

Chemicals

NOVEMBER
2011



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Chemicals

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- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories: TATA Chemicals, UPL
- ❖ Opportunities
- ❖ Useful information

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Advantage India

Demand potential

- India's growing population and dependency on agriculture drives chemical sector demand
- Competitive cost advantage will drive export growth of chemicals

Opportunities

- Polymers will benefit from strong growth in plastic demand
- Construction chemicals - from 2010, size is set to double by 2015

FY20E

Market size:
USD332
billion

Advantage India

Increasing investments

- Lured by the size and returns of the Indian market, foreign firms have increased their presence
- From Apr 2000 to Apr 2011, total FDI inflows into the Indian chemicals industry was USD2.9 billion

FY10

Market size:
USD83 billion

Policy support

- 100 per cent FDI is permissible in the Indian chemicals sector; manufacturing of most chemical products are de-licensed
- The government has been encouraging R&D in the sector

Source: TATA strategic management group, Aranca Research
Notes: E - Estimated

Chemicals

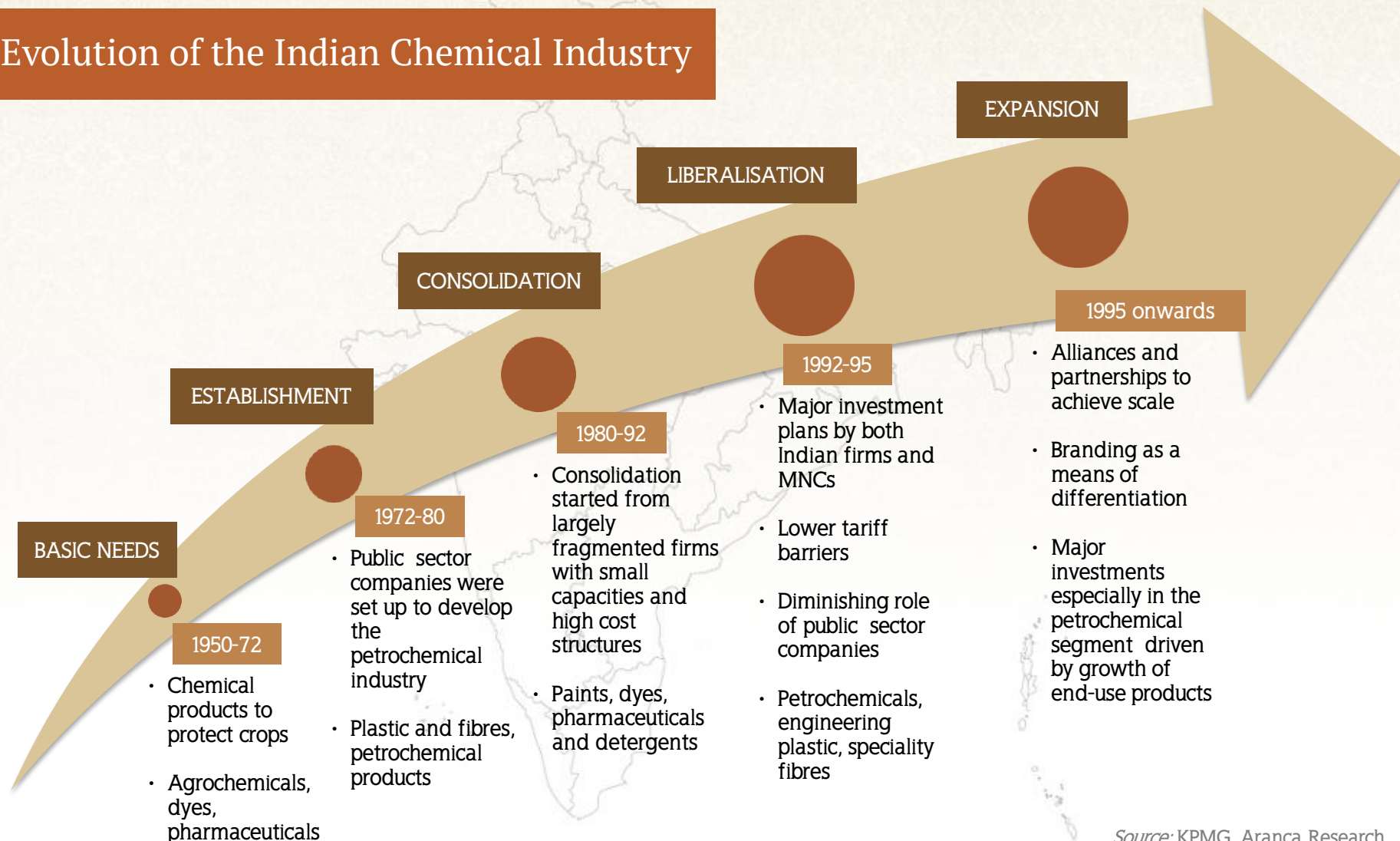
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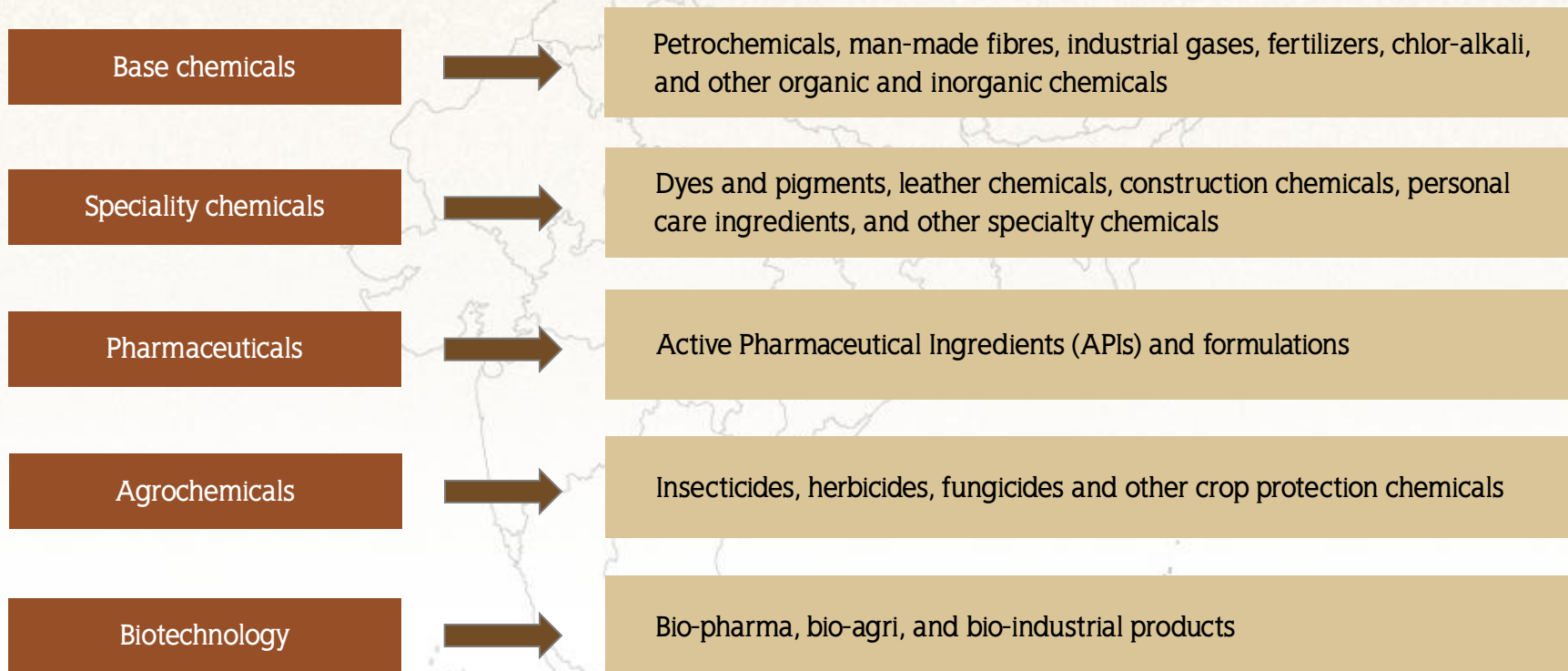
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Evolution of the Indian Chemical Industry



Source: KPMG, Aranca Research
Notes: MNC – Multinational corporation

Major segments of the Indian chemical industry



Source: TATA Strategic Management Group, Aranca Research,

Product-wise classification of the Indian chemical industry

Alkali chemicals

- Soda ash
- Caustic soda
- Liquid
- Chlorine

Inorganic chemicals

- Aluminum flouride
- Calcium carbide
- Carbon black
- Potassium chlorate
- Titanium dioxide
- Red phosphorus

Organic chemicals

- Acetic acid
- Acetone
- Phenol
- Methanol
- Ortho Nitro Chlorobenzene (ONCB)
- Isobutyl
- Para Nitrochlorobenzene (PNCB)
- Ethyl

Pesticides and insecticides

- Dichlorodiphenyltri chloroethane (DDT)
- Malathion
- Parathion
- Ethicon
- Endosulphan
- Phosalone
- Phorate
- Acephate
- Fenvalerate

Dyes and dyestuffs

- Azo dyes
- Disperse dyes
- Fast colour bases
- Ingrain dyes
- Napthols
- Vat dyes
- Reactive dyes
- Pigment Emulsion

Sources: Aranca Research

Key domestic and international players in Indian chemicals ... (1/2)

