediates.

2. Develop facilities for providing services that help address requirements under non-tariff barriers, thereby enabling access to global markets

- Create facilities for meeting testing norms and data requirements of regulated markets.

- Pursue for early commitment by Government of India to Good Laboratory Practices of OECD.
- Assist in setting up of QSAR Centre for Statistical Modelling and Toxicity Research and Testing Laboratories for US/EPA compliance & data generation.

3. Undertake Chemical Cluster Development initiatives in Corridor

It is estimated that by 2010, there will be demand for industrial land for chemical industries to the extent of 1,800 Ha within Corridor. Cluster development at Bharuch, Vadodara, Pardi and Vapi needs to be pursued. Bharuch Chemical Cluster can be a successful demonstration and following approach and programs can comprise the cluster development initiative:

- Identify a Cluster Facilitator having strong relationships within the cluster community in-depth knowledge of local firms and ability to link with common agendas for cluster participants.
- Identify key stakeholders and understand opportunities and constraints, quality of linkages across the cluster and the extent to which local players are working as a team. Assess possible leaders for leading the cluster initiative.
- Develop a Vision for the Cluster and hold workshops with cluster participants to identify steps to realize vision.
- Prepare Immediate Action Agenda for implementation by Cluster Task Forces. e.g. in Bharuch
 - Conveyance facility for disposal of effluents into deep sea enabling expansions and fresh investment in the region.
 - Augmentation of underground drainage schemes at the industrial estates in cluster.
- Pursue initiatives for common infrastructure in chemical cluster.
- Provide Permanence to Cluster Initiatives by Institution Building.
- Undertake Strategic Initiatives for Cluster Competitiveness.
- R&D Centre of Excellence in cluster by tying up with UDCT, IICT and/or NCL:
 - Set-up Aggregator for supply and marketing consolidation.
 - Clean Technology Development Centre.

4. Rationalize power cost and state level taxes discouraging plastic processing industry

- Benchmark state level taxes and levies on plastic products to competing states/union territories.
- Align sales tax structure in line with VAT to remove distortions.
- Address the issue of high cost power by benchmarking power costs and electricity duties to neighbouring states/union territories as well as international competitors.

- Cooperative captive power supplies by clusters to address cost distortions that result from application of duty on captive power.
- Encourage clusters for plastic manufacturing units.
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5. Programmes for Plastic use and recycling research program.

6. Policy measures to promote plastic substitutes in place of contemporary materials

- Preferential procurement of plastic substitutes on the underlying rationale of conservation of perishable products such as wood etc.
- Favourable tax regime to encourage substitution of perishable contemporary materials with plastics in construction.
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7. Pursue reduction of state sales tax & import duties on feedstock to increase competitiveness.

8. Provide an enabling environment for industry

- Pursue Labour reforms.
- Pursue holistic environment and regulatory measures rather than product specific 'end of pipe' mandations on emissions.
- Evaluate option of relaxing regulatory/inspection compliance requirements for holders of internationally recognized certifications like ISO 9000 and ISO 14000.
- Collective responsibility needs to be placed on Cluster Associations with the objective of managing the zones' compliance of environmental norms as a whole in addition to compliance at unit level.

9. Policy measures required at Central Government Level

- Repeal distortionary policies like JPMA affecting demand growth.
- Pursue for reduction of import duties on catalysts.
- Extension to chemicals of the "Special Financial Package for Exports".
- Pursue for inclusion of specialty chemicals under "Market Access Initiatives".

10. Administrative measures

- Facilitate outsourcing for SMEs, by undertaking a time-bound program of targeted marketing campaigns for identified majors operating in global markets.
- Stimulate polymer demand through joint development programs with industry.

1.3.2 Gems & Jewellery Sector

Surat has the potential to emerge as one stop source for diamond cutting, polishing and jewellery manufacturing in the world. Surat's industry can double its size from current US\$ 6.7 billion to US\$ 12 billion by 2010. Growth will be driven by studded diamond jewellery segment, which has the potential to grow aggressively to a size of US\$ 3 billion by 2010. At the same time, Surat's diamond cutting and polishing industry needs to maintain its dominant share in India's exports of Gems & Jewellery and has potential to grow to a size of US\$ 9.8 billion by 2010.

To achieve this vision following projects, programs, policies and administrative measures have been recommended:

1. Derisk import dependence by pursuing alternative supply sources

- Create a forum comprising GJEPC and Surat Diamond Association to initiate dialogue with alternative diamond producers such as Namibia, Russia and Canada.
- GoG would also be required to enlist the support of Government of India in this initiative as it would be dependent on bilateral government negotiations.
- The forum can also initiate dialogues with Indo Argyle Diamond Council for obtaining supply of roughs from Argyle in order to diversify procurement.
- Subsequently, this arrangement can be formalized into a Nodal Agency for trade alliances.

2. Pursue initiatives for Surat to emerge as Gems & Jewellery Cluster

For developing the cluster, the State government can fund the setting up of a Special Purpose Vehicle (SPV) with participation from Government of India and Surat Diamond Association. Various programmes can be pursued by the SPV viz.

- Brand Building initiatives.
- Market & technology information assistance to industry.
- Training and skill development activities.
- Fund courses to impart skills and train manpower.
- Processing skills for high caratage diamonds.
- Jewellery design & manufacturing skills. Courses in following key skill sets are a pre-requisite:
 - Jewellery manufacturing.
 - Retailing, and.
 - Customer Relationship Management.
- Measures for skill development :
 - Assistance to Universities in Gujarat for degree courses in gemmology and jewellery manufacturing arts.

- Sponsor technical training courses and research and development in jewellery manufacturing techniques.
- Development of courses and HR skills can be undertaken through collaboration with international centres of excellence like Italy via faculty exchanges and student exchange programs.

3. Promote brand “Surat

The Government can pursue a multi pronged approach for making Surat a preferred investment destination for diamond and jewellery manufacturers as well as generating customer recall of “Surat” brand.

