

MARCH
TOWARDS
SUSTAINABILITY

Contents

	Page No.
Message	1
1. Facts About the Company	3
2. Our Vision and Sustainability	6
3. Dimensions of Sustainability	8
3.1 Sustainability Policy	8
3.2 Dimensions of Sustainability	10
3.3 Eco Efficiency	11
a) Maximise use of renewable raw materials and conserve energy & resources	11
b) Design & produce safe and environmentally friendly products	16
3.4 Environment Protection, Safety & Health	17
a) Minimising impact on environment	17
b) Ensure industrial and transport safety and occupational health	19
3.5 Economics	22
a) Enhance value by higher than average returns on invested capital	22
b) Achieve competitive advantage through excellence in operational efficiency	23
c) Provide innovative products & cost effective solutions	24
d) Adopt transparency in sharing information	24
3.6 Human Resource	25
a) Train & develop our people to optimise their productivity	25
b) Inspire confidence and empowering	27
c) Open Dialogue	29
4 The Path Forward	33
5. Conclusion	34
6. Attestation Statement	35



MESSAGE



S.S. Bhartia
Chairman &
Managing Director



H.S. Bhartia
Co-Chairman &
Managing Director

We, at Jubilant Organosys, have been driven by the fundamental objective of maximising value by employing our assets and resources in opportunities that generate the greatest returns and position us for sustained growth in the long term. Integrating 'sustainability' into our work ethos and business practices, we believe, will significantly augment our capabilities to maximise value in both the near and long term. This takes into account not only the economic bottom line that measures business profitability but also the benefit and impact of our products and processes on the environment as well as the health and safety of our employees and the communities around our areas of operation.

Jubilant Organosys has been proactively adopting and promoting business practices that are environment-friendly and ensure greater industrial safety. From using molasses, a replenishable bio-mass obtained as a by-product of the sugar industry, as its main feedstock to working towards improving the quality of life of the communities around its manufacturing facilities, Jubilant has made considerable progress in strengthening its economic as well as environmental and social bottom lines.

Over the years, we have learned that sustainability, keeping in view the key stakeholders, makes good business sense. It inspires us to improve our processes, thereby reducing our costs and environmental impact. It builds a strong team spirit amongst our employees as more and more become involved in and contribute to our progress toward sustainability. And, finally, it lays a strong foundation for a sustainable relationship with the communities and societies in which we live and work.

Corporate sustainability is a long-term commitment based on our corporate promise of Caring, Sharing, Growing. This report provides a snapshot of our current efforts and performance from a sustainability perspective and serves as a point of reference as we progress towards a 'sustainability mindset' at Jubilant Organosys. At the same time, we understand that though we have achieved significant milestones, we have an unfinished journey ahead of us. This is our first public report on corporate sustainability and we welcome suggestions and feedback from all our stakeholders.

S.S. Bhartia
Chairman & Managing Director
August 2003

H.S. Bhartia
Co-Chairman & Managing Director



The meaning of Organosys is derived from an amalgamation of 'Organic' i.e., life and nature and 'Sys' i.e., systems, synthesis and science. This combination makes Jubilant Organosys a Science Active Company that is focused on moving up the value chain through research-based knowledge industries.

1. FACTS ABOUT THE COMPANY

Jubilant Organosys Ltd. is the largest speciality chemicals company of India and a leading global manufacturer in defined chemical categories viz second largest in pyridine and its derivatives, second largest in carbamazepine, third largest in solid polyvinyl acetate and leading positions in acetyls, animal nutrition products and other speciality chemicals. These include pharmaceuticals & life science chemicals, performance chemicals, organic intermediates, agri products and a range of other speciality chemicals.

The meaning of Organosys is derived from an amalgamation of 'Organic' i.e., life, nature and 'Sys' i.e., systems, synthesis and science. This combination makes Jubilant Organosys a Science Active Company that is focused on moving up the value chain through research-based knowledge industries.

The business of Jubilant Organosys is organised into four independent divisions, with each division having its own independent charter for growth and its own Growth Units (GUs).

Pharmaceuticals & Life Science Chemicals

- Pharmaceuticals
- Custom Research & Manufacturing Services (CRAMS)
- Advance Intermediates
- Nutrition
 - Vitamins
 - Animal Feed Additives

Performance Chemicals

- Coating
- Food Polymers
- Industrial Adhesives
- Textile Chemicals
- Latex
- Speciality Gases
- Consumer Products

Organic Intermediates

- Acetyls
 - Ethyl Acetate
 - Acetic Acid
 - Acetic Anhydride
 - Vinyl Acetate Monomer

Agri Products

- Crop Nutrition Products
- Crop Protection Formulations

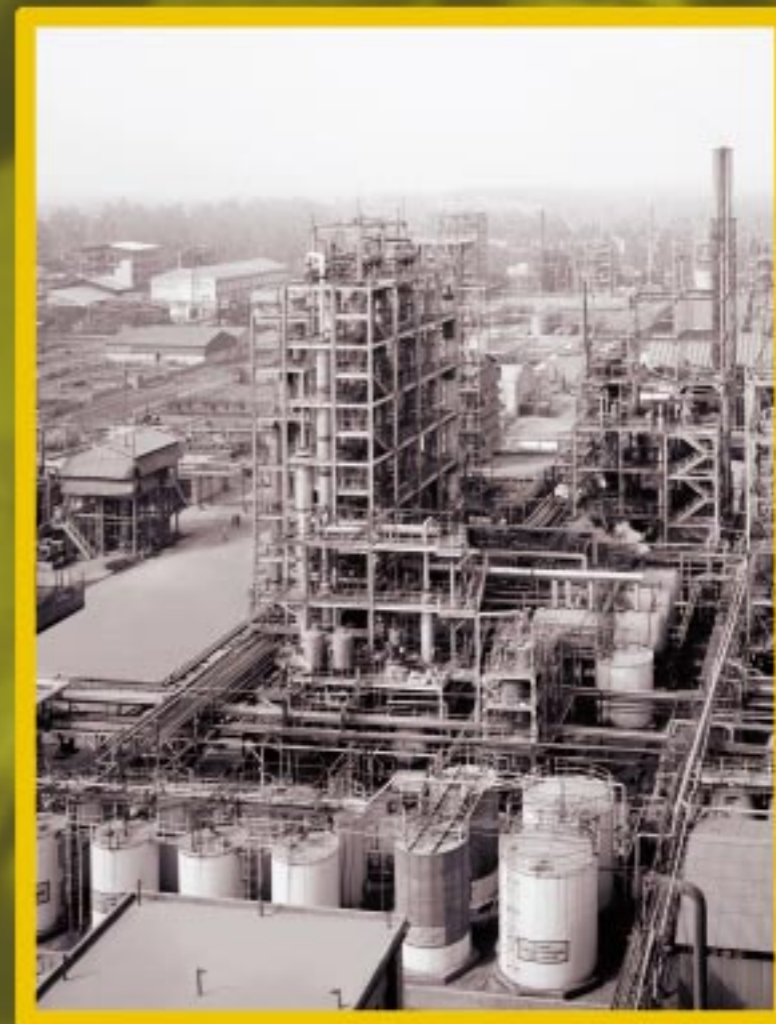
The Science Active products from these business units serve a number of industries such as pharmaceuticals, agrochemicals, construction, packaging/paper, food, beverages and textiles.

Jubilant Organosys has four modern global scale manufacturing facilities located at Bhartiagram, Gajraula (100 kms from Delhi), Nira (near Pune, Maharashtra), Samalaya (near Vadodara, Gujarat) and Nanjangud (near Mysore, Karnataka). The Gajraula unit, which is the largest facility, produces acetyls, advance intermediates, CRAMS products, nutrition, performance chemicals (except latex), speciality gases, fertilisers and agrochemicals. The Nira facility's product line includes acetyls and speciality gases while the Samalaya manufacturing facility produces latex and animal feed additives. The Nanjangud facility was recently acquired from Max India Ltd and manufactures Active Pharmaceutical Ingredients (APIs).

All our facilities adhere to the operating standards driven by best practices, follow environment-friendly policies and are ISO-9000 certified. Most plants also have the ISO 14001 certification while the implementation of Occupational Health and Safety System (OHSAS) 18001 is in its advanced stages. The Carbamazepine plant of the API unit at Nanjangud has the US FDA approval.