Domestic company	Sales in FY11 (USD million)	Products
Tata Chemicals Limited (TCL)	2269.8	Soda ash, salt, marine chemicals, caustic soda, cement etc.
United Phosphorus Limited (UPL)	1,177.1	Agrochemicals
Nirma Ltd.	989.8	Alkyl benzene, alfa olefin sulphonate, sulfuric acid, soda ash
Gujarat Heavy Chemicals Ltd. (GHCL)	314.1	Soda ash
Gujarat Alkalies and Chemicals Ltd (GACL)	296.5	Caustic soda
Solaris Chemtech Industries Ltd.	52.1*	Bromine and bromine chemicals

Sources: Company ANR, Aranca Research

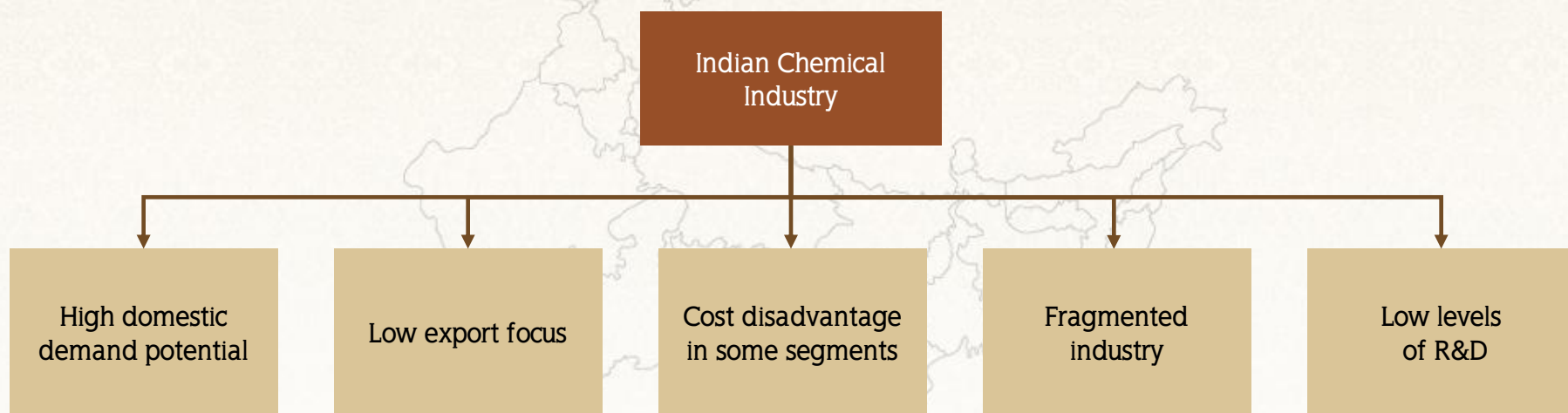
Note: *-FY 10

Key domestic and international players in Indian chemicals ... (2/2)

International Company	Sales in 2010 USD billion	Products
BASF	84.8	Chemicals, plastics, performance and nutrition products
The Dow Chemicals	53.7	Specialty chemicals, agrochemicals and plastics
Bayer	46.6	Agrochemicals, pharmaceuticals, polymers, technology services
E. I. du Pont de Nemours and Company	31.5	Specialty and fine chemicals
INEOS	28.4	PVC films and specialty resins
AkzoNobel	19.4	Coatings, decorative paints and specialty chemicals
Evonik Industries	17.7	Specialty chemicals
Lanxess	9.5	Plastics, rubber, specialty chemicals and intermediates
Wacker Chemie	6.3	Silicone, polymer, specialty and fine chemicals

Sources: Company ANR, Aranca Research

Characteristics of the Indian Chemical industry



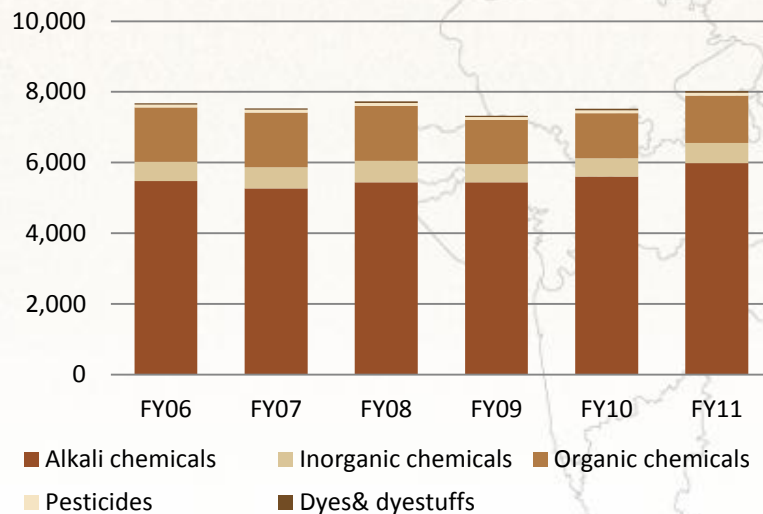
- The industry has changed over time to meet the dynamic needs of an emerging economy
 - Strong economic growth and rise in per-capita incomes has meant a steady increase in demand for chemicals
- The industry has left behind a low-growth and regulated environment to emerge more mature
- There is strong government support towards R&D, a fact that will benefit the sector in the future as well

Sources: KPMG international 2011, Aranca Research

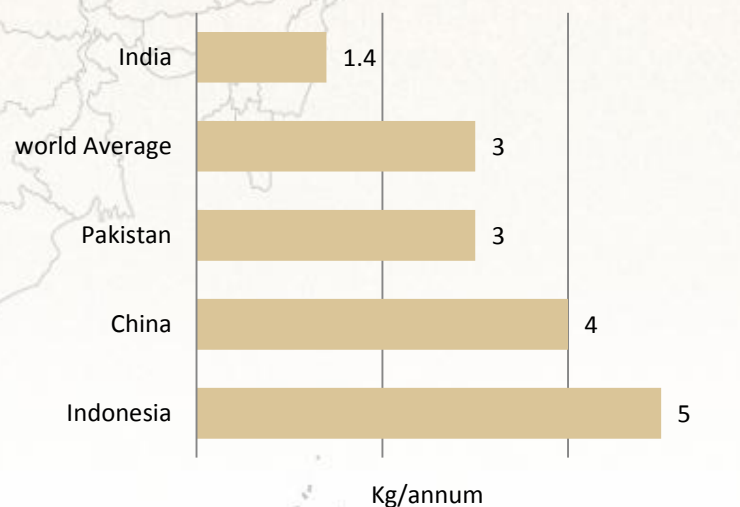
Notes: R&D – Research and development

Both domestic and external demand driving growth ... (1/2)

Production of major chemicals (000' MT)



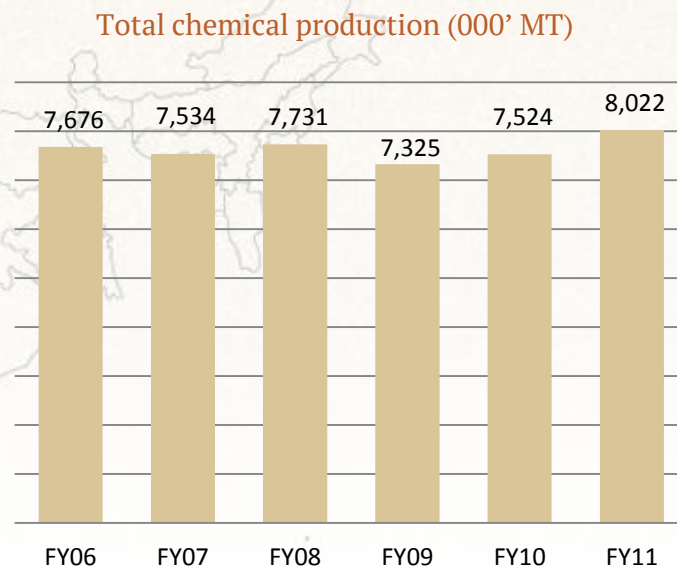
Annual per-capita polyester consumption-2010



Source: Department of Chemicals and Petrochemicals, Aranca Research
Note: MT-Metric Tonne
Kg: Kilo gram

Both domestic and external demand driving growth ... (2/2)

- Favourable demographics and strong economic growth driving activity in the sector
- Total production in the Indian Chemical industry has grown at an annual pace of 10 per cent since FY09
- External demand has also contributed strongly to the growth in the industry
- India is still below the global average in polyester and polymer consumption

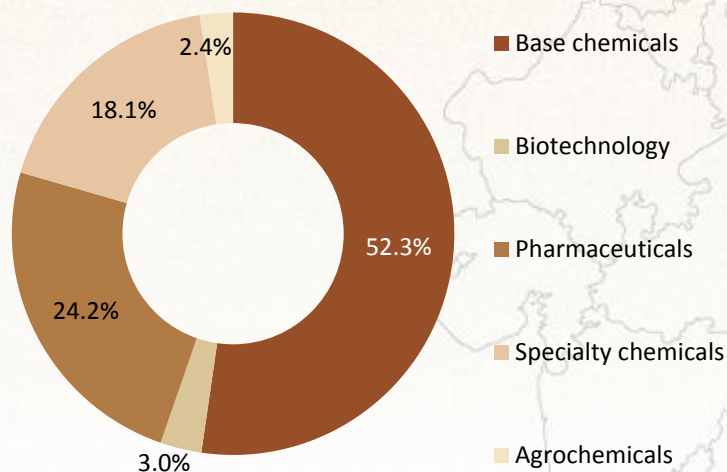


Source: Department of Chemicals and Petrochemicals, Aranca Research

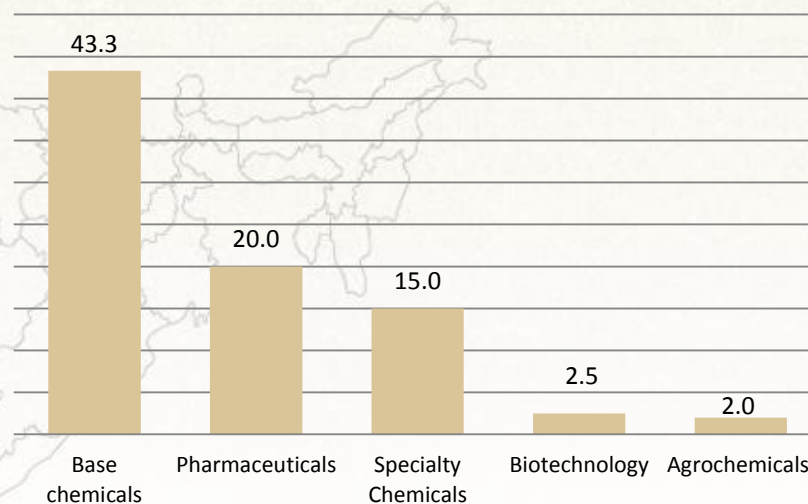
Note: MT-Metric Tonne

Base chemicals shares more than half of total production

Share in production in FY10



Production of chemicals in FY10 (USD billion)



