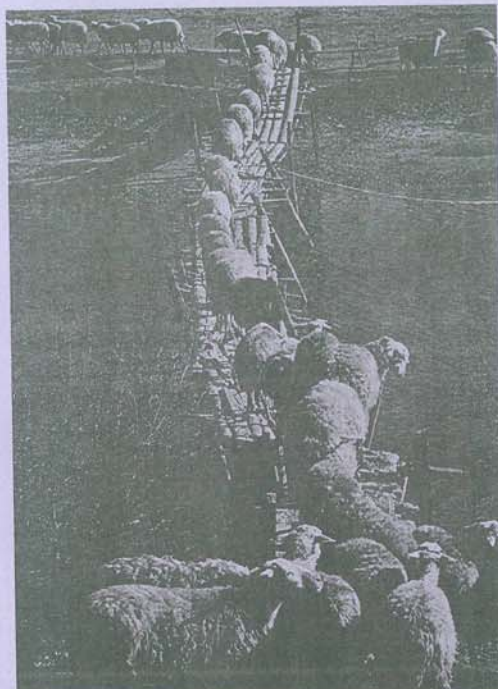


The Global Forum for Environmental Education

Volume 12, number 2, 2002



The rivers cut the earth and disconnect people who faced the challenge by building bridges, first wooden and afterwards stone.

Caretakers of the Environment
A global network for teachers,
educators and students.

The Global Forum for Environmental Education is the official publication of Caretakers of the Environment International. The International Board consists of: President Andrew Cox, Ireland; vice president Brigitta Norden, Sweden; director/ networking Fatima Matos Almeida, Portugal; director/communications Isabel Abrams, USA; secretary/treasurer: Joke Wals, The Netherlands; director of information technology, David Lloyd, Israel; editor of Global Forum, Cris Leibner, USA; Mr Ed Radatz, USA, and Mr Arjen Wals, the Netherlands, Emeritus Members.

Cover: The wooden bridge over the river Axios, Greece

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Notes for contributors
We welcome contributions in the form of articles, poetry, art work or reports related to environmental education in the broadest sense, as long as they are at least of interest to teachers and/or students at the upper secondary school level.

Text
Text should be in WORD format for windows or else without format in plain text or rtf. An article can have a maximum length of 750 words. Footnotes should be avoided. Please accompany each article by a short summary and

an address for further information. If you are unable to use a computer, we still welcome your contributions!

Tables, figures and illustrations

Do not include tables, figures and illustrations as part of the text. Gather them together in a separate file or on paper. In the text you can point out the approximate position of tables, figures and illustrations. We would also like to receive captions to the illustrations you send us. We always welcome pictures and photographs!

Deadlines

Global Forum appears twice a year in June and in December. Contributions for the June issue have to be received before May the 1st. Contributions for the December issue before November the 1st.

Please send your contributions to:

E-mail: Mr Cris Leibner (USA and the rest of the world!) cris@kmsd.edu

Or by snail mail to: Kettle Moraine High school, Wisconsin, USA
or Mr Denis Charron (Europe)
charron@ac-grenoble.fr



Pracatinat in the Italian Piedmont...venue of the 16th annual conference.

Editorial

This edition is my last as editor as I have been elected President of the organisation. I take over from Arjen Wals, the former President and coincidentally, the former editor of the Global Forum magazine. The new editor will be Cris Leibner from Wisconsin, USA and ably assisted by Mr Denis Charron from Die in France. Not surprisingly this issue focuses heavily on the 16th Caretakers conference held at Pracatinat in the Piedmont region of northern Italy. The Conference was financially supported by various levels of local and regional government and by local businesses. This meant that the organisers were able to sponsor many delegations that could not otherwise have made it to Italy. This followed the model of the IIIEE conference in Lund, Sweden some two years before. In South Africa, there was support from the Ministeries of Tourism and Environment plus Education. Whilst they did not sponsor delegations from outside Africa, it did ensure the organisers were able to run the conference without too many monetary worries. The forthcoming conference in Kenya in July 2003 will be the 17th annual event and is by some standards the most important. It will be expensive for delegations to reach Kisumu but it is absolutely vital that this does not become an elitist conference. We must support our colleagues in less developed parts of the world and share with them environmental concerns and seek solutions. Some may question how sustainable a conference as distant as this is and how safe. These questions arose in Peru, Russia and even when I was co-organiser of the Irish conference. It means a great deal to those people in the destination area and we must make every effort to attend in numbers. It will be a big challenge but I feel a highly rewarding for all students and teachers concerned. The next issue will be focussed on the African contributions to Caretakers. The strength in Caretakers lies in our ability to rise to the challenge and to give networks of people involved in environmental work a chance to meet with likeminded people. We have welcomed many networks to conferences over the years including Science across the World, Global Young reporters, Coastwatch and Young reporters for the Environment. It thus pleasing to welcome an affiliate member to Caretakers

International. We hope to have articles on the workings of RIACA (Caretakers Networks for IberoAmerica and the Carribean) in the next issue.

