



Accelerating **focussed growth**

Contents

Integrated Report

01-57

- 01 Company Overview
- 06 Our Diversified Science Led Portfolio
- 08 Performance Highlights for FY 2018-19
- 10 Board of Directors
- 12 Management Team
- 13 MD & CEO's Message
- 14 Integrated Value Chain
- 16 Business Model Explaining the Interlinkage of Capitals
- 18 Our Formula for Accelerating Focussed Growth
- 21 Managing Risks, Maximising Returns
- 24 Listening to and Engaging with the Stakeholders
- 25 Addressing Material Issues
- 26 Basic Chemistry Business
- 32 Consumer Products Business
- 38 Specialty Chemicals Business
- 45 Intensifying Focus on Health & Safety
- 46 Innovating for a Better World
- 48 Growing Together
- 50 Our Commitment to Sustainable Growth
- 53 Corporate Social Responsibility
- 56 Basis of Reporting
- 57 Results at a Glance

Statutory Reports

58-152

- 58 Board's Report
- 94 Management Discussion and Analysis
- 116 Corporate Governance Report
- 138 Business Responsibility Report

Financial Statements

154-310

- 154 Standalone Financial Statements
- 223 Consolidated Financial Statements
- 309 Form AOC-1

- 311 Notice
- 323 Financial Statistics
- 325 Attendance Slip/Proxy Form
- 327 Glossary

80th Annual General Meeting

Date: Monday, July 8, 2019

Time: 3.00 P. M.

Venue:

Birla Matushri Sabhagar,
19, Sir Vithaldas Thackersey Marg,
New Marine Lines, Mumbai - 400 020.

Deep innovation expertise to harness the best of science and serve the society.

A passion to consistently push beyond existing limits and rise above.

Combine innovation and passion with scale and accelerated growth happens.

This is how Tata Chemicals has emerged to be one of the world's most reputed brands, revolutionising the industry segments it has operated in its 80-year journey.

As we continue to nurture our inherent strengths, we are undertaking many initiatives to accelerate our growth in focussed areas.

Our multi-pronged strategy of customer-centric product development and expansion into white spaces in our Consumer Products Business and capacity augmentation programmes in our Specialty Products Business has laid a strong foundation for growth. Aligning our organisational structure and strategies with the revised segment reporting and the exit from non-core businesses has simplified our portfolio and are driving stronger synergies. Strong innovation drive is enabling us to tap the emerging areas and nurture the newly-seeded portfolio.

Moving forward, we will consistently leverage our understanding of science as a key differentiator as we strengthen the basic chemicals business and aggressively grow the Specialty Products and Consumer Products Business. We will do this with our relentless focus on operational excellence, cost competitiveness, innovation and new product development centred around customers.

Our way forward is accelerating focussed growth.



To view or download this report, please log on to www.tatachemicals.com/Investors/Financial-reports



Icon to guide you to further details



Accelerating focussed growth with diverse, yet closely integrated businesses

Established in 1939, Tata Chemicals Limited (TCL) is a part of US\$ 110 billion Tata Group. A global company, we serve customers across 40+ countries in five continents. We bring together our knowledge, expertise and innovation prowess to positively impact industries, consumers and farmers with our science-led products spread across three business verticals. Our market capitalisation as on March 31, 2019 stood at ₹ 15,000 crore.

Inspiring our 80 years of growth

Values



S - Safety

P - Passion

I - Integrity

C - Care

E - Excellence

Vision



To be a sustainable Company with deep customer insights and engaging relationship with all stakeholders in industrial chemicals, branded agriculture and consumer products.

Mission



Serving society through science

Cultural Pillars



Proactive cost focus

Agile execution

Collaborative innovation

Trusting relationships

Approach to Business

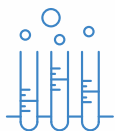


Delivering high performance for stakeholders

Caring for the community

Nurturing a committed and passionate workforce

Business divisions



Basic Chemistry Products

Inorganic chemistry solutions to serve the world's leading downstream brands



Consumer Products

High-quality and branded everyday nourishing food products to positively impact the lives of consumers



Specialty Products

Agro Sciences

Crop protection and other agricultural inputs to farmers



Nutritional Sciences

An innovative range of prebiotics and healthier alternatives to regular sugar for consumers

Material Sciences

Value-added offerings leveraging Soda Ash value chain linkages

Energy Sciences*

Integrated offerings of cell manufacturing, battery recycling and battery active production

*Potential future endeavour

Organisation structure

Key Subsidiaries

Tata Chemicals North America (TCNA)

Amongst the world's leading producers of high-quality natural Soda Ash

Tata Chemicals Europe (TCE)

Amongst Europe's leading producers of Sodium Bicarbonate, Salt, light Soda Ash and other products

Tata Chemicals Magadi (TCM)

Africa's largest Soda Ash manufacturer and one of the leading exporters in Kenya

Tata Chemicals South Africa (TCSA)

A licensed bulk handling terminal, servicing a large part of customers' Soda Ash requirements and also a growing third party cargo handling business

Tata Chemicals International Pte. Ltd. (TCIPL)

Trading of Soda Ash, procurement of raw materials and holding investments of international subsidiaries

Rallis India Limited (Rallis)

Among India's leading agro chemicals companies

Ncourage Social Enterprise Foundation

Social Enterprise targeting improvement in social issues including clean drinking water and livelihood

CSR Implementors

Tata Chemicals Society for Rural Development (TCSRSD)

Undertakes activities to address various concerns of the communities and to preserve the environment and bio-diversity.

Okhai Centre

Women empowerment through livelihood generation

Uday Foundation

Undertakes activities to create sustainable employment opportunities for youths in rural areas and assist employees in improving skills.

Tata Chemicals Golden Jubilee Foundation

Medical and educational assistance to underprivileged



Key Highlights of FY 2018-19



Nearing completion of state-of-the-art ₹ 270 crore greenfield biotechnology manufacturing unit at Nellore, Andhra Pradesh having an installed capacity of 5,000 MT of Fructo-Oligosaccharides (FOS)



Approved capex of ₹2,400 crore towards debottlenecking and capacity expansion for all products at Mithapur plant



The Board of Rallis has approved a capex of ₹800 crore towards expansion of formulation capacity and building technical and associated intermediary products manufacturing capacity for backward integration



Signed Memorandum of Understanding with CSIR-CECRI, Karaikudi, ISRO and C-MET to strengthen lithium strategy



Set-up and dedicated to the Indian nation 'Centre of Excellence for Coastal and Marine Conservation' and 'Centre for Sustainable Agriculture and Farm Excellence' in commemoration of 150 years of the Tata Group



Completed acquisition of precipitated silica business and initiated process improvement initiatives of the silica plant in Cuddalore, Tamil Nadu having an annual manufacturing capacity of 900 TPM



Launched 'Ncourage Social Enterprise Foundation' targeting to improve social issues including clean drinking water and livelihood



Committed to Science Based Targets Initiative (SBTI) and revamping the sustainability strategy at all geographies for carbon conscious growth

Our Global Presence



America

- 1. Green River Basin, Wyoming, USA
- Canada, USA, Mexico, Brazil and Argentina

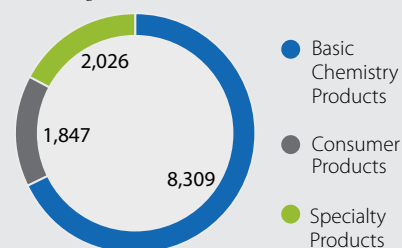
Europe

- 2. Winnington, Lostock, Middlewich, UK
- Europe and the UK

Segmental Revenue break-up

Consolidated

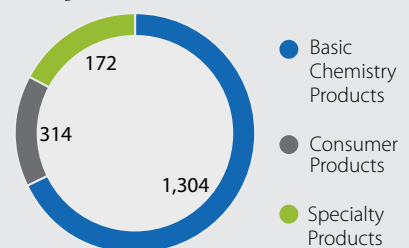
₹11,296 Cr.



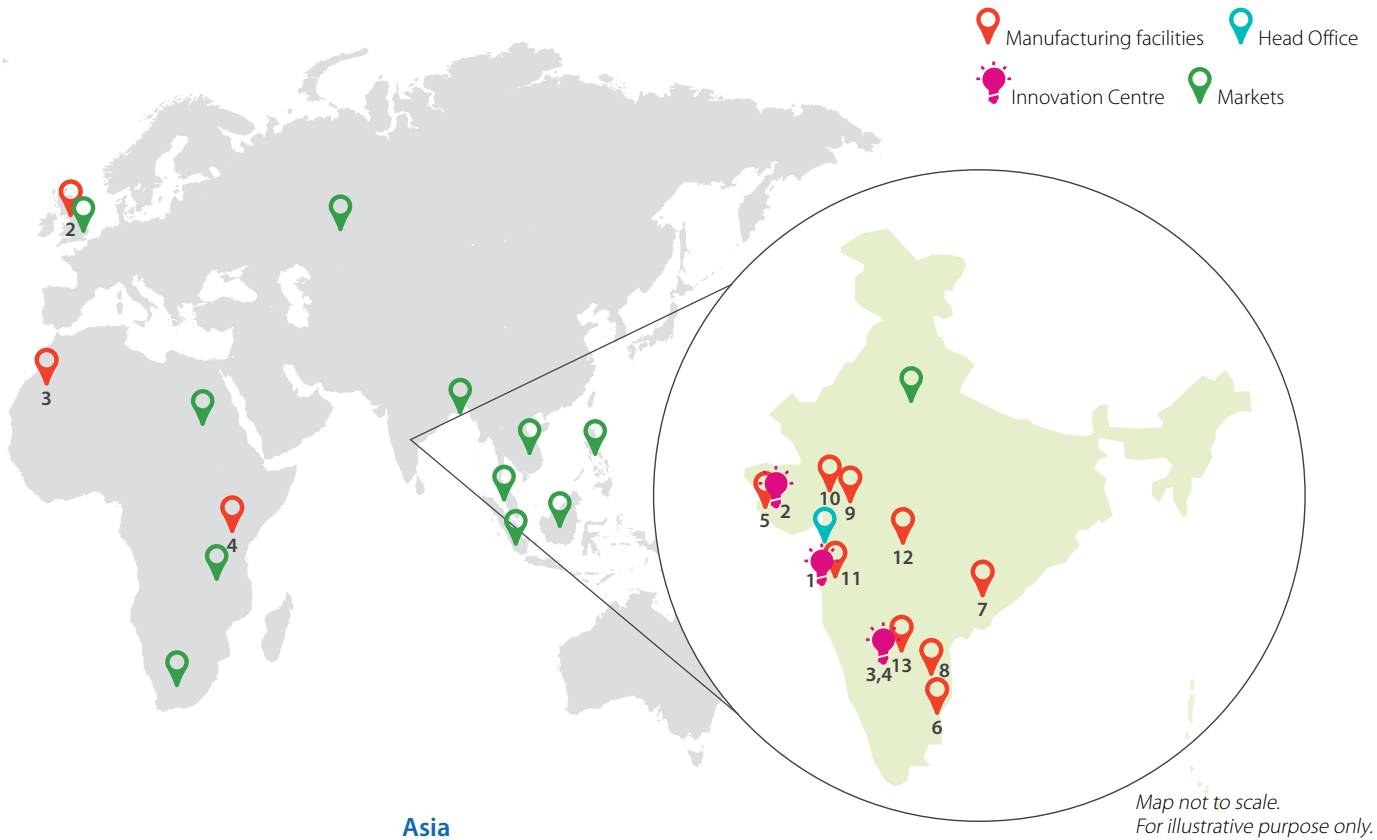
Segmental Result (EBIT)

Consolidated

₹1,790 Cr.



Note: The chart does not take into account the unallocated revenue and inter-segment revenue.



Asia

Africa

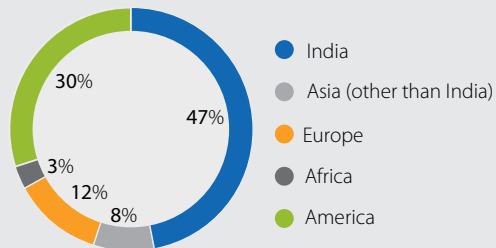
- 📍 3. Jorf Hasfar, Morocco (JV), North Africa
- 4. Magadi, Kenya
- 📍 South and East Africa, Sub-Saharan Africa

- 📍 5. Mithapur, Gujarat
- 📍 6. Cuddalore, Tamil Nadu
- 📍 7. Nellore, Andhra Pradesh
- 📍 8. Sriperumbudur, Tamil Nadu
- 📍 9. Ankleshwar, Gujarat (Rallis)
- 📍 10. Dahej, Gujarat (Rallis)
- 📍 11. Lote, Maharashtra (Rallis)
- 📍 12. Akola, Maharashtra (Rallis)
- 📍 13. Bengaluru, Karnataka (Metahelix)
- 📍 Mumbai, India
- 📍 India, Bangladesh, Indonesia, Malaysia, Thailand, Philippines
- 💡 1. TCL Innovation Centre, Pune
- 💡 2. TCL R&D Centre, Mithapur, Gujarat
- 💡 3. Rallis Innovation Chemistry Hub (RICH), Bengaluru, Karnataka
- 💡 4. Metahelix Life Sciences R&D facility, Bengaluru, Karnataka

Geographical Revenue

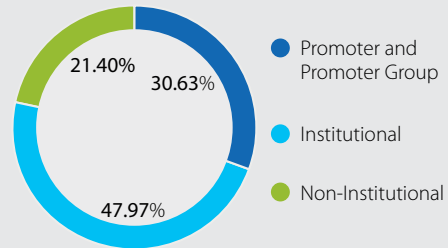
Consolidated

₹11,296 Cr.



Our Ownership Structure

Shareholding

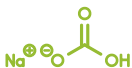


Our Diversified Science Led Portfolio



3rd largest

Soda Ash manufacturer in the world



6th largest

Sodium Bicarbonate manufacturer in the world*



Market leader

in Salt in India (Sales)



India's 1st

National pulses brand



Tata Salt

2nd most trusted food brand in India**



Pioneer

in FOS/GOS products in India

*IHS Chemical Sodium Bicarbonate Chemical Economics Handbook

**ET Brand equity results

Basic Chemistry Products

Category	End-user segments
Soda Ash	Detergent Float glass – construction and housing; commercial, office and retail space and the automotive sector, Container Glass - soft drinks, Indian-made foreign liquor, pharmaceuticals, tableware, glass etc., detergent chemicals - Sodium Bicarbonate, sodium silicates, other chemicals, dyes and intermediaries
Bicarb	Pharma (US Pharmacopoeia and British Pharmacopoeia), Pharmaceutical (Indian Pharmacopoeia), Food Animal and poultry feed, Foodgrade dust, Explosion suppressant, Haemo Dialysis, Flue Gas Treatment
Cement	Construction
Salt	Food Processing, industrial salt, de-icing, dairy products, water softening and industrial applications
Marine Chemicals	Agro Chemicals, Pesticides, Pharma Intermediaries, Fire Retardants
Crushed Refined Soda	Manufacturing of Sodium Silicate, Animal feed additive, Mining applications, Effluent treatment, Flue gas treatment, Compost heap treatment, battery manufacturing industry

Consumer Products

Category	Product profile
Salt	Vacuum evaporated salt, rock salt, black salt, crystal salt, low sodium salt, double fortified salt, solar salt, cooking soda, flavoured salt, herbal salt ¹
Pulses and besan	Unpolished dals - high protein dals range of 19 variants, Besan - low oil absorb besan, Organic dals range, Jeera Sattu flour ¹
Ready-to-cook mix	Range of mixes ² (khichdi mix, multigrain chilla mix, Low oil absorb pakoda mix, moong dal chilla mix, multi dal chilla mix)
Spices	Pure spices, blended spices
New products	Range of chutneys ² (spicy tomato chutney, chinese chutney and tamarind-date chutney), red rice poha ¹ , bran rich basmati rice ¹ , dal based snacks ¹ , 100% pure natural unrefined cold pressed extra virgin coconut oil ¹
Home care and fabric care	Detergents ¹

Specialty Products

Category	Product profile
Food	Nutritional solutions, Tata Nx brand, wellness foods, prebiotic products, Stevia based sweetener made of all natural ingredients
Wellness	Prebiotics: Fructo-Oligosaccharide (FOS), Galacto-Oligosaccharide (GOS), Animal feed supplements: FOS-based formulations
Agricultural	Crop protection solutions (herbicides, fungicides, insecticides), organic manure, seeds, plant growth nutrients (PGNs) and other agri-input solutions through Rallis
Advanced materials	Nano Zinc Oxide, Highly Dispersible Silica

1. Pilot stage in select markets and will be scaled up /continued if pilots successful

2. Successfully completed pilots and started scaling up

Brands/Products
DetMate
Dense Soda Ash, Light Soda Ash
Pharmakarb, Medikarb, Sodakarb, Alkakarb, Dessikarb, Hemokarb, Briskarb
Tata Shudh
Glacia, Granulite, Magadi Moore, Nyama and Magadi Moore Maziwa
Liquid Bromine
Crushed Refined Soda

Brands/Products
Tata Salt, Tata Salt Lite, Tata Salt Plus, Tata Salt Crystal, I Shakti, Flavoritz

Tata Sampann

Tata Dx

Brands/Products
Tata Nx
Gossence™, Fossence™, Gut Shakti
GeoGreen, Tata Metri, Tarak, Tata Panida, Contaf, Contaf Plus, Taqat, Ergon, Tata Master, Sultaf, Tata Asataf, Applaud, Takumi, Hunk, Nagata, Origin, Reeve 5, Sedna, Sonic Flo, Tata Mida, Zeeny, Rilon, Anant, Summit, Ralligold WP, Ralligold, Gr, Tata Bahaar, Uphaar, Solubor, Glucobita, Tracel, Surplus
Nano Zinc Oxide, Highly Dispersible Silica



We are present in every 5th Indian vehicle

The glass window in every 5th Indian vehicle is made from our Soda Ash



We are a preferred choice for Indian detergent manufacturers

Every month 47 million households use detergents made from our Soda Ash



We fortify iron and iodine sufficiency among Indians

Every year 170 million households in India consume iron and iodine fortified Tata Salt



We are present in the biscuits you eat and make them healthy

Our Sodium Bicarbonate and FOS are used by India's biggest biscuit manufacturers



We strive for farmer prosperity

We cover 80% of India's districts with 13 million farmer contacts through our Specialty Products



We facilitate in improving nutrition and health

We provide an innovative range of prebiotics, healthier alternatives of sugar, high protein unpolished dals, low oil absorb besan and healthy ready-to-cook nutrimixes

Performance Highlights for FY 2018-19



Financial capital#

Financial capital represents the pool of funds, including both debt and equity finance, that is available to our organisation. We rely on multiple sources of funds and put them to use for the acquisition of manufactured capital to strengthen the balance sheet.