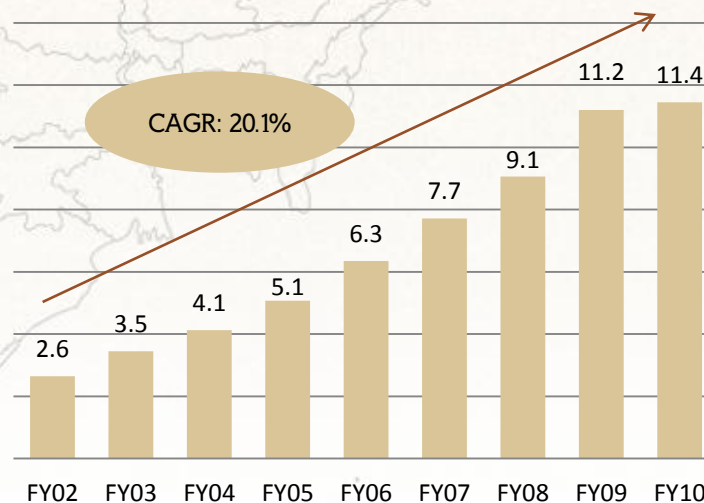
- Base chemicals covers more than half (52.3 per cent) of the Indian chemical industry; the segment was valued at USD43.3 billion in FY10 followed by pharmaceuticals (24.2 per cent)
- Agrichemicals and Biotechnology are the minor components of the sector accounting for 2.4 per cent and 3.0 per cent of production in FY10
- Speciality chemicals are relatively high valued; The sector is rapidly growing and have a diverse end-product market

Source: Department of Chemicals and Petrochemicals, Aranca Research

India is a net importer of chemicals ... (1/2)

- Chemicals constitutes more than 14 per cent of India's total exports
- Total exports of chemicals grew from USD2.6 billion in FY02 to USD11.4 billion in FY10, a CAGR of 20.1 per cent

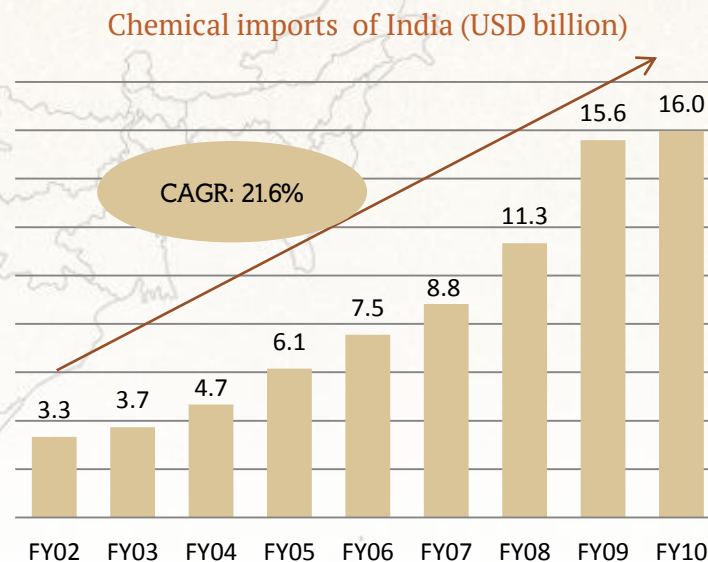
Chemical exports of India (USD billion)



Source: Department of Chemicals and Petrochemicals,
Aranca Research

India is a net importer of chemicals ... (2/2)

- India has been a major importer of chemicals; the sector made up 9 per cent of India's total imports in FY10
- Total chemical imports rose at a CAGR of 21.6 per cent over FY02-10 to USD16.0 billion

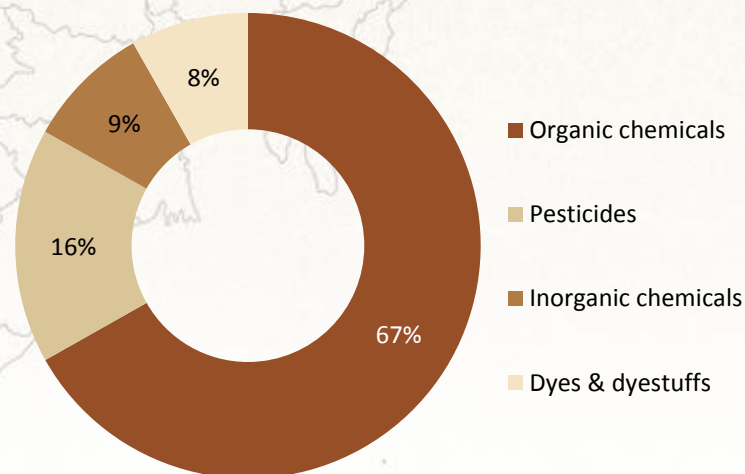


Source: Department of Chemicals and Petrochemicals,
Aranca Research

Organic chemicals dominate both exports and imports ... (1/2)

- Organic chemicals constitute more than 67 per cent of India's total chemical exports followed by pesticides at 16 per cent (FY10)
- Over FY02-10 pesticide exports rose at a CAGR of 26 per cent; for organic chemicals it was 21 per cent

Exports of different chemical segments in FY10

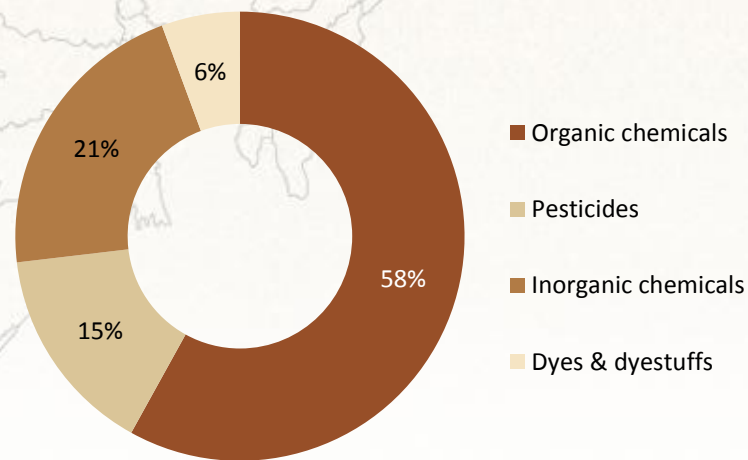


Source: Department of Chemicals and Petrochemicals, Aranca Research

Organic chemicals dominate both exports and imports ... (2/2)

- Among chemical imports, organic chemicals also dominate with a share of 58 per cent followed by pesticides at 15 per cent (FY10)
- Over FY02-10 pesticide imports rose at a CAGR of 54 per cent followed by organic chemicals (22.5 per cent)

Imports of different chemical segments in FY10



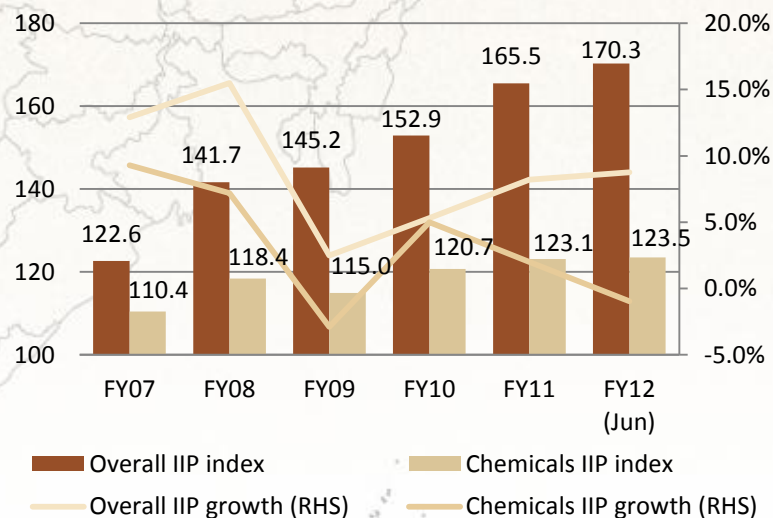
Source: Department of Chemicals and Petrochemicals, Aranca Research

Comparisons with overall industry: growth and price trends ... (1/2)

- Since FY07, annual growth in the chemical industry has been lower than overall growth (as reflected by data in IIP)
- In June FY12 chemical industry recorded a negative growth of 0.9 per cent, compare to the last year (June FY11)

Note: In India, the Wholesale Price Index is used to calculate inflation (not the Consumer Price Index)