At the last conference, the executive discussed the possibility of establishing a Council of experienced members to support the work of the executive between conferences. This has now been established and will be formally launched at the next conference.

The incoming members of the Caretakers Council are:

Mr Rapemo Odhiambo, Kenya
Mr Jose Molina, Costa Rica
Mr Wayne Schimpff, USA
Ms Clara Brandao, Portugal
Mr Denis Charron, France
Ms Ingrid Adolfsson, Sweden
Ms Luisa Viglietta, Italy
Ms Alba di Carlo, Italy
Ms. Kathryn Graves, Canada
Mr Jose Ramon Casanova, Spain
Ms Stien Matakupan, Indonesia
Ms Maria Moate, South Africa
Ms Dina Tamoutseli, Greece
Mr Toni Salomen, Poland

Please excuse any odd editing in the last edition as something happened between Ireland and Holland!

*Pollution, pollution, pollution!
Everywhere is the confusion.
Whose is this creation?
No one has come to a conclusion.
Look here, look there
Look everywhere.
All around black smoke
From cars and scooters.
Everyone is enjoying the ride,
Ignoring the harm it is causing, killing the plants.
Don't you think, it is a great torture?
A big loss to our nature and nation.
It is time to take some action for the
Environment.*

Poem recited by Raghaur Guar (7 years old)
from Group A at Conference 2002, Italy.



Youth Convention Declaration

We the youth leaders attending the second Global Environmental Youth Convention and the 16th International Caretakers of the Environment of Asia, America (North, Central and South), Africa, and Europe, held in Italy from June 29th to July 3rd, 2002, strongly urge the leaders of the world gathering at the Johannesburg Earth Summit to consider the following.

- Education is the foundation for sustainable living, and therefore needs to be accessible to all people.
- Solving environmental problems requires dealing with Social, Economic, and Political issues as well.
- In addition to education, communication and participation, legislation is needed to prevent further environmental degradation.
- Business and industry have a vital role to play in protecting the earth in the way they produce, invest in research and development, and affect both local and global economy. Legislation should reward those corporations that consider corporate responsibility to include environmental and social responsibility, and act accordingly.

- Achieving environmentally friendly lifestyles requires a change in people's mentality from Ego-Centric to Eco-Centric.
 - Un-sustainable mobility is a great threat to our planet therefore emphasis must be placed on sustainable mobility and a major shift from private to public transportation.
 - ICT (Information and Communications Technology) can – when used responsibly and fairly – become a healthy bridge between people and nations, and as such reduce physical mobility.
 - The use and development of recyclable products and renewable resources should be maximised while the consumption of material goods should be minimised, when possible.
 - Without world peace, safety and co operation, any attempt to move towards a more sustainable world is meaningless.
 - Children and youth make up the largest segment of the earth's population and their voices should be heard, particularly when the future is at stake.
- We, the youth of the world, are here and will be everywhere, both today and tomorrow, to seek the best ways to improve life and maintain a just and equitable global development which does not compromise the life of our planet.

ASIA NEWS

This section includes some quotes from the Earth Ceremony at Pracatinat, Italy in July 2002 plus an article from China, and 2 reports from Caretakers India.

*"Virtue admired as greatly as water flowing down
Culture valued as highly as smoke rising to the
cloud." (Hong Kong)*

*"This earth gave us birth and there is nothing in
this world which can compare to it, not even the
heaven.*

*Nature is our mother,
we should not illtreat our mother,
we should protect our mother,
we will protect, protect, protect." (India)*

*"Inilah sebagian dari tanah dimana aku lahir dan
hidup, dan aku berjanji untuk merawatnya
seperti ia merawatku sampai sekarang."
(This is the bowl of the earth from our lovely
place. The place where I was born and I live, I
promise to take care of it as it cares for me.
Indonesia)*

Creative, Hopeful, Innovative, New. Answers

*Written by Student: Lu Shan with the help of
her mentor, Liao Hong from the Peoples
Republic of China. The first letter of each word
were the key themes in the presentation. As
editor, I have selected some of the presentation
for inclusion here.*

- Transportation and Biological Environment
- The Electric Car in China
- Roadside Art in China

Transportation and the Biological Environment

2002 is the most important year in the history of railroad construction in China. This year we are laying down the Yu-huai Railroad, which will play a primary role in the nation's western development strategy, as well as

establish a Tibetan railroad system that will stretch a distance of 1,110 km on the Tibetan Plateau. These two projects challenge not only our construction technology, but also our ability to protect the biological environment along railroads.

