

RANGZHI

AN RSPN PUBLICATION



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"Earth Day" Prize Winning Entries

Forest Fires

The RSPN's "Farming Matters" Project

Getting Tough With Tobacco

Environmental Stringers' Reports

Plus The Usual Features



30 September 1994

Volume II No. 2

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This, the third, RANGZHIN is long overdue and, wishfully, well worth the wait. There haven't exactly been frantic demands for it but a discreet inquiry or two has been forthcoming.

The reasons for the delay are numerous: institutional auditing, the deferred declaration of the 'Earth Day' Writing competition results, and the resignation of our resident artist being among some.

Anyroads, it's out and there's more crammed in than in previous issues as compensation of sorts. It's chockful of all our usual features plus lots of new stuff for your perusal and edification.

The response by way of entries to our above-mentioned competition was heartening and the onus of resolving the winners amidst a field of a number of first rate writers, a herculean labour indeed. At the risk of sounding patronizing, the level of awareness and expression encountered was truly an eye-opener to yours truly.

As is generally known, the RANGZHIN is a magazine aimed at a juvenile readership. Which is why every school in the kingdom, including the far flung community ones, is on our mailing list. However, as it's said, there's many a slip 'twixt cup and the lip and though our postal system seldom fails to deliver the goods, sometimes, for reasons best known to those concerned, students - our targetted audience - don't get to sample the merchandise.

The RSPN appeals to those in a position to help, to kindly facilitate the fulfilment of the journal's basic objectives.

EDITORIAL BOARD

EDITOR - J. Michael Chiranal

ARTISTS - Sonam Choden Dorji & Karma P. Demma

LAY-OUT - KPD & JMC

FROM OUR OWN CORRESPONDENT

RSPN Stringers Report

FOREST FIRES IN PUNAKHA

Dr K Ramadevi, Punakha HS

Forest fires are very common in Bhutan. The cause for these forest fires may be natural, sometimes accidental. The forest fire surveyors revealed that many cases in Bhutan are accidental mainly due to the negligence of people.

WHY DO PEOPLE SET FIRE TO THE FOREST?

According to the Forest Division, in Chirpine forests, there is very little chance for other plants to survive. It is even very difficult for the grasses to grow. During winter, when the climate is dry, villagers burn the forests, mainly the seedlings of pine. This will favour the growth of grass so that they may graze their cattle there. This burning not only favours the growth of grasses but also that of the pine trees. The reason for this is as yet unclear. (It may be due to the ashes formed which reduce the acidity of the soil and thus favour growth.) Whatever the reason, if the person who sets an area on fire is not careful, it may go out of control and start a forest fire. More often than not, this is the primary source of forest fires.

Besides these villagers, travellers are also known to be responsible for forest fires when they set alight campfires then move on without bothering to douse it on their departure.

WARNINGS DO NOT HELP FIRE ACCIDENTS

In spite of the regular warnings and requests made by the Forest Division, forest fires are still a regular feature of every winter season. All efforts to educate the villagers seem to have been in vain.

Under Punakha Dzongkhag alone, forest fires occurred seven times in the year 1988-89, ten times in the year 1992-93 and upto March 1994, there have been three so far.

FOREST FIRES IN PUNAKHA DURING 1994

(Information collected from Forest Range Office - Punakha)

During the month of January 1994, there was a forest fire, which went out by itself. The forest staff was unable to locate the region despite an extensive search.

During the month of March there were two forest fires on the 8th and 10th.

DETAILS OF FOREST FIRES

On 8 March around 2 p.m., Mr Kuenga Norbu, the In-Charge, Punakha Range Office, sensed a forest fire in the direction of Samdenkha village. He immediately rushed towards the suspected site with his assistant Mr Kaula Drukpa. They were able to locate the area and controlled the fire with the help of local people. The fire occurred below Niduchu near the village of Pelade in Chubugewog.

On 10 March, the Dzongrab Gom of Punakha noticed from his office some smoke in the direction of Talo at around 12 noon. He immediately alerted the Forest Range Office, Punakha. Forest staff along with local firefighters from Punakha left for the site and succeeded in bringing the fire under control. The incident occurred near Daligonpa under Talo gewog.

ACTUAL DAMAGE YET TO BE KNOWN

In both these cases, it was only ground fire. So it was easily brought under control with crude fire fighting methods like beating with branches. The fire damaged only the seedlings and not the trees. Due to this, the loss was comparatively less. Even then, according to the local people, the fire below Niduchu damaged an area of about 300 acres, while the fire at Talo razed about 600 acres. Loss is calculated at approximately Nu 600/acre.

A team from the Forest Division is conducting a survey to estimate the exact damage and loss caused by the forest fires.

FOREST FIRE IN LHUNTSHE

800 acres of forest land, valued at Nu 1,577,600, in Yomay village, under Membigewog, in Lhuntshe Dzongkhag, was gutted by a devastating fire on 9 March 1994.

According to the Forest Range Office, Lhuntshe, the blaze, 15th in a series since 1991, spread out from bushes set afire by a farmer practising Tseri cultivation. The devastation that continued from 11 a.m. on 9 March to about 5 p.m. on 11 March indiscriminately set ablaze 1,600 priceless trees, 2,400 stout poles, 76,000 saplings and 120,000 seedlings in the densely wooded forest sprawl.

The disaster too has claimed a high toll of wildlife and has left many more wild species frightened and homeless. The ghastly look in the aftermath of the blaze has apparently aggravated alarming landslide possibilities.

Intensive afforestation activities have now become a necessity to effect desirable greening of the devastated forest coverage.

Jigme Thinley (Headmaster)
Tangmachu JHS

NATURE CLUB IN WAMRONG JHS

We were very happy to receive a visit from RSPN personnel on 8 May 1994. It really boosted our ideas and plans for a Nature Club. The pamphlet which he distributed was of immense help towards establishing the same.

On 9 May, at Assembly, the Headmaster briefed the student body on the aims and activities of the proposed Nature Club which would benefit both the school and the local community.

The Classes VII A and B boys dug two garbage pits, one near the main building

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and the other behind the kitchen. They also sealed the old pits which had already been filled up with litter.

Thus far (26 May 1994), the Nature Club could register 67 very active members from the higher classes. We are confident that their numbers will swell in the near future. We look forward to receiving further literature, equipment and visits by RSPN staff in future.

Srinavas C.H
Wamrong Junior High School

WILDLIFE GARDEN IN TANGMACHU

"Please help us! Please help! Help!"

These sounds were very astonishing to the Nature Club In Charge of Tangmachu Junior High School. She turned in every direction to find who was in a problem. She was most confused to find no one around. She hurried to the Headmaster to convey the news. The Headmaster, along with a few students, accompanied her to the area. No sooner had they reached the same spot, when the same sounds were emitted. An old pine tree inhabited by a solitary cuckoo seemed to be the source of those cries.

The Nature Club members and the Headmaster were moved by the sight. They took a quick decision to help this dying symbol of Nature. Quite a large area, once thickly wooded forest, had been cleared during the construction of the school. Who knows how many untold creatures had been injured, both physically and mentally, in the process?

Before this last tree disappears taking with it the last trace of nature, we had to find a solution to help this fading life. And so was born the idea of a wildlife garden!

And so besides being a shelter for all forms of life, this wildlife garden will help to

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spread the message of conservation far and wide, we hope.