- **Investment road shows** directed at overseas diamond cutting and jewellery manufacturing firms to set up shop in Surat Gems and Jewellery Park.
- **Alliance with rough manufacturers** for mutually beneficial arrangements with associations like IADC to help the industry penetrate into new markets.
- **Representation in International Trade Fairs** As an expression of Government support to promote, showcase and facilitate investments in Surat.
- **Hold trade Fair in Surat** On the lines of IIJS and similar fairs in Basel, Bangkok and Japan.
- **Emphasis on Safety** by providing high level security in the diamond clusters and promote Surat as the safest place to pursue Gems and Jewellery business.
- **Promotional print & media campaigns** to build brand “Surat” for diamonds as well as jewellery targeted at customers and manufacturers.

4. Identify and pursue infrastructure development projects

- Ensure that the proposed G&J park in Surat houses:
 - Training & Design Centre.
 - Certification and Hallmarking Centre.
 - Exhibition & Marketing Centre.
 - Strong rooms.
 - Wastewater treatment facility.
- In addition following facilities need to be pursued at Surat:
 - Extension of runway length in Surat Airport to 2300 meters in medium term to enable landing of large sized aircraft.
 - Adequate number of 5- Star hotel facilities in Surat for accommodating high net worth visitors.
 - Recreational and social infrastructure facilities.
 - Customs house in G&J park for facilitating exports through Surat.

- Broad band access in G&J park for internet trade.

1.3.3 Textile Sector

There is a significant presence of synthetic textile sector in the corridor. Demand for cotton fabric is expected to see a sluggish growth; on the other hand high growth in demand is expected for synthetic textiles. The corridor can leverage its presence in the high growth segment of synthetic textiles. Textile and apparel sector output for the corridor has a potential to grow to \$ 4 billion by 2010 attracting investments of \$ 1.67 billion and create additional employment for about three and a half lac people. To achieve this vision following projects, programs, policies and administrative measures have been recommended:

- Develop specialized Hitech Textile Parks at Choryasi/ Pandesar and Vapi.
- Pursue power tariff rationalization.
- Improve off-take of TUFs:
 - Initiate awareness programmes and workshops in co-ordination with Powerloom Service Centres.
- Provide other incentives for units opting for modernization
 - Reduced power tariffs for shuttle-less loom units.
- Develop training facilities for apparel and textile industry
 - Garmenting – stitching, embroidery etc.
 - Garment design.
 - Spinning, Weaving and Processing.
- Encourage development of cooperatives/market aggregators for fragmented textile industry.
- Attract prominent composite textile/apparel manufacturing firms.
- Pursue labour reforms - Amend the Industrial Disputes Act, 1947 and Contract Labour (Regulation and Abolition) Act, 1970 to confer greater flexibility in rightsizing and deployment of their workforce.
- Address Social issues:
 - Develop an income security system to pay unemployment benefits to retrenched workers, retrain and assist them in job search.
 - Encourage voluntary implementation of verifiable standards like SA-8000 incorporating aspects like minimum wages, no child labour, occupational health & safety, statutory working hours non-discrimination, and no forced labour.

1.3.4 Pharmaceuticals sector

The key centres of pharmaceutical research and manufacturing in the corridor are the districts of Vadodara, Valsad and Bharuch. The Corridor has potential to emerge as the preferred investment destination for Indian and international pharmaceutical manufacturing and research companies. Pharmaceutical sector

output for the corridor has a potential to grow to US \$ 4 billion by 2010, creating additional employment for more than four lakh people. The presence of a strong chemical and pharmaceutical base, along with focused government support and interventions can be significant catalysts to the growth of pharmaceutical sector in the corridor.

To achieve this vision, following projects, programs, policies and administrative measures have been recommended:

1. Cluster Development Scheme

The initiatives under cluster development programme will comprise:

- Pharmaceutical I-Park at Vadodara.
 - There is potential for a 300 Ha industrial park for pharmaceutical sector in the district of Vadodara.
- Hitech Pharma Park at Limbdi.
- Establish drug/medical research institutions.
- Awareness program for upgrading drug manufacturing facilities.

2. Expand pharmacy education facilities in the corridor

- Practical training to fresh pharmacy graduates.
- Centralized information center for clusters.

3. Other infrastructure initiatives

- Develop efficient container handling facility at Hazira port with good rail and road connectivity.
- Develop social and urban infrastructure.

4. Key policy changes recommended

- Raise investment limit for SSI units to 5 crore so that upgradation cost for units for the purpose of Schedule-M or various GMP compliances does not affect their SSI status.
- End uncertainty regarding DPCO to encourage investments in the sector.

5. Rationalise approval procedures – align norms to international research requirements

- Approval procedures for pre-clinical testing on animals.

1.3.5 Agro Processing sector

The production of Banana constitutes more than 50% of total production of fruits in Gujarat and has a significant presence in South Gujarat. The area under

production of bananas in Gujarat in 2002-03 was around 35,000 hectares and growing at a CAGR of 2.6%. The Corridor produces around 40% of the total Mango production in Gujarat. The area under production of mangoes in Gujarat in 2002-03 was around 69,871 hectares.

Mango and Banana varieties of Corridor have the potential to emerge as recognized valued brands in export markets and the Corridor can emerge as a major centre for production, trading and export of fresh and processed mangoes, bananas and vegetables. Exports of fresh mangoes and Bananas can grow to US\$ 280 million by 2010 and trade in processed mango products has potential to grow to US\$ 40 million by 2010. For this the Corridor needs to attract leading exporters/processors of fruits and vegetables for procuring & exporting fruits and locating their processing facilities. The Corridor will also need fully integrated infrastructure from farmgate to domestic and export markets for procurement and selling of fresh & processed fruits and vegetables.

To achieve this vision, following projects, programs, policies and administrative measures have been recommended:

- 1. Pursue contract farming to encourage yield improvements.**
- 2. Provide enabling environment to encourage contract farming**
 - Amendment to APMC Act.
 - Support/facilitate rainfall insurance packages.
 - Deregulate areas for private agri-markets.
 - Quick approval from relevant authorities and provision of services like electricity, water, sewerage etc.
- 3. Forge alliance with corporates for Contract Farming and play a facilitatory role for participation of commercial banks in extending loans to farmers**
 - “Mango/Banana Village Adoption Plan”.
 - Involve Agri-university for introduction and supervision of agronomical practices.
 - Co-ordinate with agri input providers for extension and support services to contract farmers.
 - “Farmers Field School” in such villages to encourage transfer of technology from laboratory to field and impart training in grading, standardization and quality certification procedures.
- 4. Address transport limitations in accessing markets by crop producers**
 - Fruit & Vegetable routes.