Building a Green Gallery

Yu-huai railroad connects Chongqing in the Sichuan Basin, with Huaihua, Hunan Province. It will wind between forests and mountains from the east of Chongqing to the west of Hunan Province. In this area many rare trees grow and there are several natural preserves, along with the meandering Wujiang River. There's no doubt that the picturesque scenery will entertain the railroad's passengers. Because of the precious natural richness there, we should pay more attention and be responsible in maintaining the area's biological environment. In so doing, we can leave future generation with a high-qualified railroad that is also a green gallery. What Specific Measures are there?

- Reduce the size of work sites in order not to destroy vegetation
- Dispose of rubbish frequently
- Replace (replant) vegetation destroyed during the construction process
- Clean waste water to a certain standard before discharging it into the Wujiang River

The Tibet Railroad

A promise to environmental protection by railroad construction corporations. This railroad will be the highest and longest railroad on frozen-earth (tundra) plateau in the world. It will stretch from Geermu to Lhasa. When it is finished, the currently poor transportation conditions in Tibet will be completely changed.



EUROPE NEWS

This section covers mainly the work of Group C at the Italian conference plus a presentation on bio invasions from Italy.

"Die Erde ist ein lebensnotwendiges Medium, geht damit sorgsam und schonend um!" (Earth is essential for life, treat it with care and consideration, Austria)

"Olemme tuoneet laman hyvin puhkaan pohjoisen mullan karhujen maasta sekotehtäväksi kaikilla maapallotamme luonnon maaperään. Tämä symboloi sitä nikkumamallonta yhteyttä ja vastuuta, jonka me kaikki jaamme luonnon kasvien ja eläinten suojelussa."

(We have brought this very pure arctic ground from the land of the bears to be mixed with the ground all over our globe. This symbolises that unbreakable unity and responsibility that we all share in the protection of nature, her plants and her animals, Finland)

"La Terre est la mère des hommes, c'est un trésor fragile que nous devons préserver." (Earth is the mother of man, it is a fragile treasure that we must save, France.)

"We, representing the youth of Greece, are promising to care for the tree of Nature, so that it will grow to be the tree of a planet where peace, justice, equity and respect for the environment will reign."

"Esperem que aquest arbre, símbol d'amistat, creixi fins fer-nos millors a tots."

(We hope that this tree, symbol of friendship, grows to make all of us better, Spain)

"Fie ca acest pamant sa ocroteasca samanta, sa creasca si sa redoadasca." (May this earth protect the seed, to grow and to bear fruit, Romania)

"Ja turame ovaa so elba celata planeta da bide vaka-ista i nezagadana." (We are pouring this earth with wishes that all the planet is clear and unpolluted like this one, Macedonia)

The workings of Group C ...a case study

Black Hat deals with what would the bad things about road construction in the park be? Why would it not work?

Yellow Hat deals with what are the positive or good things? Why will it work?



What do we need to know? Where would we get the information?

We started with a sense of Place... a concept which brings back the days of the Bristol Conference! Sense of Place: What do you feel about the location? Delegates were asked to divide a page into Plus, minus, interesting (PMI). The feedback on this was particularly interesting as they were from such diverse backgrounds. The group then moved into the famous Thinking Hats of Edward de Bono. This gave a structured way of discussion. Red hat deals with feelings, hunches and intuition. White hat deals with facts and figures. Delegates were asked to note information on signs plus any other information provided about the biodiversity of the area.



The group was composed of delegates from India, St. Vincent and the Grenadines, Greece, Ireland, Lithuania, France, Kenya, the Netherlands and Italy. The basic idea was to take the theme and apply it to the local environment at Pracaltina in Piedmont Italy. The main focus was on thinking about our surroundings, analysing our thoughts and then to communicate those thoughts and recommendations to the rest of the delegates. We had limited time but the process was of utmost importance as a learning experience.