Jubilant's corporate headquarters are at NOIDA (near Delhi); the Company has a subsidiary in the US and a representative office in China. The financial results of 2002-03 reflect the strategic shift in the business profile of the Company with increased contributions to both revenues and earnings from the knowledge segment. Jubilant's FY 2003 gross revenues increased by 12% over the previous year to Rs. 9,677 million and exports advanced by 66% to Rs. 1,964 million.

This report covers the Company's manufacturing facilities at Gajraula, Nira and Samalaya. The Nanjangud facility was acquired in September 2002 and will be reviewed in the 2003-04 report.





2. OUR VISION AND SUSTAINABILITY

Jubilant Organosys has integrated its vision with the concept of 'sustainable development'.



Our Vision is:

- To be among the top 10 most admired companies to work for.
- To maintain and acquire the first or second leadership position in our chosen areas of business in India.
- To expand our position of leadership in India to establish a global presence.
- To continuously achieve a return on invested capital of at least 10 percentage points higher than the cost of capital.

Our Vision is driven by our Values, which are:

- **Inspire Confidence**
"We will carefully select, train and develop our people to be creative, empower them to take decisions, so that they respond to all customers with agility, confidence and teamwork."
- **Always Stretch**
"We stretch ourselves to be cost effective and efficient in all aspects of our operations and focus on flawless delivery to create and provide the best value to our customers."
- **Sharing Knowledge**
"By sharing our knowledge and learning from each other and from the markets we serve, we will continue to surprise our customers with innovative solutions."
- **Excellent Quality**
"With utmost care for the environment and safety, we will always strive to excel in the quality of our processes, our products and our services."

While fulfilling our vision, our Promise to all stakeholders is of

"Caring, Sharing, Growing"

"We will, with utmost care for the environment, continue to enhance value: for our customers by providing innovative products and economically efficient solutions; and for our shareholders through sales growth, cost effectiveness and wise investment of resources".

3. DIMENSIONS OF SUSTAINABILITY

3.1 Sustainability Policy



Sustainability Policy

We, at Jubilant Organosys Ltd., the largest speciality chemicals company of India having business interests in pharmaceuticals & life science chemicals, performance chemicals, organic intermediates and agri products, believe in the sustainability of growth. Our approach to Sustainable Development focuses on the triple bottom line of Economics, Environment and People.

As a business entity, we aim at improving shareholder value through return higher than the average cost of capital, innovative and cost competitive products as well as a continuous improvement in our operational efficiencies.

The nature of our activities makes an efficient utilisation of resources, environmental protection, operational & transportation safety and employee health, significant components for long term sustainability of our business and we stand committed to these.

We are part of the society and acknowledge our responsibility as a good corporate citizen. We encourage and practise an open dialogue with all our stakeholders and value their considered opinion in our strategic plans. We also recognise that development and empowerment of our human resource is crucial in achieving our objectives.

We shall adopt a structured approach for implementation of the policy and regularly monitor its progress.

S.S. Bhartia
Chairman & Managing Director

H.S. Bhartia
Co-Chairman & Managing Director

The above-articulated policy will be implemented through a structured approach. A sustainability management team, comprising functional and business heads, has been established to identify stakeholders in their respective areas, assess their needs through dialogue or other forms of engagement and develop action plans

MANUFACTURING LOCATIONS



Gajraula



Nanjangud



Nira



Samalaya



At Jubilant, dimensions to sustainability are – Eco efficiency; Environment protection, safety & health; Economics and Human Resources.

for implementation. The overall progress will be reviewed at the highest level by a committee comprising the following members:

- Chairman & Managing Director Mr. S. S. Bhartia
- Co-Chairman & Managing Director Mr. H. S. Bhartia
- Executive Directors Dr. J. M. Khanna
- Mr. S. N. Singh
- Mr. S. Bang
- Chief Financial Officer Mr. R. Sankaraiah
- Chief of Human Resource Mr. Chandan Chattaraj
- Chief of Manufacturing Mr. Tapan Dutta
- Chief of Environment, Health & Safety Mr. A. K. Ghose

3.2 Dimensions of sustainability

At Jubilant, the path to sustainability has four dimensions.

Eco-efficiency

- Maximise the use of renewable raw materials and non-conventional energy, conservation and reduction in the use of energy and resources as well as a reduction and recycling of waste.
- Design and make products that are safe and environment friendly.

Environmental Protection, Safety & Health

- Take utmost care of the environment and reduce the impact of our operations on it.
- Protect the health and safety of our employees by encouraging and implementing best practices in occupational health, process safety and transportation safety.
- Actively participate in mitigating global environmental concerns.

Economics

- Continue to enhance value by achieving an average return on invested capital higher than the weighted average cost of that capital.
- Provide innovative products and cost-effective solutions to customers.
- Achieve a competitive advantage by expanding our leadership position in India and globally by achieving excellence in operational efficiency.
- Maintain transparency in sharing information.

Human Resources

- Train and develop our people to optimise their productivity.
- Inspire confidence and empower them to take decisions.
- Practise open dialogue – with employees, customers, government agencies, trade associations and with communities around all our facilities.

The main feedstock for bulk of our products is a renewable resource. Biogas produced from effluents is burnt in boilers, furnaces and incinerator saving fossil fuels that are precious finite resources.



3.3 Eco-efficiency

a) Maximise the use of renewable raw materials and conserve energy and resources.

i) Renewable resource as feedstock

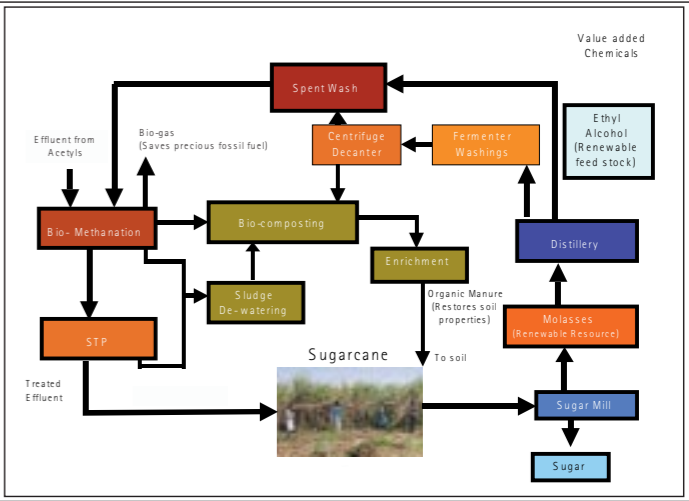


Figure – 3.3.1

The Company differentiates itself in its manufacturing approach, which is based on the use of a renewable resource as the main feedstock, the cascading use of waste products to conserve energy requirements and a complete recycling and reuse of the final wastes at the plants in Gajraula and Nira. The main feedstock, molasses, occurs as a by-product in sugar mills from which industrial alcohol is produced by the processes of fermentation and distillation. Industrial alcohol is further processed to produce a series of value-added chemicals as illustrated in Fig. 3.3.1. The fermentation and distillation processes release an effluent called 'spent wash', which, at Jubilant, is treated as a 'resource' to produce methane-rich biogas through an 'anaerobic digestion' process. The biogas produced is utilised as an energy source for producing steam and power as well as in furnaces and incinerators, saving fossil fuels that are precious finite resources. The Gajraula facility of the Company operates the largest molasses based distillery in Asia (305 kL/d) and produces about 175,000 m³ of biogas everyday, saving 175 tonnes/day of coal. Apart from biogas production, energy is also extracted from another waste product, a reaction residue of pyridine, by utilising it in the incinerator. Figure 3.3.2 shows energy produced from renewable resources and plans of the Company for making improvements over the future.

It may be noted that the Nira facility was acquired in May 1999 when it did not have a biogas plant, which was subsequently installed by



Jubilant recognises energy as the most valuable resource and has been in the forefront of the Indian Chemical Industry in energy conservation efforts.

Jubilant in 2002-03.

