



Eco-Echoes

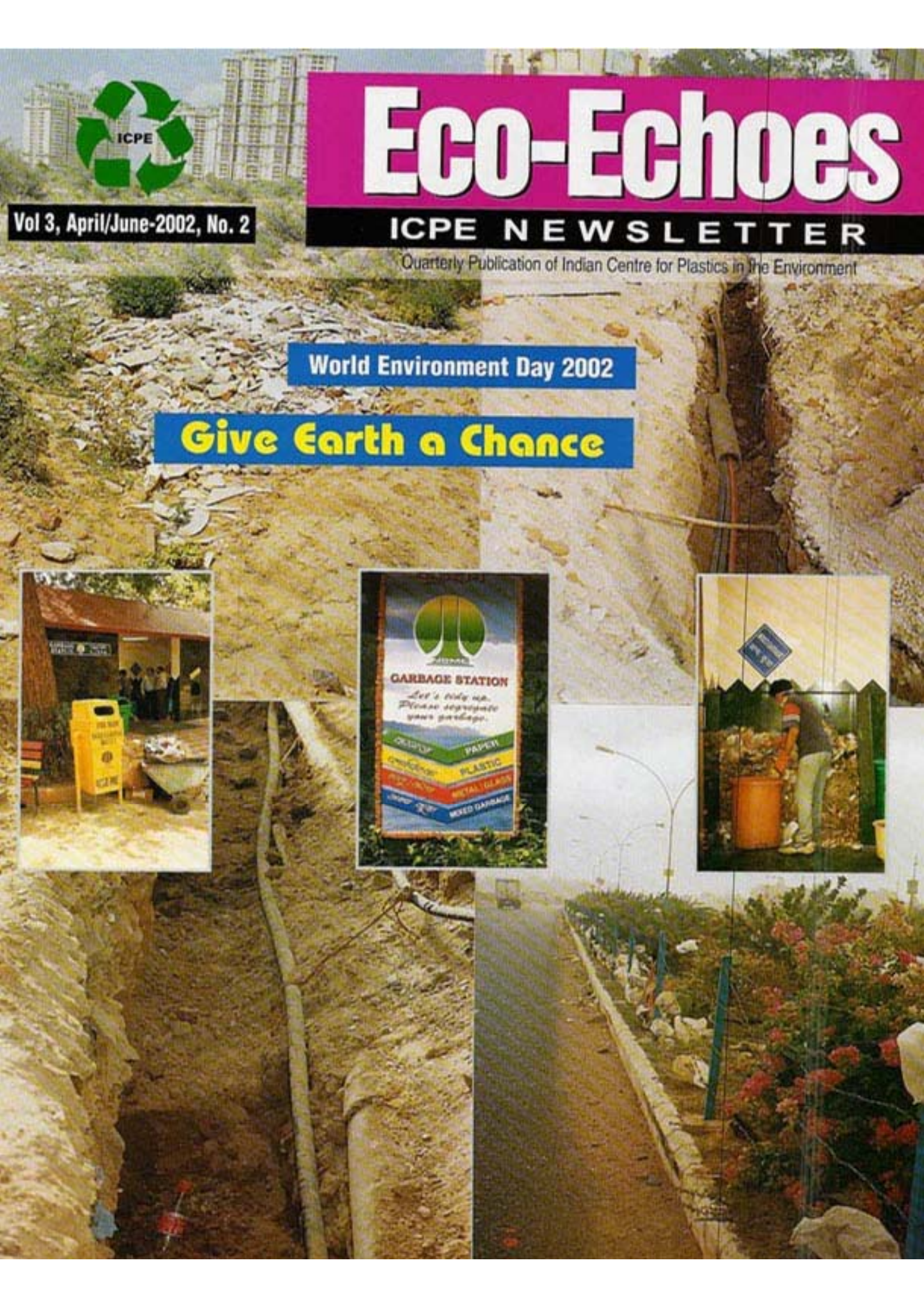
ICPE NEWSLETTER

Quarterly Publication of Indian Centre for Plastics in the Environment

Vol 3, April/June-2002, No. 2

World Environment Day 2002

Give Earth a Chance



"Drinking Water through Eco-friendly Plastic pouches"

Marketing "Safe Drinking Water" through plastic pouches has become an accepted norm both among the urban and rural masses in Gujarat. Chilled Mineral Water available packed in plastic pouches has several advantages over traditional system of chilled water in open glasses particularly in public places. Priced economically at Re. 1 for 250 ml. pouch, it is easily available and handy. In Gujarat State itself, there are 150 units engaged in marketing and distributing drinking water in plastic



pouches under different brand names. The production capacity is estimated at 30 lakhs pouches per day.

The peak period for demand of drinking water through plastic pouches is during summer season i.e. April-July. The plastic pouches are seen used in cities like Ahmedabad, Mehsana, Rajkot and Surat, and also in Tamil Nadu.

Linear Low Density Polyethylene (LLDPE) Multiplayer Film is used in the manufacture of pouches for packaging of mineral water.

(Courtesy: RIL, Ahmedabad & Chennai)



Vol. 2, April/June 2001 No. 2

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Cover: Bottled/Pouched drinking water ensures purity and safety.

(Material assistance derived from Asian Plastics News, APME & Modern Plastics International is gratefully acknowledged)

Readers are invited to send their contributions in the form of short notes/news item, new products development, case studies relating to Plastics and the environment, recycling technology, waste management, etc. for Publication in the Newsletter.

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World Environment Day

World Environment Day is celebrated in every country by organizations and institutions committed to promoting environment culture. 5th June is the day fixed for this celebration by the United Nations. Every year the theme varies. This year theme was "Give Earth a Chance". In its message for the day the Secretary – General of the United Nations indicated that,

"the day is meant to convey message of urgency about the state of the earth and the broader quest for sustainable development. Sustainable development rests on three pillars: economic growth, social progress and protection of our environmental and natural resources. There is little chance of protecting the environment without a greater sense of mutual responsibility, especially in an age of interdependence, and especially since the environmental footprint left by some societies is so much larger than that left by others".

Plastics and the plastics industry play their part in contributing to sustainable development. Plastics help save resources – oil, other fossil fuels, water and food. Due to their light weight, and being specially tailored to the demand of the application, plastics use less to do more, and waste is also minimised as a result. Plastics vital role in modern technologies and medicine gives access to higher standards of living, healthcare and information to an ever growing proportion of the world's population.

Plastics contributions towards sustainable development are lauded universally, however, when plastics form part of the waste stream in Municipal Solid Waste, it worries the local authorities and the common man on the street. Not appreciating the fact that waste is business and plastics waste is lucrative business because they are recyclable and help resource recovery both in the form of materials and energy. Plastics continue to be the victim of environmental curse. The generation of waste and management of its disposal with rise in population and technological developments continue to worry the local authorities world over. There are useful technological options practised and available for adoption and the search and innovation continue to be on demand.

■ ■ ■ ■

For promoting sustainable development, conferences and seminars are best platforms to discuss issues and arrive at certain conclusions. During the month of June, a conference organized by PHD Chamber of Commerce and Industry and Municipal Corporation of Delhi focused on "Options and Opportunities in solid Waste Management in National Capital Region", while a seminar on "Recycling Responsibilities and Urban Waste Management in India" organized by Srishti, a very active NGO were well attended by the practioners in solid Waste Management, Policy Makers and NGOs. On the other hand, the Department of Environment, Govt. of NCT Delhi continued its very informative campaign through media ads on waste management in the capital city.