EBITDA

₹2,095 Cr.

₹2,191 Cr.
FY 2017-18

PBT

₹1,742 Cr.

₹1,620 Cr.
FY 2017-18

PAT

₹1,395 Cr.

₹1,560 Cr.
FY 2017-18

Market capitalisation*

₹15,000 Cr.

₹17,251 Cr.
FY 2017-18

#For continuing operations only

*As on March 31, 2019



Manufactured capital

Manufacturing capital represents our plants, warehouses, logistics facilities and all the physical assets that we use for producing basic and agro chemicals, consumer food, nutritional products and seeds. We continue to invest in the manufactured capital to build capacities and enhance operational efficiency.

Soda Ash production

3,634 KT

Sodium Bicarbonate production

220 KT

Branded salt production*

1,131 KT

Cement production

409 KT

* includes I Shakti Salt



Intellectual capital

Intellectual capital represents our scientific knowledge, research & development capabilities and innovation quotient which is core to our business. We have put a strong emphasis on R&D to come up with new and better products that enhance our competitiveness.

Investment in R&D

₹38 Cr.

Patents filed

5



Social and relationship capital

Social capital represents our community engagements and investments in their development. We carry forward the ethos of Tata Group and strive to become a responsible corporate by undertaking activities that can bring a meaningful difference to the society.

Our relationship capital represents the long-term relationships with the supply partners, dealers and customers. We continue to nurture these relationships to make our business more sustainable. We work closely with our suppliers for sharing knowledge and capacity building. We engage closely with our customers (consumers, industries and farmers) and drive innovation and product quality to meet their needs and enhance satisfaction levels.

CSR Spend	No. of people benefited
₹26 Cr.	2,00,000



Human capital*

Human capital represents the knowledge, skills and experience of our strong workforce which enables us to create value. We invest in their welfare, engagement, skilling, health and safety to ensure the sustained outcome.

*The KPI's of human capital include all subsidiaries

Total on-roll employees**	Employee engagement score	TRIFR***	Employee Productivity - PBT/Employee
4,698	73%	1.61	0.37 ₹ in Cr./ employee

**As on March 31, 2019

***Total Recordable Incident Frequency Rate indicating the number of safety related incidents per million hours worked



Natural capital

Natural capital represents all the renewable and non-renewable resources on which our operations are dependent. This includes various raw materials (i.e. coal and limestone among other minerals extracted from mines), land and water that we use into our operations. Our intent is to minimise the use of natural resources and the impact of our operations on nature.

% of Process water supplied by Sea	Energy generated from renewable sources	Recycled and co-processed packaging waste*	Water recycled
73%	6,279 GJ	75%	66%

*For TCL India

Board of Directors



2

Mr. Bhaskar Bhat, Non-Executive Director

A mechanical engineer from IIT Madras with a post-graduate diploma in management from IIM Ahmedabad, Mr. Bhat joined the Tata Watch Project (initiated at Tata Press) in 1983, which is now Titan Company Limited. He has served as the Managing Director of Titan Company Limited since April 2002. Mr. Bhat has engineered the creation of many brands including pioneering the concept of franchising and retailing in Watches, Jewellery, Eyewear and Precision Engineering. He was awarded the Distinguished Alumnus Award of IIT Madras in 2008. He was appointed as a Director on the Board of Tata Sons in November 2017. He was appointed as the Non-Executive Director of Tata Chemicals in December 2016.



1 2

Mr. Nasser Munjee, Non-Executive Independent Director

With a Master's Degree from the London School of Economics, Mr. Munjee has held various positions at HDFC for more than 20 years, including serving as an Executive Director. He was the Managing Director of IDFC and served on the Board of various multinational companies and trusts. He was a technical adviser on the World Bank's Public Private Partnership Infrastructure and Advisory Fund. Mr. Munjee has been the chairman of DCB Bank since June 2005 and was appointed as a Non-Executive, Independent Director on the Board of Tata Chemicals in September 2006.



1 2 4

Dr. Y. S. P. Thorat, Non-Executive Independent Director

Dr. Thorat holds a Doctorate in Economics along with Degrees in Political Science and Law. He started his career with the Reserve Bank of India in 1972 and was appointed as its Executive Director in 2003. His major contribution has been in the field of policy support for agriculture finance, supervision and export credit. In the year 2004, he was appointed as the Managing Director of NABARD and later the Chairman. In the past, he has been associated with the Planning Commission, Government of India, for the 10th and 11th five-year plans. Dr. Thorat is also a director of several other companies and has been serving as a Non-Executive, Independent Director on the Board of Tata Chemicals since January 2010.



3 5

Ms. Vibha Paul Rishi, Non-Executive Independent Director

Ms. Vibha Paul Rishi holds a BA Degree in Economics from Delhi University and an MBA with specialisation in marketing from the Faculty of Management Studies, New Delhi. She is an experienced business leader who has worked with Titan, PepsiCo, Max India and Future Group with stints in India, the UK and USA. Her last role was as the Executive Director, Brand and Human Capital of Max India. She has worked at senior positions in branding, strategy, innovation and human capital around the world. She serves on the Boards of several reputed companies and is also on the Board of Pratham, an NGO that works to provide education to underprivileged children in India and was appointed as a Non-Executive, Independent Director on the Board of Tata Chemicals in September 2014.



1 3 4 5

Mr. S. Padmanabhan, Non-Executive Director

Mr. Padmanabhan is a distinguished alumnus of IIM Bangalore, a Gold Medallist and alumnus from PSG College of Technology, Coimbatore and has also completed the Advanced Management Program at Harvard Business School. During a 26-year stint with Tata Consultancy Services, Mr. Padmanabhan held several senior leadership roles. In the past, he has held the positions of Executive Director of Tata Power as well as the Group Chief Human Resources Officer at Tata Sons. He also serves on the Boards of several other Tata companies. Appointed as a Non-Executive Director of Tata Chemicals since December 2016, he is currently the Executive Chairman, Tata Business Excellence Group (TBExG).



Mr. Ratan N. Tata, Chairman Emeritus

Mr. Ratan Tata was the Chairman of Tata Sons from 1991 till his retirement on December 28, 2012. He was also Chairman of the major Tata companies, including Tata Motors, Tata Steel, Tata Consultancy Services, Tata Power, Tata Global Beverages, Tata Chemicals, Indian Hotels and Tata Teleservices. During his tenure, the Group's revenues grew manifold, totalling over US\$100 billion in 2011-12. He is the Chairman of the Tata Trusts which are amongst India's oldest, non-sectarian philanthropic organisations that work in several areas of community development. He is the Chairman of the Council of Management of the Tata Institute of Fundamental Research and also serves on the Board of Trustees of Cornell University and the University of Southern California.



1

Ms. Padmini Khare Kaicker, Non-Executive Independent Director

Ms. Padmini Khare Kaicker is a Certified Public Accountant (USA), a Chartered Accountant from the Institute of Chartered Accountants of India and a Diploma holder in Business Finance from the Institute of Chartered Financial Analysts of India. She is the Managing Partner of B. K. Khare & Co., one of the leading Indian accounting firms. She has a wide and varied experience in the areas of audit, taxation, corporate finance, risk management, corporate governance, M&A and restructuring. She serves on the board of several companies and has been a Non-Executive, Independent Director on the Board of Tata Chemicals since April 2018.



3 4 5

Mr. R. Mukundan, Managing Director & CEO

An engineer from IIT Roorkee, Mr. R. Mukundan joined the Tata Administrative Service in 1990, after completing an MBA from FMS, Delhi University. He is also an alumnus of the Harvard Business School. During his career with the Tata Group, he has held various responsibilities across the chemical, automotive and hospitality sectors. He was appointed as the Managing Director of Tata Chemicals in November 2008.



3 4

Mr. Zarir Langrana, Executive Director

An economics graduate from the University of Madras with post-graduation in business management from XLRI, Jamshedpur, Mr. Langrana has also attended advanced executive development programmes at Harvard Business School. During his association with Tata Chemicals of over 30 years, he has led the corporate strategy and business development functions and headed the global marketing function for the chemicals business. Appointed an Executive Director in April 2018, Mr. Langrana currently heads the Global Chemicals Business and the new ventures in Specialty Business.

Board Committees

- 1. Audit Committee
- 2. Nomination and Remuneration Committee
- 3. CSR, Safety and Sustainability Committee
- 4. Risk Management Committee
- 5. Stakeholders Relationship Committee

● Chairperson ● Member

Management Team

Mr. R. Mukundan

Managing Director & CEO

Mr. Zarir Langrana

Executive Director

Mr. John Mulhall

Chief Financial Officer

Mr. R. Nanda

Chief Human Resources Officer

Mr. Rajiv Chandan

General Counsel & Company Secretary

Mr. M. S. S. Rao

Chief Safety & Engineering

Mr. K. R. Venkatadri

Chief Innovation & Digital Officer

Ms. Alka Talwar

Chief Sustainability & CSR

Dr. Richard Lobo

Head - Strategy & Business Excellence

Mr. Shohab Rais

Chief Operating Officer, India
Chemicals Business

Ms. Richa Arora

Chief Operating Officer,
Consumer Products Business

Mr. Rino Raj

Chief Operating Officer,
Energy & Battery Business

Mr. Sanjiv Lal

Managing Director & CEO,
Rallis India Limited

Mr. Scott Ellis

Managing Director & CEO,
Tata Chemicals North America

Dr. Martin Ashcroft

Managing Director,
Tata Chemicals Europe

Mr. Harish Nair

Executive Director & COO,
Tata Chemicals Magadi

MD & CEO's Message

Dear Shareholders,

It is with energy and enthusiasm that I write to you about our performance, journey forward and future strategy. The last fiscal year marked 150 years of the Tata Group and to commemorate this we set up two centres of excellence, dedicated to the nation - one is a "Centre of Excellence for Coastal and Marine Conservation" and the other is "Centre for Sustainable Agriculture and Farm Excellence". The initial grant for these Centres is being contributed by the Tata Chemical Society for Rural Development with support from Tata Chemicals and its subsidiary, Rallis India.

This is also a landmark year as Tata Chemicals celebrates 80 years of business and 90 years of the Okha Salt Works, its birthplace. Through this time, we have navigated our business to meet the needs and expectations of all stakeholders. Our longevity and continued relevance epitomises the inherent strength of our Values and Purpose.

Overall business performance

FY 2018-19 has been one of the best years in terms of performance holistically. Our standalone operational profit (from continuing operations) has been the highest ever.

While TCL India's operations delivered to the plan, there is a need to improve the performance of subsidiaries. Our teams are focussed on the task on hand in terms of better reliability of operations and more focussed market efforts.

Our Basic Chemistry Business had good market conditions globally and maintained margins despite a surge in energy costs. We are progressing our plans to debottleneck and expand operations in Mithapur plant. We are also strengthening our product portfolio through the investment in Medikarb plant for Pharma grade Bicarbonate and the launch of Speckarb, an industrial grade Sodium Bicarbonate. These products are enabling us to tap newer customer segments and expand global operations.

Our Specialty Products Business is progressing well. We now have four verticals under it. The Agri Sciences Business run by our subsidiary Rallis faced tough market conditions within India, however, its exports grew at an excellent pace. Rallis has moved

forward with new vigour to strengthen its sales and marketing through several operational steps and new product additions. It is investing in its Dahej facilities to address the growing needs of Indian and overseas markets. In the Nutrition Science Business, our investment in the Nellore plant for FOS (Fructo Oligosaccharide) is nearing commissioning. In the Material Science Business, our acquisition of a silica plant in Cuddalore and subsequent upgrade is advancing as planned. We will make silica for food and HDS rubber (tyre) grade at this plant. In Energy Storage Science Business, our discussions with automotive players is advancing on the back of the new EV policy announced by the Government.

The Consumer Products Business performed extremely well. Our brands, Tata Salt and Tata Sampann achieved greater traction. We strengthened the business launching several new products like Ready-to-cook nutrimixes, Basmati Rice and Red Poha and expanding the portfolio from food to home and fabric care segments with Tata Dx Detergent. The year was memorable as Tata Salt crossed the milestone of clocking 1 million MT of packet sales.

Our financial performance reflected the steady operational performance. On a consolidated basis, our revenue from continuing operations grew by 9% to ₹ 11,296 crore. Net debt stands at ₹ 1,959 crore, EBITDA was ₹ 2,095 crore and PAT was ₹ 1,395 crore. Cash and cash equivalents at the end of the year stood at ₹ 1,952 crore.

Our strategy going forward

Our strategy going forward is to be a focussed science-led chemistry company. With this, our focus will be on strengthening the innovative funnel to ensure aggressive growth in the Specialty Products Business.

In our Basic Chemistry Products Business, we will continue to be most cost-efficient Soda Ash, Bicarbonate and Salt business. Our investment in a Bicarbonate unit in the United Kingdom using innovative carbon capture process and Mithapur plant expansion will provide significant thrust.

The Consumer Products Business will build food platform under the Tata Sampann Brand further.

In the Specialty Products Business, the Agri Sciences Business is undergoing significant transformation with an ambitious ₹ 800 crore investment plan and a rejuvenated management team who are focussed on driving excellence and growth. The upcoming plants of Nutrition Science and Material Science Businesses will add a new layer of growth. In the Energy Storage Sciences Business, we plan to build an integrated business that includes cell manufacturing, battery recycling and battery active production.

Focus on innovation, digital thrust and sustainability

As we seek to accelerate growth, our focus on building a sustainable, knowledge driven organisation that is anchored in futuristic technologies will be the key.

Leading our efforts in this path are our laboratories in Pune and Bengaluru. We are investing in them to scale product development keeping in mind our long-term sustainability focus. Digital technology is now at the heart of our business operations, as we seek to simplify and speed up operations and serve customers better.

We will continue to make headway towards responsible manufacturing to ensure zero harm to people, assets and environment across the business value chain.

In conclusion

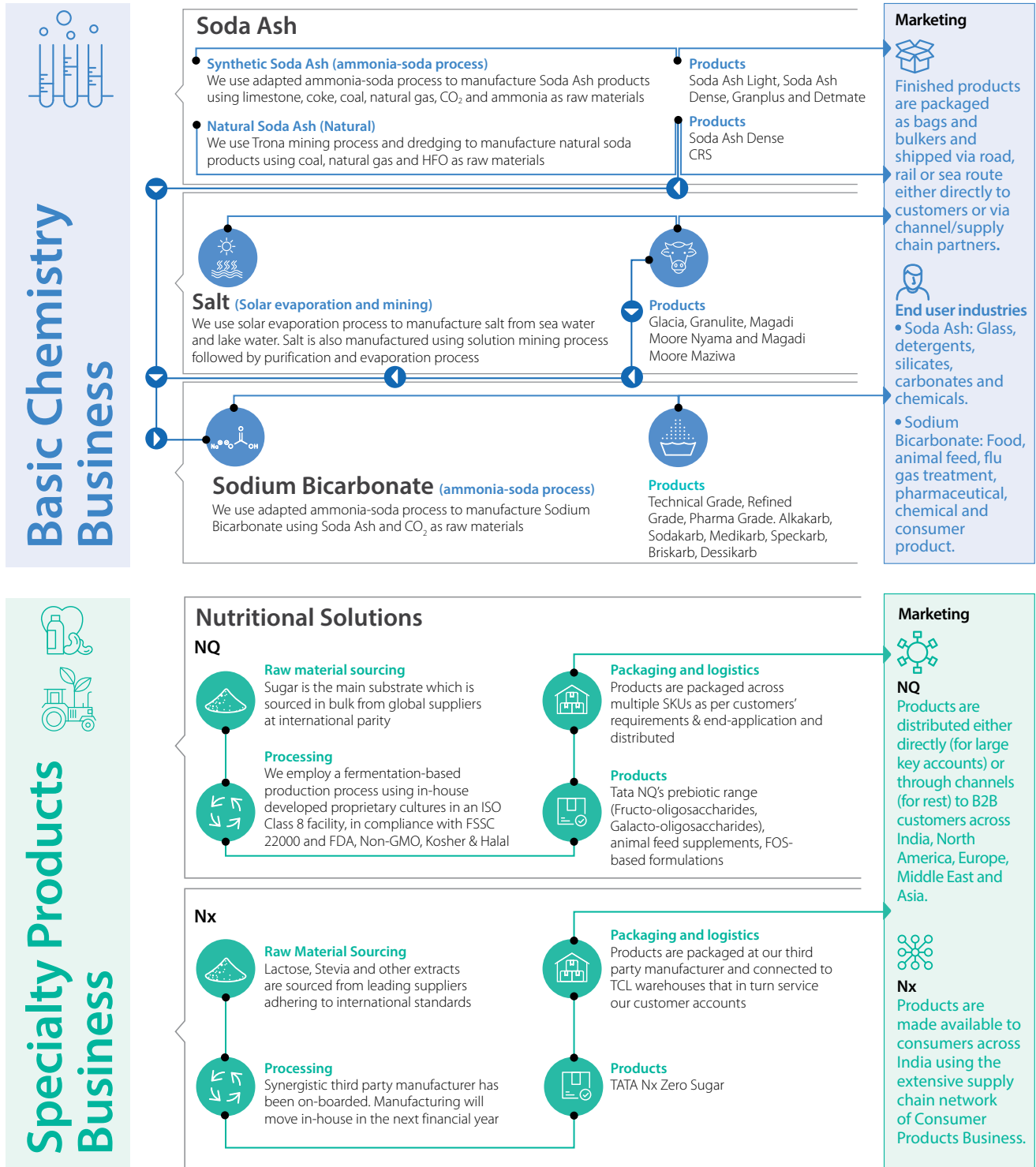
I thank all our shareholders for their unstinting support. We remain motivated to build a sustainable, long-term future, while upholding the Tata Values and Group Purpose. Engaged employees are our strength and we value the passion and enthusiasm they bring to their work.