Bishnu K Gurung
Tangmachu Junior High School

**ENVIRONMENTAL EDUCATION CAMP
25 TO 30 JANUARY 1994**

25.1.94

Visit to Chhukha Hydel Project was very enchanting as well as astonishing. This project does not seem to have much negative impact on nature. It has been constructed in such a way as to be eco-friendly.

26.1.94

Phuntsholing: Camped at P/ling Primary School. The activities related to nature protection were most engrossing and kept us awake till late at night.

27.1.94

Visited the Jaldapara Wildlife Sanctuary in India. The visit gave us a sense of how important the natural forest is to living beings.

28.1.94

Visited local industries/ factories around Phuntsholing.

BCCL: Though the income it generates is very high, there is a proportionate damage done to the environment. Roughly 100 acres of forest land around the site have been degraded due to dust and smoke produced by the factory. The other small scale industries like the milk processing plant, Dezang breweries, Bhutan Polythene, etc., are not as harmful as the BCCL.

29.1.94

Visited Tala BPPL, Gedu GWMC and Tashi Rosin factory. The GWMC and BPPL, which are wood intensive, have depleted the forest cover quite drastically. One hopes that there is some control on the felling of timber to supply these insatiable industries.

30.1.94

Fuelwood and Water Pollution projects exhibited by RSPN staff. Most meaningful and enlightening! Last day brings a most interesting trip to a climax. Looking forward to more of the same.

I K Chhetri
Samdrup Jongkhar Primary School

NEWS FROM NOBDING.

VILLAGERS KILL LEOPARD

Villagers from Riding under Dangchu gewog killed a male leopard on 18.7.94. According to the villagers, the leopard had killed five pigs, two horses and wounded a few other domestic animals. The villagers trapped the leopard and killed it. The body of the leopard was handed over to the forest personnel.

RISE IN TEMPERATURE

In previous years, there used to be much rainfall at Nobding in the spring. This year there has been very little rain. According to the meteorology in charge, the average temperature has risen 1° C this year as compared to the last *eight* years. The maximum temperature here was 25.5° C till last year. This year in the month of July the temperature reached 26.5° C.

N B Rai
Nobding PS

GUIDELINES FOR ENVIRONMENTAL REPORTING

Would you like to be a reporter for the RSPN? We do not pay, as yet, but the experience will be invaluable. You can share your news and views with others and see your name in print! Here are some tips that might help you to do the needful.

This hand out is intended to be suggestive rather than restrictive.

The information sought off the environmental reporters may, for convenience, be classified as follows:

1. News reports, i.e., straightforward reporting, in the form of a news item, of any environmental event in the respective Dzongkhag like, for examples:

- ♦ **natural disasters** like landslides, floods, forest fires, droughts, epidemics, etc.,
- ♦ **wildlife encounters** with birds, boars, bears, deer, etc.,
- ♦ **development projects** and their likely or evident environmental impacts,
- ♦ **environmental related activities** like exhibitions, workshops, campaigns, etc.

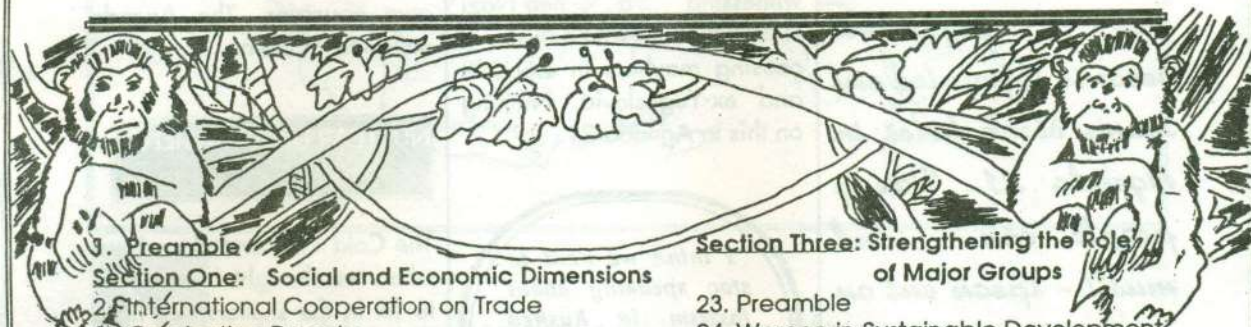
2. Interviews with extension workers in the environmental related sectors of forestry, agriculture, irrigation, etc. and with members of the community like farmers, educators, monks, etc..

3. Quantitative data pertaining to the environment like, for instance, classification of flora/fauna, rates of consumption of energy like fuelwood, kerosene, electricity, etc., meteorological information, crop yields, land use patterns etc..

We take this opportunity to thank you once again for the unstinted and honorary cooperation you will be extending particularly to the RSPN and generally to the wider community and we look forward to hearing from you and fostering a closer relationship in the future.

One of the important documents to result from the Rio Earth Summit was the so called Agenda 21. Here is a full list of the chapter titles.

AGENDA 21



Preamble

Section One: Social and Economic Dimensions

2. International Cooperation on Trade
3. Combating Poverty
4. Changing Consumption Patterns
5. Population and Sustainability
6. Protecting Human Health
7. Sustainable Human Settlements
8. Integrating Decision-making

Section Two: Conservation and Management of Human Resources

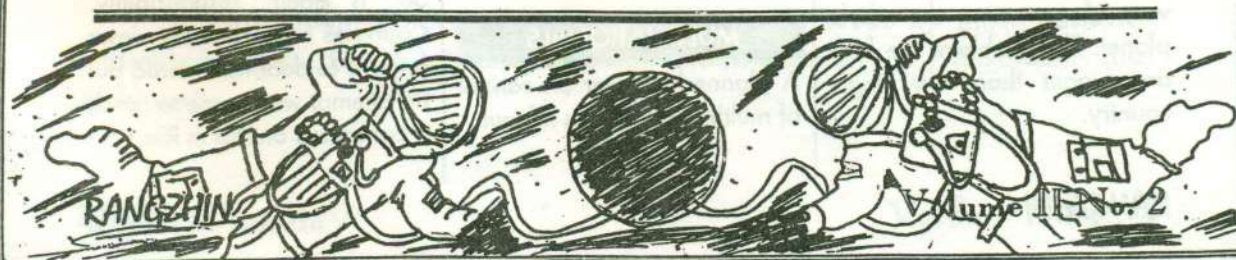
9. Protecting the Atmosphere
10. Sustainable Land Management
11. Combating Deforestation
12. Combating Desertification and Drought
13. Sustainable Mountain Development
14. Sustainable Agriculture and Rural Development
15. Conservation of Biological Diversity
16. Management of Biotechnology
17. Protecting and Managing the Oceans
18. Protecting and Managing Fresh Water
19. Safe Use of Toxic Chemicals
20. Management of Hazardous Wastes
21. Management of Solid Waste and Sewage
22. Managing Radioactive Waste

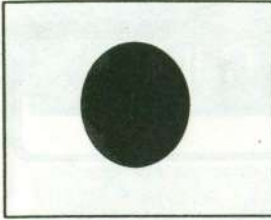
Section Three: Strengthening the Role of Major Groups

23. Preamble
24. Women in Sustainable Development
25. Children and Youth in Sustainable Development
26. Strengthening the Role of Indigenous People
27. Partnership with NGOs
28. The Role of Local Authorities
29. The Role of Workers and Trade Unions
30. Business and Industry
31. The Role of Science and Technology
32. The Role of Farmers

Section Four: Means of Implementation

33. Financing Sustainable Development
34. Technology Transfer
35. Science for Sustainable Dev.
36. Education, Training and Public Awareness
37. Capacity Building for Sust. Dev.
38. International Institutions for Sustainable Development
39. Revision of International Laws
40. Information for Decision-making





BLACK HOLES IN AGENDA 21

The Youth statement was important because it pointed out many black holes in Agenda 21. Young people can - and must! - speak out on matters that governments cannot or dare not talk about. Black holes in Agenda 21 include:

WAR AND MILITARISM

Nothing destroys the environment and wrecks development quicker than war or the billions spent preparing for it. No mention in Agenda 21.