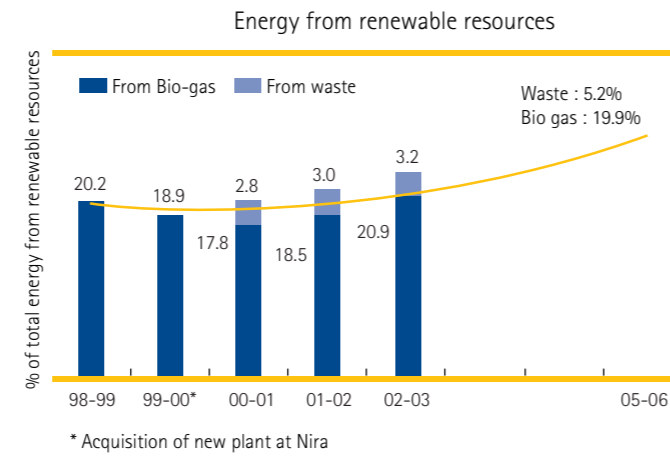


Figure 3.3.2

The effluents emerging from the biogas plant is still rich in nutrients, which is gainfully utilised for crop irrigation following treatment. The distillery, the biogas plant and the secondary effluent treatment plant produce varying quantities of sludge – another waste product – which is also rich in plant nutrients, converted into stabilised compost and then recycled for use in the soil. The loop is thus fully closed, starting from utilisation of molasses for the production of value-added chemicals and energy and the ultimate recycling of all waste into the soil.

ii) Energy conservation

Jubilant recognises energy as the most precious resource and has been in the forefront of the Indian chemical industry in energy conservation. For this the Company has gained recognition from the Government of India through its Energy Conservation Awards for Chemical Industry. Jubilant has been a recipient of these awards for five successive years from 1997.

The energy conservation efforts at Jubilant are driven by the utilisation of waste heat, the timely replacement of inefficient equipment by energy efficient machines, condensation and flash steam recovery, the demand side management of energy and energy audits by in-house/external experts. Some examples of energy conservation efforts implemented by the Company over the last few years are:

- Replacement of old Skoda DG sets by more efficient Wartsila sets,
- Utilisation of high-pressure vent gas from acetaldehyde absorber column to convey fly ash of boilers to silos, thereby avoiding the use of electric compressor for the same,
- Recovery of energy and nitrogen gas from the vent gas of the acetaldehyde plant,

Possibilities of recycling wastes to produce energy are continuously explored at Jubilant.



- Installing waste heat recovery boilers for the DG sets and incinerator,
- Replacement of old compressors by more efficient and energy-saving compressors in the acetic acid plant,
- Optimisation of the distillation process in the acetic acid plant,
- Technology upgradation by switching from batch process to continuous process in the pyridine plant,
- Changing alumina blades of the cooling tower fans with lighter FRP blades,
- Use of chilled water in the charger coolers of DG sets,

The efforts made in the area of energy conservation have resulted in a significant decline in specific energy consumption at manufacturing facilities (as presented in Figure 3.3.3) even as the Company sustains its effort towards a further reduction in energy consumption.

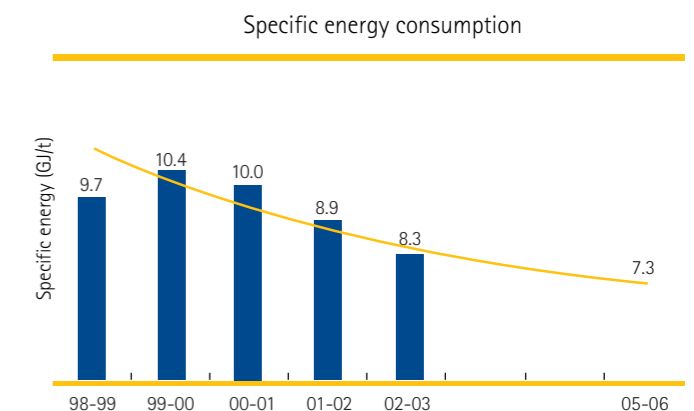


Figure 3.3.3

(Note: After the acquisition of the Nira facility in May 1999, production levels have increased)

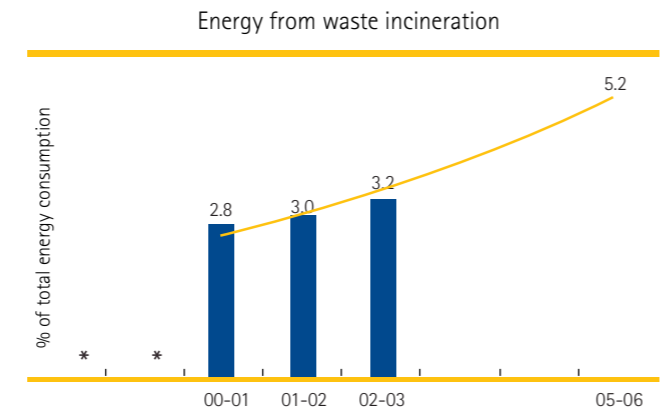
iii) Waste recycling

The processes involved in the production of speciality chemicals generate some non-biodegradable liquid effluents and hazardous wastes that need to be incinerated to avoid land and water pollution. A custom-designed incinerator was commissioned at the Gajraula facility in March 2000 that can utilise a part of these hazardous wastes as fuel for incineration, supplemented by biogas. A win-win situation has thus been achieved where not only the non-biodegradable effluent is incinerated but the hazardous wastes too are gainfully utilised to produce steam for the manufacturing process.

Energy conserved through this process amounts to 3.2 per cent of



the facility's total energy consumption. An additional incinerator is being installed at Gajraula to handle the hazardous wastes of the new plants. This will further increase the share of energy being generated from waste instead of fossil fuel, as shown in figure 3.3.4.



* Incinerator was installed in 2000-01

Figure 3.3.4

Apart from the utilisation of waste as energy resource, the incinerator also plays a significant role in reducing the odour in/around plant premises. The production unit vents and the fugitive emissions are the principal sources of odour at the Gajraula facility. The major odourogenous vents have been connected to the incinerator where the organic vapours of vents are burnt, thereby reducing the odour levels of the facility and its surroundings. The work for connecting the rest is on.

iv) Waste heat recovery

Sustained efforts are being made to recover heat from flue gases and other sources wherever possible, and these have resulted in the generation of more than 10 per cent of the Gajraula facility's total steam requirement, as illustrated in Figure 3.3.5. Efforts are on to further increase this share.

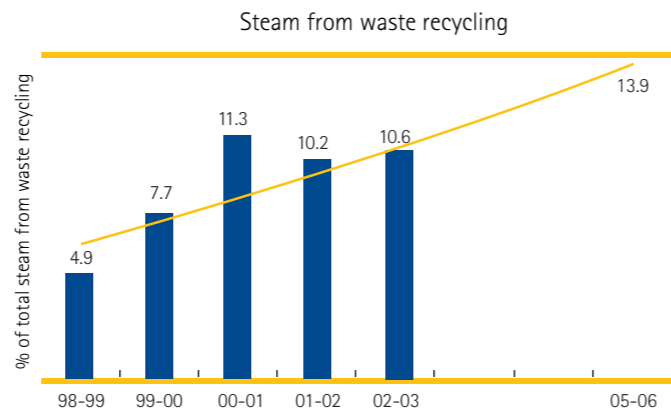


Figure 3.3.5



Sustained efforts at reducing, recycling and the reuse of water have resulted in a significant reduction in the water consumption.

v) Water conservation

Water is utilised in the process plants for direct and indirect uses. A continuous effort is being made to reduce consumption levels by following a 'Reduce, Reuse and Recycle' approach. Some of the key measures taken comprise:

- Reduce
 - Reduce the dilution of 'spent wash' in the distillery,
 - Reduce the requirement of fresh water for cooling in the CO₂ compressor, CO₂ blower, air blower and NH₃ compressor in distillery,
 - Shifting to atmospheric distillation from vacuum distillation (saving water required for vacuum pumps).
- Recycle
 - Sealing the water of vacuum pumps.
- Reuse
 - Identify opportunities to reuse water from the Triethyl phosphate vacuum pump, foam trap of distillery, effluent of ethyl acetate and cooling tower blow downs.

The result of these ongoing initiatives is depicted in Figure 3.3.6. A steady decline was observed in the specific process water consumption in our manufacturing processes. However, due to the introduction of a few water intensive processes, consumption increased marginally in FY 2003. Water is also used in Gajraula unit for dilution of the treated distillery effluents. The use of water for this purpose will be phased out gradually in the next three years, after which the entire quantity of distillery effluents will be utilised for crop irrigation and bio composting. This and other ongoing efforts are likely to reduce water consumption further and enable the Company to regain the downward trend.