■ ■ ■ ■

Encouraging developments are reported in the field of solid waste management throughout the country. While the NGOs are active in cooperating with the local authorities, there are State Development authorities, which invite proposals for Solid Waste Management Disposal Systems on B.O.T basis. One of these proposals has been invited by Haldia Development Authority (HDA) in West Bengal. Haldia generates over 16,000 tonnes per annum of Municipal Waste and 8,000 tonnes per annum industrial waste. The HDA, which is a nodal agency, has invited proposals from companies and organizations active in the state-of-the-art waste management disposal. To implement this project HDA has earmarked 70 acres of land along with pollution clearness from the Pollution Control Board, electricity and water and other facilities.

■ ■ ■ ■

Airport Authority of India at Indira Gandhi International airport, Delhi, through authorized agencies has made arrangements to collect solid waste generated through various passenger airlines. The waste thus collected contains used plastics like, water and soft drinks bottles, cups and cutlery items, besides waste food. The waste so collected is segregated by the authorized agencies and the used plastics ware are sent for recycling. This is a regular practice followed by Airport Authority of India.



Mr. G. B. Datta (1) addressing the programme at ATDC, Kuvempu



Mr. Ratra, addressing the programme at RIL Hazira

World Environment Day Celebrated

Institutions and Organizations all over India celebrated World Environment Day on 5th June 2002. Activities relating to promotion of environment culture are organized and at times spread over a period of one week. The activities include taking pledge, debates, slogan competitions, tree plantation and giving away of awards for achievements to officers and staff of institutions.

National Thermal Power Commission (NTPC), Kawas and Reliance Industries Limited (RIL), Hazira, Surat had organized programmes on the occasion of World Environment Day.

Mr. O.P. Ratra, was invited by NTPC and RIL to these programmes. He addressed the participants on Plastics and Environment and Plastics Waste Management ■

ICPE President visits Hyderabad

Mr. K.G. Ramanathan, President, Indian Centre for Plastics in the Environment (ICPE) visited Hyderabad on 20th April 2002. During his visit, he addressed the members of Andhra Pradesh Plastics Manufacturers', Association (APPMA).



“ECONOMY & ECOLOGY MOVING TOGETHER WITH PLASTICS” – A NATIONAL SEMINAR

Indian Plastics Institute (IPI), Delhi Chapter and Confederation of Indian Industry (CII), Northern Region jointly organized a seminar “Economy & Ecology Moving Together with Plastics.”

The Seminar was held on 3rd and 4th May 2002 at New Delhi.

The participation included representatives from Industries, Govt. Departments, Institutions and NGOs. The inaugural address for the two-day seminar was delivered by Mr. Deep Chand Bandhu, Minister of Industry, Elections, Labour, Environment, Forest, Wildlife and Employment (Govt. of NCT of Delhi). Mr. Bandhu stressed the need for balancing the economic benefits and the ecological impact of plastic usage.

In his welcome address, Mr. Jagdish Khattar, Chairman Cum Managing Director, Maruti Udyog Ltd. and Chairman, CII, Northern Region stressed the need to focus on 5R strategy for waste reduction.

Mr. Prasanto Banerjee, Chairman Cum Managing Director, Gas Authority of India Ltd. (GAIL) delivered the keynote address. Mr. Banerjee stated that environment and ecology are important components of our developmental strategy. Commenting on the growing usage of plastics in the economy, he cited a study where it has been projected that India would be the third largest polymer consumer in the world by 2010. But the environment and ecology require as much planning and foresight as any other industrial and business venture. Therefore, Mr. Banerjee mooted the setting up of two centers – one for model cities in major disposal zones and another for recycled products – to deal with waste disposal.

In his special address, Mr. Arvind Mehta, Treasurer, Plastindia Foundation

expressed the need to integrate downstream industries with the value chain.

In his concluding remark, Mr. Subhash Kadakia, Chairman, IPI spoke about the economy derived out of plastics and importance of ecological balance.

The first day was dedicated to importance of Plastics to “user Industry”. Speakers from Nestle India Ltd., Coca Cola India, Dr. Morepen Laboratories, Hindustan Lever Ltd., Maruti Udyog Ltd., GE Plastics and Reliance Industries Ltd., made presentations relating to the economic benefits derived out of using plastics in various applications.

The second day was dedicated to **Waste Management and Environmental Policies**. Speakers from Indian Centre for Plastics in the Environment (ICPE), Indian Institute of Technology (IIT), Delhi, Enviroplast Committee, Plastindia Foundation, Ministry of Environment and Forests etc. delivered lectures on value addition of plastic wastes, Recycling Technique, Life Cycle Analysis of Plastics, Waste Management Policies and Guidelines etc.

The Seminar witnessed lively panel discussions. The panelists were: Mr Dilip Biswas, Chairman, Central Pollution Control Board, Mr Vijay Merchant, Chairman, Enviroplast Committee, Plastindia Foundation, Mr R. Chauhan, Chairman, Parle Bisleri Ltd., Mr O.P. Ratra, Editor & Member-Executive Committee, ICPE and Mr V.K. Grover, Past Chairman, IPI. The moderator was Mr K.G. Ramanathan, President, ICPE. The delegates took keen interest and raised queries pertaining to environment policies. NGOs suggested on awareness generation on disposal systems.

The two-day National Seminar brought the resin manufacturers, converters, the end-use industries, concerned Govt.



Hon'ble Minister Mr. Deep Chand Bandhu addressing the seminar



Mr V. K. Grover Past Chairman IPI seen introducing the Technical Session



Dr Indrani C S, Director MOEF, addressing the Technical Session



Mr Vijaya Lakra presenting his paper

to discuss post-use environmental issues. It was concluded with clear message that product economy and performance can derive only by using plastics. However, safe disposal and waste management are also important due to growing use of plastics ■



Mr T V S Krishnan, of Coca-Cola India, making his presentation



Dr A N Bhat, Director General ICPE, addressing the Seminar



A view of the participants

IPI ANNUAL DAY

Indian Plastics Institute's **Annual Day – Plastics Industry Forum**, was held on 12th April 2002 at Mumbai. The Programme was attended by over 300 participants comprising Industry experts & Business Leaders from India and abroad, Senior Executives, Technologists, Consultants, Academicians and students. The three eminent speakers addressed the gathering included **Mr Kamal Nanavaty**, President – Cracker Polymers, Reliance Industries Ltd., **Dr. S. Sivaram**, Deputy Director, National Chemical Laboratories, Pune and **Mr Kanhaiyalal Agarwal**, Chairman, Alpha Packaging Ltd., Surat.

These achievers, each representing a different sector, illustrated their presentations on vision and ideas for the future, newer markets, technologies, trend in research & development, shift in focus to Asian markets etc. and on how they perceive Indian enterprise and research could get to the forefront.

Mr Mahesh Shah, Managing Director, Royal Cushions Vinyl Products Ltd. and **Mr K.G. Ramanathan**, President, ICPE & CPMA, the eminent personalities who presided over the function as the '**Guests of Honour**' for the Awards Ceremony.