GOVERNANCE

The Agenda suggests no new government structures to implement even its own proposals let alone the ones it leaves out. We need a new way of governing the whole planet. The problems we face are bigger than any single country.

DISCRIMINATION AND NATIONALISM

Nazism lives! Europe is witnessing a neo-Nazi resurrection. Nationalism is causing mayhem in ex-USSR and ex-Yugoslavia. Nothing on this in Agenda 21.

"I think we need to stop speaking about fascism in hushed tones - we should laugh at them. I would paint that stadium in Berlin pink! That's what I would do."

Bono Vox, U2

BIRTH CONTROL

The Vatican mobilized opposition to this from many quarters. It was not seriously addressed in the Agenda, and not given any of the funding it needs.

RENEWABLE ENERGY RESOURCES

Solar, wind, wave power, etc. Oil exporting countries insisted these be played down.*

MULTINATIONALS

A planned chapter on control of multinationals was left out.

REFUGEES

Several of us witnessed the tragedy of refugees in our own countries. The Agenda says little of them.

NUCLEAR DISARMAMENT:

The Cold War ended and just when we thought it was safe to fill in the shelters, we hear that 25 countries are keen to join the nuclear club!

HUMAN RIGHTS

are mentioned but is development a human right? This is a vital question to four-fifths of the world who need development urgently. Nothing in Agenda 21.

CONSUMPTION

The chapter on consumption became weaker during the run-up to Rio. No firm directions on Green Taxes and environmental accounting were made.

MEDIA

The influence of TV, radio and the newspapers is immense. So is their responsibility. Countries have different views on how to deal with media but no attempt was made to reach a consensus on this in Rio.

It's back to basics again with the next instalment of the environmental alphabet



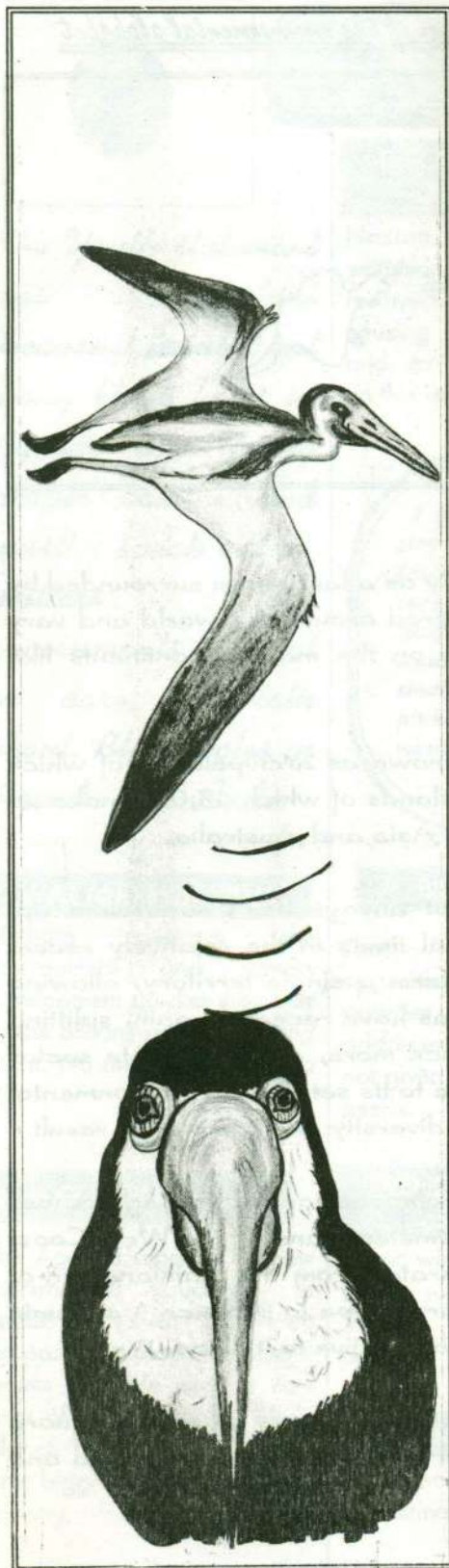
is for Island defined geographically as a land mass surrounded by a body of water. Islands lie scattered around the world and vary in size from tiny uninhabited dots on the map to continents like Australia.

Often islands are found in clusters known as archipelagos of which the Malay is one which comprises 20,000 islands of which 13,000 make up Indonesia in a chain 5000 km long between Asia and Australia.

The Indonesian archipelago has not always been so broken up. When the sea level drops, as it has several times in the relatively recent past, many of the islands have merged to form a single territory, allowing wildlife communities to mingle. When the seas have receded again, splitting up the prehistoric forests into fragments once more, each separate sector would follow its evolutionary path in response to its set of local environmental conditions and selection pressures. Greater diversity and complexity result.

The insulating effect found within the Indonesian archipelago is well demonstrated by Siberut, a 4500 square kilometer island off the West Coast of Sumatra. This island, having been separated from the mainland for at least 1 million years, has enjoyed evolutionary scope to produce 4 endemic primates and, of its 31 mammal species, 25 are native to it alone.

An additional 20,000 islands are scattered across 29 million square kilometers of the South West Pacific known collectively as Micronesia and Polynesia.



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J is for Jurassic, a word derived from the Jura mountain range in France and relating to the period of the Mesozoic era or the corresponding system of rocks marked by the presence of dinosaurs and the first appearance of birds. The term 'Jurassic' recently received prominence thanks to the spectacular Stephen Spielberg movie of the same name.

It was during the Jurassic period as evidenced by Jurassic rocks, about 20 million years ago, that the first fossils of flying reptiles (pterosaurs) are found. Insects had colonized the air some 100 million years previously and though the first flying vertebrates did little more than glide, they gained the advantage of being able to chase the flying insects and of escaping from predatory land dinosaurs. Early pterosaurs had batlike wings supported by a series of long finger bones. Later, with the change of the reptilian scales to feathers, these flying reptiles evolved to become the ancestors of modern day birds.

Mammals, the forerunners of man, too appeared with the flying reptiles during the Jurassic period.

Scientists are not quite sure what exactly led to the sudden demise of the dinosaurs who held dominion for hundreds of millions of years. Some say it was the onset of an unexpected Ice Age, others blame a comet collision but to this day the vanishing of the entire species, relatively overnight after their age-long tenure on the planet, remains one of the mysteries of life.

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K is for 'Keystone Mutualists' which refer to plant hosts which supply food to extensive associations of mobile links.

An example of this is the Brazil nut tree, commonly known for its tasty nut and widely harvested in Amazonia as a source of ash. This huge tree is pollinated solely by an iridescent insect, a member of the euglossine group of bees. Likewise, the tree's nut depends for its germination on a sharp toothed rodent, the agouri, which chews and softens the seed coat.