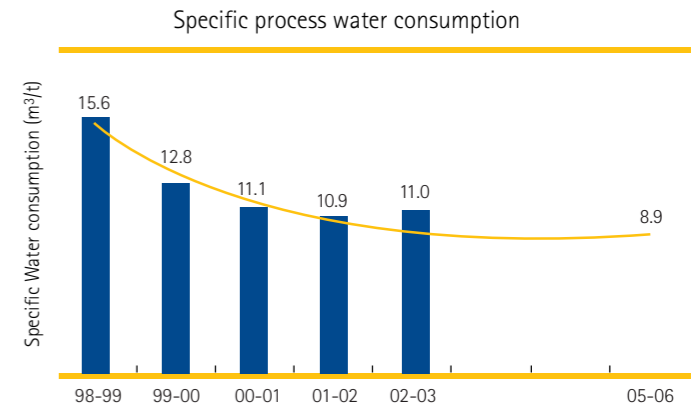


Figure 3.3.6



Bio-compost produced at Jubilant from distillery effluent and press mud, a waste product of sugar mills, is a case of win-win example of managing waste to produce wealth.

vi) Wealth from waste

Jubilant's 'wealth from waste' initiative, aimed at using renewable resources and effectively utilising by-products for value maximisation, has yielded results that are reflected in increased financial and operating efficiencies as well as benefits for the agricultural sector. A significant achievement has been the utilisation of effluents, press mud – a waste product of sugar mills – and excess sludge from the fermentation process of distillery and effluent treatment plants, to produce bio-compost. The bio compost thus produced is rich in valuable soil nutrients like nitrogen, phosphorous and potash as well as organic carbon. The persistent use of nitrogenous fertilisers in the country for enhancing crop yield has adversely affected the C/N ratio of the soil, reducing soil fertility. The use of bio compost helps correct this and restore soil fertility.

The Company has been producing bio compost for the last three years and plans to increase its production from 6,000 tonnes per annum to about 20,000 tonnes per annum over the next two years.

b) Design and produce safe and environment friendly products

Jubilant, in line with its commitment to 'Responsible Care', places a special emphasis on safety and care for the environment at all stages of its product value chain. At the design stage itself, material safety data sheets (MSDS) are developed for the safe handling, storage, transport and use of the products. These data sheets are reviewed, and its contents upgraded, on a continuous basis. Some of our achievements are listed below:

- Jubilant Organosys is one of the largest manufacturers of emulsion polymers in the country. The water-based emulsion polymers made by the Company for use in the manufacture of household paints do not require the use of environment degrading organic solvents.
- Adhesives too have historically used large quantities of organic solvents that lead to atmospheric pollution. Jubilant Organosys is one of the largest manufacturers of adhesives for use in various applications. Jubilant's product range of adhesives is predominantly based on water based formulations that do not cause any environment pollution. The hot melt range of adhesives replaces solvent-based adhesives in many applications. These products are 100 per cent solids and do not release any solvents/chemicals in the environment.
- Adhesives used in the manufacture of flexible packaging are normally solvent-based and are applied at very low solid concentrations. This leads to a high level of solvent release in the environment. The

Bio-degradable effluents, after treatment, are used in crop irrigation.



Company has developed products, which can be used at much higher solids leading to a reduced solvent release in the environment. It has also developed solventless adhesives for this application, which will totally eliminate the release of solvents in the environment.

- Pigment printing of textiles is traditionally carried out by using petroleum based solvents for thickening the pigment paste – a practice that leads to environment pollution as well as unsafe working conditions. Jubilant Organosys, in collaboration with Indian Institute of Technology, Delhi, has developed a water based thickening system, which eliminates the use of petroleum based solvents in this application.

3.4 Environmental Protection, Safety & Health

a) Minimising impact on the environment

i. Effluent treatment

Our approach towards effluent management, as mentioned in the preceding paragraphs, has been in favour of reduction followed by reuse and recycle. To achieve this objective, it becomes essential to develop suitable treatment systems. The effluents generated from the various plants could be categorised as biodegradable and non-biodegradable effluents.

Biodegradable effluent

Biodegradable effluents, emanating primarily from the distilleries at the Gajraula and Nira facilities, are treated in modern effluent treatment

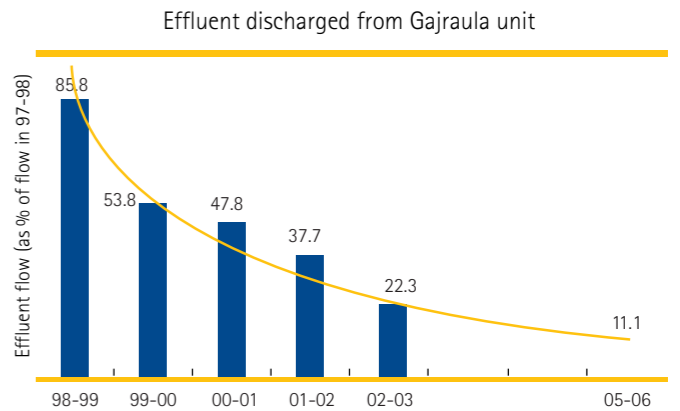


Figure 3.4.1

plants to reduce polluting ingredients to acceptable levels. Currently, a part of this treated effluent is used for crop irrigation and bio composting, and within three years, the entire quantity will be used for crop irrigation and bio composting purposes. In case of non-distillery effluents, two of the Company's manufacturing facilities at Nira and Samalaya have already achieved almost 'zero discharge of effluents'

Various measures adopted by us have brought in major reduction in emissions into the air and this declining trend continues.



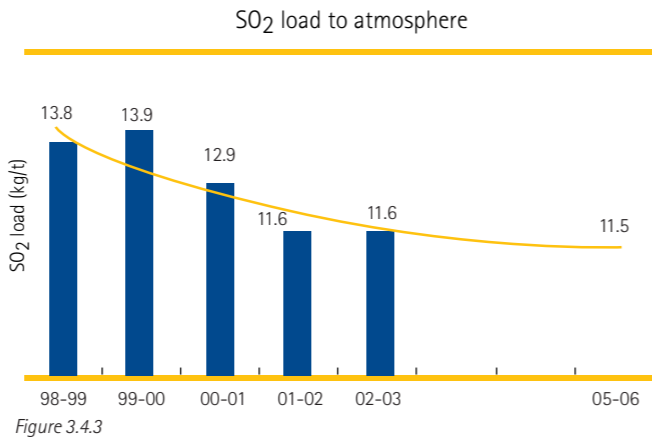
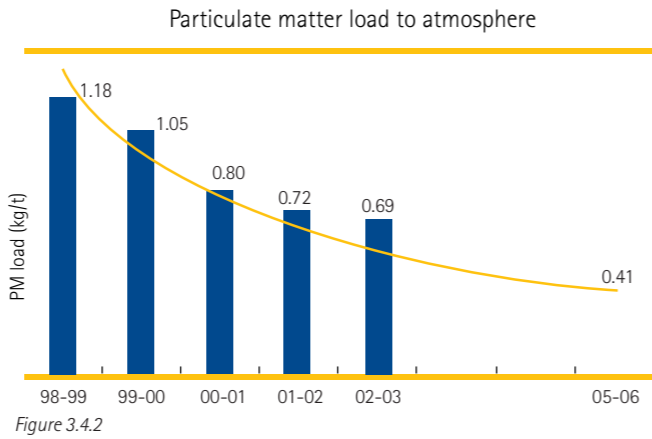
status and the third facility at Gajraula has initiated a series of measures aimed at reducing the non-distillery effluent discharge. These have yielded impressive results as illustrated in Figure 3.4.1. The Company plans to reduce current non-distillery effluent discharge levels from this facility by 50 per cent within the next three years.

Non bio-degradable effluents

The non-biodegradable effluents are incinerated following primary treatment, preventing them from being discharged into the environment.

ii. Air pollution control measures

Multiple measures are taken by the Company to minimise the emission of air pollutants from its manufacturing facilities. Processes having potential for particulate emissions are provided with electrostatic precipitators, bag filters, scrubbers or cyclone systems. As a result of these initiatives, there has been a steady reduction in emissions as shown in Figure 3.4.2 (for particulate emission) and Figure 3.4.3 (for sulphur dioxide emission).