Mr Kamal Nanavaty, President, Reliance Industries Limited, in his brilliant

presentation on "**Polymer Industry - A New Decade**" focused on the emerging scenario of the plastics business in India. He indicated that the plastics consumption by 2010 will reach almost 12.5 million tonnes from the level of 3.5 million tonnes in 2001. India then would become the third largest country in the World for the plastics consumption. China will continue to be far ahead since its economy would be superior to India. The plastics usage is related to the economic condition. It will therefore be extremely difficult to catch up with China in plastics consumption.

Mr Kanhaiyalal S. Agarwal, Chairman, Alpha Plastomers Pvt. Ltd., a very successful entrepreneur with the largest capacity of PP TQ film in India in his inimitable style spoke eloquently about how he came into the business of TQ film from the trading business of textile and grew from strength to strength. He recommended to the other plastics processors that hard work and devotion are needed to be a successful entrepreneur. He also strongly suggested following the concept of Zero (the gift of India to the World). Just in time and zero outstanding are the two financial parameters that his group has been practising very successfully. Alpha Packaging is undoubtedly the largest and the most successful TQ film converter



(L to R) : Mr S K Kadakia, Chairman IPI, Mr Mahesh Shah, Mr K G Ramanathan and Mr K P Nanavaty



Mr Vijay Merchant addressing the function



Mr A E Ladhahoy seen receiving his Distinguished Service Award from Mr K G Ramanathan

in India with almost 2.5 KT capacity.

Dr. S. Sivaram, FNA, Dy. Director, National Chemical Laboratory Pune, in his presentation on **"Polymer Science R & D in India : Challenges, Risks and Opportunities"**, elaborated that very insignificant resources are used in the Polymer research in India. He further added that the developing countries like China and India have huge demand potential for the plastics. China is already putting almost 9-10% of the total sales volume in the research activities compared to a very meager level of about 1.5% by India.

This session of presentations was followed by the Annual **'IPI Awards Ceremony'**, where IPI honoured its members who have made outstanding contributions to the advancement of the industry in line with the prime objects of IPI. The two categories of Awards viz., **'Distinguished Service Award'** and **"Meritorious Service Awards"** were

given to the select IPI and their enthusiastic support towards advancement in the field of plastics at a national level. **Mr Bipin M. Shah**, Immediate Past President of IPI President Board & Past Chairman of IPI Governing Council; **Mr V.K. Grover**, Immediate Past chairman of IPI Governing Council and Past Chairman of Delhi Chapter, and **Mr A.E. Ladhahoy**, Technical Advisor to IPI Governing Council for many years, were among the **'Distinguished Service Awards'** winners.

This event was co-sponsored by Reliance Industries Ltd., Rajoo Engineers Ltd. and DGP Windsor Indian Ltd. Prominent Industry Associations like AIPMA, OPPI, IPF, GSPMA, Plexcouncil, Andhra Pradesh Plastics Manufacturers Association, Kerala Plastics Manufacturers Associations and All India Flat Tape Manufacturers Association lent their able support to make this event successful ■



Dr N Sivaram, seen receiving his Meritorious Service Award from Mr K P Navaty



Mr V K Grover, seen receiving his Distinguished Service Award from Mr K G Ramanathan

Mumbai Municipal Commissioner, K.C. Srivastava formally launched the extension of the successful Cuffe Parade dry waste segregation project to 5 more Wards of the Municipality on April 26, 2002. Over 50,000 citizens in Andheri-Vile Parle (East), Bhandup, Dadar Parsee Colony, Mulund and Malabar Hills will participate in this programme in an effort to keep the city clean.

The programme is initiated by the Indian Centre for Plastics in the Environment (ICPE) and supported by the Municipality and several NGOs and citizens groups.

"Mumbai generates over 6200 metric tonnes of garbage everyday. The dumping grounds are scarce. Segregation of dry waste such as bottles, plastics and metals for recycling is the only solution to reduce the waste sent for dumping", the Municipal Commissioner observed. In keeping the city clean, the buck does not stop at the BMC but has to be shared by all the citizens of this city. The producers.

ICPE Extends its Project of Waste Segregation



Municipal Commissioner Mr K C Srivastava flagging off the dry waste Tempo

users and all stakeholders should get together to launch a 'Quit Garbage Campaign', he added.

The President of the ICPE's Governing Council, Mr K.G. Ramanathan said, "ICPE is committed to help the local administration throughout the country in better plastic waste management. The plastic industry is willing to streamline its recycling process and partner with local administrations in keeping the environment clean. ICPE is also engaged in education and awareness campaigns to bring about an attitudinal change among the citizens".

NAGAR, AGNI, Stri Mukti Sanghathan and various Citizens Groups are participants in the project, besides the Mumbai Municipal Corporation ■



Top (L) Mr K G Ramanathan, President ICPE, and on (R) Mrs Priya Ubale, NAGAR Coordinator, speaking at the function

Bottom :Mr K C Srivastava, giving away the awards

ICPE INDUSTRY MEET

ICPE had called a meeting of Plastic Industry representatives to discuss issues arising out of the series of meetings under Justice Ranganath Misra Committee on Plastic Waste Disposal. The meeting was held in Mumbai on April 12, 2002 and well attended by industry representatives from Mumbai, Pune, Tamil Nadu, Kerala, Goa, Andhra Pradesh, Daman, Gujarat & Delhi.

The discussions covered the following issues:

1. Plastic carry bags and the proposed restrictions/ban orders etc.
2. Introduction of buyback scheme for plastic packaging materials as proposed by Justice Misra Committee and their implications.
3. Buyback scheme for PET bottles.
4. PVC applications.
5. Mass awareness programme for proper use of plastics and to regulate indiscriminate disposal of plastic waste.



Mr K G Ramanathan addressing the Meet, others seen are (L) Mr Vijay Merchant, and (R) Mr Sujit Banerji

6. Provisions of EP Act and the present guidelines for plastic waste disposal.
7. Involvement of Industry with the community and the Municipal efforts in collection and disposal of

plastic waste.

8. Problems faced by the Industry in different places in the interpretation and implementation of the current EP Act provisions.

Industry members and expressed their viewpoints on all these matters. ICPE and leading Industry members stressed on the need for the Industry to act responsibly and take part in all initiatives for waste prevention and disposal activities. Many members felt that plastic industry is being unfairly treated by authorities and stressed on the need to educate public and the opinion makers on the merits/demerits of plastic vis-à-vis other plastic materials. It was also agreed by all the members that not only they would abide by the laws of the land but also take part in Municipal and community efforts to deal with waste management issues.