So, this towering tree requires for its reproductive system, the services of a high flying bee that pollinates flowers in its crown and a forest floor rodent that disperses its nuts.

Many other cash crops are pollinated similarly by obligate insects or bats or birds. Tiny midges or thrips pollinate rubber and cocoa, bees pollinate passion fruit, curcubits flies pollinate cashew, mango and kola nut, and hummingbirds pollinate wild pineapples.

If as a result of man's disturbance of the forest a keystone mutualist is eliminated from its ecosystem, the loss may lead to that of several other species. Still more to the point, these additional losses may, in certain circumstances, trigger a cascade of linked extinction.



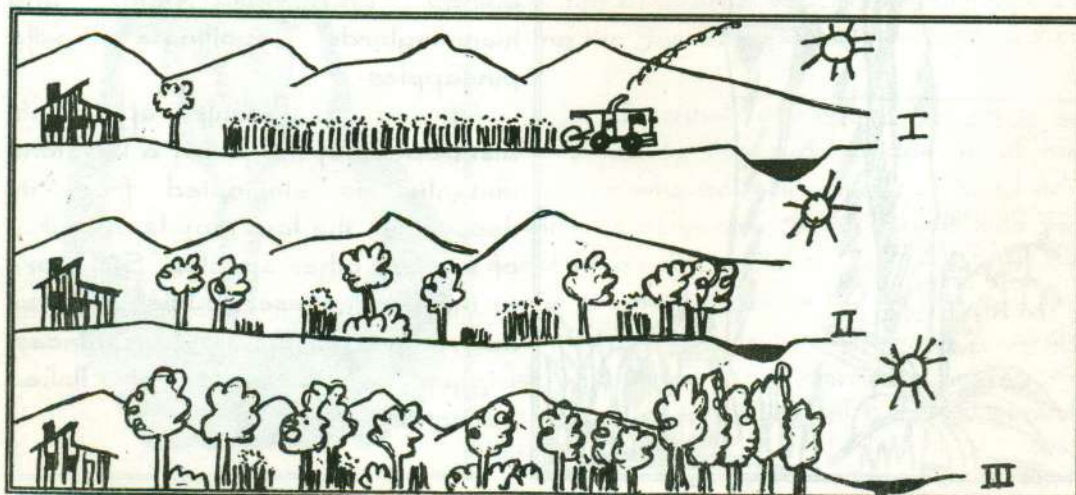
is for Land Use, the way in which we harness the potential resources of a given area. Categories of land may be based on current use (e.g. agriculture, forestry, industry) or potential use (based on surveys of topography, soil type, etc.). Land use planning is the use of this information to make decisions about long-term use of the land for maximum community benefit.

The most immediate profitable use of the land is not always the best use in terms of its long term health and ecology. For example, surface mining has led to considerable destruction of local and regional ecosystems.

The effects of land use tend to be cumulative. We therefore have an obligation to future generations to minimize our negative impact on the land. As pressures on our land resources increase, it will be necessary to use the same piece of land in a number of ways at the same time. Future land use planning will have to emphasize sequential or multiple land use rather than exclusive use. This is already the practice in many societies (e.g. Indonesian rice paddies also serve as fish ponds.).

Land is misused through deforestation, overgrazing, overcropping, intensive irrigation, and other forms of mismanagement and poor land-use practices. These can result in erosion, reduced groundwater recharge, deterioration of soil quality, salinization, lower crop yields, heavy siltation of surface waters and flooding of low lying areas.

Planning for the future of land is planning for partnership with it. Satisfying today's needs should not compromise the ability of the land to sustain us tomorrow. Land management is most effective when done at a local level based on the peoples needs and with their active participation.



Read the 3 extracts on this page. They hint at just some of the reasons for rural-urban migration.

For each extract try to fill in the gaps in the table entitled 'Comparing examples of rural-urban migration'.

UNDERSTANDING RURAL - URBAN MIGRATION

COMPARING EXAMPLES OF RURAL-URBAN MIGRATION

EXAMPLE	WHO MIGRATES TO THE CITY	IDENTIFY THE "PUSH FACTOR(S)"	IDENTIFY THE "PULL FACTOR(S)"
Extract 1			
Extract 2			
Extract 3			

EXTRACT 1

Less than half the population of Calcutta was born in the city. The enormous growth in population in recent times has been largely due to immigration. The immigrants are of two main sorts. There are the refugees of Bangladesh (formerly East Pakistan), mostly Hindus, who left the Moslem state of Pakistan when it came into being in 1947.

The other immigrants have come to the city to seek work in the factories and in the docks. Large cities are always a magnet for people in the surrounding countryside, and Calcutta is no exception. It is the focus of an area in which about 150 million people, mostly villagers, live. It is usually the young men who leave the villages in order to send home a few rupees a month to help support their families.

EXTRACT 2

"Women can usually find work in the city - unlike so many unskilled men," explains social anthropologist Maria del Carmen Elu de Lenero. Studies even confirm the existence of a "subproletarian" group, where women, as the more certain breadwinners, choose and discard their menfolk, in a kind of matriarchy, a curious reversal for macho Mexico.

More traditionally, an unemployed man from a farming area comes to the city, finds a job, then sends for his wife and children. Take short, dark Alfredo Rios Perez, age 25 (his best estimate), from a village in the state of Hidalgo. "I left home maybe six months ago," he says. Why? "To better myself!" As a farm worker, he earned about \$6 a week; now, in construction, he makes six times that - enough to bring his wife and three children to the capital. He proudly straightened a mud spattered hard hat.

EXTRACT 3

Dam Diop is the chief of Temefeul, a small village of 600 people near Diourbel, the capital of Senegal's 'peanut basin'. "In the old days," says Diop, "we used to get a fine harvest of peanuts and millet every year. Now, even when we have good rains, we're lucky if we get a quarter of what we used to get." When Diop was a boy - he's in his thirties now - the peasants of Temefeul had to do everything by hand - sowing, weeding, harvesting. One man could cultivate about a third of his land each year, This meant that two thirds of the land always lay fallow, its fertility being revived by the manuring of the nomad's cattle and by a rest from cultivation.

But gradually we began to change our farming methods," explains Diop. The introduction of horse drawn machinery meant that each family could cultivate all its land all the time. The change was welcome. "Life became easier. With the new methods we were no longer falling sick from exhaustion every three days," recalls Diop. They began to use artificial fertilizers and less manure, and the government introduced pesticide spraying programmes. For a while yields improved, but the strain on the soil soon began to tell. Pest problems are worse today than ever before: the soil is too "tired" to produce good crops, and the peasants, confronted by falling peanut prices, can no longer afford to buy in artificial fertilizer. Nor can they afford to revert to the old method of fallowing: the population has been steadily rising and families seldom have enough food to see them through the year.

The *RSPN*
Conservation Education Unit's
Project-1994 on
FARMING MATTERS

BACKGROUND

The Royal Society for the Protection of Nature is the only non-governmental organization in Bhutan dedicated to Conservation Education. The Society's primary aim is to create awareness in the people of the need to protect and conserve the local, regional and global environment. The RSPN has maintained a close working relationship with the Department of Education to implement its projects in schools, colleges and training institutions.

The main objective of the Conservation Education Programme is to sensitise people towards an understanding of the physical and human processes that interact to shape the environment and to foster a concern for and a commitment to its quality through the sustainable management of natural resources.