- 5. Develop infrastructure to facilitate processing activities**
 - Cold storage infrastructure and warehousing facilities.
- 6. Develop efficient Agro Supply Chain to support processing & retail supplies.**
- 7. Provide processed and fresh fruit handling facility at Surat & Baroda Airports.**
- 8. Ensure internationally acceptable certification facility in each Agro-park.**
- 9. Conduct outreach programmes**
 - Road shows targeted at food brands
 - Associate with research groups such as IDMA, who have knowledge of global markets, to introduce new crop varieties in the state
- 10. Brand building initiatives for Banana.**
- 11. Targeted interventions to improve pre-harvest & post harvest practices**
 - Address disadvantages of high transport & packing costs

1.3.6 Biotechnology sector

Biotechnology is a fast emerging sector finding application in agriculture, pharmaceuticals, and manufacturing and exhibits large-scale employment potential. The Corridor has potential for biotechnological investments in the field of health and industrial biotechnology and needs to focus on attracting, both, Indian and international biotechnology companies. Biotechnology sector has a potential to attract investments of US\$ 720 million and register an output of US\$ 400 million by 2010 thereby generating 88,000 jobs.

To achieve this vision, following projects, programs, policies and administrative measures have been recommended:

1. Developing a biotechnology cluster at Vadodara

There is potential for a 40 Ha industrial park for biotechnology sector in the district of Vadodara. A Biotechnology park at Vadodara will be the nerve center of cluster development initiatives.

- MS University should be developed as the nucleus and key research centre with state of art research facilities and incubation centres.
- Promote networking between education/research institutions and industry
- Targeted programmes for attracting prominent biotechnology companies

2. Key policy initiatives

- Rationalize the approval process for biotechnology products since an overly constrained product approval system in the country for a sector as nascent as biotechnology can be detrimental to its growth.
- Operationalise a time bound, single window clearance system.

1.3.7 Research & Development

India, in recent past has witnessed an increase in R&D sourcing in the areas of Pharmaceuticals/Biotechnology, Engineering & Design Services and Information Technology. In the period 1995-99, a total of 316 patents were filed with more than 40% in the above mentioned categories.

Increased emphasis on R&D in the State, especially Corridor, has the potential to drive competitiveness of Manufacturing, Pharmaceuticals and Biotech industry in the state. Focused efforts should be made to increase Corridor's presence in R&D with a growth target of at least one & half times above the current national average. Focus areas for Corridor in R&D can be offshored experimental R&D activities in the area of Engineering & Design, Pharmaceuticals, Biopharma and Environment Management.

To achieve this vision, following projects, programs, policies and administrative measures have been recommended:

1. Leverage Off shoring opportunities in experimental R&D

- Requires specific actions across four broad directions – viz. funding, infrastructure support, institutional support and monitoring mechanisms.
- Address Manpower Demand Supply Gap for Highly skilled research staff such as PhDs and skilled staff such as graduates/post graduates in science & technology disciplines by :
 - Pursuing programs for increasing attractiveness of R&D as a career choice.
 - Benchmarking Corridor as a preferred supplier of quality manpower by developing “Centres of Excellence in Science & Technology”
- Infrastructure to promote R&D.
 - Setting up of “Centres of Excellence”.
 - Upgrading “Graduate Courses” in Universities/ colleges with a focus on high quality research.
 - Establishing private universities offering specializations in science and mathematics.
 - Holding of sector specific international expositions involving participation of industry and academia from all over the world.

2. Direct funding to Centres of Excellence spearheading R&D initiatives

- Direct funding from the State to specific programs/projects carried out in research institutions/universities.
- Co-funding of fellowships for PhDs through industry.
- Support and encouragement to corporate philanthropy to fund research.

3. Programmes for Institutionalizing R&D

- Identify & select priority areas for R&D.
- Deploy state's knowledge resources on projects.
- Develop robust funding system involving direct appropriation of government funds to key projects.
- Manage programme & Monitor progress by constituting an expert management system comprising third party experts.

4. Pursue “Gujarat Applied Industrial Research Programme”

- Focus on undertaking 2-5 research programmes on an annual basis, in areas that have a potential for commercial application over the next two to three years.
- An independent Expert Committee could be entrusted with the responsibility of inviting research proposals, shortlisting areas of research and related programmes, the terms of reference of the research, defining identifiable milestones and outcomes of the research.
- The overall budget for the Gujarat Applied Industrial Research Programme could be based on an initial allocation of say Rs.5 crores from the state government, and specific contributions from Ministry of Science & Technology, Government of India and industrial houses/ associations.

1.3.8 IT in manufacturing

The industries residing within the Corridor especially, the Small and Medium Enterprises (SMEs) need to have access to adequate information to enhance productivity and facilitate market access. However, the SME sector suffers from inadequacies in provision of business information, which is often slow and cumbersome to access, limited in scope and not provided in an integrated manner. The need is for an integrated information solutions network that links all relevant national and international information sources and operates on a demand-driven and commercial basis by realizing SMEs' trust and support through strong local/community ownership.

Rapid advances in IT have far-reaching effects on business operations or create completely new business processes. IT is becoming crucial in building up new type of businesses - the e-business that includes:

- e-commerce
- e-payments, and
- e-procurement

To achieve this vision, following projects, programs, policies and administrative measures have been recommended:

1. Programme for setting up Cluster IT Infrastructure

- Project for broadband connectivity to Cluster participants.
- Undertake study to assess information needs of Cluster stakeholders
- Set up Special Purpose Vehicle for the facility.
- Prepare Web Portal containing information on services required by stakeholders and also providing linkage to individual sites of each cluster participant.
- To support the business information services, related services have to be offered, such as Business and ICT Training, and Enterprise Internet Solutions (EIS).
- Conduct workshop of cluster participants for building awareness about the advantages offered by ICT and organize training courses on principles of electronic mail, web browsing and e-commerce.