On the basis of the discussions held an action plan has been prepared which ICPE with the help of the State Industry Associations have agreed to implement ■



— A View of the participants

THE HINDU BUSINESS LINE

Friday, June 21, 2002

बुधवार 21 जून, नई दिल्ली, 6 जून 2002

बहस

प्लास्टिक के खतरे

हमारा मत है कि प्रदूषण के मद्देनजर प्लास्टिक को बढ़ावा देना खतरनाक है।

पिछले कुछ दशकों के अनुभवों ने स्पष्ट कर दिया है कि प्लास्टिक हमारे पर्यावरण के लिए एक खतरनाक तत्व साबित हुआ है। यह सही है कि विविध रूपों में हमारी दैनिक जरूरतों में शामिल होकर प्लास्टिक ने अपनी खास जगह बनाई है, लेकिन मानव समाज में इसकी बढ़ती घुमपट ने पर्यावरण को खासा नुकसान पहुंचाया है। आज हमलोग यह है कि प्लास्टिक की बैलियाँ, मोतलों से लेकर तरह-तरह के पाउच गली-मोहल्ले की सड़कों, नदियों और पहाड़ों तक में फैले हुए हैं। प्लास्टिक की बैलियाँ जहाँ बेजुबान जानवरों के गले-अंठों में फँसकर उनकी मौत का सबब बन रही हैं, वहीं मिट्टी में नहीं घुलने की प्रकृति होने के कारण स्थायी किस्म का प्रदूषण पैदा कर रही हैं। चूँकि प्रकृति की जैव संरचना के विपरीत होने की वजह से प्लास्टिक का प्रदूषण दिनोंदिन बढ़ रहा है और जहरीले कचरे की वजह बन रहा है। अनेक शहरों में प्लास्टिक बैलियों के प्रयोग पर रोक लगाई गई है, लेकिन देखरेख के अभाव में यह रोक बेमानी साबित हुई है। हमारा मत है कि प्लास्टिक के उपयोग को प्रोत्साहित करने की बजाए उसका प्रयोग रोकने की कोशिश होनी चाहिए, ताकि पर्यावरण को प्रदूषित होने से बचाया जा सके।



प्रतिसंपादकीय/ गैस अथॉरिटी ऑफ इंडिया लि. में कार्यकारी निदेशक (मार्केटिंग) ए.के. राय का कहना है कि प्लास्टिक प्राकृतिक स्रोतों को बचाए रखता है।

इसमें कोई संदेह नहीं है कि प्लास्टिक की बैलियाँ पर्यावरण के लिए नुकसानदेह साबित हो रही हैं। लेकिन यह समस्या का एक पहलू है। पर्यावरण को नुकसान नगण्यता की कमी के चलते हो रहा है। इसे हम चीन के उदाहरण से समझ सकते हैं। आज चीन में प्लास्टिक की प्रति व्यक्ति खपत करीब नौ किलो है, जबकि भारत में यह सिर्फ तीन किलोग्राम है। खपत ज्यादा होने पर भी चीन में प्लास्टिक पर्यावरण के लिए कोई समस्या नहीं है, जबकि भारत में यह समस्या काफी बढ़ी है। दूसरी चीज यह है कि अगर हम आज प्लास्टिक के विकल्प को छोड़कर कागज या किसी अन्य प्राकृतिक संसाधन पर निर्भर हो जाते हैं, तो इससे उसकी कमी का संकट खड़ा हो जाएगा। जैसे पैकेजिंग के मामले में जो कागज बनाया जा रहा है, उसके लिए दस साल में बढ़े हुए करीब दो करोड़ वृक्ष काटे जाते हैं। साफ है



A sales girl displaying plastic poultry equipment imported by Sunford, a local import and export company, at its stall in 'Poultry Expo-2002', which is currently on at Hyderabad. The company imports these poultry materials from Iran.

AWARENESS PROGRAMMES

VIVEKANANDA MISSION SCHOOL



The prize winners with the Principal and the organisers

ICPE continues its efforts to promote awareness amongst school students in the field of plastics and environment. During April 23rd – 24th 2002, the ICPE in co-operation with Indian Plastic Federation (IPF) conducted awareness programmes in two schools in Kolkata. Namely Vivekananda Mission School and Bhawanipur Gujarati Educational Society School.

The students took keen interest in presentation by ICPE followed by a group of student participants. The students' speakers were awarded prizes in the form of books.

Illustrated herein are the two programmes, which were very well received. Students were enthusiastic in expressing their opinion about plastics and a selection of these is reproduced below:

It is not possible for us to carry a jute bag and any other sort of bags every time we go to the market to buy the simplest of things. So the use of plastic is very useful to carry the things and easily available in any shop.

Then comes the plastic furniture. It is ruling the market. It is stylish, light, take less space and very cheap. On the other hand the wooden furniture's are heavy, take a lot of space and is very very expensive.

..... Satadru Roy,
IX-B, Vivekananda Mission School, Kolkata.

Still the growth of packaged drinking water industry has boosted the use of PET bottles. People had a prejudice that PET bottles are not recyclable and, if they are, why they are not collected by rag pickers and waste dealers. But today, used PET bottles are collected by the rag pickers and traded through waste dealers for recycling to the units in Chennai, Mumbai, Kanpur, Silvassa, Nasik and Moradabad. Moreover PET bottles are recycled into value added products like unsaturated polyester resin, carpets, recreational vehicle parts, upholstery geo-textiles to name a few.

..... Sayane Gula,
X-C, Vivekananda Mission School, Kolkata

We just cannot say no to plastics because plastics are here to stay. Saving



The Principal addressing



Student presentation...

no to plastics would have the same magnitude as saying no to computers or to the pill because like the pill or computers plastics have not just changed but revolutionized the lives of human beings. It is all very well to speak in favour of organic and fossil material but the fact remains that the growth of such

VIVEKANANDA MISSION SCHOOL



The Principal giving away the prizes



materials would not just lead to the depletion of our meager natural resources causing problems such as ecological imbalances but would also read to their extinction in the not too distant future.

..... Amrita Chakraborty,

XII, Vivekananda Mission School, Kolkata
Plastics are great gifts of science, useful to us in many ways. But the abuse of plastics has harmful consequences. (Just as any other scientific material, which has both advantages and disadvantages) Thus bringing an end to the abuse of plastics is the only way to plastic waste management. The problem can be handled by means of "Public Awareness". Not only in cities, the awareness programmes should also be held in rural areas at regular intervals.

..... Indrani

IX, Vivekananda Mission School, Kolkata
In the end, I....that plastics are not only recyclable but they are usefully recyclable, there I think it is undoubtedly proved that plastics are recycled via various routes.



Mr O P Ratra making a presentation

Good things must come to an end and so my arguments must come to a conclusion. Plastic in Greek means 'able to shape' and very rightly I would like to say that being properly utilised plastic product can shape the life of thousands, Its upon us to inculcate the habits be it good or bad, so one must know the thin red line of diff.

..... Akruiti Thakar

XII - B, Bhawanipur Gujarati Educational Society School.

Kidney and hearts which are important organs of human being are first packed by plastic and then stored in a cold place for transplantation. If plastic would not be safe it would be directly stored in cold places but it is first covered by plastic.

Doctors use gloves which are made of plastic. Even blood bags are made of plastic. It it would be harmful to people, then doctors who are said to be Gods for people who will be suffering from diseases would not use it during operation or when ever required. Nor would blood packed in plastic if it was not safe.

..... Nishita Shah

XII - E, Bhawanipur Gujarati Educational Society School

Plastics protect plantlife in multiple ways It prevents massive deforestation by acting as a substitute for wood sproduct like paper, furniture, building material, and so on. Plastic pipes are extensively used in irrigation, water management irrigations, sprinkle irrigation and so on. Not only plastics has a wide application in day to day life but also it surpasses a other substitutes in matter of convenience. Paper bags disintegrate quickly as compared to plastic bags which are durable and easy to store



Plastic bags are harmful ONLY WHEN people are careless, people with no civic sense use it according to their own whims and fancies without abiding by the eco-friendly formulated rules and regulations.