PROJECT DESCRIPTION

The proposed project for 1994 is **Farming Matters**, the third in the series under the Environmental Award Scheme, as the RSPN feels the urgency of addressing an issue which deals with the impact of farming technologies, chemical fertilizers, pesticides, and improved varieties of seeds on farming.

The project will be implemented in the schools, colleges and training institutions and completed within the academic year which runs from March to December.

The Punakha-Wangdi valley has been selected for piloting the present project chiefly for the presence of CARD and NRTI, which are slated to play a pivotal role in its implementation.

GOALS

- ♦ To promote an awareness of environmental problems related to new farming methods;
- ♦ To create an overall understanding of resistive seeds and environmentally safe farming methods;
- ♦ To obtain a first hand knowledge into the side effects of chemical fertilizers and pesticides on soil, insects, animals and aquatic life;
- ♦ To communicate the findings to the wider community.

STATEMENT OF NEED

The present Bhutan has a population of 600,000 which is increasing at the rate of 2.5% annually. In most developing countries, deforestation has resulted from population explosion. To forestall the same, the RGOB has decided to stop issuing new land to the people. This will generate increasing pressure on the existing farm land (9% arable land) insofar as the farmers will tend to use more fertilizers/pesticides to maximise output. This project becomes important as most Bhutanese are unaware of the impacts of the excessive use of artificial fertilizers and pesticides.

The students, teachers and farmers of Bhutan will benefit from the project as it emphasizes the importance of environmentally friendly farming practices. This in turn will lead to steps taken that are necessary to preserve the environment.

THE GUIDEBOOK

The design of a guidebook has been completed on the project 'Farming Matters'. The project guidebook contains different ways to understand food and its importance, the problem of famine faced by the world due to food shortage, the use of pesticides/fertilizers to boost food production so as to meet the demands of an ever increasing population.

The second part contains surveys to ascertain where our country stands in terms of food production, ways of farming and the use of organic/inorganic pesticides and fertilizers. Students will conduct interviews with farmers and agricultural officials *apropos* relevant issues *vis a vis* the farming systems prevalent in the kingdom and focus on their long term environmental impacts.

The third part will enable students and teachers to recommend alternative solutions and actions to the problems encountered.

PLAN OF OPERATION

1. *Completion* of education package book (begining of July)
2. Workshop for teachers from seven schools and NRTI (mid-July)
3. Video shows in all the participating schools (July end)
4. Distribution stationary (mid-August)
5. Monitoring on two occasions separated by a fortnight (August end & mid-September)
6. Exhibition - evaluation and public viewing (8, 9 and 10 October)
7. Progress Report (October end)

MONITORING AND EVALUATION

The RSPN will monitor and evaluate the project through field visits spent analysing the students' participation. Close contact with the teachers will provide an assessment of the relevance and suitability of the resource materials and allow on the job advice to be given. Each school will organize, at the end of the project, an exhibition whereby the students will present their finding to the public. The participating schools will finally submit their project reports based on which the Environment

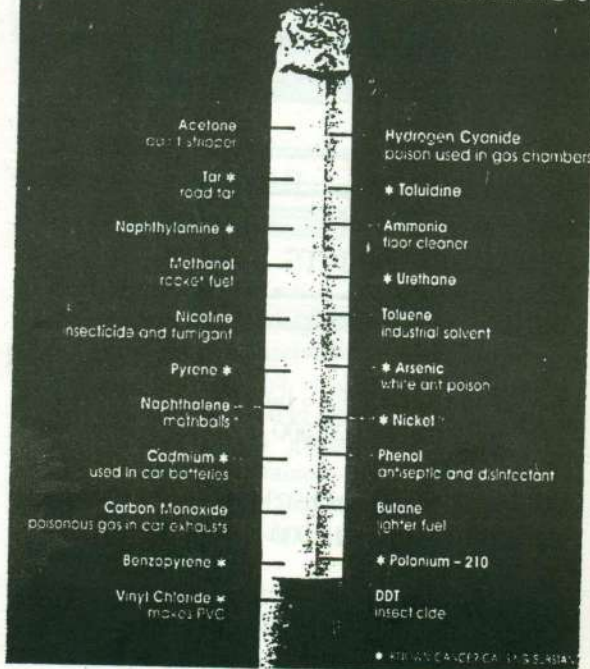
Award will be accorded. The gist of the reports will then be compiled and published to raise a wider awareness of the issues. The project will be repeated after a period of eight years (as there are 8 project themes under the EAS) to facilitate an evaluation of how the project helped to change the attitude of the target groups.

BUDGETARY REQUIREMENTS

<i>Printing</i> and publication of teacher's handbook (200 copies)	Nu 20,000
Field equipment and teaching materials	Nu 40,000
Slides, photographic materials, video tapes	Nu 25,000
Field trips for the winners	Nu 50,000
Training workshop for teachers/exhibition	Nu 20,000
Monitoring and evaluation visits	Nu 10,000
Telephone, mail, transport and miscellaneous	Nu 10,000
Total	Nu 175,000



THE PUFF THAT KILLS.



Smoking has not always been regarded as a health hazard. In fact, in the 19th Century, it was regarded by some as beneficial, with some doctors suggesting that smoking was antiseptic, killed germs and protected against diphtheria.

Any suggestion that smoking was a danger to health was based on guesswork rather than scientific investigation, and therefore easily ridiculed. Little attention was given to doctors who suggested that smoking was responsible for epilepsy, male sterility and female facial hair!

Today medical opinion on the connection between smoking and diseases such as lung cancer, chronic bronchitis and heart attack, is based on a considerable amount of

Science Versus Myth Smoking

scientific work involving millions of smokers and statistics on the causes of death for the whole population.

Surprisingly, there are still a few people who believe in the myth that smoking is harmless, and who support their view with nothing more scientific than: "I knew someone who smoked like a chimney and lived to 84."

FACTS ABOUT SMOKERS

Out of every 1,000 smokers, one will be murdered, six will die in road accidents and 250 will die from smoking-related diseases.

In Britain, 95,000 die from smoking-related diseases each year.

In Britain, 38,000 die from lung cancer each year, of whom 90% are smokers, whereas only 34% of the population smoke.

The Countdown to Lung Cancer: Getting Tough with Tobacco

1939

Dr F H Muller (Germany) linked lung cancer with smoking for the first time.

1950

Dr Ernst Wynder and Dr Everts Graham (United States) surveyed 650 men with lung cancer and found that 95% had been smoking for 25 years or more.

1951

Dr Richard Doll and Professor Austin Bradford Hill (Britain) studied 1357 patients with lung cancer and found 99.5% were smokers. They concluded that "Smoking is a factor, an important factor, in the production of cancer in the lung".

1962

Report of the Royal College of Physicians (Britain) "Smoking and Health" drew on a number of surveys to conclude that smoking increases the risk of several diseases, especially lung cancer.

1964

Report of the Surgeon-General (United States) came to the same conclusion.

1966

The Federal Act comes into effect, requiring warning labels on cigarette packets.

1971

Cigarette advertising completely banned on major media channels such as TV and media.

1983

Report of the Royal College of Physicians (Britain) states that 100,000 deaths each year are caused by smoking.

1993

JAN The Environment Protection Agency's report identifies second hand smoke as health risk.

MAY Limited smoking ban in public areas of the House of Representatives office building and the House half of the Capitol takes effect.

JUN Postal Service prohibits workplace smoking.