It's difficult for us to protect the biological environment along the path of the railroad, because the biological conditions are unique and primeval, and also very fragile. Besides grassy marshlands and frozen earth (tundra), there is the Yangbajiang Hot Spring Preserve, and the Lizhong Pengbo Natural Preserve for the black neck crane. They are all endangered geographic areas that contain species indispensable to the plateau and also to our country. To protect the intact, original ecological system is our responsibility.

Specific Measures:

- At the sites, we can see that workers staked little flags into earth along transportation routes to prevent big vehicles from crushing excessive numbers of plants. They also moved many plants to safe places and then re-planted them in their original locations when the workers had finished the project in that particular site area.
- During migratory seasons, many kinds of wild animals will cross the railroad and forage along the road. Passages for wild animals were set up so that they can live without interruption.
- There are many lakes and wetlands on the Tibet Plateau that play important roles in the local biological environment. When building the railroad, the workers try to go around them when we transport building materials. If there is no way to avoid wetlands, they build bridges ACROSS them instead of roads THROUGH them.
- In order not to destroy the stability of the tundra (frozen earth) conditions, the construction companies chose 6 sections as experimental areas to try out different ways to build the railroad in such conditions and then choose the most suitable one. They also worked on the project during appropriate seasons, hoping to do less damage to the unique tundra environment.
- The co-ordinators have also set up a bonus/penalty system to regulate the project's construction processes.

Conclusion:

With the continuing development of China's economy, culture and education, it's necessary to set up an extensive network of railroads that connects the west with the east, the south with the north, and can provide convenient and quick transportation of passengers and goods. But the lessons of

history remind us that we must construct a sustainable transportation network, which means it would be best to develop the railroads without damaging the existing biological conditions. For this reason, we have plans and promises to build green galleries in China's territory.

I believe with the help of the China's young people, sustainable transportation will be developed in the tradition, customs and characteristics of our people and our environment.

The Electric Car in China

Today in China there are about 30 cities that provide air-quality reports to the public. Some of these cities have very poor air quality and very serious pollution problems. According to an analysis by the Chinese EPA, 70% of atmospheric pollutants in these cities come from automobile exhaust. With the development of Chinese automobile industry, exhaust emissions pollution will undoubtedly become an increasing danger to cities. In order to reduce pollution, people are seeking for a new kind of clean fuel to decrease the quantity of waste gas. Therefore, environment-friendly cars are being produced. But, in investigating the development of our environmentally friendly cars, it's very easy to find many problems in the development of the Chinese auto industry. The only choice we have that will protect the city environment as well as the domestic car industry is to design and develop environmentally friendly car ourselves.

As far as electric cars are concerned, the fact that they are non-polluting and quiet makes them the best choice. But at present in China, the level of technological development in this field is very low. It's difficult for people to accept electric cars because of their limited range of operation



Green Hat deals with possibilities, alternatives and ideas. These were used later to analyse findings and display results. This is using your creative side.

Blue Hat is used to manage the thinking process. The Group then moved into OPV (Other people's views). This was used to prepare them for the field visit.

Who are the stakeholders?

Each group had to take a particular position and decide on the means of presenting the outcome. e.g. Park ranger, NGO, government minister, bird...

The idea of Howard Gardners Multiple Intelligences was also introduced to ensure that delegates used creative means to communicate their findings.

Collecting Information



Analysing and Planning Presentation



Planning a Drama above and practicing the songs below:

1. If you are happy and rejoice, clap your hands (x2)
If you are happy with the plants on Mount Precatinal
If you are happy and rejoice, clap your hands.



2. I am gonna, I am gonna, Find a solution To this problem called pollution. I'm gonna use ICT, To save this biodiversity. It's time for, it's time for, For an ecorevolution. 3. Un Kilometre a pied, ca use, ca use Un kilometre a pied, ca use ma souliers. One kilometre on foot, it wears One kilometre on foot, it wears down the shoes.



Using Information gathered and pictures from a digital camera to produce a Powerpoint presentation on Computer.



Presenting the short drama



(usually it can cover about only 100 km before needing to be re-charged). So, the key problem with the electric car is how to develop a new kind of high-efficiency and low-cost battery system. Currently, most carmakers just focus on their fierce competition with other domestic rivals. Many electric car models are of poor quality and most of them don't advanced battery technology. Lack of funding for research and development is one of the biggest reasons restricting the production of a popular Chinese electric car.

It should be noted that automobile production conditions worldwide are very chaotic. How many factories on earth are producing electric cars and what's their quality standard? Nobody knows. The administration department in charge of such matters says that most of the factories are located in rural areas and they don't know the situation very clearly. In our research we found that all of those auto factories in question produced bicycles in the past. It is not easy to determine if the factory or the nation issues the product quality standards.