Growth in the chemical industry versus total industry



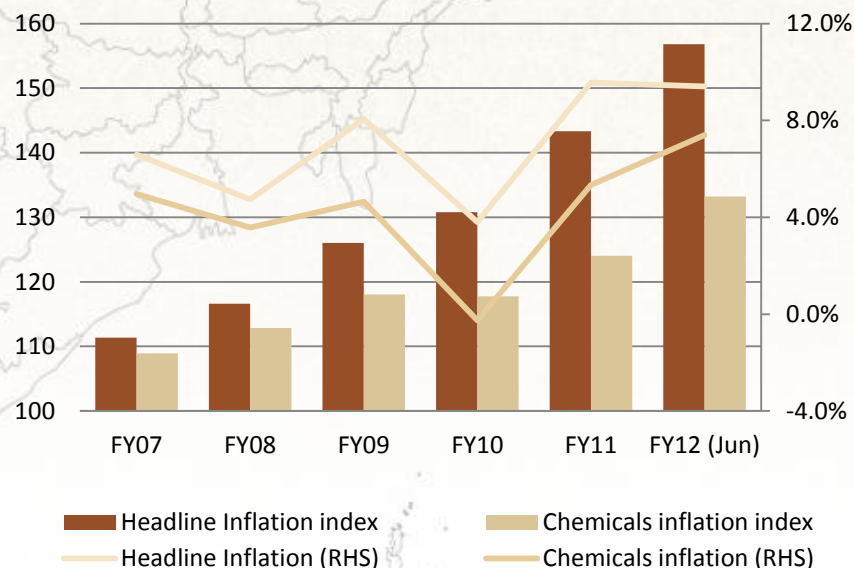
Source: Ministry of finance, Aranca Research

Comparisons with overall industry: growth and price trends ... (2/2)

- Growth in prices of chemicals has been generally lower than headline inflation
- This has continued into FY12 as well; latest figures (June 2011) reveal a 7.4 per cent YoY rise in prices of chemicals compared to a 9.4 per cent figure for headline inflation

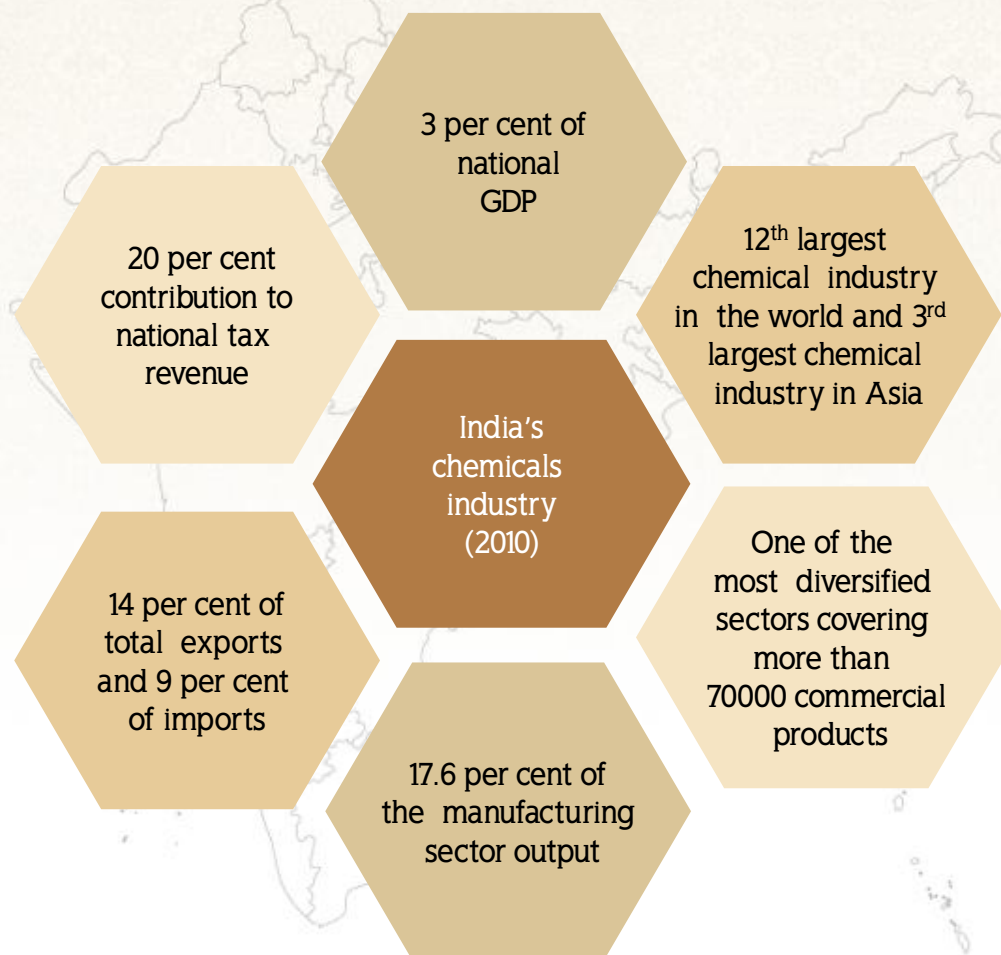
Note: In India, the Wholesale Price Index is used to calculate inflation (not the Consumer Price Index)

Rise in prices of chemicals relative to headline inflation



Source: Ministry of finance, Aranca Research

Chemical industry holds a significant position in the economy



Source: Ministry of Environment and Forests, Central Pollution Control Board, Aranca Research

High growth would lead to rising global positioning

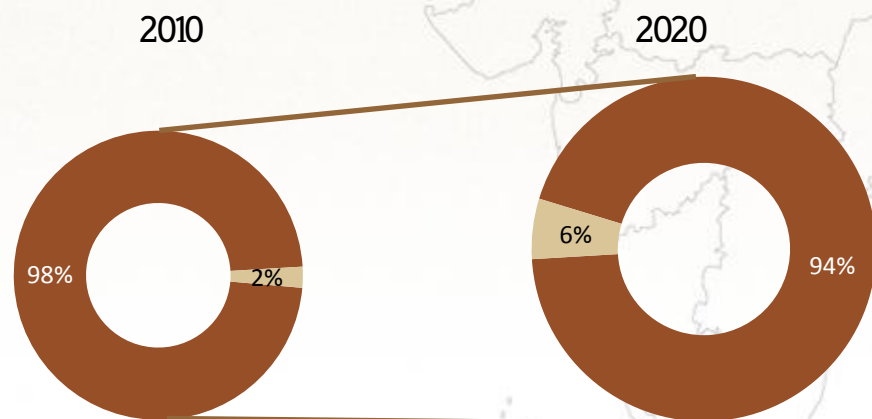
2010

- Global chemical industry USD3.4 trillion
- India chemical industry USD81.6 billion

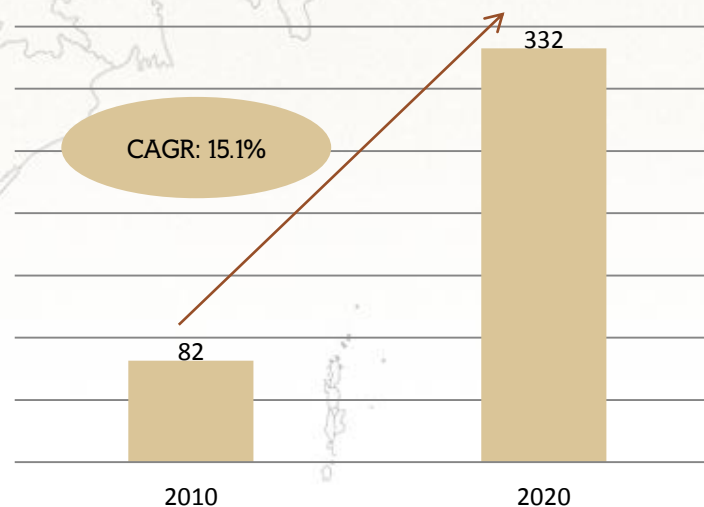
2020

- Global chemical industry USD5.5 trillion
- India chemical industry USD332.4 billion