Investment has not been a constraint in the Company's efforts to improve its environmental performance.

iii. Investing for a better environment

Jubilant Organosys has taken multiple steps over the years towards managing and reducing the environmental impact of its operations. The Company has been consistently making significant investments in cleaner production, modern machinery, efficient processes and effluent treatment and management facilities. Some of the progressive measures include investments in the installation of:

- Biogas plant for distillery effluents,
- Secondary effluent treatment plants,
- Mechanical sludge dewatering plant,
- Incinerators,
- Bio composting facilities,
- Effluent holding lagoons and distribution piping network for crop irrigation.

Jubilant Organosys has already invested over Rs. 400 million (US\$ 8 million) on Environment, Health & Safety (EHS) over the past four years. Investments made by the Company in environment, health and safety have been substantial, varying from 11 to 18 per cent of the total capital investments made by the Company as presented in Figure 3.4.4. The Company has completed the cleaning up operations and all new projects are conceived with all necessary EHS measures incorporated in these.

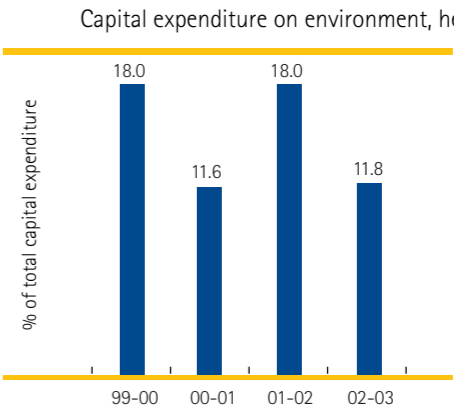


Figure 3.4.4

Ensure industrial and transport safety and occupational health

i) Industrial safety

Protecting our employees' health and safety forms an integral part of the way the Company manages its business. The safety issues are primarily handled at following levels:

- Process safety

Safety forms a key component of each and every process at Jubilant Organosys and the issue is addressed at the planning stage itself. For

The nature of our operations involves handling of flammable chemicals, hence fire safety assumes great importance.



existing operations, periodic inspections and audits, both in-house as well as by external agencies, are carried out and corrective measures, wherever necessary, are adopted.

• Fire safety

The nature of our operations involves the handling of flammable chemicals. as a result, fire safety is an important element of the overall safety programme. In-built safety measures are incorporated at the product design stage and in developing Standard Operating Procedures (SOP) to prevent the occurrence of fire incidents. Additionally, elaborate arrangements at all the facilities prevent and control fire incidents, including the Company's own fire and foam tenders. Teams of trained personnel operate these appliances across all manufacturing locations of the Company.

• Handling and storage safety

Fire hydrant and foam fire-fighting networks protect all flammable chemical storages at Jubilant. Certain storage tanks, like the acetaldehyde storage tank, are covered by water spray systems as an additional safety measure. The handling of hazardous chemicals is mainly through the piping system and is handled by trained operators. The 'on-site' emergency plans are regularly updated and periodic mock drills are conducted to ensure their effectiveness during an emergency.

• Training



Figure 3.4.5

Training forms the most critical input to safety management at Jubilant. One of the most vulnerable sections of workers, as far as safety is concerned in a manufacturing complex, are the casual workers at construction sites or other contract related works. The Company follows a strict principle of mandatory safety training to each of these workers before they can enter its manufacturing premises. The progress



Safety systems, fire-fighting facilities and continuous training help maintain a high level of safety performance at Jubilant.

made over the years in providing adequate training to contract workers can be seen in Figure 3.4.5.

As a result of focused and consistent effort aimed at ensuring safety at all stages, safety-related incidents remain at a negligibly low level as illustrated in Figure 3.4.6. The Company continuously strives for zero accident in all its locations in the future years.

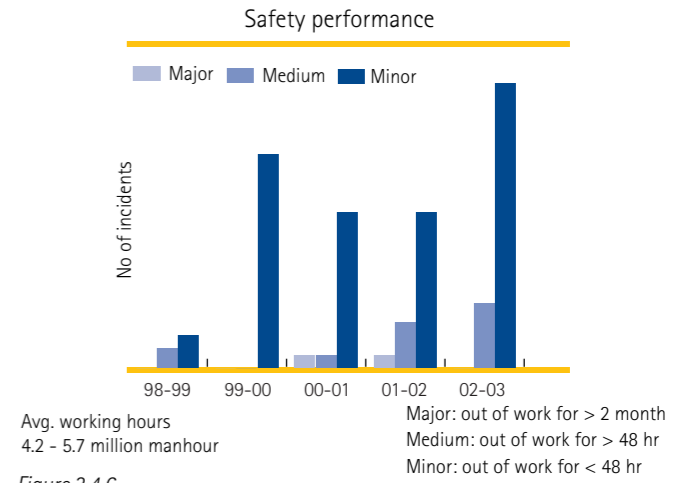


Figure 3.4.6

ii) Transportation safety

At Jubilant, safety considerations extend beyond manufacturing. The Company transports materials and products safely; it recognises the safety needs and concerns of the customers and local communities. Jubilant Organosys follows an elaborate and strict system of inspection of the tankers transporting the Company's products to various parts of the country and abroad. Regular training programmes are conducted for the drivers and cleaners of the transport vehicles wherein training on the

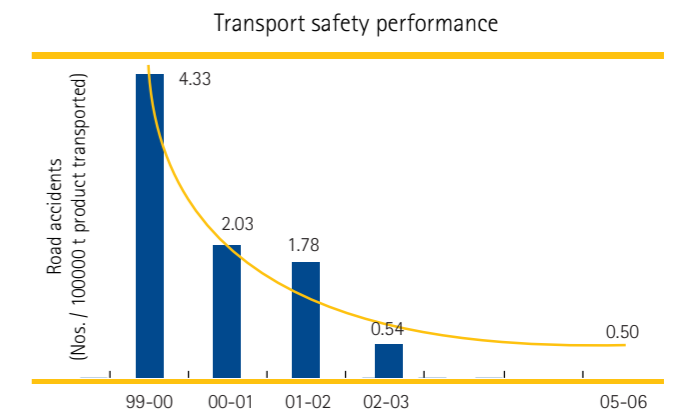


Figure 3.4.7

nature of the chemicals that they are transporting and safety measures to be adopted during transportation of such chemicals, including the Material Safety Data Sheet (MSDS), is imparted. Transporters are

Employee health cards are maintained which give his/her health check-up history, helping the management to assess any occupation related disorders.



provided Transport Emergency (TREM) Cards for all dangerous chemicals leaving the factory premises. These TREM cards – in English and all major Indian languages – incorporate instructions to handle emergency situations during transit. The steadfast observance of standard operating procedures in loading and transportation activities and regular intensive training has reduced the number of transportation-related incidents to about one incident per 100,000 tonnes of products transported, as shown in Figure 3.4.7. The Company is also developing a Transport Emergency Response Plan (TERP) for a quick response to any emergency situation.

iii) Occupational health

Jubilant is working to ensure the health and well-being of its workforce. The Company has identified key areas of focus from the health perspective and is encouraging its facilities to develop initiatives to address them. The Company is procuring portable and fixed-type work zone monitoring systems for the Gajraula facility to detect and measure presence of organic vapours and other gases in the work zone atmosphere and take actions against any fugitive emissions. Each employee of the Company undergoes periodic medical check-ups, particularly from the occupational health angle covering general health, work stress-related issues like hypertension, allergies, gastritis disorder, anaemia, obesity, addiction, eyesight and lung function. Periodically, specialists from near by metropolitan cities are invited and health camps organised for both employees and their families. The Company's medical team is headed by an experienced and qualified Medical Superintendent who is supported by a team of paramedics.

3.5 Economics

a) Enhance value by higher than average returns on invested capital
Jubilant redefined its vision two years ago to sharply focus its strategy on creating value on a sustainable basis. The Company set a target to achieve a return on capital employed 10 points higher than the prevailing cost of capital.

The management team strives to increase the average return on capital employed and to lower the weighted average cost of capital.

Provided in the table below is a summary of the progress made so far:

	2000-01	01-02	02-03
Return on Capital employed	11.1%	12.8%	18.9%
Weighted average cost of capital	10%	9.7%	8.4%



Jubilant Organosys is committed to enhancing shareholder value through operational efficiency by achieving a return higher than the average cost of capital.