We have travelled eight decades together and seek to continue our journey with optimism and enthusiasm for a better future.

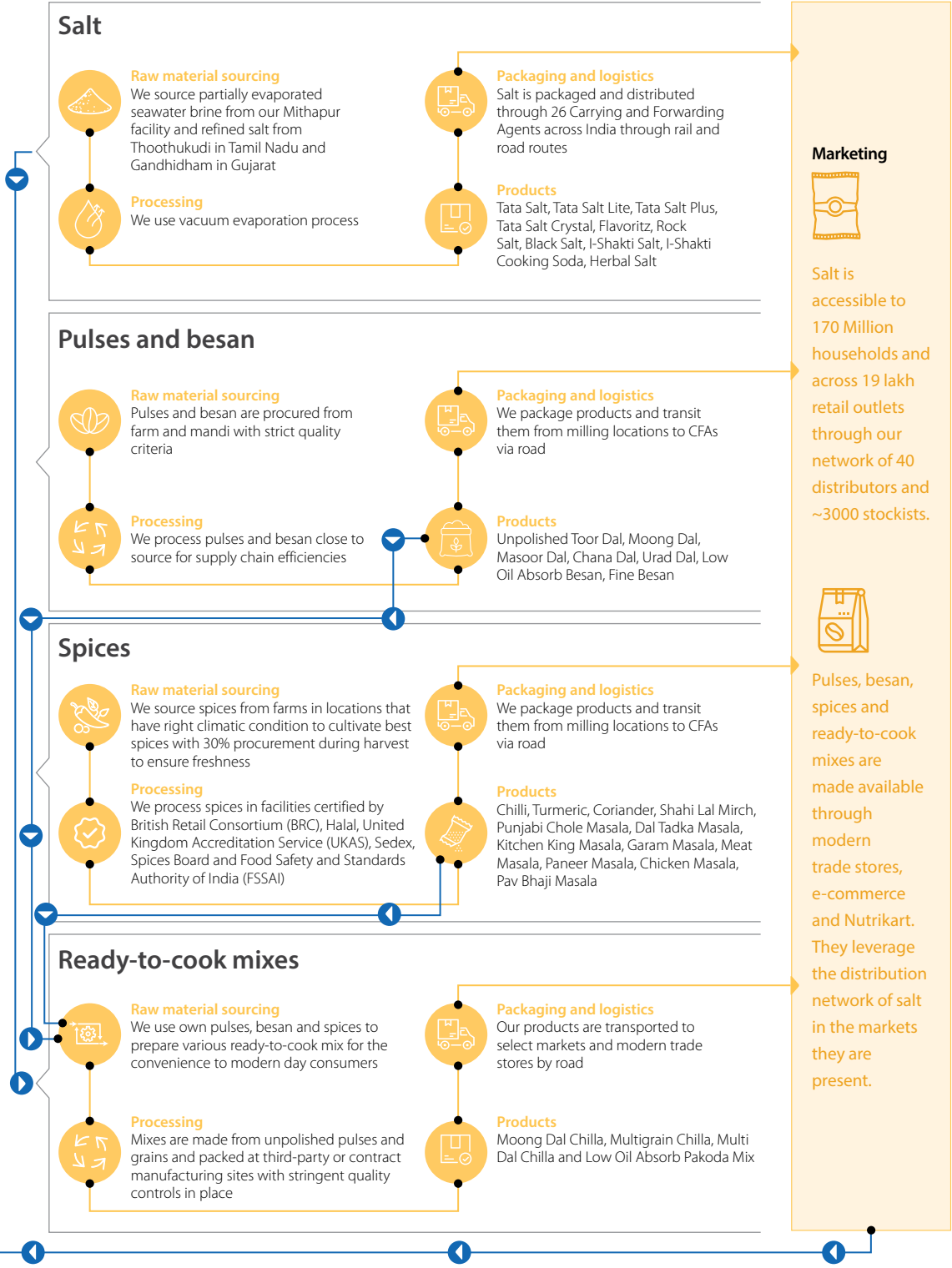
Best regards,

R. Mukundan
Managing Director & CEO

Integrated Value Chain



Consumer Products Business



Business Model explaining the Interlinkage of Capitals

INPUTS

MULTIPLE CAPITALS / KPIs	UoM	2018-19
FINANCIAL CAPITAL		
Total Capital Employed ¹	₹ crores	24,317
Capital Expenditure		
Standalone	₹ crores	589
Consolidated	₹ crores	1,082
MANUFACTURED CAPITAL		
Property, plant and equipment ²	₹ crores	13,551
Assets under construction ³	₹ crores	774
<i>Manufacturing name plate capacity:</i>		
Soda Ash	KT	4,138
Sodium Bicarbonate	KT	236
Branded Salt	KT	1,035
Cement	KT	440
INTELLECTUAL CAPITAL		
Investment in Research & Development (standalone)	₹ crores	38
R&D expenditure as % of revenues	%	0.9
Patents filed	Nos.	5
Employees in R&D	Nos.	224
HUMAN CAPITAL		
Employees on payroll	Nos.	4,698
Employees off payroll	Nos.	7,409
Functional Training Coverage (unique employees)	%	72
Training days per employee	Mandays/employee	3.4
Employees covered under manager/ leader development programme	Nos.	245
Safety Training	Mandays / employee	1.54
SOCIAL AND RELATIONSHIP CAPITAL		
Spent on CSR initiatives	₹ crores	26
Basic Chemistry Business		
No. of depots (TCL India: 13; TCNA: 2; TCSA: 1; TCE: 4; TCML: 3)	Nos.	23
Consumer Products Business		
Stockists	Nos.	3,282
CFAs	Nos.	26
Distributors	Nos.	42
Specialty Products Business (Nutritional Solutions)		
Distributors (India and global)	Nos.	13
NATURAL CAPITAL		
Rainwater harvesting capacity installed	MCFT	396
Saplings planted	Nos.	2.6 lakh

1. Capital Employed = Total Assets less Total Current Liabilities plus Current Borrowings plus Current Maturities from Non Current Borrowings and Finance Lease Obligation less Investment in Subsidiaries (Other than Rallis India Limited)
2. It includes Property, plant and equipment, Investment property, Goodwill on consolidation, Goodwill and Intangible assets
3. Assets under construction includes Capital work-in-progress and Intangible assets under development
4. Cash and Cash Equivalents (including Deposits with < 12 months maturity and current investments)

*TCL India



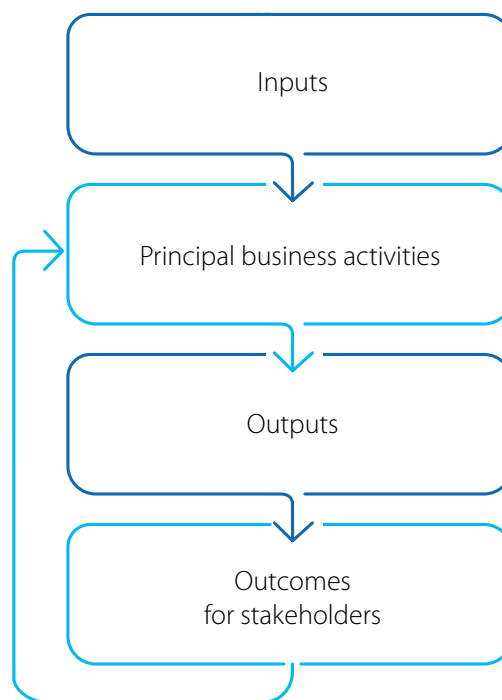
Governance

Mission, Vision, Values, Tata Code of Conduct, Board and its Committees, Tata Business Excellence Model, Quality Policy, Whistleblower Policy, Code of Corporate Disclosure Practices



Key aspects

- Stakeholder engagement
- Risks and opportunities
- External environment
- Strategy and resource allocation



OUTPUT

	Organisation Total	
	UoM	2018-19
Branded Salt production*	KT	1,131
Sodium Bicarbonate production	KT	220
Soda Ash production	KT	3,634
Cement production	KT	409

* includes I Shakti Salt



For deeper insights into our Value Chain, please refer to **page 14-15**



Sustainable development goal

Tata Chemicals' business model and outcomes are aligned with the United Nations Sustainability Development Goals (SDGs).



Support functions

- Business Excellence
- Corporate Communications
- Corporate Strategy & Planning
- Finance
- Human Resource & Administration
- Information Technology Services
- Internal Audit & Business Assurance
- Legal & Corporate Secretarial
- Research & Development
- Sustainability & Corporate Social Responsibility

OUTCOMES

MULTIPLE CAPITALS / KPIs	UoM	2018-19
FINANCIAL CAPITAL		
Revenue (Consolidated)	₹ crore	11,296 (t)
EBIDTA	₹ crore	2,095 (t)
PAT	₹ crore	1,395 (t)
Cash and cash equivalents ⁴	₹ crore	4,205 (t)
EPS (total continuing and discontinued operations)	₹/share	45.38
Dividend on face value of ₹10 per share	₹/share	12.50
Net worth	₹ crore	12,341 (t)
Market Capitalisation as on March 31, 2019	₹ crore	15,000 (t)
Gross Debt : Equity	Times	0.50 (t)
Net Debt : EBITDA	Times	0.93 (t)
MANUFACTURED CAPITAL		
Soda Ash sales	KT	3,526 (t)
Sodium Bicarbonate sales	KT	209 (t)
Branded salt sales	KT	1,155 (t)
Cement sales	KT	402 (t)
INTELLECTUAL CAPITAL		
Basic Chemistry Business		
New products launched	Nos.	3
Consumer Products Business		
New products launched	Nos.	10
Specialty Chemicals Business		
New products launched - NQ	Nos.	3
New products launched - Nx	Nos.	1
HUMAN CAPITAL		
Employee productivity (PBT per employee)	₹ crore / employee	0.37 (t)
Voluntary attrition	%	10 (-)
Employee Engagement scores	%	73 (t)
Incidents of labour unrest	Nos.	0 (-)
SOCIAL AND RELATIONSHIP CAPITAL		
CSR beneficiaries	Nos.	2 lakh
Students covered under educational programme	Nos.	24,800
Basic Chemistry Products Business		
TCL - Customer satisfaction index	Score	82 (t)
TCL - End user reach (no. of companies)	Nos.	3,399 (t)
TCL - Grievance resolution time	Days	4 (t)
TCNA - Customer satisfaction index	Score	90 (t)
TCNA - End user reach (no. of companies)	Nos.	71 (t)
TCNA - Grievance resolution time	Days	17 (t)
TCSA - Customer satisfaction index	Score	90 (t)
TCSA - End user reach (no. of companies)	Nos.	71 (t)
TCE - Customer satisfaction index	Score	96 (t)
TCE - End user reach (no. of companies)	Nos.	1,876 (t)
TCE - Grievance resolution time	Days	<28 (t)
TCML - Customer satisfaction index	Score	78 (-)
TCML - End user reach (no. of companies)	Nos.	409 (t)
TCML - Grievance resolution time	Days	2 (t)
Consumer Products Business		
Customer satisfaction index (retailers)	Score	76 (-)
Grievance resolution time	Days	3 (t)
Household reach	Million	170 (t)
Retail Outlets (direct and indirect)	Lakh	19 (t)
Tata Salt franchise (Tata Salt, Tata Salt Lite, Tata Salt Plus) market share in powdered salt segment	%	25.7 (t)
Specialty Products Business		
Nutritional Solutions		
Customer satisfaction index	Score	80% (t)
NATURAL CAPITAL		
Energy Savings (Global)	Gj	24,109 (t)
Energy generated from renewable sources*	Gj	6,279 (t)
Total Water Consumption (Global)	Mm ³	105 (t)
% of Sea Water Consumption (Global)	%	73 (t)
Water discharged (Global)	Mm ³	89 (t)
Water recycled (Global)	Mm ³	70 (t)
Responsible manufacturing index (Global)	score	0.47 (t)
Solid waste utilisation*	%	90 (t)
GHG emissions (Global)	mtCO ₂ /MT Produced	0.79 (t)
Packaging waste recycled and co-processed*	%	75

Note: (t) indicate change over previous year, - means no change

FINANCIAL CAPITAL

MANUFACTURED CAPITAL

INTELLECTUAL CAPITAL

HUMAN CAPITAL

SOCIAL AND RELATIONSHIP CAPITAL

NATURAL CAPITAL

Our Formula for Accelerating Focussed Growth

Our Strategic Planning Process, rooted in our mission, drives our vision, growth and sustainability. It sets the strategic direction to achieve organisational objectives and deliver long-term value to stakeholders.

Charting strategy process across horizons

Long-term horizon (> 5 years)

Enterprise level, strategic-oriented and focussed on the role of innovation and portfolio decisions

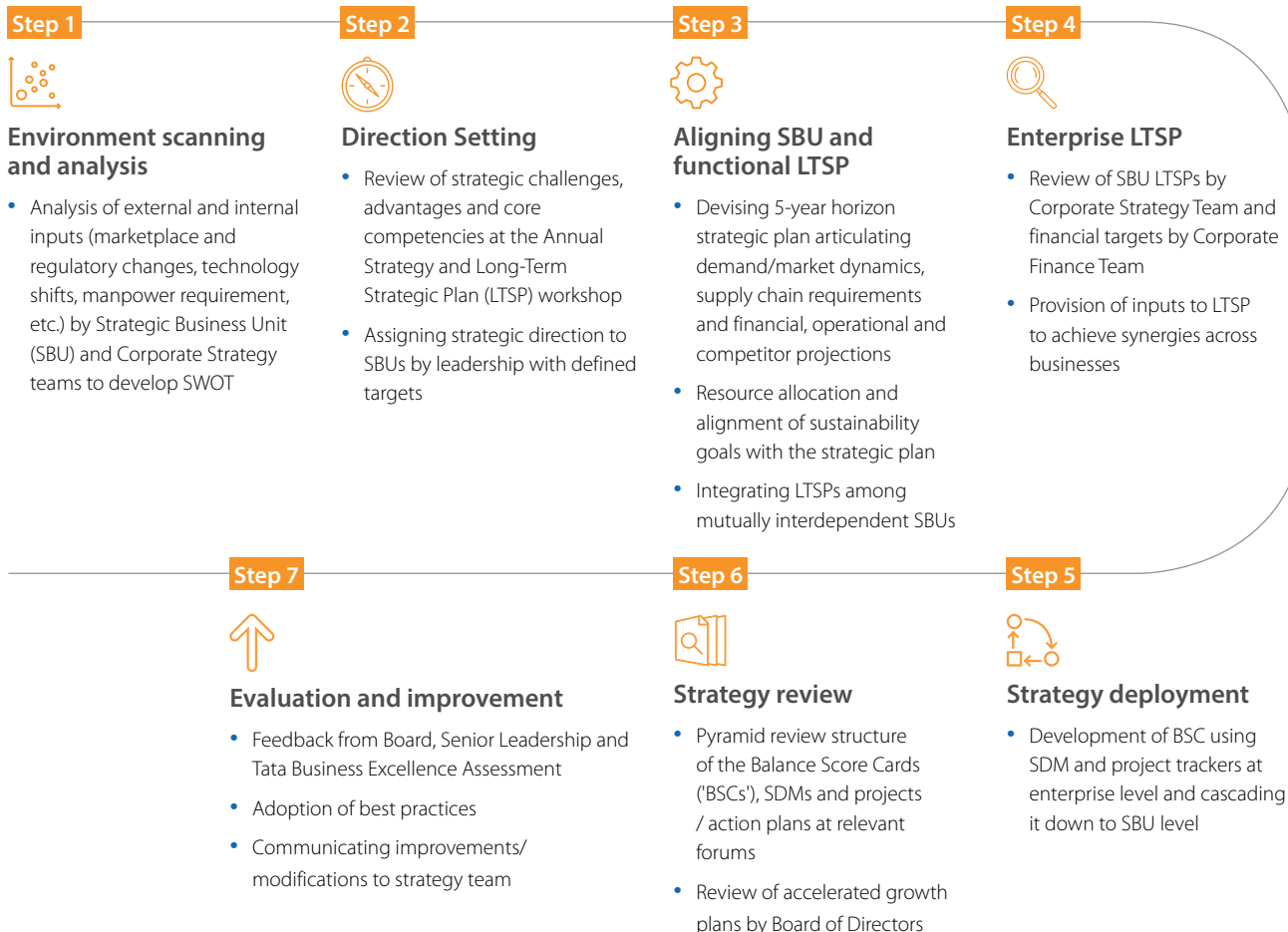
Medium-term horizon (2-3 years)

Granular and addresses revenue forecasts, growth dimensions and sustainability planning

Short-term horizon (1 year)

Tactical and uses annual business plan and Strategy Deployment Matrix (SDM) tools to translate five-year plans into specific actions

Strategy planning process at Tata Chemicals



Key market trends

<p>Global growth is likely to remain softened in the near-term, followed by a pick-up in the second half of 2019 supported by significant policy accommodation by major central banks</p>	<p>Growing Indian economy, supported by continued recovery of investment and robust consumption amidst an expansionary monetary policy stance and expected impetus from fiscal policy</p>	<p>Consumer market push led by growing awareness, accessibility, changing lifestyles and need for convenience. Increasing rural consumption supported by rising income and aspiration levels is driving demand for branded products in rural India</p>	<p>Push in Soda Ash demand driven by rising consumption from glass sector</p>	<p>Growth in high intensity natural sweeteners due to increased awareness and consumption of dietary foods</p>

Strategic objectives and enablers

Strategic objective (SO)	Enablers of our strategy
<p>Maintain cost leadership and scale the Basic Chemistry Products Business</p>	<ul style="list-style-type: none"> World's 3rd and 6th largest manufacturer of Soda Ash and Sodium Bicarbonate respectively with strong customer relationships Unique global supply chain advantage facilitating assured supply and efficient service at competitive prices to customers Access to vast natural resources in the US (TCNA) and Kenya (TCML) contributing to 2/3rd of the Company's manufactured Sodium Bicarbonate Approved capex of ₹ 2,400 crore for capacity expansion at Mithapur plant
<p>Grow market share of Salt business, scale new products and seed new categories fuelled by science-led differentiation in the Consumer Products Business</p>	<ul style="list-style-type: none"> Tata Salt portfolio reach to over 170 million Indian households and its market leadership exemplifies the enduring trust of brand among consumers Tata Sampann is the first national player in branded pulses Focussed movement towards a full range FMCG play, scaling up in spices and foods and also piloting products in home care Pan-India distribution Resource security e.g. salt from Mithapur
<p>Aggressively grow through scientific innovation and acquisition of niche opportunities in Agro, Material, Nutritional and Energy Sciences of the Specialty Products Business</p>	<p>Established world-class R&D facilities housing experienced scientists at Tata Chemicals' Innovation Centre in Pune and R&D Centre in Mithapur, Rallis Innovation Chemistry Hub (RICH) and Metahelix Life Sciences R&D facilities in Bengaluru</p> <p>Agro Sciences</p> <ul style="list-style-type: none"> Covers 80% of India's districts with 13 million farmer contacts through subsidiaries Rallis and Metahelix Capex of ₹ 800 crore approved by the Board of Rallis towards expanding formulation capacity to service growing global demand and build technical and associated intermediary products manufacturing capacity for backward integration



Material Sciences

- Green patented technology for manufacture of HDS for tyres
- Completed the acquisition of precipitated silica business



Nutritional Sciences

- Strong demand for nutrition rich products
- State-of-the-art greenfield biotechnology manufacturing unit at an investment of ₹ 270 crore at Nellore, Andhra Pradesh commissioning in 2019



Energy Sciences

- Need for new emission norms complaint products/ EV revolution in India
- MoUs signed with CSIR-CECRI, Karaikudi, ISRO and C-MET to strengthen our lithium based energy storage solution strategy

FY 2019-20: Key objectives

Leverage 'science' as the key differentiator to achieve our Strategic Objectives defined above



Strengthening the Basic Chemistry Products Business



Gaining stronger foothold in Consumer Products Business



Aggressively growing Specialty Products Business

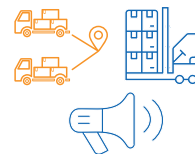
Areas of focus



Leverage technology and digitalisation to improve process efficiency and greater thrust on sustainability



Invest in digital capabilities to expand consumer reach, drive operational excellence, analytics for faster decision making and enhancement of people skill-set to make the Company future-ready



Distribution expansion, brand building initiatives and strengthening of supply chain in the Consumer Products Business

Drivers



Robust technology and R&D capabilities



Relentless focus on operational excellence and customer centricity



Developing engaging relationships with all stakeholders



Commitment to sustainability

Managing Risks, Maximising Returns

Risks are inherent to business and we are committed to effectively managing them in our pursuit to achieve strategic and business objectives aimed at enhancing stakeholders' value sustainably. Our focus on dealing with business uncertainties is to minimise the downside while striving to maximise the upside potential to attain our business objectives and ensure long-term sustainable growth.