..... Pallavi More
 XII, Science, Bhawanipur Gujarati Educational Society School

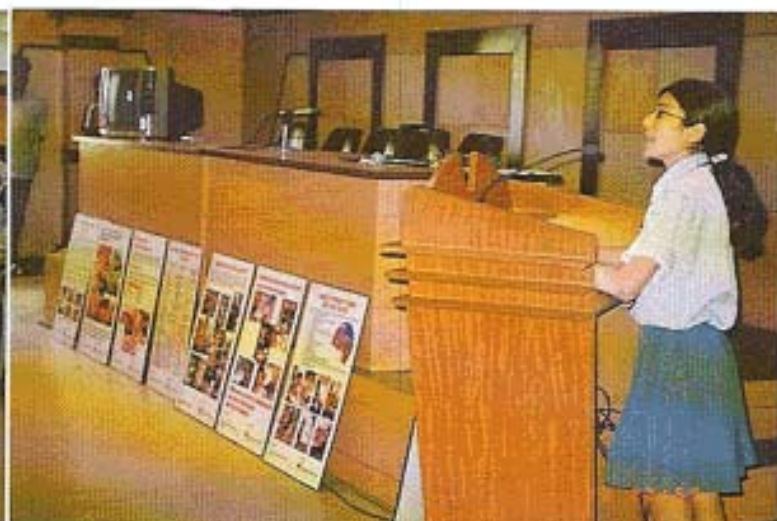
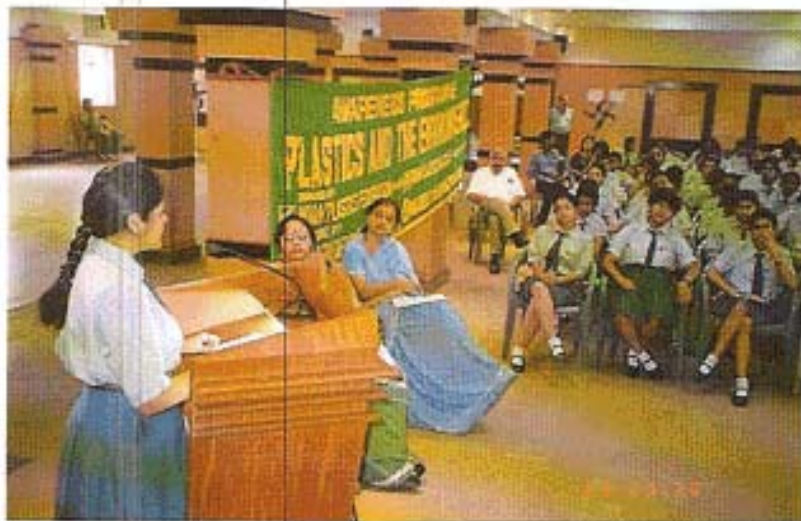
Plastic is thrown by the people in the running water thinking it to be useless and not recyclable thus blocking the river

channels and creating water pollution. Care and Precaution has to be taken not to throw the plastics in water but to collect it, put in a dustbin and send it for recycling and recomposition. Thus avoiding the contamination of water. It is the people who contaminate water and not plastic, as plastic is thrown by the people into the water, plastics do not go themselves into the water. Everything has got some plus and some minus points. It is upon us the people to use it

properly. Plastic does not contaminate water anyhow. If it is used properly, it is very helpful. A good example to support my view is that medicines if used properly cure the sickness of man but if misused it is dangerous to one's health and may ultimately result in one's death (and is known as drug).

.....Swati Khandelwal
 XII, Science, Bhawanipur Gujarati Educational Society School.

Bhawanipur Gujarati Educational Society School



Presentation by the students



The prize winners with the Principal



MANUFACTURE AND USES OF PLASTIC WOVEN SACKS

Plastic Woven Sacks are manufactured by extrusion of Polypropylene (PP) granules under heat and pressure into flat tapes, which in turn are woven on flat or Circular Looms to produce sacks for desired end use. The normal tape denier ranges from 800 to 1000 with average Tenacity of 5.6 gpd, which results in the tensile strength of the bags to 90-100 kgf. This is enough to bear the load of the 50 kg of the content and sustains the accidental drops etc. The functional advantages of PWS as packaging material are given in Table 1.



Table 1: Advantages of Plastic Woven Sacks

Base Property	Functional Advantages
Excellent Chemical Resistance	Suitable For Packing Food Products
Inert	No Organoleptic Deterioration
Non Toxic	Useful For Food Packaging
Non Biodegradable	Can Find Other Uses
Non Hygroscopic	Ideal For Fertilizer, Chemical & Sugar Packing
Varied Colours	Aesthetic Appeal
Breathing possible	Preservation Efficient
Higher Tenacity Of Tapes	Better End Use Performance.

Table 2: Comparative Properties of PWS and Jute Bags

Properties	PWS Bags	Jute Bags
Seam Strength	Strong	Strong
Surface Texture	Smooth	Rough
Operational Convenience	Good	Good But Abrasive
Capacity Utilization	Excellent	Excellent
Stack Stability	Good	Good
Resistance to Hooking	Poor	Fair
Drop Test Performance	Very Good	Fair
End-Use Performance (W.R.T. Bursting, Damage, Spillage, Replacement)	Excellent	Good
Grain Preservation Efficiency. (Breathing)	Very Good	Excellent
Resistance To Moisture Dampening	Excellent	Poor
Organoleptic Deterioration	Nil	Very High
Chemical Resistance	Excellent	Poor
Aesthetic Appearance	Excellent	Poor
Air Borne Pollution	None	Very High
Seepage	Very Low	Low

Unlike natural material like jute and paper, plastic woven sacks are eco-friendly because PWS manufacturing involve low energy input, no air polluting, generation of dust, effluent free, (since no chemical treatment like softening/bleaching is needed, no use of hydrocarbon oils), instant colouring, no emission of gases, safe & healthy manufacturing processes.

Above properties are combined with inherent advantages of Plastics Woven Sacks. A comparative advantage of Plastic Woven Sacks vis-a-vis jute bags is given in Table 2.

Types of Waste

Since Plastics Woven Sacks are used in packing of bulk commodities, large quantities of used Woven Sacks are rejected as waste. The source of Plastic Woven Sacks Waste can be categorized into Manufacturing Waste and Consumer Waste.

Manufacturing Waste includes ruptured tapes, inferior quality tapes, cut and torn of unspecified Woven Sacks, which are generated at manufacturing stage. These go at 1st grade waste and are routed through retailers to the recyclers for processing.

A Seminar



Srishti, an active NGO operating from Delhi, has carried out a study on the issue of recycling of urban waste. The report of the study was released and its recommendations presented at a seminar organized by Srishti on May 28th 2002 at New Delhi. Mr. Dilip Biswas, Chairman, CPCB was the chief guest. The seminar was attended by the representatives of NGOs, the Plastics Industry and local Municipal Authorities. The study provides authentic data and information on various issues relating to recycling of solid waste systems developed and practised by various agencies in Delhi, Mumbai and Bangalore, whose representatives made presentations during the seminar. These included,

Mr. Ravi Agarwal, Chief Coordinator, Srishti

Mr. Rosario Anselm, Wastewise, Bangalore

Mr. Jyoti Mhapsekar, Stri Mukti Sangathan, Mumbai

Dr. Vijayalaxmi, Development Alternatives, Delhi

Mr. Ajay Mittal, Director, Thermopack Industries

Mr. Rajesh Rangarajan, Zero Waste, Chennai

Mr. Ayushman, Srishti – Outreach Program. and a representative of

Jwalapuri Waste Dealer's Association, ICPE was represented by Mr. O.P Ratra, who actively participated during the discussions on issues relating to rag pickers/waste collectors and recycling.