AUG Senate votes to restrict smoking in federal buildings.

NOV Congress proposes ban on tobacco advertising in movie theatres and stadiums and strengthening warning labels on cigarettes.

1994

FEB Food and Drug Commissioner David Kessler begins to change regulation of tobacco products.

APR Congress interrogates tobacco firm executives about charges of nicotine manipulation in cigarettes.

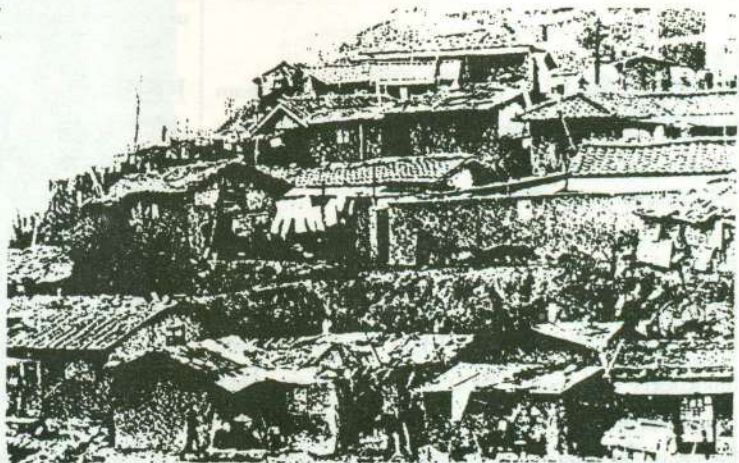
MAY Legislation to prohibit smoking in public places clears House Panel. Amtrak bans smoking, except at some platform stops during overnight trips.

JUN Brown and Williamson Tobacco Corporation's alleged production of Y-1, a genetically engineered high nicotine tobacco plant, comes under the scrutiny of the House Energy and Commerce Subcommittee on Health and the Environment.

POOR HOUSING AND HEALTH

Look at the partly completed table on this page. Then study the boxed words below and write in where you think each one should go in the table.

- ◆ Provide enough water to each house and drains to get rid of waste water.
- ◆ Support for poor households to enlarge their houses and improve ventilation.
- ◆ Provide garbage disposal services and instal drainage pipes.
- ◆ Supply clean water to all houses.
- ◆ Skin and eye diseases linked to dirty water.
- ◆ Stagnant pools and household wastes attract rats and insects which can pass on diseases.
- ◆ Give the poor the legal right to live on the land where they have built houses and supply water and sewers.



Housing Problem	Related Health Problem	Action needed by the government
Dirty water supply	Many diseases including diarrhoea, dysentery, typhoid, hepatitis.	
Poor having to build houses on an illegal site	Government does not provide water supply and sewers so same health problems as those listed above are common.	
Overcrowding and lack of fresh air	Makes it easier to catch diseases like flu, TB and diptheria where infection is through the throat.	
No drainage and garbage disposal		
Lack of water for washing		

Besides looking for case studies, making poems and paintings, interesting people were interviewed about Agenda 21. They gave us a background and sense of how important it is to think hard now about the next century.

The preceding generations have done much which is good and also much that will have to be undone - both within each country and in the international community. Like you, I feel that politicians and governments are too slow in taking urgently needed decisions. But I urge you to seek to effect change only through democratic means. Never resort to force. The 20th century has demonstrated too well that force does not solve problems. You have your whole lives ahead of you - make it happy for yourselves and for others.

Mikhail Gorbachev

Helping developing countries is not foreign aid. It's an investment in global environmental security. It is as important for the developed countries who give aid as it is for the developing countries who receive it. The most powerful thing you can do to make sure Agenda 21 is put into action is to do it in your own life and in your own community.

Maurice Strong,
Secretary General UNCED

Sharing, caring and cooperating need to characterize 21st century human relations if we are going to put an end to suffering, exploitation and war. How do we reinvigorate the world's political systems? Through hard work, commitment and non-stop campaigning. Nothing comes easy, so young people need to get angry, get active, get educated and get involved.

Anita Roddick,
Body Shop

It seems to me that the most important thing to do is to change attitudes. The way people think about life, the habits that they have. Agenda 21 doesn't work unless people make it work. I want to use young people to sensitise all the rest of the population. I think young people have an enormous responsibility to remind their parents of what's happening and to make them care about the future.

The Rt. Hon. John Gummer,
Minister of Environment, UK

The real importance of Agenda 21 is that it responsabilizes all of us. No one sector of society is going to make it happen, no one country, no one United Nations. It's all of us.

Tariq Banuri,
Sustainable Development Institute
of Pakistan

We must reconcile the relationship between humans and nature. Find the balance and respect it. I just hope that the energy you have now doesn't dissipate by the time you grow up and move into positions where you can do something. What's important is to maintain the energy needed for change. Having more women in charge would be a good place to start.

Kevin Godley,
Media Lab, One World

We asked is wise, wise man many questions - 'Who's going to do this? How do we force this government or that company to act?' ... Always he steered our thoughts away from thinking what other people might or might not do, to what we could do ourselves. That's where Agenda 21 really begins: with us!

Report on an interview with
Tommy Koh, Singapore

For me the most important challenges are the alleviation of poverty, changing consumption patterns and reducing population growth. If we want to say that the world has become more sustainable, we have to see significant progress on these three areas. Also, people need to accept the responsibility to others and to future generations. The message of Agenda 21 is to encourage as many people as possible to connect with each other - to exchange experiences and to seek answers.

Nitin Desai,
Under-Secretary General,
Policy Coordination
& Sustainable Development

At the end of every discussion, we always come back to the question of consumption. You can't bring up a new generation of people telling that they can have everything we have and more. They can have more but we will have to measure its quality differently and measure poverty differently as well. We're living on a borrowed planet here. It's critical that young people grow up with a concept of their place in the community and their place on the planet which is different from the one made by the last two generations. They have to see themselves in the context of the whole ecosystem.

Rachel Kyte,
Director,
Women for Environment
and Development

In connection with the forest fires in Punakha Dzongkhag, Mr Kuenga Norbu, the In-Charge of the Forest Range Office, Punakha, was interviewed by Dr K. Ramadevi, RSPN Stringer, on 12 March 1994.

S: Good morning, Mr Kuenga Norbu. I am here on behalf of the RSPN to know certain things about forest fires on behalf of our Rangzhin readers.

KN: A very good morning! You are welcome.

S: We heard that you were the first person to suspect the forest fire which occurred recently near Samdenkha. How could you do that? Do you have any special devices or training to enable you to detect these fires before others?

KN: Yes, I was the first person to detect it but no, I have neither special devices nor training for the purpose merely my five senses. Of course, my training does help. An untrained person must depend only upon his sight to detect a fire.

S: Can you please explain this in some detail?

KN: O.K.. First of all, a person should develop some awareness towards fire accidents. Secondly, we need some training to develop fire sense. This means detecting

- ♦ the smell of burning things
- ♦ the smoke clouds in the atmosphere
- ♦ the wind direction and movement of smoke clouds

S: What immediate action should one take after suspecting a fire or being reported one?

KN: The immediate action to take is to march towards the suspected or actual site with a patrolling team or forest staff. Even a minute's delay can cause infinite damage.

Just like doctors, forest staff should be alert always.

S: Do you have a special team for extinguishing fires?

KN: So far, we have no special team. We always take the help of local people. As yet we've had no problems because each and every forest staff is instructed at the Training Institute at Taba to extinguish fires.