The following section discusses various dimensions of TCL's Enterprise Risk Management. The risk-related information outlined in this section is not exhaustive and is for information purposes only. The discussion may contain statements which may be forward-looking in nature.

The Company's business model is subject to uncertainties that could cause actual results to differ materially from those reflected in the forward-looking statements. Our business' operational performance and financial results could also be harmed by risks and uncertainties not currently known to us or by risks that we currently do not believe are material. Readers are also advised to exercise their own judgement in assessing the risks associated with the Company.

Approach to risk management

Tata Chemicals recognises that effective risk management is essential to achieve its business objectives and long-term sustainable growth. The Enterprise Risk Management process aims to develop Risk Intelligent culture within the Company to encourage risk informed business decision-making.

The risk management policy of the Company lays down the framework of Risk Management promoting a proactive approach in identifying, evaluating, reporting and resolving risks associated with the business. Mechanisms for identification

and prioritisation of risks include scanning the business environment and continuous monitoring of internal risk factors. Risk management forms an integral part of Management focus and is an ongoing process and integrated with operations.

Risk management in action

We are exposed to risks arising out of the macroeconomic environment as well as from the internal business environment. We continually focus on addressing the same as we ensure value creation for our stakeholders. Information regarding key risks facing Tata Chemicals and their mitigation strategies are as under:



Strategic Risks

1 Failure to respond to sustainability and climate change related risks

Mitigation

- On the sustainability front, the objective is to go beyond compliance requirements
- Continuous monitoring of various environmental parameters with continued investment in environment related projects in plants
- Impact register is periodically reviewed for keeping it updated and for improving environmental performance

- The overall roadmap as well as specific issues of concern including those related to environment and climate change is reviewed in detail at CSR, Safety and Sustainability Committee of the Board regularly
- The Company has also adopted ISO 14001 and is a signatory to Responsible Care which guides the Company as and when required
- Environmental Management Plan (EMP) is in place for mitigating the

- environmental impacts thus reducing operational environmental risks
- We are scaling up recyclable packaging capacity of our Consumer Products and will replicate the same to Chemical Products in a phase-wise manner
- Taking proactive steps to drive waste management initiatives including collection, segregation and safe disposal of plastic waste as per Extended Producer's responsibility norms

2 Missing the opportunity to embrace digitalisation pace supporting business growth

Mitigation

- Plans are underway to make digital technology a core part of the Company's operations
- Using technology to make processes simpler for customers and internal stakeholders in the digital age

- Various digitisation initiatives are taken by the Company to focus on improving efficiency, enhancing customer engagement and having better analytics to make informed decisions
- Enhancement of the business intelligence platform with visual

- analytics tools to support business decision-making is also underway
- New-age systems to enable the next level of digitalisation are being implemented in operations

3 Failure to have a robust and flexible succession planning process

Mitigation

- The Company invests on internal talent and nurtures them through the culture of continuous learning and career path development initiatives, thereby building capabilities for creating future

- leaders. We have talent management strategies in place for attracting and retaining talent
- Succession planning for Senior Management to ensure continuity in business is in place

- We have leveraged technology to enable continuous learning via e-platforms such as e-learnings and mobile app based courses

 **Operational Risks**

4 Cyber Security Risk

Mitigation

- Regular security compliance check, periodic third-party assessment, upgrading fire walls, having threat monitoring systems, regular patch updates, periodic cyber security

- awareness programme, benchmarking against ISO 27001 (global standard for Information Security Management System)
- Cyber security war room exercise for Senior Leadership team

- Steps taken by the Management to address cyber security risks is periodically reviewed by the Risk Management Committee of the Board

5 Failure to retain market leadership and miss growth opportunities

Mitigation

A. Basic Chemistry Products

- We are maintaining cost leadership
- Scaling capacity both in India and at Global Chemistry Business units

- through brownfield expansion and debottlenecking and supplying in India through cost efficient supply chain
- Cost control initiatives, creating a portfolio of value-added products, continued focus on R&D

B. Consumer Products

- Continuous brand building initiatives, micro market interventions and innovative offerings for nutritional needs of the consumer

 **Financial Risks**

6 Disciplined capital allocation and cost effective financing structure inability to secure sufficient, cost effective funding

Mitigation

Business planning with special focus on cash flow and liquidity management

Regulatory Risks and Compliance

7 Frequent amendment of statutory rules and regulations

Mitigation

- Deployment of comprehensive digital-enabled compliance framework for monitoring compliances
- Periodic review of compliances at leadership forums

8 Government policy change which could impact the Company's operation

Mitigation

- Continuous dialogue with regulatory authorities for greater clarity
- Advocacy meetings with governments and ministries, seminars, membership in regulatory affairs bodies, membership in industry bodies

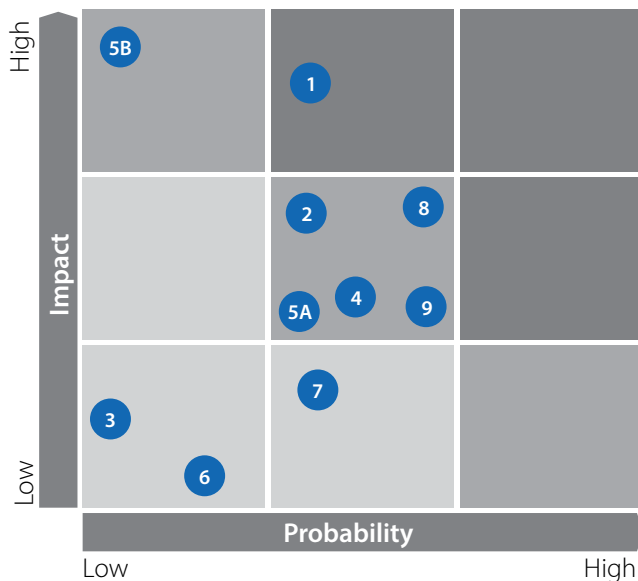
Reputational Risks

9 Failure to ensure Containment of Safety Hazards - Employee Safety (Behaviour issues), Workplace Safety (Fire Safety, Asset Integrity), Process Safety & Product Safety Hazard Chemicals – Transportation

Mitigation

- Safety is periodically reviewed by the CSR, Safety and Sustainability Committee as well as Risk Management Committee of the Board
- TCL's Corporate Safety Health and Environment Policy is the overarching policy, with the subsidiaries aligning it to the local regulatory and safety directorates
- We are driven by voluntary standards such as OHSAS 18001, Responsible Care and the British Safety Council guidelines
- Various safety improvement initiatives covering behavioural safety, structural and equipment safety and process safety management and benchmarking with companies that are best in the business are in place and are continuously evaluated for effectiveness
- Hazards are identified using techniques such as Hazard and Operability Study (HAZOP), Hazard Identification and Risk Analysis (HIRA), What-if-Analysis, Failure Mode Effect Analysis and addressed by following hierarchy of risk control.
- Unsafe conditions and hazards are reported in an e-enabled portal
- For product safety and transportation of hazardous chemicals, we have installed GPS system in bromine tanker. We support our customers by doing safety audits in their premises for handling of chlorine

Risk Mapping



Listening to and Engaging with the Stakeholders

We engage with our stakeholders continually across different mediums, which helps us understand and cater to their requirements and build a rich network of relationships. With this, we support the values on which we were founded and build a sustainable business.

	Engagement method	Relevant matters
 <p>Shareholders and investors To provide accurate, transparent and timely information to enable them take informed investment decisions and ensure business decisions are taken considering their interests</p>	<ul style="list-style-type: none"> · Annual General Meeting, Report to shareholders, · Investor/analysts meet, Quarterly results, Media releases, Company website, Report to stock exchange 	<ul style="list-style-type: none"> · Appreciation in share price and growth in dividends, Business profitability and sustainability, High-level of corporate governance
 <p>Suppliers and partners To develop mutually-beneficial, long-term relationships</p>	<ul style="list-style-type: none"> · Supplier pre-qualification/vetting, Supplier plant visits, MoUs, Trade association meets/ seminars, Professional networks, Bhagidhari Sabha, Contract management/review, Product workshops/ on site presentations, Framework agreements 	<ul style="list-style-type: none"> · Timely payment and delivery, Sustained business and growth, Vendor selection process, Safety, health and wellbeing and human rights of employees of contracting companies/ suppliers
 <p>Community To uplift the quality of all communities impacted by our business</p>	<ul style="list-style-type: none"> · Community meetings/visits, Local authority and town council meetings, Location head's meet, Strength, Weakness, Opportunities and Threat Committee meetings, Community projects, Seminar/conferences, Partnership with local charities, Volunteerism 	<ul style="list-style-type: none"> · Legal compliance, especially on safety, health and environmental performance, creating jobs, sustained contribution to community development, progress on implementation of social and labour plans
 <p>Customers To execute our commitment to the Tata Group's ethos of Customer promise</p>	<ul style="list-style-type: none"> · Distributor/retailer/direct customer meets, Senior leader customer meets/visits, customer plant visits, Chief Operating Officer's club, achievers meet, KAM workshops, focus group discussion, membership in trade organisation/ associations, complaints management, helpdesk, conferences, information on packaging, complaints management, Joint business development plans, customer surveys 	<ul style="list-style-type: none"> · Consistent quality, Responsiveness to needs, After sales service
 <p>Employees To have fully-engaged and committed workforce to drive organisation's growth, while providing them professional growth opportunities</p>	<ul style="list-style-type: none"> · Senior leaders' communication/talk, Senior leadership forum, Town hall briefing, Goal setting and performance appraisal meetings/ performance review, Exit interviews, Arbitration/ union meetings, Wellness initiatives, Focus on workplace safety, Employee engagement survey, Email updates, intranet, flat screens, websites, poster campaigns, house magazines, confluence, circulars, quarterly publication, intranet, theatre workshops (Oorja), newsletters 	<ul style="list-style-type: none"> · Engagement, Training and development, Career progression, Health and safety
 <p>Government and regulatory bodies To ensure proactive approach towards compliance and regulatory requirements, setting industry benchmarks and engaging with authorities in policy-making</p>	<ul style="list-style-type: none"> · Advocacy meetings with local/state/national government and ministries, Seminars, media releases, conferences, Membership in local enterprise partnership, Membership industry bodies such as ICC, BCCI, CII, CIA, ESAPA, EU Salt Association 	<ul style="list-style-type: none"> · Timely contribution to exchequer, Proactive engagement, Contribution to local infrastructure, Skill and capacity building, Sustainable livelihood, clean and safe environment

Addressing Material Issues

Material matters are the issues with the capability to substantially impact our business outcomes and competitiveness. These issues affect our ability to create value in the short, medium or long term, if not addressed strategically.

Materiality process at Tata Chemicals



Materiality matrix

Importance to Tata Chemicals		Energy ● Climate change ●	● Safety and health ● Employee engagement ● Ethics
	Customer ● Performance standards for contractors/suppliers ● Biodiversity ●	Community engagement ● Product stewardship ● Biodiversity ●	● Water ● Waste ● Employee benefits
	Spills ●	Diversity ● Logistics ●	
Low to high	Low to high Importance to stakeholders		

Identifying and mapping material issues

At Tata Chemicals, we identify material issues by engaging with multiple stakeholders – investors, shareholders, media, government, global employees, suppliers, contractors, customers and the community. These engagements are conducted through meetings, tele and video conferencing, interviews of top management and external stakeholder surveys across geographies.

We review whether these issues are aligned with our vision, brand portfolio and geographical footprint and map them against key stakeholder priorities and internal business priorities. We then review the business goals and challenges to finalise the materiality matrix. This exercise is carried out every alternate year. We work on all the issues highlighted in the materiality matrix and focus additionally on the issues in the top 4 quadrant.

Addressing materiality

We have taken a strategic call to revisit these material aspects on a periodical basis to track their current status. Our long-term strategy roadmaps are developed keeping these aspects. These initiatives, while accelerating our business growth, are also strengthening our fundamentals and our value creation ability.

Basic Chemistry Business



Trusted global partner

Industrial concerns globally are increasingly wanting to partner trusted manufacturers for their essential input requirements. We are leveraging the strong foundation of our Chemicals Business built over eight decades to cater to these clients and propel growth. We understand the unique needs of customers to deliver pioneering products of outstanding quality and value and delight them with great experiences.



Business overview

We are a leading global chemical player with over 4,138 KT of Soda Ash and 236 KT of Sodium Bicarbonate capacities. With operations spread across India (Tata Chemicals), US (Tata Chemicals North America), UK (Tata Chemicals Europe), Kenya (Tata Chemicals Magadi) and customer base across the globe, we are one of the most geographically diversified players.

Our business model is underlined by a continuous focus on cost optimisation, lean supply chain practices and enhancement of portfolio with value added and branded products targeted at specific customer needs. This, complimented by continuous enhancement in service offerings, ensures our business sustainability and profitability.

Business environment

Soda Ash and Sodium Bicarbonate are key products for the global chemicals business, being consumed by many downstream companies as raw materials for diverse industrial and consumer applications. The global markets for these products are characterised by worldwide trading with manufacturing concentrated in China, US, European Union, Turkey and India.

In FY 2018-19, the world Soda Ash demand was almost flat for the year, however, the demand grew 2.8% over the last year for markets excluding China, on the back of strong growth in Western Europe, South America, South East Asia, Africa and the Indian subcontinent. The Chinese and CIS markets experienced negative growth. The demand of Sodium Bicarbonate remained high, with the Indian market growing by

6% over the last year. Addition of new Sodium Bicarbonate capacities in India led to reduced imports.

The present global Soda Ash and Sodium Bicarbonate demand-supply scenario are moderately balanced. Their prices are expected to move in a narrow band globally. The CAGR for Soda Ash demand growth is expected to be 1.9% between 2018 and 2028 and that of Sodium Bicarbonate volume growth is expected to be above GDP levels. In India, the demand for both the products is expected to be healthier with forecasts of strengthening economic activity and their significantly low per capita consumption. We expect a stable market both in India and globally with little capacity additions.

Performance highlights FY 2018-19

During the year, we continued servicing our customers globally with our focus on manufacturing excellence and continuous improvement with processes such as Lean Six Sigma. We retain our competitive edge in terms of providing quality products at the most competitive prices along with world-class service, customised solutions and customer relationship management.

Key business developments across our global companies include:

TCL

- Executed operational excellence initiatives and throughput optimisation of all key products within prevailing operational constraints to achieve greater cost control
- Entered the niche segment of industrial grade Sodium Bicarbonate with the launch of Speckarb, which is high in purity and low on chloride, sulphate and heavy metal content
- Launched new cement products – Tata Shudh OPC with the enhanced value proposition of very high one-day strength and Tata Shudh PPC
- Successfully established Medikarb, India's first branded pharmaceutical grade Sodium Bicarbonate, which is now used by many Pharma companies
- Achieved highest ever production and sale of Bicarb led by an encouraging market response of our new foray into specialty pharma grade Bicarb – Medikarb – as we leveraged customer connect and market knowledge
- Our online customer portal and app – Chem Connect – launched in FY 2017-18 has recorded over 98% customer engagement
- Recorded highest-ever sales of bromine with ~99% volumes shipped in ISO tankers and ~100% increase in bulk movement of Soda Ash

TCNA

- Implemented project DSI (Dry Sorbent Injection) to use ground trona as a SO_x sorbent for emission compliance
- Commenced project MAP for plant-wide modernisation of DCS systems over the next five years
- Undertook engineering studies to investigate potential of solution mining in existing trona bed 14
- Re-established corporate office in Sandy, Utah to improve synergy with manufacturing in Green River Wyoming

TCE

- Rationalised sales of imported Soda Ash in line with the margin plans
- Soda Ash production slightly below par largely due to operational issues in the first quarter of the year
- Strong performance of associated energy business generated good income and contributed to the Soda Ash/energy BU performance

TCML

- Undertook extensive marketing efforts to stabilise markets for existing products – Magadi Moore Nyama salt and Magadi Moore Mazawi crushed refined soda, which were introduced in the previous year
- Successfully scaled animal feed grade crushed refined soda market in the US while exploring new markets in India, Africa, Europe and the far east
- Undertook major marketing activities, including radio campaigns and 14 farmer training forums, to boost sales of fortified salt resulting in higher distribution and trials. Fortified salt sales in FY 2018-19 increased by 25%

Tata Chemicals advantage

Our manufacturing facilities have a strategic advantage in terms of raw material security and a good mix of manufacturing processes with lower carbon footprint, in line with our long-term sustainability target.