Contribution to global chemical industry will increase



Strong growth outlook for the Indian chemical industry

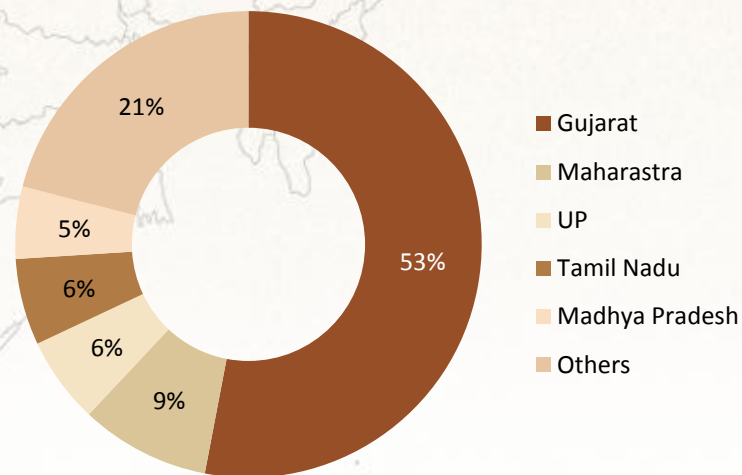


Source: TATA Strategic Management Group, Aranca Research

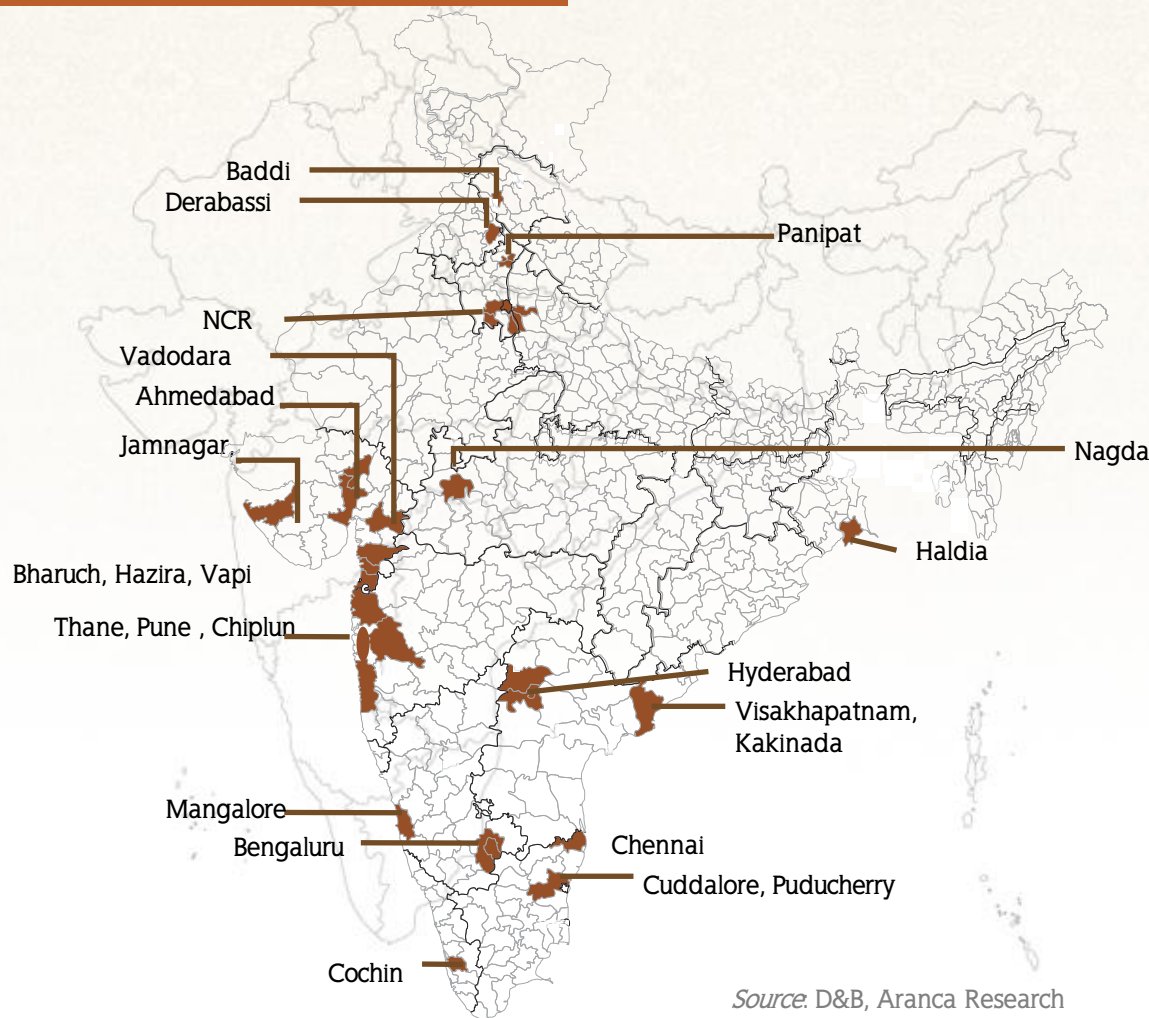
Widespread chemical industry infrastructure across India ... (1/2)

- Though the sector is spread across the country, there is relatively high concentration along the west coast due to proximity to raw materials and ports
- Gujarat alone is estimated to contribute about 53 per cent to total production in the country

Regional concentration of basic chemical industry (FY10)



Widespread chemical industry infrastructure across India ... (2/2)



Source: D&B, Aranca Research

Chemicals

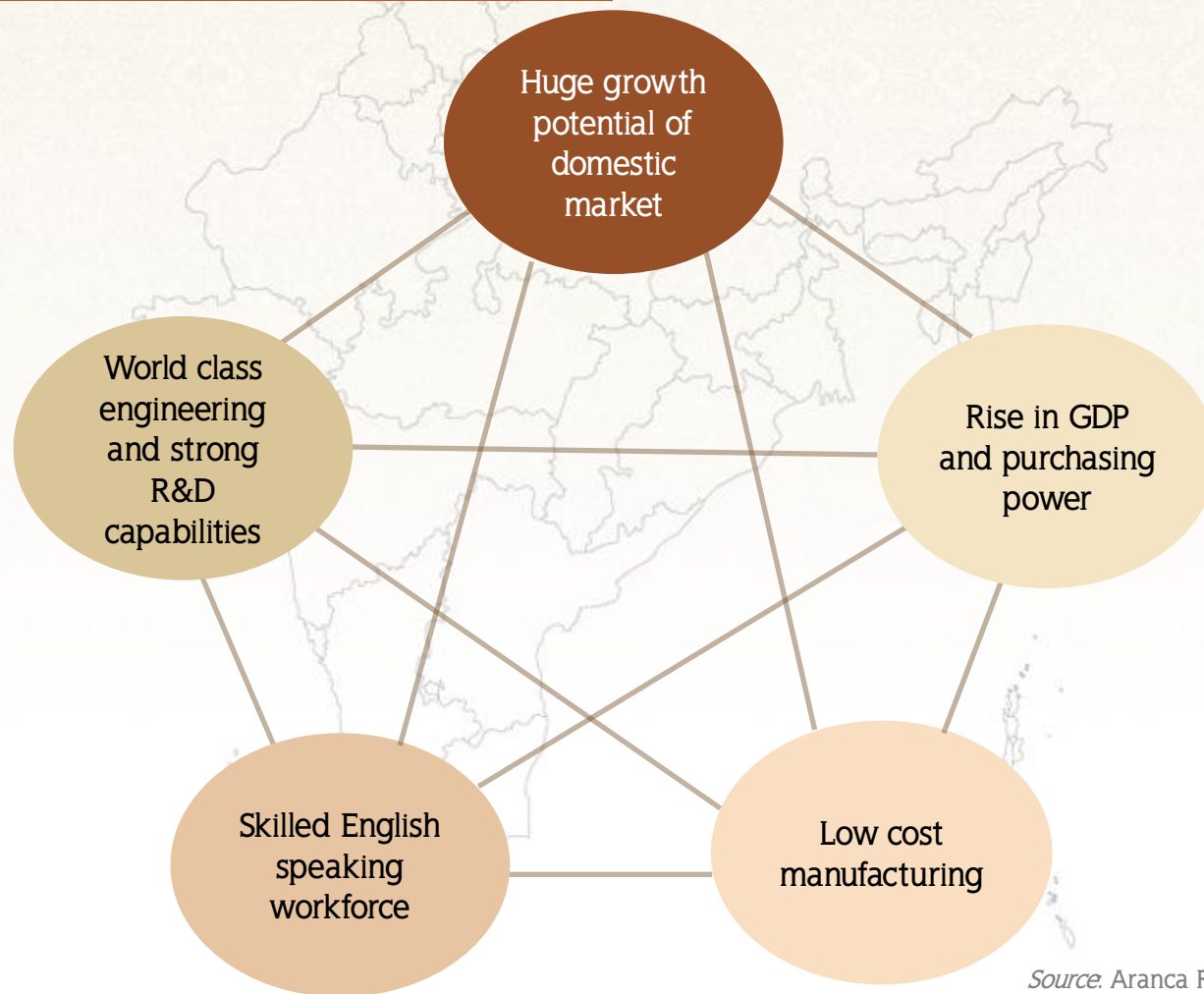
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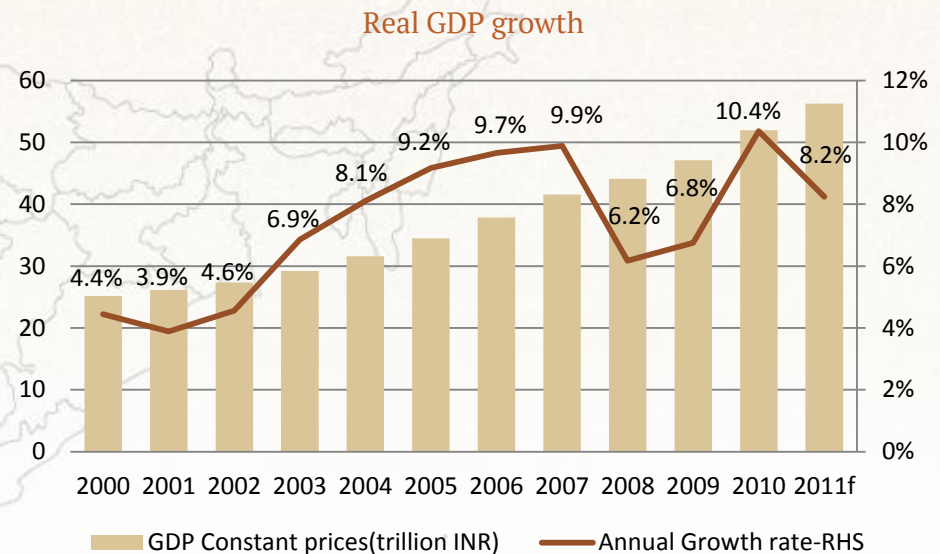
Growth drivers of the Indian chemical industry



Source: Aranca Research

Economic expansion will drive growth in the chemical industry ... (1/2)

→ Being largely an intermediate product, strong economic growth is an important factor in sustaining demand for chemical products