At Thimphu, there is a team known as "Protection Range". It is not meant specifically to put out fires but will do the job along with the detection of illegal activities in connection with logging and poaching.

INTERVIEW

S: Are the forest staff provided with any special tools with which to put out fires?

KN: Actually our Range Office has no such equipment but all our staff are trained to use the tools that are available locally such as spades, shovels, rakes, etc..

S: Don't you feel handicapped without special firefighting tools?

KN: Of course, at times, we feel handicapped without special tools and implements as we have to fight the fire only in the wind direction. But if it is a groundfire, we don't require much equipment. It can easily be put out by smothering with the help of branches. It is in the case of the crown fire that special equipment is required. It also depends on the topography.

S: What is the most frequent cause of forest fire in Bhutan?

KN: Mainly the negligence and carelessness of people. In Bhutan, forest fires due to natural calamities are rare indeed.

S: If your Division is able to trace the offender, what is the penalty?

KN: Usually the offender will be charged and imprisoned by the district court. If we are unable to identify the offender, the people under the region where the forest fire occurred will be fined collectively. The amount of fine will be decided and collected by the district court.

S: Is that fine a compensation for the loss occurred?

KN: No, no. It is only a nominal penalty for their carelessness and it is to make them understand the importance of forests. They cannot afford the amount that has been lost in most cases as each acre of forest consists of about 300 seedlings which cost around Nu 2 each. If one acre is burnt (ground fire) there is an approximate loss of Nu 600. Imagine the loss that takes place when 200 acres or more are razed!

S: Did you ever from this Range Office identify any offender?

KN: Unfortunately, so far, we haven't.

S: Is there any reward offered for information that may lead to the apprehension of such culprits?

KN: As per my knowledge, we reward persons who report illegal forest activities like logging and poaching but not forest fires. Another thing is noone reports offenders connected with forest fires as most villagers are involved in the same at some time or the other. They have an understanding among themselves.

S: Every week we see an advertisement in the Kuensel by the Forest Division about

preventing forest fires and protecting the forests. Do you think that villagers can read and understand it?

KN: Of course, that message may not reach the villagers. The actual offenders may not know how to read.

S: In that case, what role does your Range Office play in educating the villagers?

KN: Till today, no special programme has been launched to educate illiterate villagers through our Range Office. But in 1992, in collaboration with RSPN, a programme was given to the forest trainees at Taba to educate the villagers. Besides that, I don't recall any such programme to develop awareness among villagers with respect to forest conservation. If such projects do come up, it would be better to use slides, photographs, songs, dramas, etc., it would be more beneficial than written material. Soon NRTI students will come out as extension workers. Lets hope they take up all such work in future. (Smiles)

S: Can you please give statistics of the total loss from the year 1990 till today.

KN: I am extremely sorry. It is under process now. Once we complete

it, we will give you a copy.

S: Among all the natural resources, forests are the only renewable ones. What are the measures taken by the Forest Division to compensate the loss caused either by forest fire or by logging?

KN: Actually replantation activity is very limited in the areas affected by logging and forest fires. But if we cut down the trees that are marked, we need not worry much about replantation. New plants will grow automatically by themselves. Even in the burnt areas, so far, only seedlings are being damaged. The big trees haven't been burnt by the fires to that extent. Surprisingly after

INTERVIEW



every forest fire, the Chirpine trees grow very rapidly. Community forestry plantation has been done by this Range Office of Punakha at three locations: Jomlehang, the cremation ground and Tana.

S: It is very interesting to hear all these things from you. Can you let me know now in what way our school children can help in your work. Is there any special scheme for children to improve the forest?

K.N.: Actually children are the main connecting link between our Division and the illiterate villagers. We need their help a lot to communicate the importance of forest conservation to their parents and neighbours. That is why, as a first step, to raise awareness among children, the Coronation Day of His Majesty is co-celebrated as Social Forestry Day since 1984.

S: Thank you very much for spending a lot of your precious time on us. I would like to request you to kindly end with a message to our Rangzhin readers.

K.N.: Students are the main agents between their parents and our Division. They can easily understand what they see

going on around them. That is why information about forests is being added to their curriculum. If they can pass that information to their parents effectively, and if they show some interest not only in planting trees on Social Forestry Day, but also in protecting them and seeing them grow, it is more than enough at their age. If they can do these things, not only will our Division be grateful, but so too the entire

ENVIRONMENTALLY FRIENDLY TIPS

- ♦ Reduce number of animals by using hybrid varieties
- ♦ Advise the farmers to cultivate grass napier, guinea, alfafa
- ♦ Bare mountains should be sprayed with grass seeds (Doob grass)
- ♦ Encourage sanitary latrines with local technology, e.g., using oil drums
- ♦ Advise farmers to cull rather than kill animals
- ♦ Promote solar water heaters in rural areas where electricity is unavailable
- ♦ Encourage farmers to maintain poultry (bird meat is better than animal)
- ♦ Ban the use of deer skin as seat covers

Unsustainable consumption, particularly in industrialized nations, is increasing the amount and variety of wastes. Quantities could increase four to fivefold by the year 2025.

Agenda 21

During the race for progress, most of us forgot to collect the stuff we dropped along the way. That's the reality which is now catching up with us. It's like a huge snake that's been coiling itself around us. Now it's beginning to hurt. We've been producing more and more waste including chemicals and nuclear material that will hang around and be dangerous for hundreds, even thousands, of years. It's time to panic - and to act! Soon there will be no more room for these mountains of rubbish.

Agenda 21 devotes three chapters to this problem: first it looks at solid waste - sewage, household garbage. Second, at hazardous waste, poisonous stuff, lethal to us and our environment. Lastly, at nuclear waste that comes from nuclear power stations and bomb factories.



RANQZHIN

DANGEROUS GARBAGE

SOLID WASTE

This is set to increase four to five times by 2025. In developing countries, less than 10% of human sewage is treated. If we do nothing to change this, by 2025 the planet will be engulfed in a mountain of human manure!

HAZARDOUS

The industrial revolution has changed life in developed countries from a struggle of existence to the complex high-tech experience it is today. Industry works with increasing speed to fulfill our various needs.

The dark side of this is all the poisonous leftovers nobody seems to have knowledge, interest or money to treat. Each year, 260 million tons of hazardous waste is produced in the USA - many times that in the rest of the world. Worst, poorer countries have become dumping grounds for the hazardous waste of rich nations. Out of sight, out of mind!

NUCLEAR WASTE

Our invisible gift to future generations! Every year, tons and tons of it are produced and trucked across



industrialized countries. No new nuclear power stations are being built, but the problem of several hundred existing ones remain.

There is no method of storage that is guaranteed to be safe in an earthquake. By the year 2000, there'll be 100,000 truckloads of radioactive waste stored in Great Britain alone! This is a problem our generation will have to face and one that will be around for our great, great, great grandchildren.

TOXIC CHEMICALS

Chemicals are a vital part of our modern world used in virtually every industry and human process. Trouble is, many of them are 'toxic' or poisonous. Toxic chemicals that are banned in rich countries are transported and illegally dumped in poor countries, which do not have the capacity to deal with them. There is currently no global agreement on trade in toxic chemicals.