70% of our Soda Ash capacity is manufactured through natural sources at our plants in the US and Kenya, which ensures lower manufacturing costs along with lesser energy and environment footprint. Both these plants have access to huge raw materials resources – the US plant is in Wyoming which has the world's largest deposits of trona and Kenya plant is near Magadi Lake which is a regenerating lake.

Our Mithapur plant in India and Northwich plant in the UK manufacture synthetic Soda Ash and Sodium Bicarbonate. This process uses raw salt/brine (salt water) and limestone as key raw materials. While the UK plant has the availability of natural salt, Mithapur plant uses salt manufactured using solar heat.

 Risks

Profitability risk

- Impact on Kenyan operations due to increased royalty rates, possibility of shorter lease period and disruption in rail logistics due to unviability of Rift Valley Railways. A proposed land rate increase may further impact profitability

- Stringent health & safety norms and competitive pricing threats in Europe

Environmental risk

- Rising stringency in environmental regulations in India
- Implementation of EU-Emission Trading System Phase 4

Macro-economic risk

- High energy price volatility and uncertain economic times in the UK
- UK exiting EU without a deal
- Impact on global demand-supply balance and price fluctuation driven by the addition of new Soda Ash and bicarb capacities by domestic players in India and uncertainty in Chinese production



 Magadi plant

Opportunities

- Our strong pipeline of investment projects in salt and Sodium Bicarbonate/ Soda Ash/energy will sustain the momentum into FY 2019-20 and beyond, driving cost competitiveness and enhanced customer service
- Initiated Projects to grow Sodium Bicarbonate and Salt sales opportunities in Asia
- Key ongoing projects will strengthen competitiveness – salt power station, carbon capture and recovery plant at coal handling plant to optimise operations and new warehousing proposals to enhance customer and demand satisfaction, cost and safety
- Planned capacity expansion programme for all products at Mithapur facility, the statutory permissions of which are either received or are in an advanced stage. This will enable us to meet rising demand. A dedicated team (Project Pragati) has been formed for the same to ensure timebound execution

Strategies

Grow leadership position

- Execute LEAP (Lead, Engage, Aspire and Perform) strategy to strengthen leadership position, address risks and exploit opportunities
- Grow volume of subsidiaries

Optimise costs

- Continue ongoing operation optimisation initiative and improvement programmes

- Manage variable costs like fuel, salt and limestone through raw material securitisation
- Exploit new opportunities in Sodium Bicarbonate and sesquicarbonate
- Build a market for the newly developed variants for specialised industrial applications and flue gas treatment, which is an emerging area due

to increasing awareness and the anticipated legislations on air pollution

- Invest in capacities to pursue value-driven growth opportunity in food, animal feed and pharma variants



For deeper insights into our product portfolio, please refer to **page 06-07**



Bulk transportation of salt in UK

Picture Credit: Abbey Logistic Group

GROWTH STORY



Nurturing crushed refined soda (CRS) portfolio, exploring international opportunities

By successfully tapping Kenya's abundant salt resource, Tata Chemicals Magadi (TCML), has created a new growth vertical with its CRS that caters to the livestock as a rumen buffer leading to high production in dairy animals. While the product was widely popular in Kenya, we leveraged its effectiveness to create export opportunities.

Establishing the US market

After a successful pilot study in the US, we were faced with the challenge of meeting product quality and specification requirement and logistics management. These were tackled by our cross-functional teams who undertook intensive planning to develop sustainable solutions to meet customer requirements and ensure business profitability. We undertook shallow trona mining to meet low fluoride content specification and revived part of the mothballed premium ash plant to attain desired particle size. The supply chain was optimised by creating new storage spaces in redundant silos and in Mombasa, along with reviving the trans-shipment facility at Kajiado to enable the parallel transfer of product by both rail and trucks.

These efforts paid-off and we have received several orders in the US. Our CRS

sales have grown significantly from 19,813 tonnes in FY 2016-17 to 42,174 tonnes in FY 2018-19 with a total of 8,000 tonnes shipment to the US. More importantly, our product has received positive customer feedback with a high rating. Potential customers are completing necessary due diligence and our plant has received Good Manufacturing Practices (GMP) certification for animal feed imports into Europe, providing scope to explore new markets.

Growing the US market

While the addressable opportunity for low-fluoride CRS is tremendous in the US market, we faced constraints on the production side due to bottlenecks in the grinding and screening process. To overcome this, we held consultations with our customers to arrive at an agreement to supply unscreened standard fluoride CRS. The move shall help us enhance shipment to the US while opening access to other international markets as well.

Exploring new market

We see significant potential for growth going forward as we explore markets in Africa, India, Europe and the far east. We have already received enquiries from Indian, European and other international markets, where samples for trial use have been despatched.

GROWTH STORY



Reinforcing cement business, moving up the value chain

We started the cement manufacturing business in 1993 with the strategic intent of consuming solid waste generated in the Soda Ash plant, restricting sales to Saurashtra, Kutch and central Gujarat. To enhance cement availability and expanding our presence in the value chain, we have launched new products namely Tata Shudh PPC and Tata Shudh OPC.

Tata Shudh PPC marks our entry into a new segment, which is witnessing growth. Tata Shudh OPC is a new variant that offers the additional value proposition of having the highest one day strength. Along with the launches, we have enhanced our service levels significantly by strengthening channel and supply chain infrastructure.

GROWTH STORY



Expanding Sodium Bicarbonate application areas

Industries globally have a need for high-purity industrial grade Sodium Bicarbonate with low chloride, sulphate and heavy metal content. This product meets stringent quality and regulatory standards, requiring a high level of expertise to manufacture them. Our newly launched product 'Speckarb' is our solution for these industrial customers. A specialty grade Sodium Bicarbonate, it is a versatile pure powder alkali intended for specialised industrial applications like specialty chemical synthesis, high-quality

dyes, leather, metallurgy, electronics. The product adheres to the superior quality specifications of IS 2124: Sodium Bicarbonate: Bureau of Indian Standards and is not intended for applications, directly or indirectly, related to human consumption.

Speckarb marks our presence in the niche segment of industrial grade Sodium Bicarbonate and will provide us with significant demand opportunities in both the domestic and export markets.

Picture Credit: Chirag Parmar

Consumer Products Business



Reaching more households, improving everyday experiences

Household stories in India are changing. Millions of consumers are increasingly demanding high-quality products that are safer, healthier, tastier and more convenient. We are building our Consumer Products Business (CPB) around these aspirations with innovation, branding and distribution capabilities to cater to the new age Indian consumers.



Business overview

Our CPB houses a range of high-quality, daily use products that bring goodness to the lives of consumers. Beginning with the iconic Tata Salt that pioneered the crusade for iodisation in India and has now become one of the most trusted food brands, we have extended our portfolio to include salt variants, nourishing food items and detergents.

Our salt portfolio, including specialty salt products, is marketed under the Tata Salt brand and addresses the various nutritional needs of consumers. We market our food products including pulses, spices, besan, chutneys, basmati rice, red rice poha, snacks and ready to cook nutrimixes under the Tata Sampann brand. With this portfolio, we bring the traditional wisdom of Indian foods in a contemporary package to deliver the best of taste, nutrition and convenience.

In FY 2018-19, we ventured into the fabric care segment with the pilot launch of Tata Dx Detergents to touch the lives of customers with differentiated offerings across the FMCG landscape.

Business environment

Salt

The Indian salt industry is one of the largest in the world with several producers and a complex delivery network. Taking this as an opportunity, the Government promotes iodisation of salt under the National Iodine Deficiency Disorders Control Programme (NIDDCP) to reduce prevalence of iodine deficiency disorders (IDD) in the country. The Government is further exploring the possibility of using double fortified salt with iron and iodine in nutritional programs to combat the twin challenge of IDD and anaemia.

This regulatory support along with rising health awareness is resulting in an increased shift towards branded packaged salt, with the segment growing by ~5% in FY 2018-19 and branded salt accounting for 88% of the total edible salt market.

Pulses and besan

Pulses, having high-protein content, are an important food crop globally and an indispensable constituent of India's daily diet. India is also one of the world's

largest producers and consumer of pulses. But, the industry is largely unbranded and there is a need for high quality, hygienically packed products. This presents a significant business opportunity.

Besan is India's leading snack food ingredient. But, the industry is largely unbranded with consumers seeking healthier options.

Spices

India is globally recognised as the home of spices. However, the industry is highly fragmented and regional in nature with consumer taste changing across markets. The industry is also largely dominated by regional and unbranded products that are suspect in terms of quality, consistency and purity. This opens opportunities for brands that can address these gaps.

Tata Chemicals advantage

Salt

We have one of the largest salt production capacities. This scale of production when combined with our diverse salt portfolio, high quality and purity, wide distribution network and brand equity gives us immense strategic advantages and capabilities to grow the business and cater to the requirements of a large section of Indian households.

Pulses

Tata Sampann is India's first national pulses brand, offering a variety of high-quality, unpolished and nutritious dals apart from an organic range. We also provide high-quality, low-oil absorb besan that ensures homogeneous batter and makes food healthier. Our differentiation of quality and unique offerings makes us a preferred brand for consumers.

Spices

Tata Sampann offers a range of high-quality, pure Spices and innovative blends. Our pure Spices, sourced from locations where climatic conditions and terrain benefit its natural flavour, are 100% pure and have a higher percentage of active ingredients as we never use 'Spent' ingredients. Our blends are developed with pure, fresh and authentic ingredients with recipes designed by renowned celebrity chef, Padma Shri Sanjeev Kapoor. Additionally, we offer the value proposition of unique 5-in-1 sachets packaging that retains the freshness of spices. Our unique and value-added offerings as well as our robust marketing and distribution make us the brand of choice.

Performance and business highlights FY 2018-19

Overall Branded salt sales volume

1,154,601 MT
1,058,772 MT
FY 2017-18

Tata Salt Outlet reach

19 lakh
17.8 lakh
FY 2017-18

Customer (retailer) satisfaction index

76
76
FY 2017-18



Tata Salt enjoys leadership with 25.2%* market share in overall packaged powdered salt market. It continues to be India's largest distributed salt brand reaching out to 170 million households through 19 lakh retail outlets.

*Moving Annual Total March '19



For deeper insights into our product portfolio, please refer to **page 06-07**



Strengthening portfolio, bringing goodness to consumers

We continued with our efforts to respond to the consumers' needs by launching several products focussed on improving their everyday experiences across wider facets.

Nutrimixes

(Moong Dal Chilla, Multigrain Chilla, Multi Dal Chilla and Low Oil Absorb Pakoda Mix)

Made from unpolished pulses and grains, rich in protein and fibre

Chutneys

(Spicy Tomato, Tamarind-Date and Chinese Chutney)

Natural with no preservatives and artificial colours and a shelf life of 6 months

Organic Pulses

(Toor Dal, Chana Dal, Masoor Dal, Moong Dal, Urad Dal, Urad Dal Whole)

100% Organic unpolished dals, adhering to India Organic and USDA standards

Basmati Rice

Goodness of rice bran, a source of Gamma Oryzanol and Dietary Zinc

Red Rice Poha

Naturally rich with high fibre

Jeera Sattu

Made with unpolished Chana, High in protein, iron, dietary fibre, zinc and phosphorous

My Gudness, a Dalicious Snack

(Toofani Tamatar, Masala Dhamaka and Sassy Salsa)

Baked snacks made of 62% dal (moong, urad, chana) with 2X protein and 40% less fat*

Herbal Salt

(Amla Coriander Chilli, Rosemary Thyme Basil Oregano, Lemon Mint Ginger)

Adds taste, flavour and goodness of herbs in everyday meals

Tata Dx Detergent

'Quick Wash' – Needs only 15 minutes of soaking

Virgin Coconut Oil

100% pure, natural, unrefined, cold pressed, extra virgin coconut oil

**compared to ordinary extruded (packaged) snacks available in the market*



Business risks

Environmental risks

- Changes in regulatory and environmental norms

Profitability risks

- Rising fuel and labour costs
- Volatility in commodity prices

Competition risks

- Increasing competition from the unorganised market, regional players and private labels

Opportunities

- Increasing awareness of health and wellness among consumers and their need for pure, consistent quality and convenient choices is leading to expanding market share of trusted brands like ours

- Expanding our footprint along with a focus on scaling-up portfolio with differentiated offerings across various segments will enable us to reach more homes and cater to diverse regional needs

- Cost optimisation and service-level improvement that helps us deliver an unmatched value proposition to customers and channel partners
- Leveraging digital technology across the value chain

Strategies

Consolidate position in Tata Salt and strengthen market share

- Undertake brand campaigns and market-specific activities
- Nurture thought leadership to offer innovative products like Tata Salt Lite and Tata Salt Plus to address consumer nutritional needs
- Leverage interesting new formats like Herbal Salt, Rock Salt and Black Salt to address specific consumer needs

Grow Tata Sampann portfolio

- Continue delivering pure and authentic products with natural ingredients that are tasty, nourishing and in keeping with consumer needs
- Expand offerings across various food categories in innovative formats to enhance convenience and elevate the consumer's cooking experience
- Scale-up new products to drive rapid growth

Wider reach and efficient operations

- Continue building a future-ready distribution network and scale up modern retail and e-commerce channels
- Leverage digital platforms and technologies to connect and engage with customers, share product knowledge and improve our presence across the value chain



Delivering the goodness of pulses and besan



Our products are differentiated from other products in the market due to our expertise in pulses and spices, the right choice of ingredients and authenticity in taste.



Tata Sampann Moong Chilla Mix is a dry spiced mix which can be made into a batter with the addition of water, thus eliminating all the other steps and be ready to be served in less than 15 minutes



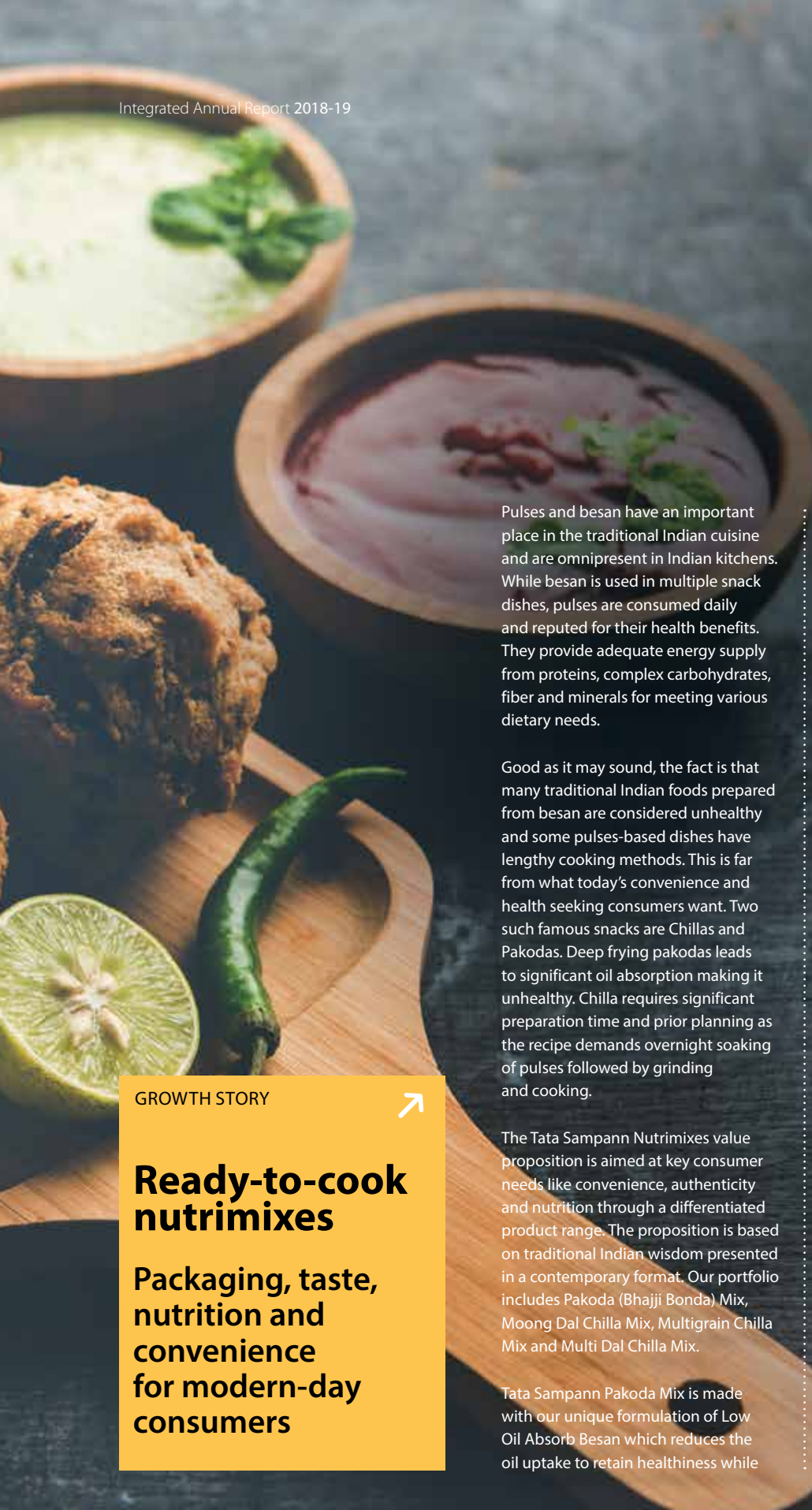
Pakoda Mix is a unique formulation of Low Oil Absorb Besan for low oil uptake to retain healthiness, while delivering authentic taste and crispiness.



The Multigrain Chilla Mix is a high protein ready-to-cook convenient mix offering a fast way to boost body with a good 20% of calories coming from the protein and not the sugars.