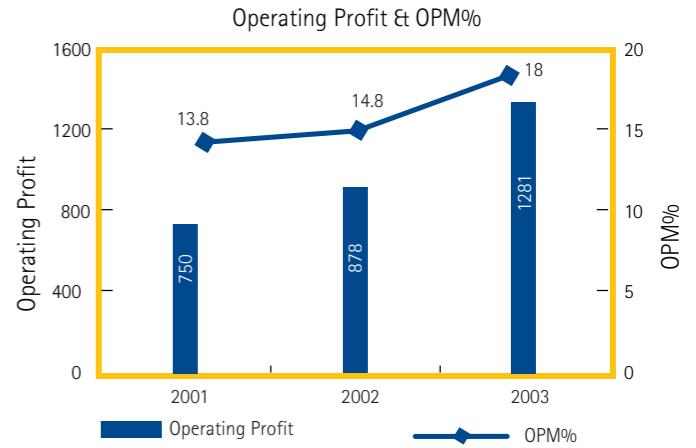
To sustain the improvements achieved in ROCE, the Company will continue to focus on:

- Continuously improve operating efficiencies in the areas of supply chain, cost management; reduce working capital requirement; improve logistics and marketing efficiencies; and reduce working capital requirement and cost of debt through financial restructuring.
- Developing new products through innovation and a continuous investment in Research and Development for strengthening the innovation process.

b) Achieve a competitive advantage through excellence in operational efficiency

Jubilant has always believed that by achieving operational excellence, it can create a sustainable competitive advantage. This competitive advantage ultimately gets reflected in its profitable leadership position in the Indian and global markets. Today, all the divisions of the Company are profitable, enabling it to achieve the goal of profitable leadership.

Operating excellence has many aspects to it and, over the years, Jubilant has continuously focused on all of these aspects, as explained below.



Supply chain efficiencies: The Company frequently participates in various e-marketing opportunities for buying and selling chemicals, spares and consumables.

Cost management: Over the years, the Company has undertaken several cost saving initiatives in the areas of transportation, warehousing, materials handling, packaging and sourcing, all of which have contributed significantly to reduce the overall cost base.

Working capital management: The focus on improving the cash flow cycle has resulted in significant improvements in the operating cash



At Jubilant, innovation means developing increasingly high performance products to meet changing market demands and trends.

flow. This improvement has been driven by the Company's initiatives in optimising inventory levels and improving collection efficiencies.

Logistics: Jubilant has succeeded in improving on-time deliveries to its customers by a complete and comprehensive review of fleet operations.

Marketing: The Company continues to enhance marketing strengths through increasing the effectiveness of the sales force in India and in the export markets.

Financial restructuring: To optimise its debt profile, the Company has undertaken an innovative debt management initiative to replace its high cost Rupee debt with low cost debts both in foreign currency and Rupee denominations. This initiative is backed by the natural hedge that Jubilant enjoys by way of export receivables owing to a sustained growth in exports and a low dependence on imports.

c) Provide innovative products and cost-effective solutions

At Jubilant, innovation means increasingly developing high performance products to meet changing market demands and trends. Sustainable innovation is about opting for processes and technologies that are in line with our health and environment objectives in accordance with the Company's commitment to progress.

Driven by a robust R&D base, we consistently introduce new products every year and in fiscal 2002-03 almost 28 per cent of the net sales came from products that were less than five years old.

d) Adopt transparency in sharing information

Jubilant has adopted a policy of complete transparency in sharing information with the investor community, shareholders and other financial partners. Some of the steps taken are:

- i. Proactively meeting institutional investors to create awareness about the Company's business strategy and operating profile.
 - An investor meet was organised following the annual results for the financial year 2001-02. This meeting was attended by over 60 analysts and fund managers from institutional brokers and asset management companies.
 - Follow-up one-on-one meetings:
 - ✓ Post Q1 results with five institutional investors.
 - ✓ Post Q2 results with seven institutional investors.
 - ✓ Post Q3 results with seven institutional investors.
 - Jubilant's senior management team met with, and plant visits were organised for eight financial institutions during the last

Jubilant's human resource policy affirms the belief that it is the people who will sustain Jubilant as an institution with vitality and prosperity.



quarter of fiscal 2002-3.

- Quarterly results and updates to institutional investors.

- ii. Quarterly results publication in prominent national business and general interest dailies as well as the regional print media to reach out to retail investors.
- iii. Detailed business information in Management Discussion Et Analysis of the annual report that appraises shareholders of business performance during the year and provides a section on outlook. A detailed Corporate Governance report provides information on governance in the Company.
- iv. Half-yearly results and performance is shared with all the shareholders through direct mailers.
- v. The web site is constantly updated to provide the latest information about the Company. The Annual Report, latest investor presentations and the chairman's message are available in soft copy on the web site of the Company.
- vi. A key step that has been taken is involving vendors as partners for sharing knowledge both ways. This has resulted in a noteworthy improvement in inventory management and a reduction in overall costs.

3.6 Human resources

a. Train and develop our people to optimise their productivity

The vision and success of the Company are shaped by its people. Caring, Sharing, Growing is the mantra. Jubilant's human resource policy affirms the belief that people are the organisation's major assets, and that together they will sustain Jubilant as an institution with vitality and perpetuity.

The Company believes that each employee has added value and created new paradigms in business partnership between the customers and the Company.

Capability-enhancement programmes

The value addition to sustainability from the human resources perspective is to enable employees to optimise their productivity. Towards this the Company has endeavoured to train and develop employees in building skills and capabilities. The training activities are broadly grouped under five areas (refer Figure 3.6.1) with a focus on functional requirements or generic skills enhancements: marketing



Jubilant places a great emphasis on enhancing skills-set and knowledge base of employees on an ongoing basis.

skills, behavioural skills, IT-related, awareness Training on environment, health and safety, and manufacturing or technical skills enhancement training.

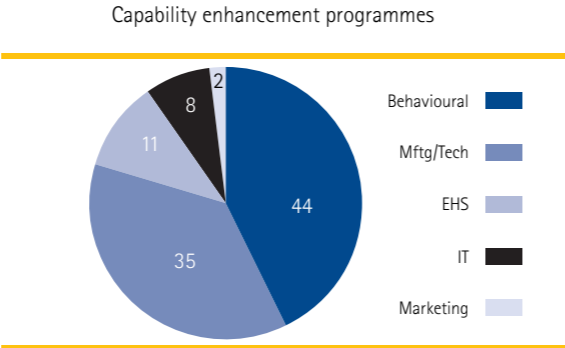


Figure 3.6.1

Leadership development programme

This programme has the dimensions of being both diagnostic and developmental. These are organised for employees at the senior level. As a diagnostic tool, it serves to identify those aspects of individual leadership quality that the participants need to inculcate; and, in its developmental aspect, it serves to identify the challenging roles that could be taken on to further add dynamism to the organisation. The programme facilitates individual development, teamwork and a greater understanding for a cohesive team with a shared vision to work towards organisational objectives.

Quality of work life

We encourage employees to balance work and life. An individual's overall development is taken care of by the programmes that we conduct on:

- Positive thinking and fostering positive attitudes in life conducted with the objective of enhancing capabilities, while at the same time fostering employees who are healthier and happier.
- Lectures on yoga, health, stress management, ergonomics and various other topics that address the day-to-day issues and concerns of employees.

Training on environment, health and safety

Towards achieving sustainable growth, the Company regularly conducts training aimed at raising awareness levels of employees with respect to environment, health and safety issues.

Nominations for external programmes

Being a Science Active company, Jubilant Organosys is committed to creating high scientific knowledge-based value for the service of society at large. The Company makes a constant endeavour to enhance and nurture our intellectual wealth and talent-pool.



Training programmes are designed to facilitate individual development and to promote teamwork.

The Company places a great emphasis on enhancing the skills-set and knowledge base of employees on an ongoing basis and often sends them for programmes in various fields conducted by premier training and educational institutes in India. It has also sponsored employees for training abroad in Japan and the US.

The aim of Jubilant's human resources division is also to create a pool of motivated individuals that are empowered, thinking, growing continually and sustaining the talent requirements in line with the goals and vision of the Company, while maximising operational efficiency.

The data on average training mandays for the financial years 2001-02 and 2002-03 is illustrated in Figure 3.6.2. The Company trained for 2.5 mandays per person in 2002-03 and has set a target for 3.0 mandays of training per person in 2003-04.