2. Implement ERP Technology in manufacturing

- Obtain consensus of cluster participants belonging to a given industry on implementing ERP.
- Co-ordinate with leading ERP solutions provider to develop a test pilot to be implemented after successful demonstration.
- Incentivize the unit agreeing for pilot implementation by reducing purchase cost of final developed software through subsidy from the Cluster association.
- Customize the test pilot to specific needs of a unit in co-ordination with the solutions provider and cost for such customisation to be borne by the unit.

1.3.9 Environment Sector

The Corridor has a large presence of chemical and textile industry. This offers potential for application of new techniques in environment management as well as environment policies and processes. Mapping of the growth prospects and size of EGS segments with requirements of Corridor suggests that solid & hazardous waste services, water and wastewater management, protection of

ambient air, remediation and consulting services are segments that not only address corridor needs but can also be encouraged to use corridor as a base for offering these services to other regions in the country. The principle factors that contribute to the growth of environment industry in domestic and export markets are:

- R&D and capability for technological improvements
- Size of domestic market
- Servicing and marketing networks

Following projects, programs, policies and administrative measures have been recommended to capture the potential offered by Environment Sector:

1. GEMI as Institute of Environment Excellence.

The current portfolio of GEMI will require to be strengthened and new areas for environmental intervention identified.

- A outline of Environment Management Techniques for industries in Corridor in each sector has been provided

2. Pursue Environment Management Projects – CETPs & Waste Management.

3. Pursue industry modernization by leveraging carbon credit arrangement under Kyoto Protocol.

4. Information assistance to local industry targeting exports.

5. Key policy and administrative measures

- Implement systems/processes enabling third Party verification / assessment.

1.3.10 Glass Industry

There are many large producers of various glass products in the corridor. In addition to the large players, many small and medium units are present in south Gujarat and are concentrated in the district of Bharuch. The Corridor also has a significant presence of major suppliers of raw materials for manufacture of glass viz. silica, quartz and soda ash.

Some of the key constraints faced by the glass industry in the corridor include:

- Uncertainty in natural gas supply
- High cost of power in Gujarat
- Constrained container capacity for exports
- Poor road infrastructure linking glass manufacturing clusters

Following projects, programs, policies and administrative measures have been recommended to stimulate growth in Glass Industry:

1. **Lowering of electricity duty and reducing the extent of cross subsidisation in power tariffs in order to bring down industrial power tariffs to levels comparable with other states.**
2. **Expedite building of container facility at Hazira.**
3. **The government should arrange for the repair and maintenance of connecting roads to NH-8 in terms of improving the surfacing of roads.**
Improvement in the quality of these connecting roads will lead to cost savings and reduction in loss for many glass manufacturers in the corridor.

Table 3: Recommended road sections for surface quality improvements

Road Link	Length (Kms)
▪ Jambusar to NH-8 (near Vadodara)	60
▪ Bharuch - Tankaria – Palej road link to NH-8	20

1.3.11 Paper Industry

The Corridor boasts presence of number of paper manufacturing units and boasts presence of a major industry player viz. Central Pulp & Paper located in Surat district. Within the corridor, the industry is mainly concentrated in Vapi GIDC estate. The industries in Vapi are using recyclable waste paper as a raw material (wood and agri residue are two other alternate RM sources) for their manufacturing operations. Around 60% of this waste paper is imported from international sources through Mumbai & JNPT ports. The paper industry in Corridor faces a few constraints to growth, viz:

- Many of the small mills operate with conventional / obsolete technology and second hand equipment. This affects the quality of output as well as the input-output ratio.
- Existing small size of many units hinders their capability to raise adequate capital for up-gradation of technology.
- Investments to comply with pollution control norms affecting margins.
- Inadequate availability of coal as energy source for boilers.
- High cost grid power forces players to make investments in captive facilities affecting their returns.

Following projects, programs, policies and administrative measures have been recommended to stimulate growth in Paper Industry:

1. Improve industry's access to Raw Materials

- Aggregator for importing industry requirement of waste paper.

- Programmes for improving waste paper collection in Gujarat.

2. Improve infrastructure facilities

- Improvement of key logistic facilities used by the industry such as Hazira and Dahej ports, road links to these ports and railways and communication facilities will help the pulp & paper industry.

3. Policy level measures for State Government

- Power & water tariffs should be benchmarked to competing states.
- The government should allow duty free imports of new & second hand machinery / equipment for Technology Up gradation.
- Accelerated depreciation to partially mitigate high capital intensity should be allowed.
- A technology up gradation fund should be created to make available funds for up gradation & modernization of the manufacturing assets. The fund should be adequately supported by the Central & state governments.

1.3.12 Engineering Goods sector

Corridor has a substantial presence of various engineering segments, especially foundry products, industrial machinery (notably textile machinery) and machine tools. Key success factors for engineering industry comprise:

- Technology and research and development.
- Products and services innovation.
- Skilled, qualified and trained manpower for producing and developing machinery with better design and operations.
- Diversification by exports.

Some of the key concerns for engineering industry in the Corridor include:

- Poor technological know-how, innovation and research.
- Low off take of the Technology Upgradation Fund Scheme.

Following are the key recommendations for Engineering Industry:

- Set up engineering research institutions at prominent engineering institutes in the state. These research institutions should be set up in collaboration with established research institutions like ARAI¹ and industry associations like TMMAI². These institutions should aim at developing cost effective and innovative solutions for various user segments of engineering industry and reduce dependence on imports.

¹ Automotive Research Association of India

² Textile Machinery Manufacturers Association of India

- The government should take steps to revive the TUF scheme and introduce more schemes for industrial development and technology upgradation. This make the respective industries more competitive and at the same time boost demand for engineering goods.