Multidal Chilla Mix has the goodness of multiple common pulses consumed by Indian population and is a rich source of protein and fiber.



Pulses and besan have an important place in the traditional Indian cuisine and are omnipresent in Indian kitchens. While besan is used in multiple snack dishes, pulses are consumed daily and reputed for their health benefits. They provide adequate energy supply from proteins, complex carbohydrates, fiber and minerals for meeting various dietary needs.

Good as it may sound, the fact is that many traditional Indian foods prepared from besan are considered unhealthy and some pulses-based dishes have lengthy cooking methods. This is far from what today's convenience and health seeking consumers want. Two such famous snacks are Chillas and Pakodas. Deep frying pakodas leads to significant oil absorption making it unhealthy. Chilla requires significant preparation time and prior planning as the recipe demands overnight soaking of pulses followed by grinding and cooking.

The Tata Sampann Nutrimixes value proposition is aimed at key consumer needs like convenience, authenticity and nutrition through a differentiated product range. The proposition is based on traditional Indian wisdom presented in a contemporary format. Our portfolio includes Pakoda (Bhajji Bonda) Mix, Moong Dal Chilla Mix, Multigrain Chilla Mix and Multi Dal Chilla Mix.

Tata Sampann Pakoda Mix is made with our unique formulation of Low Oil Absorb Besan which reduces the oil uptake to retain healthiness while

delivering the authentic taste and crispiness.

Chillas made out of besan or moong paste is a very popular dish in north India. Compared to traditional laborious method of chilla preparation, Tata Sampann Moong Chilla Mix is a dry spiced mix which can be made into a batter with the addition of water, thus eliminating all the other steps. It is ready to be cooked and served in less than 15 minutes.

The Multigrain Chilla Mix is a high protein, ready-to-cook, convenient mix offering a fast way to boost body with a good 20% of calories coming from the protein and not the sugars. It has the goodness of multigrain and extra protein content in comparison to the besan chilla mix.

The Multidal Chilla Mix combines the goodness of the multiple common pulses consumed by the Indian population and is again a rich source of the protein and fiber.

Our products are differentiated from other products in the market due to our expertise in pulses and spices, the right choice of ingredients and authenticity in taste. We have ensured none of our products have artificial colours or preservatives and remain true to the promise of being "Sarvagun Sampann" and bringing traditional nutrition into everyday meals. Our focus going forward, will be to capitalise on our differentiators and grow the Tata Sampann mixes portfolio.

GROWTH STORY



Ready-to-cook nutrimixes

Packaging, taste, nutrition and convenience for modern-day consumers

Specialty Chemicals Business

Nutritional solutions



Innovating to nourish everyday life

The Nutraceuticals space is booming. Products that supplement the diet with vital nutritional values, essential for healthy and active life, are in demand. This is more so in India's case where traditional diets lack such nutritional values and irregular eating habits and lifestyle of modern-day consumers are causing health problems. We are leveraging our food science knowledge and strength in consumer products to reimagine the dietary and nutritional needs with innovative natural products specific to Indian consumers.



Business overview

We entered into the nutritional solutions business with our brand – Tata Nx that targets new-age Indians demanding food that provides nourishment.

We leveraged the intellectual expertise of the scientists and food technologists at our Innovation Centre in Pune to gain better insights into the human body and develop solutions for addressing health-related problems from a nutritional standpoint rather than medicinal. We utilise the innovative bio-easy format as a delivery mechanism which enables optimal absorption and assimilation of nutrition.

We have a young and energetic team with deep market understanding. We have maintained a lean and agile business model by capitalising on the Consumer Products Business' extensive supply chain network for faster and deeper penetration

and partnering 2P Manufacturers for sweeteners and functional foods.

Business environment

The Nutraceutical and dietary supplements market is still at a nascent stage in India, accounting for ~2% of the global share. Dietary supplements dominate the market with a 65% share and functional food and beverages account for 35% of the overall nutraceuticals market.

However, the use of nutraceutical products is growing fast in India, especially in the urban areas where the youth are keen to maintain fitness and build a stronger physique, resulting in a penetration of nutraceutical products at 22.15% in the urban areas, higher than the 6.32% in rural areas. The segment's growth is further reinforced by an increase in the purchasing power and rising disposable income of Indians.

It is expected that India's nutraceuticals market, valued at ₹ 26,000 crore in 2017, will expand sharply at a CAGR of ~17% to reach ₹ 80,800 crore by 2023. The subsegment of High-Intensity Sweeteners ('HIS') market currently is about ₹ 500 crore and expected to grow at 6% driven by the growing population of overweight, obese and diabetic patients. On an average 5% of the Indian population is obese, but in the urban context, the numbers are incredibly high. HIS is the fastest growing segment due to the rising health concerns with aspartame and sucralose being the most famous sweeteners.

In recent years, stevia has witnessed major demand due to the advantage of being a natural sweetener, making it an ideal alternative of high sugar consuming nation. Besides, stevia's natural make provides it with the advantage of not falling under the product category as 'artificial sweetener'.

Risks

Competitive risk

- Increasing competitive intensity with domestic and global players who are introducing stevia-based products
- Stringent health & safety norms and competitive pricing threats in Europe

Dynamic regulatory environment

- With Nutraceuticals being an emerging category, it is critical that the authorities understand the efficacy and effectiveness of the product by leveraging the expertise of academic

institutes ICT (Mumbai) and CFTRI (Mysore) and appropriate FICCI and CII networks. We continue to work closely with regulatory authorities to ensure our products meet all compliances and we remain abreast of incoming regulatory changes

Opportunities

- With increasing disposable incomes and rising awareness for health and dietary needs, the consumers are increasingly adopting Nutraceuticals. The segment is witnessing significant investment and

is expected to provide immense growth potential

- FSSAI's notification to products using artificial sweeteners (excluding stevia) be labelled as not safe / not

recommended for children and other immunocompromised adults provides unique positioning to our product, Zero Sugar - a stevia-based sweetener, which is made from 100% natural ingredients

Strategies

Target IP protected and differentiated offerings

With more F&B companies resorting to new technologies to reduce sugar content in their products, our strategy is to:

- Maintain a competitive advantage by developing science-based IP protected offerings in nourishment, correction and replacement domains
- Launch stevia-based formulations labelled as low sugar/low calorie

Strengthen pipeline

- With rampant protein deficiency in Indians and increasing consumption of gummy vitamins, we will target strengthening pipeline with functional foods, probiotics and gummy vitamins

Enhance distribution and customer engagement

With the trend of retailers increasingly investing in own private labels to drive

margins and loyalty and the emergence of new points of sale that integrates with daily experience, our strategy will be to:

- Explore new and unconventional channels to supplement existing distribution network
- Engage with end-users in new and personal ways such as digital media, at schools, offices, etc.



GROWTH STORY

Accelerating growth by scaling Zero Sugar



Tata Nx Zero Sugar has been recognised with the Ayush Kamal Ratna for India's Best Natural Sweetener in Swadeshi National Award ceremony in April 2017

Tata Nx Zero Sugar is a one-of-its-kind offering made from non-artificial sugar substitute – lactose (natural milk sugar), steviol glycosides (extracted from stevia herb) and a fruit extract. 100% natural, with no sugar, this product has a low Glycaemic Index as compared to regular sugar, making it appropriate for people who have been advised to avoid or reduce their sugar intake.

Post its successful pilot run in FY 2017-18, we relaunched the product in July 2018, exclusively on Amazon and at select stores in Bengaluru, Chennai and Hyderabad. Vital for individuals seeking health or fighting ailments, the product has been well-received. We are now focussing on scaling-up distribution and supplying it on a pan-India basis.

For deeper insights into our product portfolio, please refer to **page 06-07**



Bringing wellness to life

Consumers globally are increasingly demanding natural, convenient and safe foods and supplements that can support their lifestyle, while delivering adequate nutrition. We are bringing our knowledge in fermentation, food technology and biogenomics to offer solutions for such needs supported by our dedicated Research & Innovation Centre and greenfield manufacturing facilities.



Business overview

Tata NQ, our Nutritional Solutions brand, offers innovative, natural and science-backed prebiotics, gut health and sugar reduction ingredients having extensive health benefits. Our solutions find application across multiple categories of food and beverages (F&B) and nutraceuticals. We are amongst the few manufacturers of prebiotic dietary fibres using a nature inspired fermentation route. Our presence spans across North America, Australia, Europe, Middle East and Asia.

Business environment

The human gut has more neurotransmitters than the brain and trillions of residing microbes that has an impact on our digestive system, health and immunity related aspects, psychology and overall well-being. Driven by its importance to human body, gut health

has become an intensely studied research theme for finding solutions to modern day health and lifestyle challenges.

As a result, there is a growing global trend of wellness products entering the mainstream consumer sector. The segment is witnessing surge in new product launches and new entrants. Its application areas have widened in the niche fields of skin, oral, surface microbiome and in sugar reduction driven by consumer's healthier choices and regulatory push.

Performance highlights FY 2018-19

FY 2018-19 has been an encouraging year marked by positive operational development and growth in revenues to ₹ 41 crore. Strong plant operations and encouraging customer responses on new

products drove growth as we focussed on collaborating and co-creating with them in a project mode. We maintained a track record of zero injury and incident across sites.

Our Fructo-Oligosaccharide (FOS), a mix of own manufactured FOS and complementary food ingredients, garnered wider acceptance as a prebiotic dietary fibre and healthy sweetener in dairy, bakery and confectionery sectors.

We established a global distribution network and initiated customer engagement in South East Asia, China and USA to gain insights on their qualifications process and regulatory approvals needed to begin sales. Our Animal Nutrition segment started on a strong footing with FOS-led formulations finding customer acceptance in aqua and poultry space.

Tata Chemicals advantage

Tata Chemicals has expertise in the human nutrition field backed by its near decade of R&D experience. This is exemplified in our commissioning of 1,000 cohort study mapping of the Indian gut microbiome, a first of its scale effort in India. It provided interesting insights about Indian gut and its similarities and differences with global counterparts. We are focussed on furthering our knowledge around prebiotics and their health impact by partnering research institutes and universities globally.

We have undertaken extensive work in the bio-informatics field as well, developing huge databases with millions of data-points. We are linking them with other available databases globally and using advanced computational techniques and machine learning algorithms for gaining critical insights which can be used in preventive healthcare practices and customised nutrition.

We have been developing broad-based application and food-technology capabilities to integrate prebiotics in various F&B formats. Our focus now will be to leverage our strong technical know-how, portfolio and credibility (11 patents and 9 research papers globally) to adopt a solutions-provider approach and support customers with curated application development.

 Risks

Capacity risk

- Unavailability of FOS powder for seeding in international markets

Raw material risk

- Pricing fluctuations and supply risk for cocoa

Regulatory risk

- Delays in regulatory approval
- Differing health-related regulations across different countries

Competition risk

- Cheaper competing products in sugar reduction and fibre fortification

 Opportunities

- Completion of ongoing greenfield facility at Nellore plant to enhance FOS powder and FOS liquid capacity and help meet global demand

- Initiation of clinical research to understand mechanism and pathway through which FOS and GOS improves human health will facilitate in converting international

customers and building a formulation portfolio targeted at improving gut and immunity health through preventive measures

 Strategies

Explore new business opportunities

- Nutraceuticals, herbals, health formulations and confectionery in India
- FOS in animal feed segment for aqua and poultry customers in India and Asia and pet food customers in European Union

Target international opportunities

- Initiate technical qualification process for replacement opportunity and new product development
- Establish distribution network for driving demand through customer engagements

and application-based sales in food, beverages and nutrition segment

Scale new product

- Undertake techno-commercial feasibility and scale-up of yeast and its derivatives at Sriperumbudur for utilising fermentation facility



GROWTH STORY



Mambattu plant becomes a reality!

FY 2018-19 became a milestone year towards incremental investments in infrastructure and capabilities. With a committed outlay of ₹ 270 crores, we are nearing completion of our world-class 5,000 MTPA (expandable up to 20,000 MTPA) FOS manufacturing plant near Nellore, Andhra Pradesh. This plant reflects our vision and aspirations to service demanding global customers.

Designed to be the best

- **Global quality compliance:** ISO Class 8 facility complying with FSSC 22000, FDA, Non-GMO, Kosher and Halal standards
- **Best-in-class technologies:** It employs one of the best purification technologies SSMB (Sequential Simulated Moving Bed) and state-of-the-art equipment
- **Automation and digitisation:** It is fully automated and digitised with minimal manual interference, eliminating chances of errors. Its best-in-class IT systems and quality control processes ensure high quality control, product traceability and paperless tracking. Its system is designed to leverage innovative content formats and technologies to establish the brand's social presence and to reach customers globally
- **Sustainable:** The plant will have zero fossil fuel usage and carbon emission. It is equipped with adequate solar power capacity to meet daily needs. It has deployed measures like MVR / TVR Evaporation and installation of rainwater harvesting structures (45,000 KL capacity) to achieve sustainable water availability and reduce ETP load
- **Safety:** The plant's safety systems and procedures to be aligned with the Tata Group's standards to achieve 'Target Zero Harm' through a well-defined safety road map. It will focus on various safety training programs, safety initiatives and seminars along with carrying out BBS and HIRA studies. Further, the plant shall practise tracking of all the incidents and give special thrust to road safety



3D rendition of Mambattu plant

GROWTH STORY



Rallis pursues big ideas to solve for agriculture

Digital solutions to support farmers

Samadhan App

Provides farmers direct access to Rallis' product details, Package of Practices developed by R&D and real-time weather and mandi prices.

Drishti

Provides weather forecast, crop and crop stage, forecast the current and projected crop health, soil moisture, nutrient index, plant stress and likely pest and disease.

Low agricultural productivity is a challenge for India. The problem is about knowing the right way of using the agricultural inputs, adopting productive farming methods and having access to necessary expert support services.

Gathering the knowledge gained through years of R&D and farmer engagement, Rallis has developed a holistic approach for this – Rallis Samrudh Krishi® (RSK). With efforts directed to addressing farmer needs in a programmed manner, RSK facilitates in enhancing farm productivity and farmer income.

With RSK, Rallis engages with a select set of farmers at an individual level. It assists them in determining their soil quality based on geography and provides right soil health enhancing products, high-quality seeds and helps them adopt right

agronomy practices. It analyses crop growth pattern and forecasts crop health to provide right plant growth nutrients to enhance health. It determines plant stress and likely pest and disease impacts to provide right crop protection products. It thus provides them necessary intervention initiatives across the crop life cycle. Further, post-harvest, the farmers are provided with market price information for selling their produce optimally

This kind of intervention and hand holding has benefited several farmers by enhancing their productivity and income levels. Our focus now is to systematise this initiative and deliver the gains consistently across geographies.

GROWTH STORY



Metahelix delivers growth and prosperity with Maha-Sambhav

Metahelix, a wholly-owned subsidiary of Rallis, has significant presence in hybrid seeds and in the biotech space. It has benefited millions of farmers across India with its innovative hybrid seeds and outreach programme.

'Maha-Sambhav' was the rallying call taken in 2018 which helped it in expanding volumes of its new flagship cotton hybrid 'Aatish' in Maharashtra and catapulted it into the million-packet league.

Metahelix being a relatively late entrant in the ~₹3,000 crore cotton seed market was a small player in the segment. However, with efforts to understand farmer requirements, develop right products and take it to farmers through innovative means, it emerged as a key player in Maharashtra. The Company developed a new cotton hybrid seed, Aatish, that delivers the attributes of early yield, 'big boll' and 'easy picking' which are the most favoured requirements of cotton farmers today. This product gives handsome yields in lesser time, enabling farmers to have the produce for sales by Diwali (the festival of wealth) and also avoid problems relating to low rainfall and pest & disease incidence.

Communication messaging based on the hybrid's key attributes was consistently undertaken through the campaign – "Aatish Yani Khushiyo Ka Aasman" ("Aatish stands for Happiness")

across various product demonstration and pre-season activities. It enabled the team to reach out to about 6 lakh farmers and 4,000 retailers and create top of the mind recall. The campaigns were accentuated by outdoor media and hoardings, point of sales communication and WhatsApp videos. All these efforts paid rich dividends and the Company was able to grow the 'Aatish' brand by more than six times last year, making 'Maha-Sambhav' possible.



Intensifying Focus on Health & Safety

Safety is an important part of our value system. We are relentlessly improving our world-class safety performance based on a strong foundation of leadership, strengthened by our 'Zero Harm' target for people, assets and environment.

Health and safety management

At Tata Chemicals, health and safety initiatives are a key agenda. Specially formed committees work towards reinforcing safety standards. Our dedicated Board Committees on CSR, Safety and Sustainability periodically review organisational safety and drive strategic direction. Besides, the Apex Safety Committees at sites and Office Safety Committees at offices review health and safety of the employees, safety aspects and implementation of new policies and guidelines.

Assessing and managing safety risks

We are constantly working towards evolving and upgrading our safety processes through periodic reviews and benchmark them towards the Zero Harm goal. We identify top safety risks and their mitigation plans are reviewed by the CSR, Safety and Sustainability Committee and Risk Management Committee. Considering our use of hazardous chemicals, we have implemented structured Risk Assessment and Management processes and mitigation plans across high risk areas. We engage trained functional teams for identifying and managing hazards in routine and non-routine activities.

We prepare annual plans for asset management, besides workplace and process safety improvement programmes. We also identify training needs at various levels through structured processes. Safety is an inherent part across all stages of the project life cycle and is ensured through implementation of systematic processes and executed through trained personnel.

Incident / Near-miss management

This identifies critical contributing factors in an incident or high potential near-

miss through root cause analysis and in implementing preventive actions. Employees identify unsafe conditions and report them on an e-enabled portal – WSO, which is regularly tracked to ensure risk control. We carry out internal / external audits, inspections, surprise checks and engage experts to identify lapses and improvement areas and ensure effective implementation of safety systems. Although we constantly strive to improve safety in working conditions, we faced two unfortunate fatal incidents in FY 2018-19. We implemented corrective actions to prevent such recurrences and also supported the family of the deceased under the Suraksha Scheme, a financial assistance scheme. We are also targeting implementation of IoT solutions in FY 2019-20.