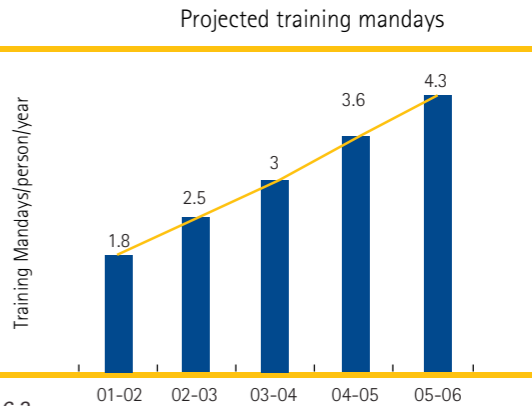


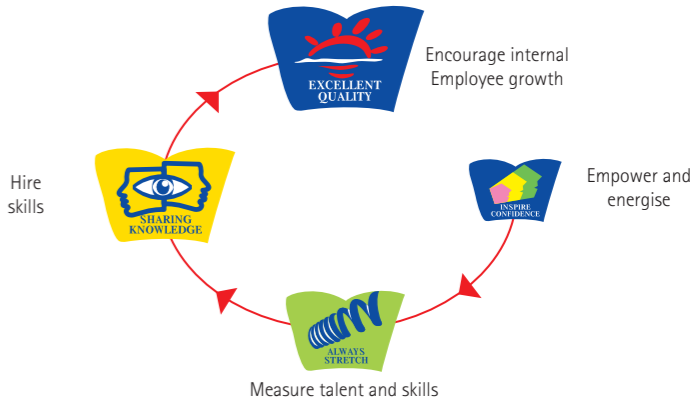
Figure 3.6.2

b) Inspiring confidence and empowering

i) Inspiring confidence

The Company's value system is illustrated by a value chain: it starts by inspiring confidence through empowering and energising employees, leading to excellent quality and employee growth.

To empower employees and enable them to take decisions, a well informed workforce with a strong knowledge base is required. To facilitate this, an internet facility has been provided to the employees.



Employees across all levels are encouraged to share experiences and learnings on quality, process improvements and cost reduction.



Managementor (the knowledge dissemination service) services have been implemented for employees so that they may gain contemporary knowledge, best practices and awareness of benchmarks in their relevant fields. The contents cover functional areas ranging from HR, IT, marketing, manufacturing, finance to strategic management.

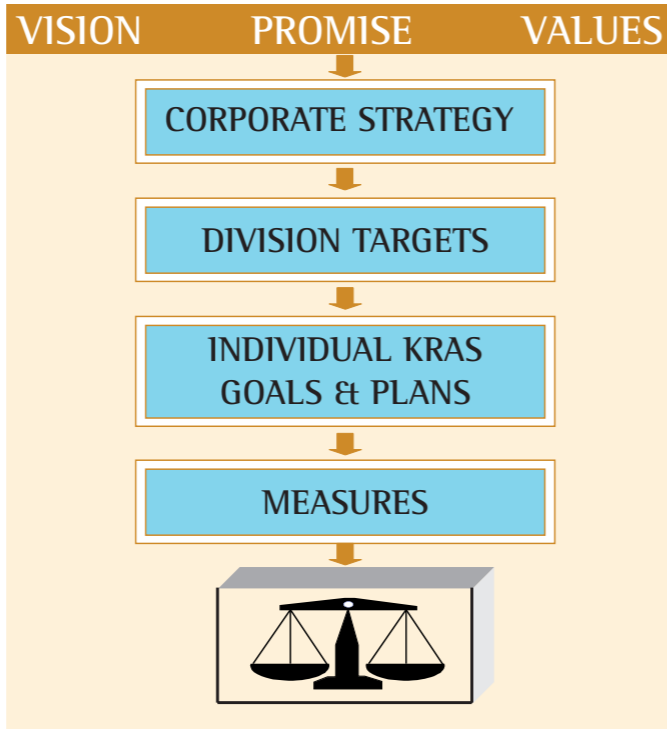
ii. Performance enhancement programme and motivation

Our business strategy does not hinge on financials alone. Our organisational measures aim to quantify not only the financial results but also measure innovation (growth), environmental performance, employee satisfaction and operational efficiency in the business processes.

Motivation

As part of the ideas for motivation and morale enhancement, manufacturing meets are organised annually where employees across all levels are encouraged to share experiences and learnings on quality, process improvements and costs.

ii) Linking corporate strategy with individual growth



An individual performance plan is drawn up wherein the individual key responsibility areas (KRA) are laid down for the year across the four



Jubilant considers the communities around its manufacturing locations as an important group of stakeholders and engages them in dialogue to get useful feedback.

dimensions of financials, growth, stakeholder and business processes. The KRA setting is done mutually, the employees and their superiors jointly discuss the result areas with their accountabilities. In addition to linking the performance to the business objective for each division, it serves to set measurable sets of standards for performance evaluation. Compensation at Jubilant is thus driven by performance – individual, divisional and organisational.

c) Open dialogue

i. Corporate social responsibility

Across all its manufacturing locations, Jubilant has created large employment opportunities – both directly and indirectly. As a responsible corporate citizen, the Company is also committed to play its role to minimise any impact that its business operations may have on the environment and to improve the quality of life of the communities around its facilities, as they constitute one of its most important groups of stakeholders.

At Jubilant, the Corporate Social Responsibility philosophy evolves from:

- Taking all necessary environment protection measures to minimise emissions and effluent discharge that might affect the local communities,
- Putting safety measures and practices in place,
- Work with the community to improve their quality of life,
- Health care programmes for employees and community members.

ii. Interactive sessions with the local community

The Company continuously shares with its neighbouring communities information on activities carried out at its manufacturing facilities, the environmental and safety impacts of such activities and the efforts being made by the Company to minimise these. Open house sessions, plant visits and other interactive meets have enabled a two-way flow of information and feedback.

iii. Working with the Community

A three-pronged approach has been adopted by the Company for contributing towards improving the quality of life of members of



Empowerment of people forms an important aspect of our community development work.

the local community around its facilities. These constitute:

- Empowering them through skill development/trainings to become self-reliant,
- Providing basic health care services in the area,
- Awareness, education and training programmes.

iv. Empowering local community members to be self-reliant

While working with the local community, the main thrust is on empowering them towards self-reliance through income generation schemes, skill development trainings and promoting entrepreneurial activities. Some of initiatives taken by the Company in this area are:

- Vocational skill development programme for women,
- Creating 'Self-help' groups, jointly with the Central Board of Worker's Education (Government of India) to provide training to individuals from economically weak classes,
- Empowering the physically impaired.

v. Awareness, education and training

Every year, several programmes are implemented to increase the awareness of the local populace about vital issues such as:

- Pulse polio vaccination,
- Family planning,
- Oral health care.

Education and training programmes conducted by the Company include:

- Adult education programme specially for rural women,
- Vocational training programmes,
- Programmes on quality of life for rural couples,
- Training volunteers for pulse polio vaccination programmes,
- Assisting local farmers to achieve optimal utilisation of land and improve the quality and yield of the crop (in association with leading agricultural universities).

vi. Community health care programmes

The Company has been conducting health care programmes for the

Every year, several programmes are implemented to increase the awareness of the local populace.



local community around its Gajraula facility almost since its inception.

• Sarvajanik Medical Centre (SMC)

A charitable institution was established in 1984 at Bhartiagram near the Gajraula facility to take care of basic health care needs of the surrounding community. The Medical Centre is equipped with basic facilities and conducts a free TB clinic, immunisation and also maternity services. Over 10,000 people benefit from these services every year.

• Community mobile dispensary

The Company operates a mobile dispensary that covers three rural health centres in the Gajraula, Hasanpur and Rahera blocks and provides basic health care services to needy villagers. The mobile hospital has a reach of about 70 villages and around 10,000 patients benefit from its services annually.

• Medical camps

The Company also conducts multiple medical camps at its facilities and in surrounding areas, providing a range of services that include TB detection, immunisation, cardiac care, family welfare, school health checks, blood donation, oral health care, and cataract operations, as summarised in the adjoining table.