1.4 ANALYSIS OF PHYSICAL INFRASTRUCTURE & RECOMMENDATIONS.

1.4.1 Gas Infrastructure

The Corridor has potential to emerge as the “Energy Hub” of country by virtue of abundant availability of natural gas - both domestic and imported, its position within the preferred coastal state of Gujarat and the large base of industrial and commercial activities. This will require sustained efforts along the following directions:

- Create infrastructure for leveraging natural resources in the region to ensure adequate and long-term availability of gas.
- Develop a vibrant regional energy market.
- Supported by a well defined regulatory and policy framework, and
- A conducive environment for investments in energy sector.

Gas availability (mmcmd)	Gas Field	Operator
4.9	<ul style="list-style-type: none"> ▪ Ankleshwar ▪ Bharuch ▪ Gandhar ▪ Dahej ▪ Jambusar ▪ Palej 	ONGC
4.0	<ul style="list-style-type: none"> ▪ CB-OS/2, Offshore Hazira 	Cairn ONGC Petrodyne
3.8	<ul style="list-style-type: none"> ▪ Hazira 	GSPC Niko Resources
-	<ul style="list-style-type: none"> ▪ CB-ONN-2000/1 	GSPC GAIL

(Source: MOPNG)

With domestic gas supplies falling well short of the demand several new supply sources have emerged. The most prominent being import of natural gas in liquefied form or LNG with the import facilities residing within the corridor.

- Petronet LNG Limited’s (PLL) 2.5 MTPA terminal at Dahej commissioned in April 2004 and likely to increase to 5 MTPA by end 2005.
- Shell’s upcoming 2.5MTPA terminal in Hazira by 2006-07 with expansion to 5 MTPA by 2009.

In terms of pipeline for transmission, Gujarat State Petronet Limited (GSPL), is setting up a statewide pipeline network and currently operates a 300 Km pipeline network serving consumers in the Hazira, Bharuch, Vadodara and Ahmedabad regions. Besides, there are other networks like:

- GAIL’s South Gujarat distribution Network with a combined length of around 350 Kms.
- GAIL’s distribution network Ex-Hazira for local industrial consumers.
- GGCL’s distribution network of more than 1400 kms.
- City Gas Distribution (CGD) networks in Surat, Ankleshwar and Bharuch.
- Following programmes and projects are recommended to leverage the availability of Gas in Corridor:
 - Gas spur-lines to I-parks in Corridor.
 - Reduce state sales tax on gas to enhance industry competitiveness.

1.4.2 Industrial Parks

GIDC has 248 sanctioned estates in the entire state, out of which 182 are currently functional.³The Corridor accounts for the largest area under industrial parks in Gujarat. Besides the industrial parks, the Corridor also boasts the presence of three SEZs – operational or under implementation. In addition, the Surat Apparel Park is also seeking SEZ status.

There is a need for Integrated Industrial Infrastructure Development with Sector Focus. Integrated Industrial Parks are self-contained islands providing high-quality infrastructure facilities offering industrial, residential, and commercial areas with developed plots/ pre-built factories, power, telecom, water and other social infrastructure”.

Table 4: I-Parks potential in Corridor & infrastructure requirements

Sector	Location	Size (ha)	Investment (Rs. Cr)	Water (MLD)	Power (MW)	Phase
2005-09						
Apparels	Surat ⁴	50	70	3	11	2005-2009
Chemicals	Panoli ⁵	400	37	27	120	2005-

³ GIDC Annual Report 2002 – 03

⁴ Already being developed by GIDC

⁵ Panoli, Vilayat, Ankleshwar, Jhagadia and Dahej are existing estates with vast amount of vacant land. These estates need upgradation to attract new chemical units.

						2009
Chemicals	Vilayat	500	66	36	150	2005-2009
Chemicals	Ankleshwar	400	53	27	120	2005-2009
Gems & Jewellery	Ichhapore, Surat ⁶	200	300	10	30	2005-2009
Pharma	Vadodara	300	115	20	90	2010-2015
Biotech	Vadodara	40	60	1	12	2005-2009
Agro	Dahej ⁷	150	50	2.5	35	2005-2009
2010-15						
Apparels	Umbergaon, Valsad	50	70	3	11	2010-2015
Chemicals	Dahej	600	450	40	180	2010-2015
Chemicals	Padra, Vadodara	500	80	36	150	2010-2015
Chemicals	Jhagadia	900	62	77	270	2010-2015
Textiles	Choryasi, Surat	100	70	10	22	2010-2015

The key actions to realise investments in I- Parks are given below:

- The I-parks in the corridor need to upgrade in terms of infrastructure facilities within a time bound up-gradation plan.
- Enhancing service efficiency and customer satisfaction in GIDC estates:
 - Higher service delivery needs greater cost recovery.
 - Notified area authority to govern service delivery in GIDC estates.
 - Induct private sector to operate and maintain GIDC estates on management contract.
 - Marketing for anchor tenants in the industrial parks of Gujarat with targeted investment promotion and single window for administrative facilitation.

1.4.3 Port Sector

The port sector in Corridor comprises the ports of Hazira, Dahej, Magdalla and Jageshwar. Both Hazira and Dahej are being developed as common user ports

⁶ Already being developed by Gujarat Hira Bourse

⁷ GAIC has already started a feasibility study for an Agro-Park at Dahej

with private participation. Besides, the ports, the corridor also has significant number of captive jetties set up by various industries like Essar, Indo-Gulf and Reliance etc. The ports in Corridor are well positioned to attract cargo currently flowing to ports of JNPT and Mumbai from the Northern hinterland. And emerge as the preferred destination for liquid cargo, LNG and POL Products. However, these ports need to address certain pre-requisites for attracting this cargo.

- Capacity to handle direct berthing large ships require deep drafts.
- Ship turnaround of international standards through state of the art handling facilities.
- Efficient infrastructure for supply and evacuation of cargo to and from the port.
- Modern Vessel Traffic Management System and integrated cargo management systems.