Emergency and crisis preparedness

Our operations encompass comprehensive processes for emergency preparedness, response and crisis management. We undertake proactive measures to identify possible emergency scenarios and calculate risk quantum. This is to prevent them with engineering controls and maintenance practices, supported by a systematic inspection regime and also assists us in being prepared in responding to emergencies in real-time situations.

TRIFR* (No. of TRI/million man-hours worked)

2018-19	1.61
2017-18	0.88
2016-17	1.09

LTIFR* (1-day away from work)

2018-19	0.87
2017-18	0.46
2016-17	0.55

*The above numbers include all subsidiaries

Key safety initiatives FY 2018-19

Global

- Cross-site safety audits and offsite
- Implementation of Work Safe Online across sites
- Dedicated third-party packaging centres
- Daily safety rounds and communication of safety observations to management
- CFTs for safety improvements

Mithapur

- Systematic implementation of Process Safety & Risk Management
- Sensitisation on softer safety aspects through 'Suraksha Samvad'

Magadi

- Safety projects under LASER workshop
- Employee engagement drives for near miss identification, reporting and closure

TCE

- Integration of dynamic risk assessment with work permits
- Layer of Protection Analysis and CDM (Construction Design and Management) implementation
- Introduced Golden Safety Rules

TCNA

- Articulation of life critical policies
- Hazard Identification Tours

Way forward

During FY 2019-20, we aim to focus on Process Safety Management at Mithapur plant. This is to strengthen our safety systems and horizontal deployment of improvements and to revisit risk management processes and mitigation plans across global sites.

United Nations' Sustainable Development Goals



Innovating for a Better World

Innovation at Tata Chemicals encompasses multiple facets of business, communities and environment to develop solutions for a better world and ensure sustainable value creation for stakeholders. Innovation lies at the core of our businesses as the key differentiator in a competitive market.

Tata Chemicals' R&D activities are undertaken at three state-of-the-art centres – Tata Chemicals Innovation Centre (IC) in Pune, Rallis Innovation Chemistry Hub (RICH) and Metahelix Life Sciences in Bengaluru.

R&D focus areas and key developments

IC Pune

Undertakes multi-disciplinary research in applied sciences to seed new businesses, support the existing ones and facilitate development of products and services.

RICH

A DSIR recognised centre undertaking research in Agri Sciences for developing solutions aimed at enhancing farm productivity and farmer income.

Metahelix

Undertakes research in agricultural biotechnology.

R&D focus areas



- Food science research to enhance nourishment
- Inorganic chemicals and material science research to develop new products/businesses
- Productivity enhancing Agro Chemicals
- Eco-friendly formulations
- Cost-effective processes for synthesising molecules
- New products evaluation and registration
- Process improvements for manufacturing
- Crop breeding research to develop superior hybrids seeds
- Biotech research for superior trait development through GM (Genetically Modified) and non-GM methods and enhancing seed yield

Key initiatives FY 2018-19



- Low sodium salt, double fortified salt
- Scale-up and range extensions of extruded snacks, chutney and mixes
- Launched new cereals, pulse-based and home care products (detergent)
- Undertook research in priority growth areas of Highly Dispersible Silica (HDS) and pipeline silica products for tyres, lithium battery actives and recycling, pharma grade NaCl and bicarbonate, food sciences & technology and Fructo-Oligosaccharides (FOS) in areas of microbiome, immunity, gut and metabolic health
- Created a strong pipeline of products for process and formulation development and bio-efficacy evaluation
- New collaboration on six projects
- Development of advanced formulations
- Precision agriculture experiments (Drone)
- NABL accreditation application
- Dossiers submitted for new registrations
- Worked on reducing GOT results, TAT and unwanted inventories and increasing accuracy
- Focussed on MDR (Market Development Representatives) productivity
- Village mapping
- Robust screening system for salt and disease tolerance
- Strengthening germplasm base for various mandate crops



Innovation statistics

	IC	RICH	Metahelix*
Patents filed	90	30	4
Patents granted	22	14	2
R&D team members	53	53	118

*Plant Variety Protection (PVP) filed since inception is 59. PVP is the provision under Protection of Plant Variety & Farmers' Rights Act (PPVFR) for protecting IP relating to plant varieties.

United Nations' Sustainable Development Goals



Way forward

Innovation Centre, Pune

- Support businesses in launching new/ value-added products and driving quality
- Intensify research in priority growth areas
- Capitalise on patent strategy to create competitive advantage in focus areas

RICH

- Intensify new technology products development with R&D geared up with investment for long-term vision
- Target off-patented molecules opportunity and innovation protection by patent filing
- Strengthen product pipeline by collaboration and own research, especially in environment-friendly formulations, bio-pesticides and crop nutrition products

Metahelix

- Undertake Rapid Generation Advancement to achieve more crop cycles completion annually to fast track inbred development
- Utilisation of genomic resources for smart breeding
- Intensifying focus on molecular and genomic information-based projects

Creating new growth verticals

IC's R&D efforts in chemistry-based, nano-material solutions have paved the path to new business avenues – advanced materials (HDS and Specialty Silica), nano zinc and lithium-ion batteries. These business areas will let us participate in the fast expanding specialty products market and thrust our growth.

TPM precipitated silica plant at Cuddalore in Tamil Nadu, commercial trials for which have commenced. We are undertaking process improvement initiatives at the plant, to further enhance its operational readiness for maximising throughput and meeting safety and quality specifications.

TREADSIL™, our HDS brand, is targeted at Passenger Car Radial (PCR) and Truck & Bus Radial (TBR) tyres, which are energy efficient and provide better safety and mileage. Our products also find application in rubber and non-rubber goods – TYSIL™, our conventional silica brand for tyres and other rubber goods applications and TAVERSIL™ for non-rubber applications like food, feed, detergents, oral care and agro chemicals.

Advanced materials

Our venture in the advanced materials segment is driven by the trends of tightening automotive emission standards in the tyre application industry. It will allow us to leverage our Soda Ash value chain linkages for value-added offering. To strengthen foothold in the segment, we have acquired the 900

Targeting attractive global opportunity

The global silica market is pegged at US\$ 4.5 billion (₹ 1,000 crore for domestic market). With our silica products, we are targeting the high-growth market of tyres, especially the green tyre made of HDS whose demand is being propelled by stringent emission norms and tyre labelling.

We are undertaking collaborative R&D with leading tyre manufacturers in India for the next generation of HDS. Having developed novel applications of functional nano silica, we are working with leading end users on various innovative applications.



Innovation Centre, Pune

Growing Together

The skills, experience and passion of our people facilitate deeper customer understanding and engaging relationships and strengthen our brand value as a preferred employer. We continue to step up efforts to accelerate our value-based growth strategy and the overall development of human capital. We nurture our people by investing in their empowerment through learning and development, wellness and safety besides providing contemporary workplace facilities.



FY 2018-19 has been a milestone year on “people” front. During the year, we successfully managed issues arising out of organisational restructuring and leadership transitions. We also tackled the issues on acquisition and foray into new segments.

Our teams, within and across business units and functions, accomplished high-level collaboration milestones. Some of these were: setting up the Greenfield nutritional solutions plant; acquisition of Silica plant; divestment of agri-business; launch of new categories under Tata Sampann; recent ventures in Specialty Chemicals Business; expanding the reach and presence of Tata Nx; and launch of our first product in the Homecare segment through Tata Dx Detergent.

Leadership Development & Capability Building

During the year, we undertook senior leadership transitions across businesses and conducted a series of workshops – Art of Feedforward. This enabled our managers to coach and guide their teams for superior performance and skilling their managerial capabilities.

We are creating an ecosystem of learning through accessible mobile driven content, experiential learning and gamification. Last year, we introduced ‘en-rich’, our online learning platform offering certification courses from the world’s best universities. We incentivise certified learning on business, functional and digital competencies. With no approvals required

for undertaking the curated content available on this platform, our employees are empowered to upskill themselves.

Our Board of Directors and the Senior Management jointly participated in a workshop anchored by a senior faculty member from the Harvard Business School.

Empowering employees

In line with our ‘Refresh 2020’ theme to enhance our people processes, a Cross-Functional Team (CFT) worked on enhancing our performance management process. This “bottoms up” change management process included hearing employees’ voice, conducting one-on-one interviews, making presentations to the management team and communicating changes.

Ensuring employee engagement

As a people-centric organisation, we measure employee engagement through our survey, ‘X-prESS’, conducted in partnership with an external agency to ensure confidentiality. Our X-prESS 2019 scores, covering over 3,000 white-collared employees globally, increased from 70% in the previous cycle to 73% this year, with a response rate of 95%. Additionally, discussion on Manager Score Cards also helped improve work-group engagement to sustain and build on the change momentum.

Aligning people with the Organisation's goals

Our key focus areas from a peoples' perspective is aligned to our long-term strategy of the enterprise, as below:

Evolving organisational structure to support strategy

- Recast the organisation structure in line with our new vision – emphasising on functional expertise, maintaining a close connect with customer and expediting product development
- Build a flat, agile and cost competitive structure
- Retain core values of integrity and ethics
- Deploy systems and processes including continuous training and building awareness on ethical practices, corporate governance, regulatory compliances to cover all stakeholders

Building future capabilities

- Address competency and skill gaps in a diverse and multi-generational workforce through opportunities and platforms for re-skilling, learning, experimenting and re-inventing themselves
- Enhance leadership and managerial capabilities for a rapidly changing external environment

- Build digital capabilities to minimise the impact of technology on work processes
- Promote transformation at the individual level and mindset change in line with organisational transformation

Nurture and enhance employee engagement

- Align workforce with the new strategic thrust and organisation agenda
- Provide career growth opportunities and meaningful roles
- Support managers to create an engaging team climate
- Undertake reward and recognition programmes
- Focus on wellness, diversity and people-friendly workplace policies

Enhance HR operational effectiveness

- Design business segment and industry relevant people practices
- Adapt to the changing regulations in respect of workforce and automation of work processes to improve productivity
- Enhance employee experience by investing in an integrated cloud technology HR platform

United Nations' Sustainable Development Goals



On-roll Employee headcount as on March 31, 2019

TCL India 1,989	TCNA 561	TCSA 13
Ncourage 17	TCM 244	Rallis 1,001
TCE 397	TCIPL 3	Metahelix 473



Diwali celebrations at Tata Chemicals

Our Commitment to Sustainable Growth

At Tata Chemicals, sustainability goes much beyond the regulatory aspect and the triple bottomline objective of People, Profit and Planet. It exemplifies our acknowledgement of environmental responsibility. It remains at the core of our business strategy as we strive to attain leadership across all aspects of business and return better value to our stakeholders.



At Tata Chemicals, sustainability encompasses stakeholder engagement, corporate governance and ethical practices. It also includes responsible manufacturing safety, health and

well-being of employees and the communities and product stewardship. We engage with stakeholders to identify opportunities for meeting ‘essential needs’ relating to economic, environmental and

social aspects. These inputs are combined with PESTLE (Political, Economic, Social, Technological, Legal and Environmental) analysis to have a holistic perspective.

Sustainability challenges, advantages and opportunities

Strategic challenges

- Talent management
- Energy/raw material security and costs
- Increased stakeholders and community expectations
- Changes in environmental norms like circular economy, recycling plastic waste and other regulations

Strategic advantages

- Operational excellence
- Access to low cost raw materials in Basic Chemistry Products Business
- Brand equity
- Robust customer engagement process and relationship
- Leadership in key markets and products

Opportunities

- Conducted climate change risk assessment and waste mapping study
- Revamped energy and emissions roadmap at plant level
- Environmental risk assessment to identify operational blind spots
- Energy audits to identify energy / carbon saving opportunities

Emissions Management

We have set challenging internal norms and adhere to all environmental regulations. We monitor stacks as per the ISO 14001 schedule and ensure results are well within limits across geographies. A third-party is engaged bi-annually for measuring and monitoring combustion process emissions and reporting it to the US EPA, UK Environment Agency (EA), IMA/NA and CDP and for Sustainability reporting. We ensure our operations release particulate matter, NOx and SOx emissions in permissible level. Air conditioning systems use is restricted to office.

Initiatives to reduce emissions

TCL

Mithapur plant

Modification of Fluid Bed Dryer in Make-up Water (MUW) plant and Vacuum system; replacement of flash vessel and its bypass system at power plant; energy efficient lights; solid effluent utilisation in cement manufacturing; renewable wind energy generation and scaling bicarbonate production; and equipped plant with online monitoring system to capture the stacks, effluent and ambient air quality.

Despatching over 60% of production volume through rail transport and the remaining by road using trucks, highly efficient Lupa Bulkers and ISO tankers along with sensitising customers for their support in unloading products from Lupa bulkers.

CPB has put in place the process to capture GHG emissions. This year, they have released 420 tCO₂ emissions (Scope 1 & 2).

TCE

Invested in a contemporary boiler plant at the British Salt plant due for commissioning by Q1 FY 2019-20. It will have an efficiency of almost 94% (80% currently), translating to 8,500 TPA reduction in CO₂ emissions. Winnington CHP, part of TCE's Northwich operations, is developing a Carbon Capture and Utilisation scheme for capturing food and pharmaceutical grade CO₂ and will use it in the Sodium Bicarbonate plant. This global first initiative will contribute to a 40,000 TPA reduction in CO₂ emissions.

TCNA

Practising bulk deliveries, 95% by rail and 5% by diesel semi-trucks of Soda Ash and use of bag-houses and scrubbers to control fugitive emissions.

TCM

Ensuring zero NO_x, SO_x and other significant air emissions and planting of trees (53,722 planted) to tackle dust problem in Magadi. Initiated process of acquiring CEMS online monitoring system for reducing emissions.

Energy conservation

We monitor company-wide energy consumption and generation through Responsible Manufacturing. Energy generation sources for TCE and Mithapur plant include natural gas and coal respectively along with co-generation facility. Mithapur plant additionally generates energy from wind power at its township. Its cement production falls under the Perform, Achieve & Trade scheme. TCM, TCNA, TCE and Sriperumbudur plants use fossil fuels for energy supplemented by grid power.

Initiatives across geographies

Mithapur

Installation of 2,504 energy efficient lights, which collectively saved 1,189 TJ of energy, 5Kw roof top solar panel and co-processing facilities in cement plant for utilising plastic waste and used oil.

TCE

Installed a new steam turbine (£5.5m) which, on an average, generates nearly 12.5 MW of additional power, saving around £4.8 million in energy costs. This CHP (Combined Heat and Power) plant has an overall efficiency over 80%. Installation of new river water pumps and compressors was completed to reduce energy consumption.

TCM

Introduced solar street lighting and LEDs across the plant premises and township and installed waste oil recycling plant for reducing fresh HFO usage. Started PAM plant for few processes and practising sun drying of crushed Soda Ash to reduce energy cost.

Waste management

Hazardous and non-hazardous waste

We practice on-site segregation of waste at all the sites. All hazardous waste is disposed through authorised and registered dealers, while organic waste from canteen is composted. We undertake

a monthly SHE Performance Matrix and Audit to track the performance of waste minimisation activities and audit the storage and segregation of waste on site.

Consumer product business covered 12 states under plastic waste management (PWM) programme along with engaging respective state Producers Responsibility Organisations for collection and safe disposal of plastic waste. In Punjab, we are working with Punjab Plastic Waste Management Society, a collaborative model with the Punjab Pollution Control Board and other FMCG companies, for collecting and recycling plastic waste. In these 12 states, we are collecting 78% of the total waste generated, in comparison to the 20% mandated by the regulatory body. The recyclable packaging operations of Tata Salt was scaled to five more CFAs covering 32,000 MT. The plan is to further scale up the PWM to more states.

Mithapur plant initiated utilisation of effluents and fly ash in cement operations. Initiatives have been undertaken to make cities and communities sustainable. In Dwarka, a PWM project 'Clean & Plastic free' city was initiated, the Phase 1 of which is completed with mapping of waste in Okha, Mithapur and Dwarka. For phase 2, a 30 MT waste management cum shredding unit is being set-up to treat plastics collected in a 100-km radius. Gaps and strategic priorities have been identified accordingly and awareness in collaboration with local municipal authorities is being carried out.

TCE ensures effluent discharges to water courses and sewers are as per permissible standards. Waste ash and lime are sent to third-parties for re-usage. TCM has waste matrix data to capture hazardous waste such as waste oil, batteries, electronic waste that are sent for recycling.



Lesser Flamingos are the smallest flamingo species also spotted at the Mithapur wetland area

Picture Credit: Chirag Parmar

Water conservation

We have set stringent yearly targets to reduce water consumption and review it on a weekly basis. TCL India carried out a detailed water footprint and sustainability assessment as per Water Footprint Network Netherlands methodology post which direct product and site water footprints were established for blue, green and grey water.

Mithapur plant sustained its efforts for zero dependence on groundwater by adopting in-house water conservation measures, managing rain-fed lakes and innovative seawater desalination technologies. 100% of its industrial process water needs are met by sea water and around 89% of water utilised which includes spent sea water used for dilution of treated waste water is recycled. TCM maps water right from the intake to its flow to the Magadi town's water tank station, treatment and distribution to the various areas where it is utilised. Plan to install Sewage Water Treatment is being tracked for implementation.

Initiatives across geographies

Mithapur

Installed 40 rainwater storage structures of 12,000 litres each in new housing development at township.

TCE

The British Salt site at Middlewich harvested rainwater for use within the plant. The Sodium Bicarbonate plant returns water abstracted from the river Weaver for cooling purposes, incurring a net zero consumption.

TCSR

Implemented various water conservation projects, especially in Mithapur region where quality water availability is a concern.

TCM

Water from natural springs used for washing product spillages from conveyors and dissolving soluble salts in the washery stage is recycled back untreated to the lake.

TCNA

Approximately, 84% of the water that was lost to the evaporation ponds as part of tailings disposal is now recovered.

United Nations' Sustainable Development Goals



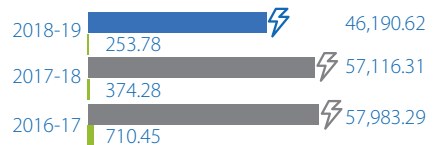
Emission intensity

tCO₂q/tonne produced



Energy consumption

TCL India TJ produced

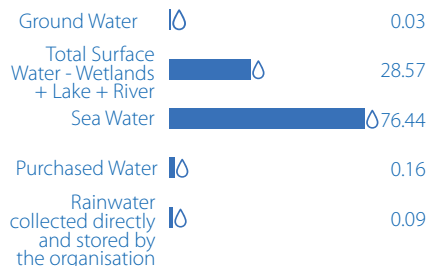


■ Direct Energy (TJ) ■ Indirect Energy (TJ)



Water consumption

MM³



Corporate Social Responsibility

At Tata Chemicals, social development is an important agenda. We touch the lives of millions globally and address pressing development challenges through social programmes that are replicable and scalable to maximise their impact and reach.