It's necessary for us to develop a 'green' environmentally friendly car. It will be a difficult and long-term job. China is poised to become the largest automobile market in the near future. If we can't adapt to the trend of protecting the environment and making full use of existing energy and technology, not only will our environment be destroyed, but also we will fall behind the world's automobile industry in development. China should speed its efforts in developing our own environmentally friendly car.

Roadside Art

- What is roadside art?
 - Does roadside art influence your life?
 - Does roadside art impact our environment?
- (Editor's note: These were some of the questions used in a survey of people's perceptions. I have not included the full survey here)

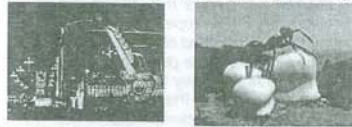
Advertisement Billboards on the Road

Most people who were willing to volunteer their opinions told us they think that advertisement billboards are a kind of roadside art, but still some people insist that billboards detract from the beauty of our surroundings. Now that China has been open to the outside world for many years and has succeeded in entering the WTO, more and more people are focusing on economic opportunities and challenges coming from both domestic and foreign sources. Advertisements have become the "spokesmen" representing this special age and its social

tendencies. Advertisement billboards now occupy large areas of space found along roadsides in Beijing, Tianjin, Shanghai and a number of other major Chinese cities.

The argument in favour of advertisement billboards: They brighten up the city. You will be entertained and receive useful information as you skim over them from the windows of your bus or car. They display socially acceptable behaviour and values. Especially, they can be used to publicise environmental protection issues, such as the advertisements promoting water conservation that can be found at many bus stops in Beijing.

The argument against advertisement billboards: Not all of the advertisements are of good quality, and some are in utter disorder. When you view any Chinese city as a whole, you



will see there are a few trees, a number of tall buildings and many "patches" of advertisement billboards of all sizes throughout the city. The merchants don't care about the aesthetic surroundings of the city, only about their profits. Those billboards advocating water conservation and other environmental issues constitute only a very small percentage of the total. I think another type of advertisement that can be considered, as a form of roadside art (at night) is neon lights. When the sun sets, neon lights colour the city and decorate the environment.

Public Art



Public art is a city's reflection of the inhabitants' expectations combined with the ideas of artists with sharp eyes and creative souls. As the economy continues its quick growth in China, the process of urbanisation can't be avoided. The same progression occurred in developed countries during the 1950s-80s. It is reasonable to expect that public art in China will continue to grow and flourish. A lot of artists in China are getting into public art. Some rush to get sponsors; others have their artistic experiments shown in public.

A new discovery in our investigation

Nearly 65% of the people we interviewed were most impressed by art that is closely related to plants, animals, and nature. This implies that most people want to get closer to nature, although they may have lived in cities for most of their lives. Some other favourite public art displays not only have profound meaning, but also remind people of old times gone by. What impressed me most were the giant cactuses made of plastic in Xidan Square, Beijing. Why? I am a girl born and brought up in a big northern Chinese city, seldom touching nature and her wonderful gifts except when visiting parks and the countryside. Because of the limited space and the demands for hygienic conditions, I had a few ducklings and a kitty for a very short time, but never truly owned and protected a pet in the proper sense. This is true for most of the adults and other children in big cities. We usually call the plants grown in a flowerpot "plants", but they are not really seen the way they should be. Plants and animal species should be considered equal to the human race. They should be set free from small pieces of soil or cages. This way they can be what they truly are meant to be. When I see the plants (whether they are real or made of plastic) along the roadside, I feel respect for the plants and for nature.

Squares

Dalian is often referred to as the city of squares. It has four major squares, Zhongshan Square, Xinghai Square, Renmin Square, Navy Square, and is dotted with some smaller squares as well. Squares are an extension of the road, not only do they transport people like a road, but they also give people an opportunity to enjoy their



lives, and represent the intentions of the local decision-makers. Every square has its own characteristics, its own unique statues, structures and atmosphere. The people we questioned in Dalian told us that they consider squares to be a form of roadside art. From this response we realised that the people and the government in Dalian want to build a more beautiful and fashionable city. Along with the appearance of numerous squares in the city, we also noticed a corresponding development of economy, and especially, improved environmental conditions.