The existing GMB port capacity, capacity addition at the existing ports and the capacity of the existing captive jetties constitutes the total traffic handling capacity at each of the ports. The requirements of capacity addition either in the form of new berths / terminals for Corridor are provided below:

Table 5: Capacity requirements for Corridor ports by 2015

Port (MTPA)	Existing	Estimate - 2015
Magdalla / Hazira	14.55	61.09
Dahej	10.22	42.63
Total	24.77	103.72

The cargo O-D for the ports in Gujarat as well as Corridor is essentially captive. Over 70% of the cargo is captive purposes and only the remaining 30% is for the northern hinterland. To emerge as the natural gateway to northern hinterland, the cost of trading through the ports of the state needs to be competitive vis-à-vis the competing ports notably the Mumbai ports. This will mean that the average ship size needs to increase and should be supplemented by an efficient logistics system. The strategy for Corridor Ports is elaborated below:

1. Undertake Port Centric Value added activities in Greater Dahej – Hazira Economic Zone

- Warehousing, Distribution & Integration Parks.
- Transporters & Forwarders Zone.
- Automotive Zone.
- Chemicals Zone.
- Petro SEZ.
- Dahej agro processing export zone.

2. **Ports to cater to large ship sizes.**
3. **Remove flag restrictions on feeders to encourage cost competitiveness.**
4. **Productivity benchmarked to world levels – ship turnaround in 12 hours**
 - Reduce regulatory delays by simplifying processes.
 - Implement Modern Vessel Traffic Management System.
5. **Develop ports with specialized activities.**
6. **Focus on Linkage Infrastructure Development.**

Table 6: Linkage infrastructure for Corridor Ports

	Section	Length (Km)	Type of development
Road	Dahej-Bharuch	54	Strengthening with hard shoulders with subsequent up-gradation to 4-lane
	Surat - Hazira	16	Upgradation to 4-lane
Railway	Dahej - Bharuch	64	Conversion of narrow gauge line to Broad Gauge
	Hazira (Gothangam) Kosad	-	Connection to arterial network. Conversion of narrow gauge line to Broad Gauge

7. **Form an inter-state port trade committee to look at & identify all facilitation measures required for greater cargo trade relations.**
8. **Create dedicated terminals or preferred terminals for hinterland states.**
9. **Integrate planning efforts in northern states with Gujarat’s transport sector**

1.4.4 Airport Sector

Existing airport infrastructure in Corridor comprises Surat Airport and Vadodara Airport. Developments to airport infrastructure are proposed for Surat and Vadodara and airstrip at Ankleshwar.

- Surat to have approximately 2500m long runway along with taxiways, parking bays and navigational & communication facilities to support operation of Airbus-320/Boeing-737 aircrafts
- For Baroda, it is estimated that the passenger traffic shall reach 538,900 by 2015. Additional infrastructure in the form of aircraft parking bays, improved taxi links and maintenance hangars, etc. needs to be developed.
- Considering that Ankleshwar is one of the fast growing industrial districts of Gujarat, it is proposed that an airport be set-up on the outskirts of

Ankleshwar as the traffic projection shows a likely traffic of around 42,600 Pax annually by 2015.

Table 7: Project Shelf details

Airport	2005	2010	2015
Vadodara	<ul style="list-style-type: none"> ▪ Resurfacing of runway ▪ Shoulders for the runway ▪ Construction of Isolation parking bay, perimeter road <p>Provision of facilities for agro/processed food exports</p> <ul style="list-style-type: none"> ▪ Walk in storages – air conditioned & refrigerated ▪ Multi Chamber perishable cargo centers ▪ Direct air booking facility from fruit production and processing centers 		
Surat	<ul style="list-style-type: none"> ▪ Extension & strengthening of the runway. (AAI) ▪ Provision of shoulders for the runway, taxi, apron & turning pad (AAI) ▪ Extension & strengthening of apron (AAI) ▪ Provision of turning pad, RESA & blast pads (AAI) ▪ Provision of perimeter road & fire station (AAI) ▪ Provision of facilities for agro/processed food exports <ol style="list-style-type: none"> 1 Walk in storages – air conditioned & refrigerated 2 Multi Chamber perishable cargo centers 3 Direct air booking facility from fruit production and processing centers <ul style="list-style-type: none"> ▪ Provision of Strong Room 	<ul style="list-style-type: none"> ▪ Provision of high intensity runway & taxiway (AAI) 	<ul style="list-style-type: none"> ▪ New terminal building to serve a peak hour traffic of 75 arriving & 75 departing pax (AAI) ▪ Provision of approach road & car park (AAI)
Ankleshwar	<ul style="list-style-type: none"> ▪ Construction of runway. ▪ Taxi track ▪ Construction of apron ▪ ATC, Fire station, 		

Airport	2005	2010	2015
	Ambulance		
	▪ Boundary wall completion		

Recommended actions for traffic generation at new airports are as follows:

1. **Encourage regional air services.**
2. **Encourage specialist air cargo handlers.**
3. **Lower Sales tax on ATF.**

1.4.5 Road Sector

The Corridor has developed along the principle arterial road running through Gujarat. Therefore, road development for addressing the requirements emanating from new growth centres adjacent to the Corridor will need to be integrated into the arterial network. The objective of road development initiatives shall be:

- Provide robust road network with adequate capacity linking all growth centres in the Corridor.
- Facilitate speedy cargo evacuation within 12 hours from growth centres to the ports in the Corridor and Mumbai.
- Develop roads that enable average speeds of 60 kmph for both passenger and freight vehicles.
- Ensure 100% all weather paved roads.

The objective for road development in Corridor should be:

- Linkage to all growth centres viz Ports, Industries/Industrial parks, Agriculture and Urban centres. The road sector will need to integrate into the arterial system and provide last mile connectivity.
- Increasing average speed such that the actual time taken for transportation from the ports to Gujarat borders will be reduced to around 12 hours from existing 25 hours.

A shelf of projects for road development in Corridor has been provided. To realize the shelf, recommendations on programmes and policies are provided below:

1. Encourage PPP in road sector by addressing policy constraints

- Remove subsidy cap of 15% of the project cost since fragile cost recovery mechanisms would force the government to bear the entire burden of such projects, as private participation would not be forthcoming at these levels.
- Introduce flexible project structuring other than BOT and extend it to two laning of roads with hard shoulders as against current restriction of 4 laning projects.
- Expand schemes with beneficiaries' participation in PPP projects.