Dr. Virindra Sharma, Environment Adviser, DFID India, British High Commission was the chairman of the Technical Session.

The study reports a set of useful recommendations, which could be considered favourably for follow-up by the policy makers in the Government and the industry including local authorities.

A copy of the report is worth a possession as a reference document.

Summary of the report:

Any sustainable waste intervention must be based in the overall production and consumption cycle, with disposal and treatment being the last resorts. Hence ensuring that waste generation is minimized, materials which are thrown as waste are recovered, products are designed which essentially facilitate this, and finally ensuring that waste disposal is carried out in a manner appropriate to its nature, with minimum health and environmental impact are important to any solid waste management.

Recycling too has to be examined in this context, and cannot be looked upon as an activity which can exist on its own merely as an alternative disposal means. Hence recycling is not just an activity; it is a way of ensuring a sustainable economy. It cannot be looked upon as part of a linear system where waste generation has no link to what happens to it, but should be a cyclic activity feeding back to the material economy.

This study raises various policy issues relating to urban waste as well as of the socio-economic environment of traditional waste recycling in India. They may seem unconnected, since currently these two operate at different levels, and no attempt has been made to see the interconnections at a policy level. However the issue needs to be addressed comprehensively since their interdependencies are critical.

These links encompass product design, post consumer waste disposal, collection, segregation and conditions within the recycling sector, and need specific roles to be played by the various stakeholders involved. A set of interventions that emerge from such an approach will guide national, local governments as well as the industry to make comprehensive and synergetic improvements in this area. The role of the import of waste must also be



(L to R) Mr Rosario Anselm, Dr Virindra Sharma, Mrs Jyoti Mhapsekar, and Dr Vijaya Laxmi

accounted for, as well as the dynamics of international policies, which lead to such an export.

The aim must be to:

1. Improve the design and materials used in products and packaging to enable their easy and safe recycling.
2. Enhance collection and recovery rates.
3. Increase employment opportunities, wage levels, social status and security of waste pickers.



Presentation by representative of plastics industry

4. Upgradation of recycling technologies, infrastructure and recycled product quality.
5. Expand markets and consumer acceptability of recycled goods.

As discussed in the report, recycling faces a number of bottlenecks. These include, poor products design, toxic, composite and unsafe materials, mixed disposal leading to deterioration in their recyclability, higher costs of recycled products as compared to virgin material based products owing to unequal subsidies, and competition with other waste disposal options such as incineration and landfilling.

The state of recycling today:

As this study shows, the waste trade in India is mostly in the informal sector or what is commonly termed as the unorganized sector. These are small and

tiny production units run mostly on informal and self-employment basis. Most of the labour force engaged in this is migrant from the poorer states on India. It is estimated that around 45 per cent of people so employed in Calcutta, Bombay, Ahmedabad and Delhi are found in this informal sector and the number seems to be increasing with time. While municipal agencies are more engaged in the collection and disposal of waste, the industry has been wary of taking any product responsibility. The government steps in mainly when there is an outcry, or if the Courts order so. The brunt of all this is borne by the general public, waste pickers or all those who are involved in ridding the urban landscape of dirt.

The sector suffers from severe infrastructure, marketing and technological disadvantage and hence characterized by not only poor working conditions, but also sub-standard products. More importantly people engaged in it have been marginalized both economically and socially.

Over the past years there has been a tremendous, though sporadic growth of the recycling sector with new kind of packaging materials being introduced, increasing amounts of plastic waste, as well as unchecked waste imports, new avenues for reprocessors have been created. In fact some waste processing units are based in export promotion zones, and only process imported waste of plastic and metal. Though the technology for reprocessing remains basic with no concern for pollution prevention, occupational safety, or the quality of products, it has yet been growing consistently, mainly in the small and tiny scale waste dealing and reprocessing areas.

Today though the waste pickers work as service providers and save the municipality a substantial budget (about 20%), there is no acknowledgement or recognition to this service. It is essential to recognize their service and give them a right over the collection of dry waste ■

Importance of Plastics in HEALTHCARE



In the year 1974, two young Swiss surgeons developed a procedure to avoid open-heart surgery for patients suffering from coronary artery disease and angina. It involved introducing a small balloon into the artery and inflating the balloon to break down the blockage that restrict blood flow. However, for the balloon to work it had to withstand a pressure of 10 bar, over five times the pressure car tyres must withstand. The material used to make the balloon was believe it or not PLASTIC! Today, plastic remains at the forefront of almost all medical innovations.

Historically, plastic was introduced as a replacement for rubber and glass for flexible tubing and containers. It now dominates the market now when single use sterilized components are popular.

The applications of plastics in the pharmaceutical industry and Medical include—healthcare devices packaging, blister packaging, collapsible tubes and flexible pouches, intravenous solution bottles & micro fluidic devices, syringes, bottles, gloves, infusions, gowns, bags, seals, test kits, PVC flooring, spectacle frames, artificial hands & prosthetic legs.

The global trends of the medical plastic industry indicate an annual growth rate of 5.8%. More than 2 billion pounds (0.9 million tonnes) of medical plastics were consumed in the year 1999. This consumption is expected to rise over 2 billion pounds (1.18 million tonnes) in the year 2004.

Types of plastic in use in packaging pharmaceutical/Medicare industry include mainly-polyethylene, polypropylene, polystyrene, PVC & PET.

A number of significant medical uses which were technically impossible without plastics include-indwelling catheters, prosthetic devices, tracheostomy tubes, flexible containers, secondary container packaging (packaging not in direct contact with the product itself.)

Plastics are advantageous as a packaging material because of their flexibility, durability, strength, low coefficient of friction to withstand fluid flow pressure and facilitate flow, biocompatibility, inertness in contact with blood, tissue and other body fluids/matters, transparency-vital to monitor/visually electronically flow through the tube, reduced transmission of infection, less cost and recyclability.