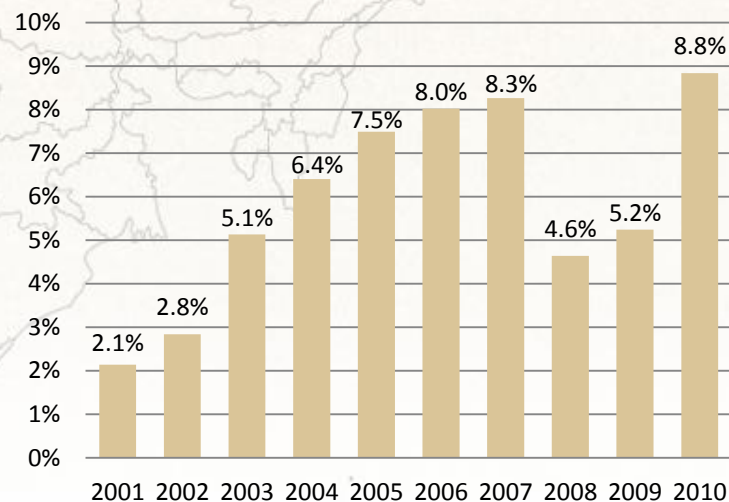


Source: IMF WEO, Aranca Research

Economic expansion will drive growth in the chemical industry ... (2/2)

- Per-capita consumption of most of the finished products under chemicals sector is far below the world average – that shows the vast potential for growth in the industry
- As in a number of other industries in India, strong growth in discretionary income and changing lifestyles are counted as few of the other major growth drivers of the chemicals sector

Per-capita GDP growth

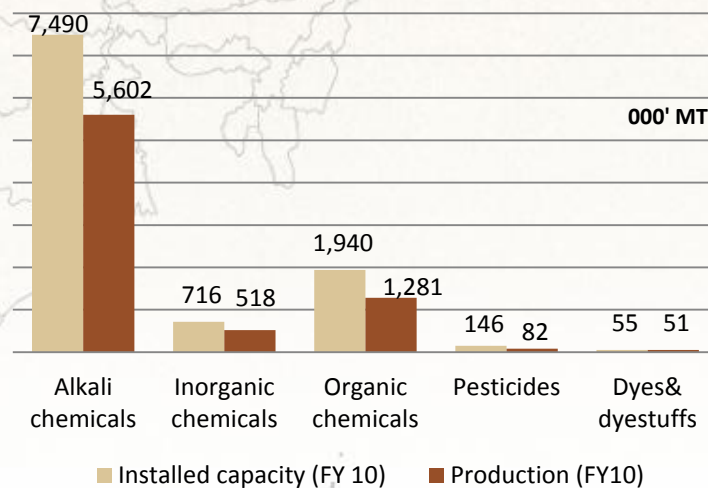


Source: IMF WEO, Aranca Research

Immense growth potential for chemical industry in India ... (1/2)

- Industry as a whole operates only under 73 per cent of installed capacity
- The 'alkali' segment (more than 74 per cent share) operated below 74 per cent of installed capacity in FY10; the figure for 'pesticides' was 56 per cent
- Only the dyes-related segment operated at high capacity – 93 per cent

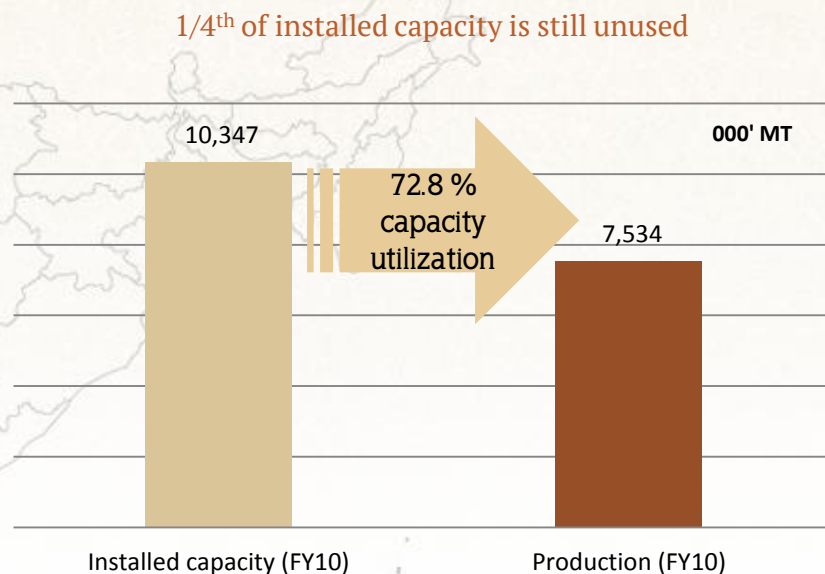
Installed capacity and production of selected major chemicals



Source: Department of chemicals and petrochemicals, Aranca Research

Immense growth potential for chemical industry in India ... (2/2)

- Strong demand growth – both domestic and external – will drive chemical industry production in future
- Government policy support and domestic environment pushing industry growth towards double digits



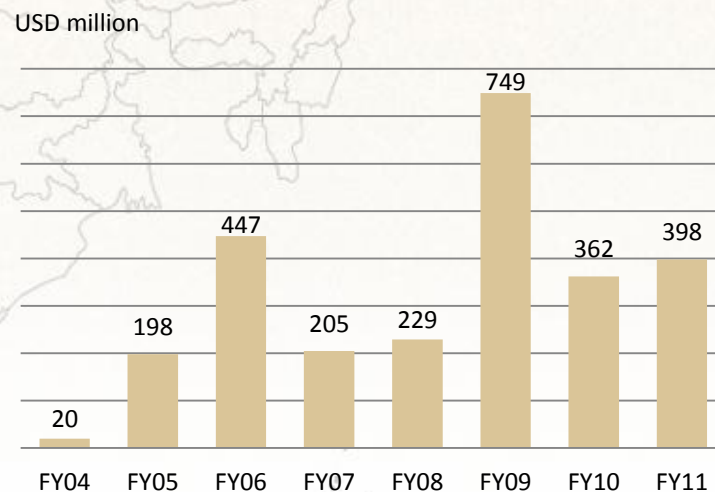
Source: Department of chemicals and petrochemicals, Aranca Research

Policy support for foreign investment ... (1/2)

- Procedures relating to investments are simplified in order to encourage Foreign Direct Investment (FDI)
- Most of the items in the chemicals sector fall under the RBI automatic approval route for FDI/NRI/OCB investment up to 100 per cent

Notes: NRI – Non-resident Indian, OCB – Overseas Commercial Bodies

Annual FDI inflow to the chemical industry (except fertiliser)

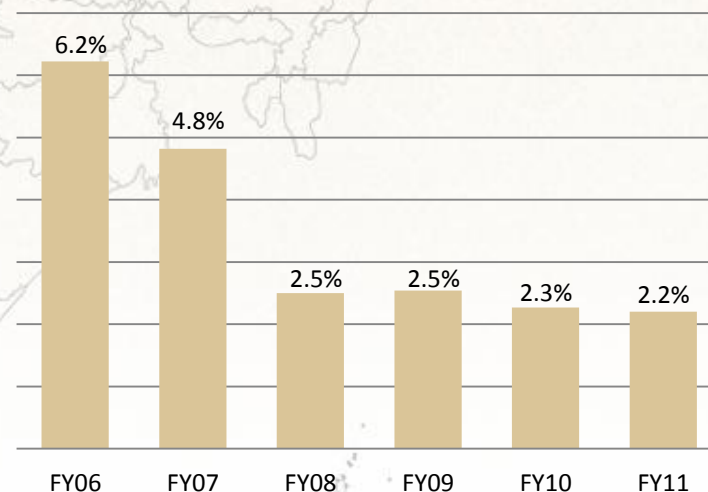


Sources: Department of Industrial Policy & Promotion, Ministry of Commerce and Industry, Aranca Research

Policy support for foreign investment ... (2/2)

- From Apr 2000 to Apr 2011, total FDI inflows into the Indian chemicals industry was USD2.9 billion
- 100 per cent FDI is not permitted under circumstances like:
 - Activities or items that require an industrial license
 - Proposals in which the foreign collaborator has a previous tie up in India in the same or allied fields
 - All proposals relating to acquisition of shares in an existing Indian company by a foreign or NRI investor
 - All proposals falling outside the notified sector policy

Share of chemical industry in total FDI inflow
(except fertiliser)



Sources: Department of Industrial Policy & Promotion, Ministry of Commerce and Industry, Aranca Research

Government support to encourage the sector is increasing ... (1/2)

All figures are in USD million

Name of the scheme	XI Plan outlay (2007-2012)	Annual Plan FY11	Annual Plan FY12
Project based support to PSUs	29.1	4.3	4.4
Support to autonomous bodies	19.2	0.1	0.2
Other ongoing schemes	44.2	165.8	142.6
New schemes initiated in XI plan	25.0	17.9	19.5
Total	117.5	188.1	166.7

Government support to encourage the sector is increasing ... (2/2)

All figures are in USD million

Name of the scheme	Plan outlay (FY10)	Plan outlay (FY11)	Non Plan outlay (FY10)	Non Plan outlay (FY11)	Non Plan outlay (FY12)
Secretariat	0.04	0.13	2.21	2.52	2.79
Central Institute of Plastics Engg. & Technology (CIPET)	4.19	15.42	0.63	0.10	0.10
Assam Gas Cracker Project	65.90	164.94	0.00	0.00	0.00
Chemical Weapons Convention (CWC)	0.17	0.21	0.00	0.00	0.00
Hindustan Insecticides Ltd. (HIL)	5.19	3.13	0.00	0.00	0.00
Others	4.19	1.30	0.50	0.54	0.63
Total	83.94	188.13	4.31	158.46	4.58