2. Changes under the Bombay Motor Vehicles Tax Act 9 of 1994

- Amend stipulation that the collection may not exceed capital outlay, return on investment at such rate as the State Government may fix and the expenses of collection of toll since it restricts efficiency and is also unattractive to private participants.
- Provide financial support to GSRDC in offering bankable projects for private participation.

3. Toll existing road network.

4. Shift in focus of service delivery to performance standards

Government should shift its focus from only specifying design standards to also stipulating performance parameters such as

- Lane availability.
- Riding speed.

1.4.6 Social Infrastructure

1.4.6.1 Education Infrastructure

The assessment of number of primary and secondary schools at the district level indicates that there is a serious deficit in the number of secondary schools in the district of Surat (140 present against 666 required). According to UDPFI guideline, for every 7500 population one secondary school is needed with the strength of 1000 students. According to the norm, urban area of Surat alone requires 375 secondary schools as against a total of 140 that are estimated to be present in the corridor. While there are no CBSE/ICSE affiliated schools in the cities of Navsari or Valsad, there is only one CBSE affiliated school at Ankleshwar (including the notified area). School facilities are insufficient in some cities, for example, in the city of Navsari there are only three to four prominent secondary schools and every year the residents face a problem regarding admissions in 8th and 11th standard.

In order to improve the education infrastructure in the corridor it is important to increase the presence of good private schools in important urban areas of the corridor.

- Available parcels of land should be identified for development of schools and these should be made available to renowned school developers.
- Skilled labour base should be developed by revamping ITI functioning.

1.4.6.2 Health Infrastructure

In addition to providing health care facilities in sufficient numbers, it is important to insure availability of modern health care facilities to all. There is a scope for improving healthcare infrastructure, in terms of facilities and service delivery.

The government should take initiatives to bring in large and renowned hospital chains to set up state of art hospitals in prominent cities in the corridor.

- Parcels of land can be identified in these cities and incentives can be provided to large hospital chains to set-up medical facilities at the identified locations.
- Incentives can be in terms of making land available at concessional rates, tax breaks etc.
- In addition, the Corridor being aligned to the National Highway –8 and drawing strength from this proximity, efforts should be made in the direction of providing efficient and State of Art Facilities along the Highway in Trauma, Orthopaedics, Head and Spine injuries.

1.4.6.3 Recreation, sports and open spaces

Presence of recreational facilities is important According to UDPI norms there is a need to provide 0.3 Ha of open space for every one thousand people residing in a town/city. These open spaces may be in the form of sports stadiums, public parks, public grounds or other open to sky public recreational facilities.

- The corridor has access to a long coastline. Many key urban areas in the corridor like Valsad, Navsari and Surat are also close to the sea. There is potential to develop seaside promenades near these cities.
- Recreational facilities can also be developed along riversides and around lakes. In Surat, promenade can be developed along the banks of river Tapi. The city of Valsad has three lakes. There are three lakes in the city of Navsari; the local municipality plans to develop a lakeside with the help of private sector participation.
- Parks can be aesthetically developed to become green ‘lung spaces’ besides serving other useful purposes. Top cities of the world always boast of beautiful parks that create the city brand. The key themes for such parks to be developed on a priority basis could include:
 - Multi-purpose urban square.
 - Tourist and recreational spot.
 - Weekend camping getaway.
 - Central Urban jungle .

1.5 MODULE III: INVESTMENT PROMOTION AND ACTION PLAN

Based on the assessment study, the corridor is the industrial hub not only for Gujarat but for all of India. Therefore, the positioning of the corridor has to be

built along its existing strength of being the hub of industrial activity for India. The Government of Gujarat needs to prepare a medium term investment promotion programme, say for a period of two or three years that should be backed by committed resources in terms of budgets and organisations, and also targeted in terms of instruments, regions and follow up measures.

The investment promotion strategy should cover a mix of following three components:

1. Gujarat's Image building campaign

- Suggested image building techniques.
- Details of independent Media Vehicles provided.
- Set up Web Presence - 'Doing business in Gujarat'.

2. Gujarat's Investment-generating measures

- General Investor Meets.
- Targeted Match-making Meets.
- Network contacts with relevant international sector associations; UNIDO, Government of India and Gujarat based industrial associations.
- Formulate matchmaking programme. This shall include identification of Gujarat based firms, alongwith relevant details and geographical interests. Similarly, the international association identifies its member enterprises that may be interested in Gujarat based firms in the particular sector.
- Initiate dialogue and facilitate contact between Gujarat companions and foreign companies and also exchange information well in advance, to ensure a high degree of preparedness.
- Opportunities Unlimited Gujarat – an investment journal.
- Investor database.

3. Gujarat's Investor servicing and facilitation measures

- Make iNDEXTb as single point interface providing pre-approval services, approval services and post approval services.

4. Key Actions for the Government in strengthening partnership with UNIDO through its Investment and Technology Promotion Offices of UNIDO and Sub contracting Partnership Exchanges

- The Government of Gujarat needs to initiate a dialogue with UNIDO to forge a partnership for attracting investments from specified regions and for specified sectors.
- Prepare specific programmes for targeted countries in the medium term. For example, with respect to this development corridor, UK – textiles, chemicals, biotechnology; China- for outsourcing opportunities from Gujarat.

- Create the SPX for Gujarat industries with the support of UNIDO and industrial associations. A specific project to aggregate information from Gujarat based enterprises needs to be initiated so that the basic information of products, capacities, inclination towards joint ventures and tie ups, along with preference countries could be created. This should then be networked with UNIDO's business information dissemination networks.