Community Development Activities at a Glance (2002-03)

1.	Basic health care services		
	a.	Sarvajani medical centre	12964 patients attended OPD services.
	b.	Mobile dispensary	8364 patients attended OPD services.
	c.	Immunisation - Pulse polio - Hepatitis-B	26736 children (0-5yrs.) vaccinated. 166 children/adults vaccinated.
	d.	Medical camps - Oral health care camp - Polio corrective operations - Cataract operation camp - Leprosy surveillance programme	150 patients provided oral health care services. 80 cases operated, 145 cases provided calipers. 88 cases operated and provided with lens. Surveyed 7808 persons, examined 5805 cases, house visited 1597 and diagnosed 14 leprosy cases, treated and kept for follow-up review.
2.	Awareness, education and training		
	a.	Adult education programme	102 rural women made literate through 3 centres.
	b.	Vocational training programme	102 rural women trained in tailoring through 3 centres.
	c.	Pulse polio awareness rallies	5 rallies of students organised, 14000 students participated in rally.
	d.	Training programmes organised a. Programme on quality of life for rural couples b. Training programme for community volunteers c. Polio vaccination	8 programmes organised. 4 programmes/2 days each (640 man-hours). 2 programmes organised for 25 volunteers for 2 hours each.
	e.	Community inter face meets	2 programmes organised, 39 opinion makers attended.
3.	Agriculture sector:		
	a.	Kishan Goshthi	2 programmes organised, 300 farmers participated.
	b.	Farmers educational tour programme	1 programme organised, 52 farmers participated.
4.	Safe drinking water programme:		
	a.	Hand pump installation	5 hand pumps installed at village Patai Khadar.
5.	Village adoption programme: (Village Basi Kalan, Hasanpur Block)		
	a.	2 kms rural road was levelled. (Road connecting the village to Hasanpur - Gajraula Rd.)	
	b.	Telephonic link provided to the village.	

The Company has made remarkable progress towards 'sustainability'. It is a continuing journey and we are committed to move ahead.



Jubilant Organosys is aware that while the Company has made remarkable progress towards 'Sustainability', it is a continuing journey. Some of the areas where we plan to further intensify the efforts are:

4.1 Carbon accounting: The Company plans to take up during 2003-04 the inventorisation of greenhouse gases from all locations.

4.2 Zero discharge: The Company aims to attain the zero discharge status for Gajraula unit in next three years. The objective is to increase reuse and recycle balance streams of effluents so that nothing is discharged out of the plant.

4.3 Revised safety systems: In line with the growing complexity of operations at all the manufacturing facilities, the Company plans to revisit all the safety systems through detailed job safety analyses of various operations and in-depth safety audit by expert external agencies. The recommendations of the audits will be reviewed and implemented on a priority basis to strengthen the internal safety of processes and management systems. The improvement in transportation safety systems, will be achieved by establishing a command centre with a 24-hour hotline facility to act as a central coordinating point. This will comprise:

- Preparation of a multidisciplinary task force,
- Command centre to have access to all relevant data (including MSDSs),
- Having a detailed emergency response procedure with assigned responsibilities to handle roadside accidents and off-site emergencies,
- Imparting training to the task force and immediate emergency response personnel (mainly transport drivers) and create awareness among stakeholders along the transit route.

4.4 Phase out all equipment that use ozone-depleting substances

4.5 Structured approach for the identification and management of risks and hazards is being undertaken under the Health and Safety Management System of OHSAS 18001.

4.6 Intensify community development activities and increase communication with them. Work has been initiated to develop methodology for measuring the success of such communication programmes.

4.7 Operating efficiencies – Plan to improve operating efficiency by:

- A reduction in:
 - Specific energy consumption,
 - Specific water consumption,
 - Particulate matter emission,
- Increase in waste incineration,
- Introduction of NOx measurement system.

Guided continuously by its values, Jubilant Organosys made a significant progress in working towards sustainability in 2002-03.

The Company is proud of the progress – proud but not content.

Corporate sustainability is firmly on the Company's agenda, as demonstrated by the proactive release of this report. Jubilant's management team is committed to continuing its engagement with all stakeholders within the organisation and in the communities where it has a presence, and jointly strengthening the ability to work together to achieve a balance between economic, environmental and social outcomes.

Jubilant has also been interacting proactively with government and industry bodies to induce responsible and attainable environmental performance standards in the industry and intends to continue efforts in this direction.

The Company continues to look for new ways to provide quality products to its customers, build ties between employees and the neighbourhoods where they live and work, help communities prosper and enhance shareholder value through improved operating efficiencies.

The Company looks forward to apprising you of the progress made in next year's report.

Ernst & Young Attestation Statement

In accordance with your mandate on Ernst & Young (E&Y) for review and attestation of your Public Report 2002-03 titled "March Towards Sustainability", we have reviewed the Report, as outlined below, in order to substantiate its contents. The Report has been prepared by the Jubilant Organosys Limited, who are responsible for selecting the information and collecting the data for presentation therein.

This attestation statement is intended to provide independent assurance regarding the content of the report. However, it should not itself be taken as a basis for interpreting Jubilant Organosys' performance in relation to its Sustainability Policy.

Approach

There is currently no statutory requirement in India for preparation, publication and attestation of corporate sustainability reports.

We have therefore used a customised attestation process, which involved challenging the contents of the report with respect to the Company's sustainability policy, performing selected document review, executing audit trails for selected claims and data streams, conducting interviews with executives and managers, and carrying out site-based reviews to understand how the sustainability policy is being implemented and reported upon across the organisation.

Basis of our review

- Based on our agreed mandate with Jubilant Organosys Ltd., the basis of review was:
- To review of the report for significant inconsistencies within the report and between the report and source data/information;
 - To test evidence on a sample basis that supports the reported data, statements and assertions at a sample of the Company's sites; review the audit trail of selected sample claims and data streams for the year 2002-03 to determine the level of accuracy in collection, transcription and aggregation;
 - To review the Company's sustainability plans policies and practices and comment on the completeness of reporting to ensure that the report provides a fair representation of such plans policies and practices.

Limitations of scope

- The financial data included in the "Economics" section of the report is derived from internal financial records of the Company and not audited by E&Y.
- Company's targets/commitments for the future years are based on internal plans and estimates and hence not auditable.

Conclusions on the report

- On the basis of our review, we conclude that:
- The statements and assertions made in the report regarding environment, health and safety performance are consistent with Jubilant Organosys' sustainability policy included in the report.
 - In the course of our review, we have seen evidence of the process of monitoring implementation of schemes in line with sustainability policy.
 - Non-financial historical data are reliable for assessing company-wide sustainability performance in the context of the data reporting boundaries stated in the report. This data have been accurately collated from information reported at site level, based on our review and testing of data processes at site, stream and corporate levels.
 - Statements and assertions made in the report, except financials, are generally supported by evidence found at the sample of sites we visited.

Ernst & Young Private Limited

Cautionary Statement

In this Public Report on sustainability we have disclosed forward-looking information based on management's plans and assumptions to enable the readers to comprehend our commitment to sustainability. Such information is subject to uncertainties and is not necessarily predictive of future results. Actual results may differ materially or substantially from those expressed or implied in this report due to various reasons or risks. The trend lines drawn in the graphs in this report are based on targets for future years.

Corporate office

1A, Sector 16A, Institutional Area,
Noida, U.P. 201 301, India
Tel: +91 (120) 2516601-11
Fax: +91 (120) 2516629

Corporate R&D Centre

C – 26, Sector 59, Noida, U.P. – 201 301, India
Tel.: +91 120 2516601,11

Manufacturing locations

Bhartiagram, Gajraula,
Dist. Jyotiba Phoolay Nagar, U.P. 244 223, India
Tel: +91 (5924) 252351, 252353-60,
Fax: +91 (5924) 252352

Block 133, Village Samalaya,
Taluka: Savli, Dist. Vadodara, Gujarat 391520, India
Tel: +91 (2667) 251326, 251361-63
Fax: +91 (2667) 251305

Village Nimbut, Rly. Station Nira,
Dist. Pune Maharashtra 412102, India
Tel: +91 (2112) 269155-57
Fax: +91 (2112) 269154

51-56, KIADB Industrial Area,
Nanjangud, Mysore, Karnataka – 571301, India
Tel.: +91 821 228402-08, Fax: +91 821 228410-11



International offices

1 Evergreen Avenue, Suite LL6, Hamden, CT 06518
Tel.: +1 203 2304890 Fax: +1 203 2034870

G/16F Jui Shi Fuxing Mansion, 918 Huai Hai Zhong
Road, Shanghai, PC 200020
Tel.: +86 21 64159378 Fax: +86 21 64152793



www.jubl.com

concept, research and visualisation by trisys (trisys@vsnl.com)