Facts and fallacies related to dioxins emission during incineration

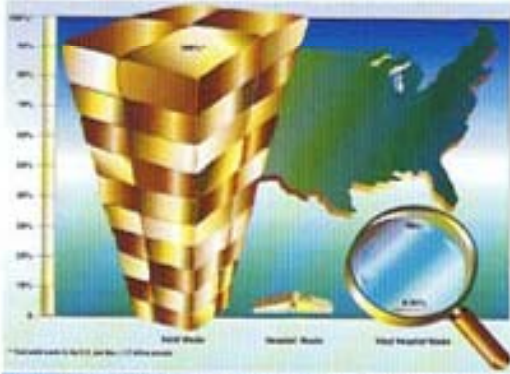
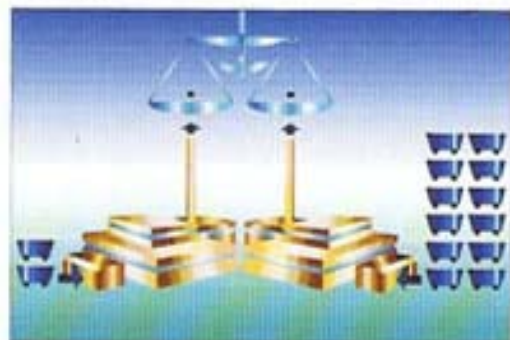
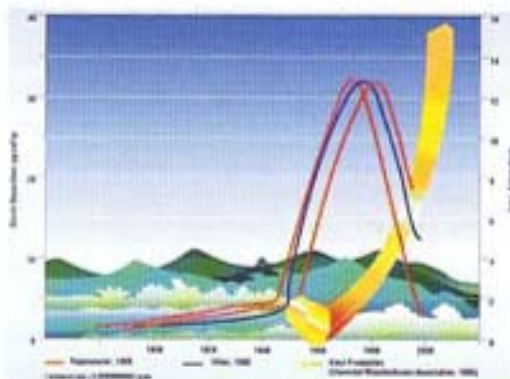
Vinyl is believed to be the main source of dioxins. But as observed in a study in USA, vinyl hospital waste forms only 0.03% of the total solid wastes.

As shown in the picture, the vinyl production has increased phenomenally during the last 20 years, but in the very same time period the dioxins emission fell drastically. The amount of dioxin emission thus depends upon the incinerator maintainance and is not related to the amount of vinyl medical waste fed in the incinerator. So vinyl plastics are not a source of pollution if the incinerators are properly maintained.

So what is the solution to this pollution?

The solution lies in recycling plastics.

..... *Dr. Vivek Ahuja,*
Medical Advisor,
Morepan Laboratories, New Delhi.



As the population and land prices rise, housing rises higher and higher. But the amount of garbage is increasing at an even pace

IDENTIPLAST

"Identify the Opportunities of Plastics Recycling"

**28 & 29 April 2003
Brussels, Belgium**

INVITATION AND CALL FOR PAPERS

On the 28th 29th APRIL 2003, APME will organise for the 4th time its biennial conference IDENTIPLAST.

Successively in 1997, 1999, 2001 IDENTIPLAST, organised and sponsored by APME, APC, PMWI, EPIC and EuPC, met with a resounding success as it provided the audience with forum where experience and know-how of identifying and sorting of plastics from different waste streams and their further treatment were shared.

The conference addresses crucial issues such as ecological and economical considerations as well as political perspective through the review of EU waste legislations.

IDENTIPLAST is a valuable opportunity for all stakeholders to get an update on a wide range of topics covering different areas relevant to the recovery of plastics such as latest developments in EU legislation, technology and commerce.

Over the years, IDENTIPLAST became generally acknowledged as a focal point for technical expertise in the area of plastics recycling.

The 2003 Programme includes

an update on developments over the last two year in plastics identification, sorting and treatment technologies and equipment associated with all large volume and technical plastics from different waste streams such as end of life vehicles, electrical and electronic equipment, packaging and construction and demolition. a broad ranging investigation into separation and sorting technologies.

discussion forums covering a wide variety of the above-mentioned issues concerning plastics recovery and assessing practical solutions for the future.

Calling potential speakers

We are calling for papers from experts and practitioners wishing to make presentations at the conference on the 28 and 29 April 2003. Please send an abstract (250 words maximum) of your proposed papers to Hanane Taidi, Conference co-ordinator, Avenue E. van Nieuwenhuysse 4, box 5, B- 1160 Brussels, Belgium. Fax: (32 2 675 40 02). E-mail: hanane.taidi@apme.org. Abstracts should reach APME by 30 September 2002.

DO YOU KNOW

PLASTIC PRODUCTS, PLASTIC WASTE AND RESOURCE RECOVERY [2000]

The Plastic Waste Management Institute, Japan, conducts annual surveys on matters related to plastic waste. These include a questionnaire-based survey on amount of recycling, a survey on the amount of plastic waste discharge, a survey directed toward local governments on general waste management, and a survey on industrial waste management.

The year 2000 saw the enactment of important laws toward the formation of a recycling-oriented society. This year, in fact, can be viewed as the first year of Japan in the new century as a recycling-oriented society. To make the most effective use of resources, these laws aim to "reduce" the generation of waste, "reuse" products, and "recycle" materials, reflecting a move from "1R to 3R's."

An active "reduce" and "reuse" movement can also be found in the plastics industry. For example, resin manufacturers and processors are working together to develop lighter PET bottles and thinner plastic shopping bags and, in the automotive industry, to integrate the various grades of car-bumper materials.

The outstanding features of this year in recycling and disposal processing are as follows.

1. A utilization rate of 50% was achieved.
2. Energy recovery in the form of incineration with power generation, cement kiln fuel, etc. is on the increase.
3. Material recycling, liquefaction, and gasification and the application of blast furnace raw materials (including coke-oven chemical materials) have either begun or expanded in conjunction with the enactment of the Containers and Packing Recycling Law.

The 4,940 thousand tons of utilized plastic waste represents an increase of 420 thousand tons over the previous year. This increase features 50 thousand tons for material recycling and 60 thousand tons for liquefaction, gasification, and blast furnace materials (chemical recycling), or 110 thousand tons combined (due, for the most part, to the Containers and Packing Recycling Law). It also includes 100 thousand tons for densified-refuse derived fuel including energy recovery as cement kiln fuel and 220 thousand tons for incineration with power. Each of the above therefore contributes about 1/4, 1/4, and 1/2, respectively, toward this increase.

Among the 1,390 thousand tons of source materials for material recycling, post-use products came to 510 thousand tons (compared to 470 thousand tons the previous year), with PET bottles contributing the most at 125 thousand tons, an increase of about 40 thousand tons from last year.

In order of descending tonnage, PET bottles are followed by agricultural plastics, wrapping film, expanded polystyrene packing material, etc., containers and the like, electric-wire covering material, automobile parts, pipes, etc., expanded polystyrene trays, home electric-appliance housings, etc., and non-PET bottles.

(Source: PWMI Newsletter No. 24,
May 2002)

COCA-COLA PLAYS ITS PART IN PET RECYCLING

When we mention plastics recycling, what comes to mind is waste collection and shredding the plastics to flakes. This is not the end of the process because one also needs to find end-uses for the

recycled plastics.

Since the introduction of the PET bottle in 1978, Coca-cola had been interested in developing creative end-uses. Dr. Forrest L Bayer, the firm's director of packaging scientific and regulatory affairs said that the first breakthrough came in 1991 when Hoechst Celanese received regulatory approval for their chemical depolymerisation (methanolysis) process.

"We went into the marketplace with the first post consumer recycled PET in food content applications in early 1991" said Bayer.

As well as helping to create new end-uses for discarded PET, the company was also interested in any potential cost-savings that could be achieved.

Bayer stated that there are numerous factors involved in getting recycled content into packaging. There should be a suitable feedstock, the company should have a recycling technology that has regulatory approval and it must be an economically viable process. "Balancing all four of those components in one geographic area is very difficult. Today we are dedicating a lot of research and effort in our system to get it right," he said.

In its PET recycling efforts, Coca-cola is using procedures that encompass chemical depolymerisation and multi-layer technologies, as well as a number of direct processes. The company recognizes that its specialty is in making and selling soft drinks, not recycling, thus machinery suppliers like Krones play a part by developing technologies and processes for recycling with custom moulders.