Xinhai Square, situated on Dalian Bay, is famous for its picturesque scenery. One respondent



(named Gong Zhifeng, a 20-year-old, university student) told me that when he is there, he feels relaxed and even hears the breath of the sea. This square is an extension of

the road, and the magnification of art, for it is the art of nature.

The policewomen we saw riding horses can also be considered as part of the art in the square. You will gain some insight when you discover the close ties between humans and horses. Certainly, you will be touched by the co-ordination between human beings and nature.

Something old but valuable

There is an interesting place in Shanghai. Xintiandi is part of the old residential area called Shikumen. Its atmosphere is filled with memories of the past. Time seems to pass slowly there. Small houses and old lanes bring us back to the Shanghai of the 1930's, but the various pubs scattered throughout the area clearly tell us that the modern city is around us all the time.



Greenbelts in the city

More and more greenbelts are appearing in Beijing. They promote the self-confidence of building a more beautiful Beijing in all the people's minds. The government has promised in the future to expand the area of green space per capita to 45 square meters from the current level of 35 square meters.



Because the gardening market in Beijing does much to promote the increasingly important role of plants (and associated technologies) in our lives, it has become a large and competitive industry. Those merchants who think "green" say environmental protection is the eternal topic not only in Beijing, but also worldwide!

Conclusion: from the examples provided above, advertisements billboards, squares, greenbelts, even the decorative roadside lamps and the architecture and colors of the buildings all can be considered as components of roadside art.

They're really changing our lives not only by beautifying our surroundings, but also giving us increased convenience in transportation and mobility. Above all, they play increasingly important roles in raising environmental awareness and promoting environmental protection, as well as encouraging us to fulfil our promise of building a brighter tomorrow for future generations.

For more information, contact:
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Report on the Observance of International Youth Day, New Delhi- India.

It was a memorable event, observance of the International Youth Day by the Caretakers of the Environment International, India in collaboration with the Indian Assembly of Youth, on August 12, 2002. CEI, India and IAY conducted a Panel Discussion-cum-seminar in its Secretariat in New Delhi on the theme "Now and For Future: Youth Action for Sustainable Development", focusing on the World Summit on Sustainable Development to be held in Johannesburg from 26 August to 4 September 2002.

Participation of young people from the society and distinguished dignitaries were present on the occasion to discuss the state of the country and how to get their government leaders to act.

The objective was to encourage and inspire the Indian Youth and let them know how their role of action can make a big difference in the community and the country.

The discussion was presided over by Mr. Ravi Dutt – President, CEI, India & Chairman, IAY, accompanied by Mr. A.K.Wanchu – General Secretary, All India Newspapers Editor's Conference along with Mr. Ashok K. Richhariya – a Prominent Industrialist, Mr. Alok Sharma – Youth Leader and Environmentalist and Mr. Abhishek Dutt – Director for Environment Education Programme.

Before the commencement of the discussion, the message of the Secretary General of United Nations – Mr. Kofi A. Annan on the "International Youth Day" was read out and distributed among the participants. Participants were invited from several parts of the country.

The following conclusions were laid down after the discussion among the panel and the participants:

- To provide education to the backward classes of the society in India.
- Youth empowerment by youth unity, better understanding among several communities of the society.
- Proper planning and implementation of modern technologies that leads to industrialisation with sustainability to narrow down the gap between developed and the developing nations.

Report on the launch of National Tree Day of India

Caretakers of the Environment International, India and Indian Assembly of Youth, New Delhi in association with Air Force Golden Jubilee Institute (Senior Secondary School), New Delhi conducted a seminar on "Ethics of Tree Plantation and Global Warming" following the great launch of National Tree Day of India by planting trees in the school premises on Monday the 9th September 2002.

On this occasion, the Vice Principal of the school, Environment Club Members and several other students and teachers participated and assisted the Director – Environment Education Programme of CEI, India Mr. Abhishek Dutt to make this day a success mark and celebrate it year after year. He also read out the message of the Secretary General of United Nations, Mr. Kofi A. Annan on the occasion of International Literacy Day celebrated on 8th September 2002.

Mr. Alok Sharma, a well-known environmentalist of India and a Civil Engineer as well addressed the participants on the above topic. In his address, he insisted that each student should plant at least one tree in his life and take care of it, so that, it could increase the number of trees and lead to afforestation in the country which would definitely decrease sharp rise in causes of global warming.