Source: Department of Chemicals and Petrochemicals, Aranca Research

Growth, competitiveness and process initiatives

- The government has announced a number of measures to improve competitiveness in the sector
- Industrial licensing has been abolished for most sub-sectors (except a small list of hazardous chemicals)
- Approval is being granted for FDI up to 100 per cent in the chemicals sector
- The government is continuously reducing the list of reserved chemical items for production in the small-scale sector, thereby facilitating greater investment in technology up-gradation and modernization
- Policies have been initiated to set up integrated Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIR)
- New initiatives are likely to attract large investments – both domestic and foreign – with requisite improvements in infrastructure and competition

Industry-level initiatives

- The Indian Chemical Council (ICC) is the nodal agency/signatory representing India under the 'Responsible Care Initiative'
- ICC has prepared codes and guidance for implementation of process safety, employee health and safety, pollution prevention, emergency response, and product safety
- Member companies of ICC are encouraged to interact with local communities and groups such as students, teachers, fire/ police personnel

Firm-level initiatives

- Indian chemical firms have strived to increase their market share through global presence
- Indian chemical firms have in place technical agreements with multinational firms to keep abreast of technological progress in the global chemical industry

Sources: EXIM Bank of India, Aranca Research

Recent major M&A deals in the Indian chemical industry

	Acquirer	Target/ JV partner	Valuation	Synergies/ drivers
Inbound				
May-10	Abott laboratories	Piramal's domestic formulations business	USD3.7 billion	Abott: Increased market share; Piramal: Focus on core business
Aug-10	Daiichi Sankyo	Zenotech	USD17 million	Quickly increase India presence
Outbound				
Aug-10	RIL	Carrizo Oil & Gas	NA	Acquire technology, increase global presence
Jul-10	Shri Renuka Sugars	Equipav S.A	NA	Raw material access, technology market access
May-10	Marico	Singapore based Skin care firm	NA	Opening into SE Asian markets for Marico
Jun-10	United phosphorus	DuPont's fungicide Business	NA	UPL: Access to South and Central American markets DuPont: Focus on core business
May-10	Piramal	BioSyntech, Canada	USD3.7 million	Piramal: Access to technology
Domestic				
Jul-10	Super Religare Laboratories Ltd (SRL)	Piramal's diagnostic services unit	USD125 Million	SRL: realize synergies – economies of scale, Piramal: focus on core business
May-10	Piramal	CIPLA's 'i-pill'	USD21 million	Piramal: Brand extension

Source: Department of chemicals and petrochemicals, Aranca Research

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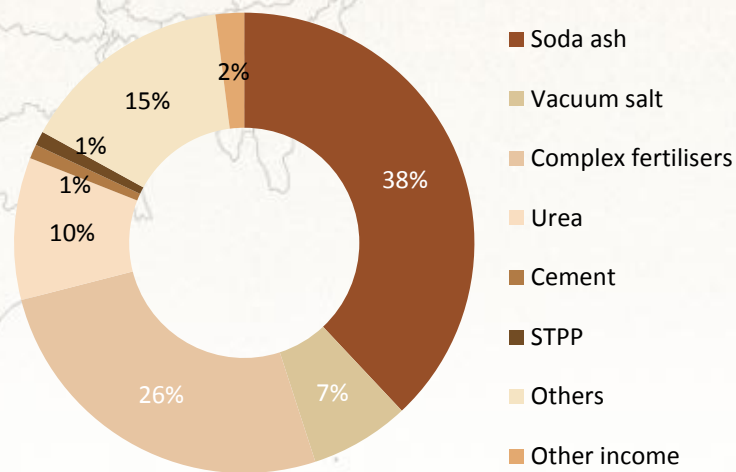
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TATA Chemicals: Diversifying their way to success ... (1/2)

- Third-largest soda ash producer in the world
- Largest soda ash producer in India
- A market leader in edible salt; largest STPP player in the country
- Most energy-efficient urea fertilizer producer in India; amongst the most efficient globally
- 1/3rd stake holder in IMACID, Morocco – assured supply of key inputs

Source: TATA strategic analysis, Aranca Research
Notes: STPP*- Sodium tripolyphosphate
IMACID- Indo Maroc Phosphore S.A.

Revenue breakup of TATA chemicals



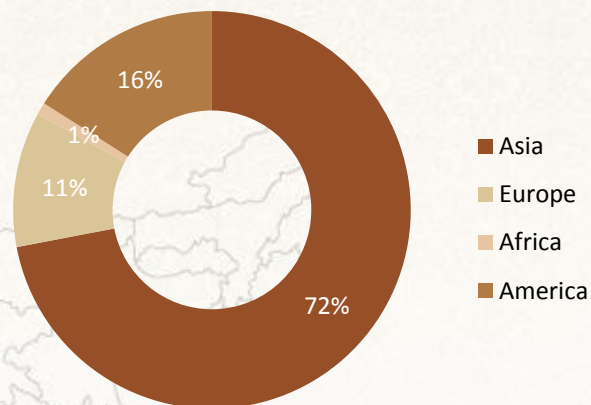
TATA Chemicals: Diversifying their way to success ... (2/2)

Growth path

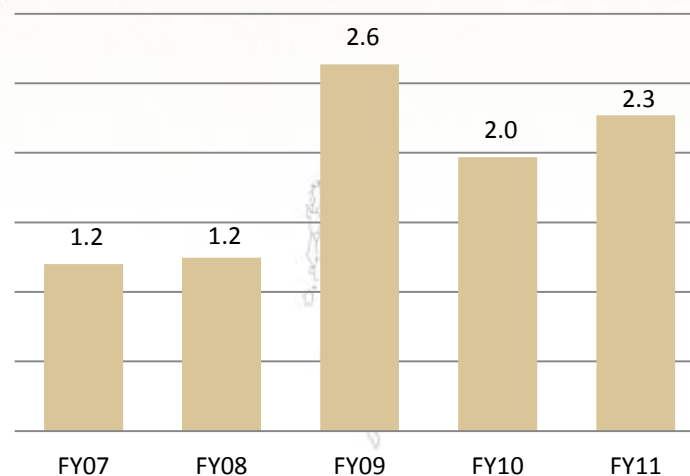
- 2004: Merger of Hind Lever Chemicals Ltd. with Tata Chemicals
- 2005: The first step towards internationalisation with stake in IMACID
- 2006: Acquires US-based General Chemical Industrial Products Inc
- 2009: Acquires controlling stake in Rallis India Limited
- 2010: Acquires South Africa's Grown Energy
- 2011: Tata Chemicals Europe Ltd. acquires British Salt, producing approximately half of UK's pure salt

Notes:IMACID- Indo Maroc Phosphore S.A.

Geographical diversification



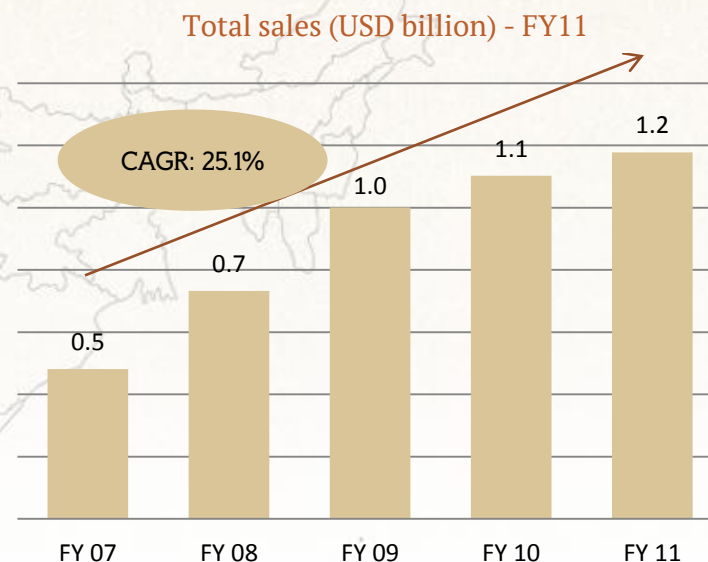
Turnover over the years (USD billion)



United Phosphorus Limited(UPL): An agrochemical success ... (1/2)

- UPL is mainly engaged in the business of agrochemicals, other industrial chemicals, and chemical intermediates
- Agrochemicals accounts for 80 per cent of total sales of the company while the industrial chemicals and intermediates segment accounts for 19 per cent
- The company has also strengthened its distribution reach and access to new markets through strategic alliances with other agrochemical manufacturers of the world

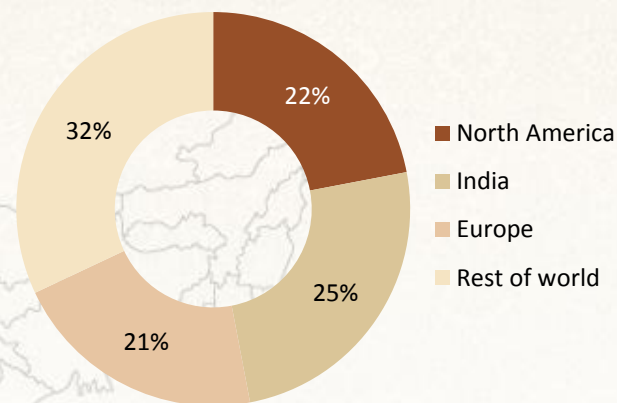
Source: United Phosphorus Limited(UPL) ANR , Aranca Research