Our CSR programme is represented as BEACoN – Blossom, Enhance, Aspire, Conserve and Nurture. It encompasses our enduring commitment towards enriching the quality of life by touching the aspects of health, sanitation, nutrition, livelihood generation, education, environment and bio-diversity. Empowerment is the cross-cutting theme across all our initiatives and targeted towards development of the society's weaker sections, especially women and socially backward communities.

Empowering communities: Blossom

Through Okhai Centre for Empowerment, TCSRSD promotes handicraft products with the objective of providing sustainable livelihoods to the artisans and keeping these traditional skills alive. The Centre supports nearly 1,500 artisans in India, providing them with skill enhancement training and facilitating market linkages

to customers through Okhai website and outlets. Today, the Okhai brand is recognised as a sustainable and online fashion brand, with over 1,50,000 online followers and 18,000 online customers. In Kenya, TCML engaged 40 women with bead work to help them earn a sustainable livelihood.

Promoting livelihood: Enhance

TCL promotes livelihood opportunities for households dependent on income from agriculture and allied activities, along with taking up infrastructure development projects.

Agriculture development

In FY 2018-19, over 4,000 farmers directly benefited from our training, exposure visits, field demonstration and support with seeds and agri-equipment interventions. TCL promoted various cultivation programmes to support farmers. In

Uttar Pradesh, pulses, oil seeds and vegetables were promoted to help farmers enhance their income. In West Bengal, the SRI method of paddy cultivation was promoted as a second crop and at Sriperumbudur in Tamil Nadu, vegetable were promoted to be grown in the kitchen garden. In Mithapur, TCSRSD in partnership with Coastal Salinity Prevention Cell is implementing the Okhamandal Samriddh Gram Project, which is aimed at doubling farmers' income in four years.

Livestock management

To improve livestock health, TCL supported OPD, FMD and HS Vaccination programme, deworming camps and animal health camps at different locations. In West Bengal, it supported over 200 families with poultry farming, helping them enhance their family income. During the year, nearly 1.30 lakh cattle were covered under the cattle health and breed improvement initiatives.

Infrastructure development

TCL supported repair of a 71 km road in Kenya, which helped in improving connectivity and travel for people.

Learning and skill development initiatives: Aspire

Under this programme, we encourage functional education and skills necessary for sustainable socio-economic development of individuals.

Skill development

TCL runs skill development programmes in different locations to train unemployed





youths to facilitate in their employment or entrepreneurial development. In FY 2018-19, over 2,110 youths were provided vocational skill training in the areas of mobile, computer, air condition and refrigerator repairing, electrical fittings, tailoring, beautician course and nursing training. TCL also supports the Tata Strive Centre in running the skill development centre at Aligarh.

Education

TCL undertook various need-based educational programmes across locations, focussed on improving the quality of education and ensuring zero drop-out of students right from pre-primary level. These include e-library, Learning Enhancement Program (LEP), teacher training, scholarships, child learning and improvement, adult literacy, residential summer camp on spoken English and personality development, career resource center, SNTD (Shreemati Nathibai Damodar Thackersey Women's University) centre, Shala Pravesh Utsav and project for primary school children with Sir Ratan Tata Trust. A total of 13,500 students benefited from these programmes.

The Learning & Migration Programme is focussed on strengthening the community school management system and improving the learning capabilities of students. Under this, nearly 6,000 children have been benefited.

In Kenya, TCML provided infrastructure support to schools and scholarship support to more than 100 students at various levels. In UK, TCE provided students opportunities to showcase their talents in science and technology. It also created direct connection with the "all-girls" Loreto Grammar School in Altrincham, Cheshire, providing opportunity to engage an audience under-represented in the UK's manufacturing industry and help them make important career choices. TCE is also one of the big sponsors and promoters of STEM education. It became the headline sponsors of 'Make It In Enterprise Challenge Grand Final' at Manchester and its Cheshire specific version, giving school-going pupils a chance to test skills and knowledge in real-world applications.

Biodiversity protection: Conserve

At TCNA, we continue to protect the habitat of the sage grouse under Wyoming State Law. TCL continued with coral reef recovery, whale shark conservation, mangrove plantation, indigenous flora rejuvenation and environmental education initiatives at Mithapur. With these initiatives, natural resources are conserved through a participatory approach for environmental sustainability. On the Group's 150th Anniversary, the Tata Centre of Excellence for Coastal and Marine Biodiversity Conservation was inaugurated at Mithapur.

Protecting Whale Sharks and Sea Lions

The Whale Shark project focusses on its habitat study, research on migratory pattern and breeding biology. During the year, 19 Whale Sharks accidentally caught in the fishing nets along the Saurashtra coast were rescued. We also work with the ECO Clubs in schools at Mithapur to raise awareness on environment conservation.

TCE donated PDV Salt pellets for enhancing water salinity for RSPCA's Sea Lion rescue centres and Welsh Mountain Zoo's (WMZ) Sea Lion habitats. TCE also partnered with WMZ to help them reduce raw material cost for creating the habitat and deliver cost-effective conservation environment/ programme for the Sea Lions.

Greening, water conservation and land reclamation

TCL planted 2.25 lakh mangroves in Dwarka (Gujarat) and Sundarbans (West Bengal) and 53,722 trees in Kenya under the greening programme. Water management and conservation initiatives like Mission Jal and drip irrigation were carried out at Uttar Pradesh and Gujarat. Further, in Uttar Pradesh, more than 2,500 acres of land was reclaimed with the help of laser levelling and deep ploughing.

Health and Sanitation: Nurture

TCL undertakes initiatives aimed at improving the health and sanitation of people unable to afford private health services or avail the government health services.

Healthcare

Improving health of rural community is an important part of TCL's overall strategy. This year, 38,426 people benefited through health awareness camps, counselling and treatment in Mithapur and Babrala. Further, eye camps were organised at these locations, in which 1,941 people got eye check-ups done and were supported with spectacles and 252 patients were supported for cataract operation.



Tata Chemicals Mithapur coral reef restoration project is helping strengthen the marine ecosystem

Picture Credit: Wildlife Trust of India

In Kenya, the Magadi Hospital provided healthcare services to 30,000 community people. In UK, TCE organised fund-raising volunteering activities for charity-funded St Luke's Hospice and Myeloma. Fund raising initiatives included scaling the three largest peaks in Cheshire, 150 km Bike Ride over 2 days and a bake sale and clothes collection drive to celebrate Tata Founder's day. Substantial funds were raised through these events which helped St. Luke in delivering high service of care and support.

Nutrition

TCL undertook activities like screening of women for anaemia, identification of severely and moderately acute malnourished children and facilitating their treatment. In FY 2018-19, more than 9,000 women and 6,000 children were benefited. Around 300 households were supported to develop kitchen garden to ensure supply of nutritious vegetables and fruits for reducing the occurrence of anaemia in women and malnutrition in children.

TCML supported with 15 tonnes of unimix for 3,000 nursery school children in Magadi. TCE donated a large range of food, collected from employees, to a foodbank for distribution to the needy over the Christmas period. With over 1.3 million people receiving food bank

parcels during the year, the initiative is vital to fight poverty and malnutrition in the UK.

Water and sanitation

TCL provided tap connection to supply water to 1,254 households and supported the construction of toilets for 350 households. The Samridhhi and Swach Tarang initiatives, which focus on use of clean and safe drinking water benefited 2.16 lakh people of different regions across India.

TCML supplies 60,000 litres of treated drinking water per day to 18 public primary schools, 40 ECDE, 7 dispensaries and 17 community water points using the Company water boozler. TCL also supplies 1,50,000 litres of treated drinking water per week for the hard to reach population between Magadi and Singiraine.

Empowerment

TCL's women empowerment programme aims at their inclusion through various CSR initiatives. It works with more than 200 women self-help groups and is facilitating women participation in different economic activities. The Kasturi initiative is helping develop women farmers in self-leadership, family management and ability to serve as community catalyst in Agriprenuership. In FY 2018-19, the project facilitated 279 women representing 13 institutions led by women farmers across eight regions of two states in India.

TCL undertakes Affirmative Action programme, which focusses on improving the lives of the marginalised population through its Employment, Employability, Entrepreneurship Development, Education and Essential Amenities initiatives. TCL has touched the lives of more than a lakh marginalised population through its various initiatives.

Other initiatives

During the year, TCL provided relief support to disaster affected people in Tamil Nadu, Kerala and Gujarat. We provided ample opportunities to employees and family members to volunteer on different social and environmental issues. TCL, TCML and TCE organised various programmes focussed on environment, bio-diversity, health and education. TCNA undertook programmes to support single mothers, senior citizens, children in need and veterans.

United Nations' Sustainable Development Goals



Basis of Reporting

In recent years, the principles of Integrated Reporting <IR> have come to prominence as a benchmark for global best practice in corporate reporting. In line with this trend, we have adopted these principles as the basis for our annual report in an attempt towards transparency and disclosures beyond statutory norms with FY2018-19 being the fourth year of such reporting. Through <IR>, we intend to enrich our reporting for all stakeholders by providing information on our value creation process using the interlinkages of multiple capitals.

We have prepared this report in accordance with the Companies Act, 2013 (and the Rules made thereunder), Indian Accounting Standards, the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 and the Secretarial Standards. Along with these, we have followed internationally recognised frameworks and guidelines such as United Nations Global Compact, Global Reporting Initiative (GRI) and AA1000

Framework for Accountability and the Integrated Reporting <IR> framework of the International Integrated Reporting Council (IIRC). We apply the following principles of AA 1000 AS (2008):

Inclusivity

We are committed to be accountable for stakeholders who are impacted directly or indirectly by our organisation. We map our stakeholders and have processes to ensure inclusion of their concerns and expectations. Additionally, we continue to develop our stakeholder engagement and sustainability capacity at corporate and manufacturing levels.

Materiality

We cover the key material aspects that have been identified through our ongoing stakeholder engagement and are addressed by various programmes or action points with measurable targets.

Responsiveness

We reach out to a wide range of stakeholders through our reporting. Each group has its own specific needs and interests. This report is one element of our interaction and communication. It reacts how we manage our operations in ways that take account and respond to stakeholder concerns.

Reporting period and scope

The Report covers financial and non-financial information and activities of Tata Chemicals Limited and its subsidiaries during the period April 1, 2018 to March 31, 2019.

The financial figures of the report have been audited by B S R & Company LLP, Chartered Accountants and the non-financial information have been assured by Ernst & Young Associates LLP.

Assurance Statement

The non-financial information disclosed in this Report, on a voluntary basis, is as per the Integrated Reporting <IR> Framework of the International Integrated Reporting Council (IIRC) and has undergone independent assurance by Ernst & Young Associates LLP. This assurance has been done as per the 'Limited' criteria of the ISAE3000 assurance standard (International Federation of Accountants' International Standard for Assurance Engagements Other than Audits or Reviews of Historical Financial Information) as well as the 'Type 1, Moderate' criteria of the AccountAbility AA1000 AS assurance standard. The specific environmental and social performance data subjected to this assurance, approach, limitations as well as the assurance conclusion are presented in the Assurance Statement available at https://www.tatachemicals.com/upload/content_pdf/tata-chemicals-limited-independent-assurance-statement-2018-19-ey.pdf.

Forward-Looking Statements

Certain statements in this Report regarding our business operations may constitute forward-looking statements. These include all statements other than statements of historical fact, including those regarding the financial position, business strategy, management plans and objectives for future operations. Forward-looking statements can be identified by words such as 'believes', 'estimates', 'anticipates', 'expects', 'intends', 'may', 'will', 'plans', 'outlook' and other words of similar meaning in connection with a discussion of future operating or financial performance.

Forward-looking statements are necessarily dependent on assumptions, data or methods that may be incorrect or imprecise and that may be incapable of being realised and as such, are not intended to be a guarantee of future results, but constitute our current expectations based on reasonable assumptions. Actual results could differ materially from those projected in any forward-looking statements due to various events, risks, uncertainties and other factors. We neither assume any obligation nor intend to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Glossary

- BBS studies (Behaviour Based Safety)
- Bombay Chamber of Commerce and Industry (BCCI)
- Carbon Disclosure Project (CDP)
- Council of Scientific and Industrial Research-Central Electrochemical Research Institute (CSIR-CECRI)
- Central Food Technologies Research Institute (CFTRI)
- Centre for Materials for Electronics Technology (C-MET)
- Chemical Industries Association (CIA)
- Construction Design and Management (CDM)
- Combined Heat and Power (CHP)
- Consumer Products Business (CPB)
- Commonwealth of Independent States (CIS)
- Compound Annual Growth Rate (CAGR)
- Confederation of Indian Industry (CII)
- Corporate Social Responsibility (CSR)
- Cross Functional Team (CFT)
- Crushed Refined Soda (CRS)
- Distributed Control Systems (DCS)
- Dry Sorbent Injection (DSI)
- Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)
- Environmental Management Plan (EMP)
- Electric Vehicles (EV)
- European Soda Ash Producers Association (ESAPA)
- European Union (EU)
- Federation of Indian Chambers of Commerce & Industry (FICCI)
- Food & Beverage (F&B)
- Food and Drug Administration (FDA)
- Faculty of Management Studies (FMS)
- FMD (foot-and-mouth disease)
- Food Safety and Standards Authority of India (FSSAI)
- Fructo-Oligosaccharides (FOS)
- Galacto-Oligosaccharide (GOS)
- Genetically Modified organisms (GMOs)
- Gigajoule (GJ)
- Greenhouse gas (GHG)
- Global Reporting Initiative (GRI)
- Good Manufacturing Practices (GMP)
- Grow Out Test (GOT)
- Gross Domestic Product (GDP)
- Hazard and Operability Study (HAZOP)
- Hazard Identification and Risk Analysis (HIRA)
- Highly Dispersible Silica (HDS)
- High-Intensity Sweeteners (HIS)
- Heavy Fuel Oil (HFO)
- Haemorrhagic Septicaemia (HS)
- Industrial Minerals Association - North America (IMA/NA)
- Indian Institute of Management (IIM)
- Indian Institute of Technology (IIT)
- Innovation Centre (IC)
- International Chamber of Commerce (ICC)
- International Integrated Reporting Council (IIRC)
- Indian Space Research Organization (ISRO)
- Iodine Deficiency Disorders (IDD)
- Thousand Tonne (KT)
- Know Around Me (KAM)
- Lead, Engage, Aspire and Perform (LEAD)
- Long-Term Strategic Plan (LTSP)
- Make-up Water (MUW)
- Market Development Representative (MDR)

- Mechanical Vapor Recompression/Thermal Vapor Recompression (MVR/TVR)
- Memorandum of Understanding (MOU)
- Metahelix Life Sciences Limited (Metahelix)
- Metric Tonnes Per Annum (MTPA)
- Metric Tonne (MT)
- Million Cubic Feet (MCFT)
- Metric Tonne Carbon Dioxide equivalent (mtCO₂)
- Nitrogen Oxide (NO_x)
- National Accreditation Board for Testing and Calibration Laboratories (NABL)
- National Iodine Deficiency Disorders Control Programme (NIDDCCP)
- Ozone Depleting Substances (ODS)
- Ordinary Portland Cement (OPC)
- Out Patient Department (OPD)
- Pure Ash Magadi (PAM)
- Passenger Car Redial (PCR)
- Political, Economic, Social, Technological, Legal and Environmental (PESTLE)
- Plastic waste management programme (PWM)
- Portland Pozzolana Cement (PPC)
- Profit Before Tax (PBT)
- Profit After Tax (PAT)
- Rallis Innovation Chemistry Hub (RICH)
- Rallis India Limited (Rallis)
- Royal Society for the Prevention of Cruelty to Animals (RSPCA)
- Science Based Targets Initiative (SBTI)
- Safety Health and Environment (SHE)
- Securities and Exchange Board of India (SEBI)
- Sequential Simulated Moving Bed (SSMB)
- Strategic Business Unit (SBU)
- Strategy Deployment Matrix (SDM)
- Strategic Objective (SO)
- Strengths, Weaknesses, Opportunity, Threats (SWOT)
- Sulfur Oxide (SO_x)
- Sustainability Development Goals (SDG)
- Tata Chemicals Europe (TCE)
- Tata Chemicals International Pte. Ltd (TCIPL)
- Tata Chemicals Limited (TCL)
- Tata Chemicals North America (TCNA)
- Tata Chemicals Magadi (TCM)
- Tata Chemicals South Africa (TCSA)
- Tata Chemicals Society for Rural Development (TCSRSD)
- Turnaround Time (TAT)
- Environment Agency (EA)
- Environmental Protection Agency (EPA)
- Welsh Mountain Zoo (WMZ)
- Work Safe Online (WSO)
- Xavier School of Management (XLRI)

Awards

Tata Chemicals wins an award at CII 12th National Six Sigma Competition 2018

Tata Chemicals Mithapur bags Best HR practice awards

Tata Nx Zero Sugar awarded Ayush Ratna for India's Best Natural Sweeteners

Tata Chemicals wins at Asia's Most Trusted Companies Awards 2018

Tata Chemicals bags the coveted CII Most Innovative Knowledge Enterprise Award 2018

Tata Chemicals' Legal Team wins 'Compliance In-House Legal Team of the Year' award

Tata Chemicals ranked #1 company for Sustainability & CSR

Tata Sampann recognised at ET Best Brands 2019

Tata Salt's Hat-trick Win at Media Abbey Awards

The Annual Safety Innovation Award at EU Salt Annual General Meeting 2018



TATA CHEMICALS

Registered Address

Bombay House,
24, Homi Mody Street,
Fort, Mumbai - 400 001 India.
CIN: L24239MH1939PLC002893
Tel: +91 22 6665 8282
Fax: +91 22 6665 8144



www.tatachemicals.com
www.facebook.com/TataChemicals
www.twitter.com/TataChemicals
www.linkedin.com/Company/tata-chemicals
www.tatasalt.com
www.tatasampann.com
www.tataswach.com
www.tatanx.in
www.okhai.org
www.tcsrd.com