1.6 ACTION PLAN

1.6.1 Projects/ Programmes in Immediate Term

SECTOR	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY
CHEMICAL SECTOR		
Programmes		
<i>Mission Critical projects for plastic application in Agriculture</i>	Agriculture Deptt.	Nodal Officer IC
<i>Facilities for meeting testing norms and data requirements of regulated markets</i>	IC	
<i>Undertake Chemical Cluster Development in Corridor</i>	IC	
<i>Plastic use and recycling research programme</i>	IC	
Policy Measures		
<i>Policy to promote plastic substitutes in government sponsored projects</i>	IC	
<i>Address the issue of high cost power</i>	GEB, Finance Deptt.	IC
<i>Pursue Labour reforms</i>	IC	
<i>Pursue for extension of "Special Financial Package for Exports" to chemicals</i>	IC	
<i>Pursue for inclusion of specialty chemicals under "Market Access Initiatives"</i>	IC	
Administrative Measures		
<i>Facilitate outsourcing by information dissemination</i>	IC	
<i>Stimulate polymer demand through joint development programs with industry</i>	IC	
GEMS & JEWELLERY SECTOR		
Programmes		
<i>Initiatives for Surat Gems & Jewellery Cluster</i>	IC	
<i>Set up intelligence cell for knowledge and information assistance</i>	IC	
<i>Identification and funding of training needs</i>	IC	
<i>Promotion activities for brand "Surat"</i>	IC	
<i>Undertake infrastructure development projects</i>	IC	
TEXTILE SECTOR		
Programmes		
<i>Developing a textile and apparel cluster along with Hi-Tech apparel & textile I-Parks at Surat</i>	GIDC	IC
<i>Provide seamless export logistics</i>	GIDB	IC

<i>Pursue development of cooperatives/market aggregators</i>	IC	
<i>Attract prominent composite textile/apparel manufacturing firms</i>	IC	
Policy Measures		
<i>Special Incentive scheme for textile units in proposed Hitech Textile Parks at Pandesar, Jetpur, Surendranagar and Vapi</i>	IC	
PHARMACEUTICAL SECTOR		
Programmes		
<i>Implement Cluster Development Scheme in Corridor</i>	IC	
<i>Develop specialized pharmaceutical I-Park at Vadodara</i>	GIDC	IC
<i>Establish drug/medical research institutions</i>	IC	
<i>Undertake awareness program for upgrading drug manufacturing facilities</i>	IC	GIDC, INDEXTb
<i>Expand pharmacy education facilities in corridor</i>	IC	
<i>Provide seamless export/import logistics</i>	GIDB	IC
Policy Measures		
<i>Raise investment limit for SSI units in pharmaceutical sector to Rs.5 crore</i>	IC	
<i>End uncertainty regarding DPCO to improve investment sentiment</i>	IC	
AGRO PROCESSING SECTOR		
Programmes		
<i>Provide enabling environment for contract farming</i>	GAIC	IC
<i>Identify and forge alliances with major contractors</i>	GAIC	IC
<i>Identify and operationalize fruit and vegetable routes</i>	GAIC	IC
<i>Develop infrastructure to facilitate processing activities</i>	GAIC	IC
<i>Develop an efficient Agro Supply Chain to support processing and retail supplies</i>	GAIC	IC
<i>Set up fresh fruit handling facility at Surat & Baroda Airports</i>	AAI	IC
<i>Certification facility in Agro-park at Dahej</i>	GAIC	IC
RESEARCH AND DEVELOPMENT ACTIVITIES		
Programmes		
<i>Infrastructure to promote R&D</i>	Deptt of S&T	IC
<i>Gujarat Applied Industrial Research Programme</i>	IC	Deptt of S&T
IT ENABLERS FOR MANUFACTURING		
Programmes		
<i>Programme for setting up Cluster IT Infrastructure</i>	IC	Deptt of S&T
<i>Project for broadband connectivity to Cluster participants</i>	IC	Deptt of S&T
<i>Undertake study to assess information needs of Cluster stakeholders</i>	IC	Deptt of S&T
<i>Set up Special Purpose Vehicle for each facility</i>	IC	Deptt of S&T
<i>Prepare Web Portal & develop services for cluster participants</i>	IC	Deptt of S&T
<i>Undertake training programme for cluster participants</i>	IC	Deptt of S&T

1.6.2 Projects Programmes in Medium term

Sector	Primary Responsibility	Secondary Responsibility
CHEMICAL SECTOR		
Programmes		
<i>Develop garment sector to drive demand for fiber intermediates</i>	IC	
Policy Measures		
<i>Access to competitive feedstock</i>	IC	
<i>Benchmark tax structure to competition</i>	Finance Deptt	IC
<i>Provide enabling environment for industry</i>	IC	
<i>Pursue holistic environment and regulatory measures</i>	GPCB	IC
<i>Pursue for reduction of import duties on catalysts</i>	IC	
<i>Pursue for reducing cost of capital investment</i>	IC	
GEMS & JEWELLERY SECTOR		
Programmes		
<i>Set up nodal agency for de-risking import dependence</i>	IC	
<i>Pursue ISO certification/ concept of "Business Excellence Model"</i>	IC	
TEXTILE SECTOR		
Policy Measures		
<i>Rationalization of duty structure</i>	IC	
PHARMACEUTICAL SECTOR		
Programmes		
<i>Develop social and urban infrastructure</i>	Deptt of Urban Development	IC
Policy Measures		
<i>Rationalize approval procedures for testing on animals - align norms to international research requirements</i>	IC	
AGRO PROCESSING SECTOR		
Programmes		
<i>Outreach programmes</i>	GAIC	IC
<i>Road shows targeted at food brands</i>	GAIC	IC
<i>Initiatives to involve industry and knowledge groups</i>	GAIC	IC
<i>Measures for imparting training & education to agronomists and farmers</i>	GAIC	IC
RESEARCH AND DEVELOPMENT ACTIVITIES		
Programmes		
<i>Address Manpower Demand Supply Gap</i>	Deptt of S&T	IC
<i>Quality of Life Infrastructure</i>	Deptt of Urban Development	IC
<i>Direct funding to Centers of Excellence spearheading R&D initiatives</i>	Deptt of S&T	IC
<i>Pursue directed programmes for R&D capability development</i>	Deptt of S&T	IC

IT ENABLERS FOR MANUFACTURING		
Programmes		
<i>Implementing ERP Technology in manufacturing</i>	IC	Deptt of S&T