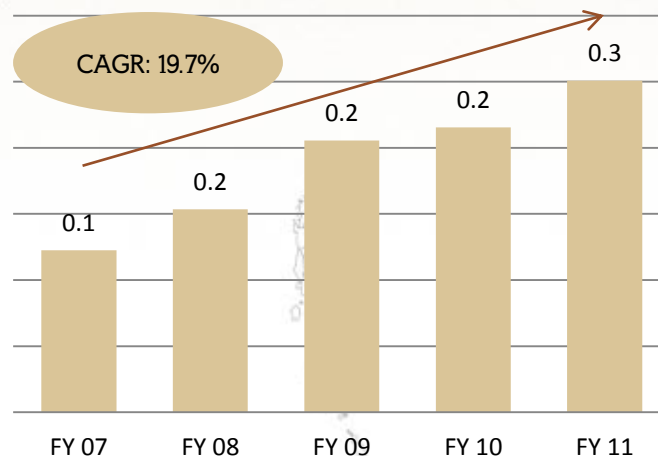
United Phosphorus Limited(UPL): An agrochemical success ... (2/2)

- Exports accounts for 53 per cent of total sales
- A big advantage for the company is that its cost of production of agrochemicals in India is low
- With various acquisitions, the company has gained access to global markets and it is in a position to offer an extensive and balanced product portfolio to its customers worldwide
- The company holds more than 1000 registrations for its products worldwide

Income by region- FY11



EBIDTA (USD billion) - FY11



Notes: EBIDTA- Earnings Before Interest, Taxes, Depreciation and Amortization

Chemicals

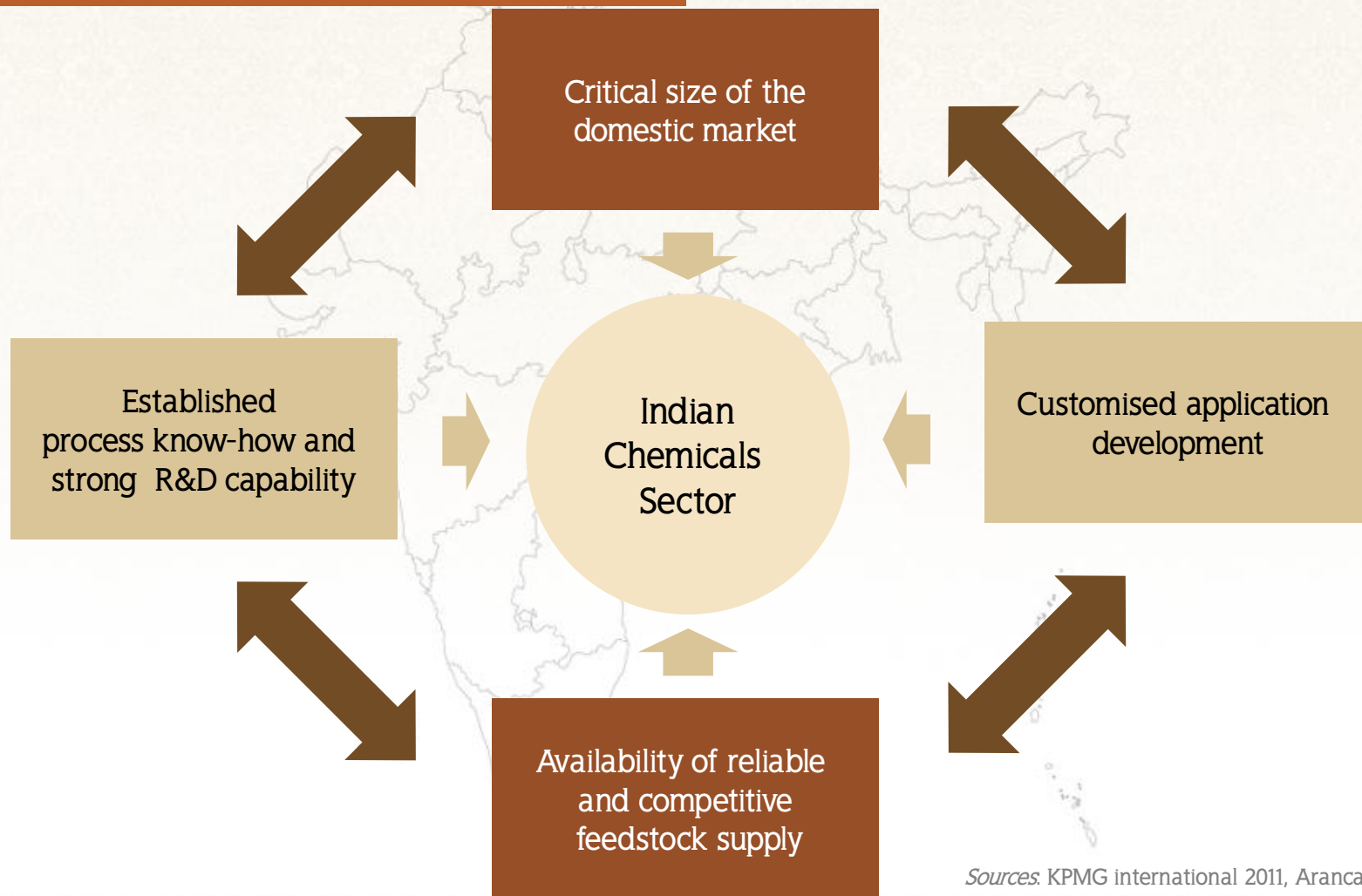
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Growth value proposition of Indian chemical industry



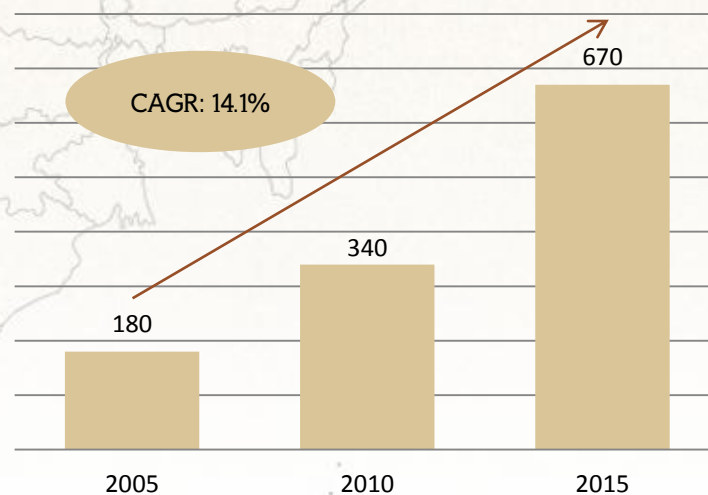
Sources: KPMG international 2011, Aranca Research

Opportunities in sub-sectors: Polymer, construction chemicals ... (1/2)

Construction chemicals

- India's construction chemical sector consists of a variety of products ranging from admixtures to sealants
- The size of the domestic market is however very small compared to the global one
- Nevertheless, with the construction sector expected to pace ahead due to strong economic growth, the fundamentals for construction chemical are sound
- By 2015, the construction chemicals sector is set to touch USD670 million, up from USD340 million in 2010

Construction chemical growth outlook (USD million)



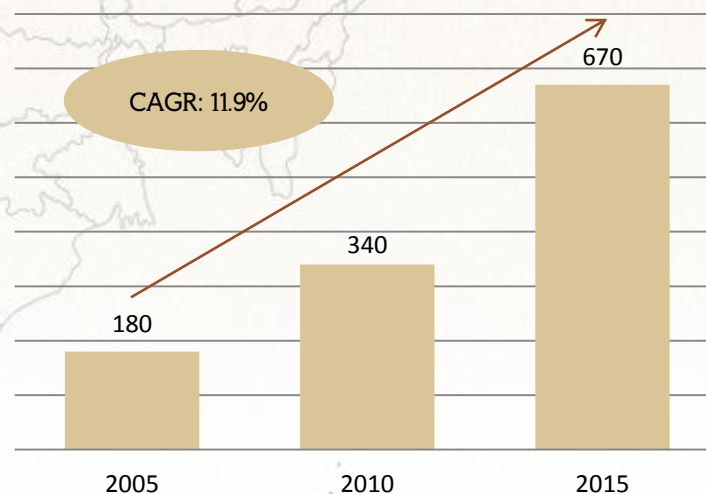
Source: TATA strategic analysis, Aranca Research

Opportunities in sub-sectors: Polymer, construction chemicals ... (2/2)

Polymer chemicals

- The Indian polymer chemical market has grown at a CAGR of 10.5 per cent in the last five years
- The sector is expected to grow at a higher rate due to growth in plastic demand due to increased usage in packaging, construction and automotive sectors
- Replacement of wood, metal and glass by plastic will also augment demand

Polymer chemical growth outlook (USD million)



Source: TATA strategic analysis, Aranca Research

Chemicals

NOVEMBER
2011

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For updated information, please visit www.ibef.org

Industry Associations

Indian Chemical Council

Sir Vithaldas Chambers, 16-Mumbai Samachar Marg,

Mumbai – 400023

Phone: 91 22 22047649/ 22846852

Fax: 91 22 22048057

Website: www.icmaindia.com

Alkali Manufacturers Association of India

3rd Floor, Pankaj Chambers, Preet Vihar Commercial Complex,

Vikas Marg, New Delhi – 110092

Phone: 91 11 22432003, 22410150, 55253401

Fax: 91 11 22468249

Website: www.ama-india.org

Indian Specialty Chemical Manufacturers' Association

1156, Bole Smruti, Suryavanshi Kshatriya Sabhagriha Marg,

Off. Veer Savarkar Marg, Dadar (West)

Mumbai – 400 028

Tel: 91 22 2446 5003

Website: www.iscma.in

Glossary

- OCB: Overseas Corporate Bodies
- NRI: Non-resident Indian
- FY: Indian financial year (April to March)
 - So FY10 implies April 2009 to March 2010
- NA: Not Available
- STPP: Sodium tripolyphosphate
- MT: Metric tonnes
- USD: US Dollar
 - Conversion rate used: USD1= INR48
EUR1= USD1.3275
- Wherever applicable, numbers have been rounded off to the nearest whole number

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