The function, as a whole, was a message to the young generation of India to save forests and prevent our planet "Earth" from global warming. It focused special attention on educating people on environmental issues to build India into a nation which reaps the benefits of science and technology while retaining its heritage and its ethical & spiritual values. Abhishek Dutt – Director EEP, CEI, India

The programme envisages learning through community service and scientific investigation. This would develop life-long habits of active citizenship and environmental stewardship. It aims to bring together all efforts of government agencies and NGOs in a complementary action plan, sharing ideas and working together for a common goal.

<http://www.cleanindia.org/programme.htm>

Youth declaration by Lu Shan

A new era is upon us. Call it what you will: the service economy, the information age, and the knowledge society. It all translates to a fundamental change in the way we exchange our goods and information. The standard of our life, the improvement of our society, the future of our world in some way depend on the quality of mobility and ICT. With the help of economic interests, mobility and ICT often wins in the competition between itself and environment. As a result, air pollution, radiation from mobile phones, interference with biological condition visibly and invisibly are swallowing the future. It's time for us youngsters to unite and reach out our hands to take action! We are and will try to sound the alert to people in every corner of the globe, to learn knowledge and exchange experiences, and finally to take action hand in hand with everybody sitting here. In so doing, our united effort will have the power to move the public, affect decision makers and eventually hand down to next generations. The world needs sustainable mobility and ICT, but in the way they benefit people and the planet not only now but also in the long run. We are here, and will be everywhere to seek the proper ways to save the world and maintain a sustainable global development economically, socially and environmentally!

Development Alternatives - an NGO - launched a school-community network programme called **CLEAN-India (Community Led Environment Action Network)** in 1996. A nationwide programme, CLEAN-India targets school children for generating awareness and taking action on environment related initiatives.

How Transport impacts on Biodiversity

Written by student Ma Hanh-Phuc, Italy.

The world wide exchange of plants, animals and diseases between the Old and New Worlds...Bio-invasions!

Did you know that?

- In 400 A.D. Polynesians arrived in Hawaii with a vast range of alien species (animals and plants).
- The arrival of Europeans in the late eighteenth century produced long-term detrimental effects on Hawaii's ecosystem.
- The European immigrants introduced European species to the countries because they were homesick and liked to see animals and plants familiar to them such as the European rabbit into Australia in 1859.
- The intentional importation of material traditionally used in the country of origin for the manufacture of products brought *Arundo donax* into Southern California by the Spanish missionaries in the 1770s for use in construction.
- European songbirds were introduced into the USA in the 1800's to improve the new surroundings (!)
- After the Norman conquest in 1066, the rabbit entered England
- Cypress cancer arrived in Italy in wooden packing material for bullets during the 2nd World War
- The bush-tailed opossum was released into New Zealand to establish a new fur trade. Now the country has 70 million of them and they have been named public enemy number one.
- Dutch Elm disease entered the US from Europe in about 1930 in elm logs imported for the veneer industry. This led to the destruction of over 4 million elms between 1933 and 1940.
- Tourists from all over the world, including the continental United States, have brought alien predators to Hawaii that have destroyed most of the indigenous wildlife.
- Planes flying to Hawaii have also introduced alien predators.
- Brown tree snakes which are responsible for killing 9 of Guam's 11 bird species are

said to have arrived in Hawaii by slithering into wheel wells of jets and dropping out when the planes landed.

- The Wellan Canal that opened in 1883 allowed the lamprey to enter lake Erie. The lamprey destroyed 97% of the trout population in the Great Lakes.
- The dangerous alga *Caulerpa taxifolia* arrived by ship in USA (1998) and Australia (2000) from the Mediterranean Sea.
- In the Great Lakes the caspian zebra mussel was introduced accidentally in ballast water from ships. Now, it clogs major water pipes, smothers the population of native clams and encrusts the spawning grounds of fish.
- Airplanes provide efficient means of exotic travel. Mosquitos have survived flights from Africa to Britain in passenger cabins.
- Snakes have travelled in cargo bays from Guam to Hawaii.
- With container transport the biologic invaders are picked up and delivered directly to inland destination all over the world.
- Container shipments of used tires from Japan brought the Asian Tiger Mosquito to the U.S., South Africa, New Zealand, Australia and Southern Europe.



Invasive or not?

Roads and their impact on Biodiversity

Many animals are killed every year by vehicles. Some species can't maintain their population because of the roadkills (e.g. Florida Panther). Some species of animals refuse to cross barriers as wide as a road and roads effectively cut the populations in half. A network of roads fragments the population further. The remaining small population are then vulnerable to all the problems associated with rarity: genetic deterioration from inbreeding and random drift in gene frequencies, environmental catastrophes, fluctuations in habitat conditions...