Among challenges the company faces are convincing regulators that post consumer PET can be transformed into a suitable feedstock for food contact, the economics of processes, and the feedstock quality. "In various areas of the

world, material comes from scavenger systems that are not very sophisticated collection systems. Since this material is generally low quality, you must have a fairly intensive treatment process to be able to deal with it," Bayer explained.

Today, Coca-Cola uses recycled PET bottle material in food contact packages in ten countries. In the US for example, recycled content is in 75% of Coca-Cola's bottles.

(Source : Asian plastics News, June 2002)

FEEDSTOCK RECYCLING OF PLASTICS IN BLAST FURNACES

A blast furnace is a large reactor in which iron oxide is reduced by carbon monoxide to produce molten pig iron, the basis for the production of steel.

The carbon monoxide is produced "in-situ" by the reaction of hot air blown into the furnace with coke that is introduced together with the iron ore. Molten iron and slag are drawn from the furnace bottom; the flue gases are burned to recover energy and subjected to a cleaning process before release to the atmosphere.

Coke as a source of carbon may be partly replaced by other feedstocks, including plastics waste, coal, or heavy oil. Plastics waste from household packaging or other sources is pre-treated by grinding and agglomeration to produce a feedstock with the right physical characteristics to be introduced with the hot air into the furnace. Used at substitution levels of up to 20%, it provides important benefits, reducing the amount of waste going to landfill and conserving non-renewable fossil resources.

Logistics solution from recycled plastics

Pallets, typically made from wood, are a long-established tool of the distribution business. They transport retail products like drinks and breakfast cereals, and industrial material such as chemicals and plastic granules. Now, pallets made from recycled plastics are bringing advantages

to user in every sector, and making important contributions to sustainable development. Here are some of the benefits:

Durability: the plastic pallets typically last for 20 trips, many more than traditional types.

Recyclability: damaged pallets can be easily recycled, extending resources and minimising landfill. When the pallets reach the end of their useful life, they can be mechanically recycled, and because the product sections are relatively thick, degradation of the surface layer does not significantly modify the mechanical properties of the recycle.

Light weight: plastic pallets are lighter and use less space, reducing transport resources. Because they do not absorb moisture or other liquids, there is no damage to products being transported, nor problems caused by inconsistent tare weight.

Health and Safety: the pallets do not splinter and are easily cleaned, remaining safe and hygienic throughout their extended life.

Customisation: plastic pallets can be designed to handle specific loads, vehicles and automated storage and handling systems

Colour coding: improved logistics and high return rates are possible thanks to the wide range of colour coding that is possible with plastics

(Source : APME)

COCA-COLA INDIA DOES IT

In their endeavour to demonstrate the Eco commitment, one of the activities initiated by Coca-Cola India is to create awareness on post consumer PET collection and recycling. In this connection they have developed a thirteen minutes film titled "Yes Recycle! No Litter!" The film demonstrates details relating to disposal, collection and recycling of post consumer PET, for the manufacture of useful products.

Throwaway World

Want to be a leader? Live like the Americans. Citizens in the US, world leader in trashing, waste a million pounds (450 kilograms) in weight per person per year. This annual garbage list: 1.6 billion kilos of carpet sent to landfills, 11 billion kilos of food, 136 billion kilos of organic and inorganic chemicals used in manufacturing and processing, and 320 billion kilos of hazardous waste generated by chemical production.

The British meanwhile dump 2.5 billion nappies/diapers a year. The Japanese use 30 million 'disposable' single-roll cameras annually. North Americans annually discard 183 million razors, 2.7 billion batteries, 140 million cubic metres of Styrofoam packing, 350 million pressurized spray-paint cans, plus enough paper and plastic ware to feed the world a picnic every month.

More than half of the world's municipal waste is generated in developed countries. In the United States, for example, the US Environmental Protection Agency estimates that the average American produces well over 0.75 tonnes of trash each year. Rich countries and people are better at making waste than making products. For every 100 kilograms of products manufactured in the United States, 3,200 kilograms of waste is created.

Explaining the 'sociology of trash' Vanessa Baird writes in the *New Internationalist* (In the Heap). "It is simple, the rich who make it are considered 'clean'; the poor who deal with it are considered 'dirty'".

(source : Gobar Times, May 31, 2002, DTE supplement)



नवभारत टाइम्स, नई दिल्ली, 23 जून 2002

जैसे करते आप
घर के कूड़े का निपटारा
उससे होगी आपके
पर्यावरण-प्रेम की पहचान



पर्यावरण विभाग ने घरेलू कचरे को जलम-जलम करने तथा उसके प्रदूषण पर पर्यावरण को नुकसान करने से रोकने और सरकारी सम्पत्तियों को परियोजनाओं की संरक्षित हो है।

गैट सड़कवादी संस्थाएं एवं यह देख जहां वे कचरे कट रहे हैं

<p>दिल्ली : 4314478, 3381627 विद्यालय बस्ती, सीएम एनए, डीडीए, पॉस्टल मुजली बस्त, विद्यालय एकाडम, विद्यालय बस्ती (एनएच), दिल्ली स्टेट गुरु काल, डीडीए रोड, गीतार बस्त, विद्यालय बस्ती मुजली बस्ती</p>	<p>सीएनडीसी बस्ती, बसवाडी बस्ती एनए दिल्ली : 2431305, 2019506 विद्यालय, बसवाडी, सीएम एनए बस्ती : 2430274, 2079377 बसवाडी एकाडम एनएच बस्ती डीडीए, 24304367 बसवाडी, बसवाडी एनए</p>	<p>एनएच बस्ती और एनएच बस्ती एनए दिल्ली : 2348220, 4610889 विद्यालय बस्ती एनए एनए बस्ती एनए और विद्यालय और बसवाडी एनए एनए : 2432388 बसवाडी, सीएमए, बसवाडी</p>
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घरेलू कचरा प्रबंधन के क्षेत्र में इन गैट सड़कवादी संस्थाओं द्वारा किये जा रहे कार्य में इन संस्थानों की निराली सहित्व का ही भाग ले सका है।

दिल्ली पर्यावरण विभाग, नई दिल्ली द्वारा एन एच बस्ती एनए बस्ती एनए, 2000 में अंतरा संयुक्त कार्य की कार्य-योजना पर एनए-बस्ती एनए बस्ती एनए की कार्य-योजना का भी अंतरा कार्य करीको की संस्थाओं है।

घरेलू कचरे को जलम-जलम करने और जलम-जलम करने से पर्यावरण को नुकसान करने से रोकना और सरकारी सम्पत्तियों को परियोजनाओं की संरक्षित हो है।

पर्यावरण विभाग
राष्ट्रीय राजधानी क्षेत्र दिल्ली सरकार



नवभारत टाइम्स, नई दिल्ली, 19 जून 2002



आप ही बताइए, पहले सचिदरता अतिथिगत सत्यता जाए या सचिदरता अतिथिगत?

आप ही बताइए, पहले सचिदरता अतिथिगत सत्यता जाए या सचिदरता अतिथिगत?

पर्यावरण विभाग
दिल्ली सरकार



PLASTICS

Make it Possible

Healthcare



PLASTICS ARE ENVIRONMENT FRIENDLY AND RECYCLABLE

प्लास्टिक पर्यावरण अनुकूल तथा पुनः चक्रण योग्य है