Even a small, unpaved forest road closed to public traffic constitutes a barrier: many animals are physically capable of crossing roads but appear to be psychologically constrained from venturing into such open spaces.

- Pollution begins with construction: noise, for example, disturbs birds and other wildlife that communicate by auditory signals...
- Vehicles emit a variety of pollutants, including heavy metal, carbon dioxide, all of which may have serious cumulative effects.
- Lead moves up the food chain, with sometimes severe toxic effects on animals.
- Roadside contaminants can be carried far from roads by wind and water.
- The maintenance of roads and roadsides also introduces de-icing products, herbicides... Drainage of these products from roads into aquatic ecosystems may be dangerous.
- Road salt can contaminate groundwater, cripple roadside vegetation and poison some species of birds. Moreover, tasty salt deposits may entice some animals to the roadside, thereby increasing the chance that they will be hit by passing vehicles.
- Road construction also kills animals and plants directly.
- Many of the weedy plants that dominate and disperse along roadsides are exotics. These species spread from roadsides into adjacent native communities.

The Columbian exchange into Europe...the biological and cultural consequences of 1492

1. Animals for food
Turkey, Cottontail, Rainbow Trout, Bull frog.
2. Trees and Flowers...
Gardens found a new style with:
American firs, Fuchsia, American pines, Petunia, Thuja, Dahlia, Cypress, Bouganvillea,



Plane-tree, Agave, Magnolia, and Yucca

3. A richer Agriculture
Potato, Tomato, Maize, Pepper, Marrow, Pumpkin, Sunflower, and



Strawberry

4. Parasites arrive with the new plants:
A lot of parasites arrive in Europe carried by different means of transport. A list of them includes fungi and insects. Only 4 parasites arrived by means of sailing ship; 26 parasites arrived by steamships from 1840 to the 2nd World War; more than thirty parasites have been introduced since 1945 not only by ship but also by plane.
5. Medicines and Poisons:
Cocoa and tobacco arrived as medical substances and then became pleasures of life. Some substances were used in pharmacology as anesthetic (curare, cocaine...).
6. Colouring materials:
New colouring matters, for example the cochineal obtained from insects or the indigo (native from Asia but

then cultivated in America), changed the colouring trade in Europe and particularly in France and Italy. The cultivation of traditional colouring materials in Europe such as the "pastel" were abandoned with disastrous effects on the European growers who depended on this for their living.

7. Rubber:

Rubber arrived from America and the rubber tyres eventually developed from this material revolutionised transport and permitted greater mobility.

8. New Furniture style:

A variety of American wood created a new style in the furniture handicrafts and in cabinet-making. Also musical instruments were made in the new materials.

How can we try to prevent road kills?

In Italy there are few studies about roadkills but accidents have already recommended some interventions. As the accidents caused by Ungulates are indemnified by the local government we are trying to put prevention systems along roads which are often the theatre of these tragedies.

- Reflectors installed along some kilometres of these roads catch the car lights and reflect them.
- Animals perceive the lights as a fence blocking their progress and wait to cross until the vehicle has gone and the fence collapses.
- Another system consists of infrared sensors and photoelectric cells which are able to perceive an animal up to a distance of 30 metres and send the driver a flashing signal.
- There is a law which requires wire nets along the highways but it isn't respected.
- In some areas we have began putting amphibian tunnels, used by animals to cross roads to migrate to their breeding ponds on wet spring nights.
- Underpasses and bridges could be a way to preserve the life of some species.

But everyone can make a difference:

SLOW DOWN

when driving through rural (especially wooded) areas. In most cases, a couple of minutes on our journey time will make non difference to us, but it could make all the difference to wildlife.

You could also contribute by making donations to build amphibian or hedgehog tunnels under the roads.

How can we prevent Biological invasions?

- Ship ballast water, wooden packing material, horticultural and floricultural plants, creatures bought in exotic countries are pathways for invasion that could all be monitored or treated more rigorously.
- Every ship, every plane, every truck is a potential carrier.
- Many insects, seeds and parasites could be carried on the logs, lumber, railroad ties...

SHARED AND UPDATED LAWS COULD PRESERVE COUNTRIES FROM DANGEROUS INVASIONS, LETHAL FOR NATIVE SPECIES AND THEIR ECOSYSTEMS BECAUSE NO SUBSEQUENT INTERVENTION IS A MAGIC SOLUTION AND CAN FAIL.

Every country has to be ready to organise:

- biological control
- chemical control
- mechanical control
- ecosystem management

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