Taken from
"RESCUE MISSION - Planet
Earth", a children's edition of
AGENDA 21

WASTE RECYCLED DOWN UNDER

Ian Anderson
in *New Scientist*

Discarded plastic bottles are being turned into pipes as strong as concrete in South Australia by Rib Loc. Melted polythene resins are extruded into plastic strips. These are wound onto drums and fed into a machine that locks them together. Thin bands of steel strengthen the outside. These are cheap alternatives to plastic and can be used for flood and stormwater drains, sewers and irrigation systems.

TREES GROW ON MONEY!

Newsweek International

England's Middleborough Botanic Centre is turning old bank notes into garden compost. Seems the cotton based paper and also packing materials make outstanding compost and the ink is non toxic. For best results, the cash is mixed with silt and starch, both of which would otherwise end up in land fills.

GULF WAR LEFT GULF CLEANER

Mike Lemonick
in *Time*

Lower levels of petroleum contamination in the oysters revealed that parts of the Persian Gulf were actually cleaner after the war than before it. This is due to sharp reduction of tanker traffic in this part of the Gulf which more than made up for the effects of war related spills.

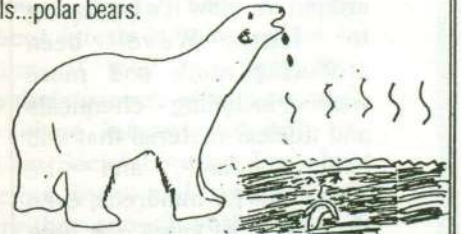
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S****POLAR BEAR BLUES**

Clyde Farnsworth
in the *New York Times*

Polar bears are at risk due to chemical pollution, global warming. Poly. chlorinated biphenyls (PCBs) in some bears are dangerously high.

These PCBs that are produced in Eastern Europe, Asia and other less developed countries, are borne by winds to the Northern seas and absorbed by marine life in a chain: algae...small...plankton...large plankton ...cod...seals...polar bears.

**PALATIAL ECO-DISHARMONY****DOWN TO EARTH**

Residents of Geneva, Switzerland, have opposed the building of twelve palaces by King Fahd of Saudi Arabia.

The king had received permission to build the palaces and an underground car park, which are to cost about \$ 30 million, next door to his Geneva residence. The protestors, however, say that the project will harm the surrounding woodlands.

They say that the work on the park for 8200 cars might disturb the flora and fauna in the small forest bought recently by the king for the project. When it was sold in 1977, the forest had been declared an ecological protection zone.

WORLDWIDE

IDEAS AND ENERGY

What can we do? So many people ask this question, we almost expect the answer, "Nothing. Not true! The Rescue Mission, under the auspices of Peace Child International and in association with United Nations, conducted the following interviews and found that we're all doing something positive. We're not unusual: millions of kids are doing many different things already. This is us!

Dann, 22, USA
I'm an actor. I perform with a theatre group called Klub Tribe which does plays on social and environmental issues. We rehearse and perform every weekend. I tour with the group throughout the States and individually with Peace Child International.

Ronnie, 19, USA
I am an environmental and political playwright. I always promote a green line in speeches and debates but there is not much enthusiasm or knowledge. Personally, the Rescue Mission is important because it will help me begin my own movement at home.

Jose Luis & Victoriano, 25 & 15, Chile

We took part in the Latin American Encounter on Ecology - Jose designed the poster and all the art work and cartoons for this. As a result the group 'Academia de Ciencias' of San Juan Evangelistica School started work on the Agenda 21 project. We plan to spread the Rescue Mission throughout South America.

Hemara, 18, Switzerland
I started an ecological group at my school. We organize awareness and action campaigns. The Rescue Mission has shown me how inseparable environment and development concerns are, an emphasis I'd like to bring to the group.

Uli, 18, Germany
I started ecological activities when I was President of my Student Council - organizing the recycling of paper, collections, information boards, etc. I also publish eco-issues in the European Youth Parliament.

Aranca, 19, Spain
Environment has never been a topic in my school, nor development! It is just starting here and Rescue Mission is the push we really need. I will be talking to my Education Minister to get it into the curriculum.

Tanya, 19, Italy
I am working with the press, politicians and school officials to get a session of the European Youth Parliament in Milan. It's hard work! I think the Rescue Mission will enhance the role of the youth.

Viola, 12, Italy
I try to keep my environment clean. The children of our school wrote to the mayor to ask for recycling facilities to be installed on campus - they were provided. The Rescue mission will help us do more.

Sheku and Michael, 20 & 22, Sierra Leone
We organize an eco-clean up day every month, and have symposia to improve the situation of women in our society. It's a great time in our country: our President is 24 years old and he's hardworking. We want to have a campaign to teach everybody to read and write.

Mia, 19, Finland
I do volunteer work in a shop that sells Third World products. The money goes to the people who make the goods, not to the middle-men. We also pressure the government about their policies towards developing countries.

Debbie, 16, England
I go to an incredibly active school. Every kid plants an acorn when they arrive. We have a sister school in Kenya to which we send computers and books; they send us craftwork which we sell.

Charlotte, 18, Finland
I am active in a nationwide students' association which encourages youth to influence their environment. I have also been raising money for youth related development projects in the Third World.

Agata, 17, Poland
I have recently joined the Polish Ozone Group which writes essays and articles on all matters to do with ecology. We try to teach people and raise awareness. I shall work to spread the Rescue Mission in Poland.

Katya, 16, Russia
I work with Rzhev Peace Child Group on plays and musicals on international themes. We really need the Rescue Mission in my country to make us feel united with the rest of the world.

Blanka, 17, Czech Republic
I'm a member of the UNESCO club in my town. We arrange exchanges with schools in other European countries. We have debates on education and development issues.

Danijela, 19, Croatia
I started Peace Child in Croatia doing international theatre programmes and leadership training in areas like Human Rights and Agenda 21. My major concern now is ending the war.

Ivan, 17, Serbia
With the war, it's impossible to do anything. We had a magazine by students, *What do you want?* It ran out of money and the editors went to the army. With the rescue mission, I hope we shall start a big youth campaign through all former Yugoslavia.

Chameal, 17, Thailand
I work with the Greenspace Club which works to create environmental awareness throughout the school. I am hoping to set up a youth watchdog group to see that the government

Birce, 17, Turkey
We don't have a club but kids in our school are very concerned about the environment. We plant trees and have talks about the air pollution problems in our city, which are sometimes bad enough to close the school.

Anuragini, 20, India
I work with 'Kalpaniksh' a student environment group fighting to preserve a 7,777 hectare Ridge which they are threatening to 'develop' into a park. It is the last piece of unspoilt land in our city region. We also fight for a cleaner city.

Andreanna & Portia, 11, Phillipines
We belong to Environmentalists in the Classroom. We ensure that the whole school is clean - it's hard because students are so untidy. Many of us demonstrated for a total ban on logging in our country. It's horrible when you go out into the country; all the hills are bald. The Department of Environment and Natural Resources ignored us. We need a Day of Access!




Mary, 15, Nigeria
We have an Environment Conservation and Preservation Club which arose out of our work on Agenda 21. We take care of the school environment, go to villages, etc. We will strongly promote Rescue Mission.



Suhail, 18, Tanzania
I helped Roots and Shoots in Dar es Salaam two years ago and helped it spread nationally and internationally. It is run entirely by students. We do projects on protecting coral reefs, mangrove swamps and the Red Colobus monkey which is unique to Zanzibar.

Bekha, 14, India
To tell the truth, I haven't done anything until the Agenda 21 work. No child does, because children don't think they have any power. I am so amazed to see how much power we could have.

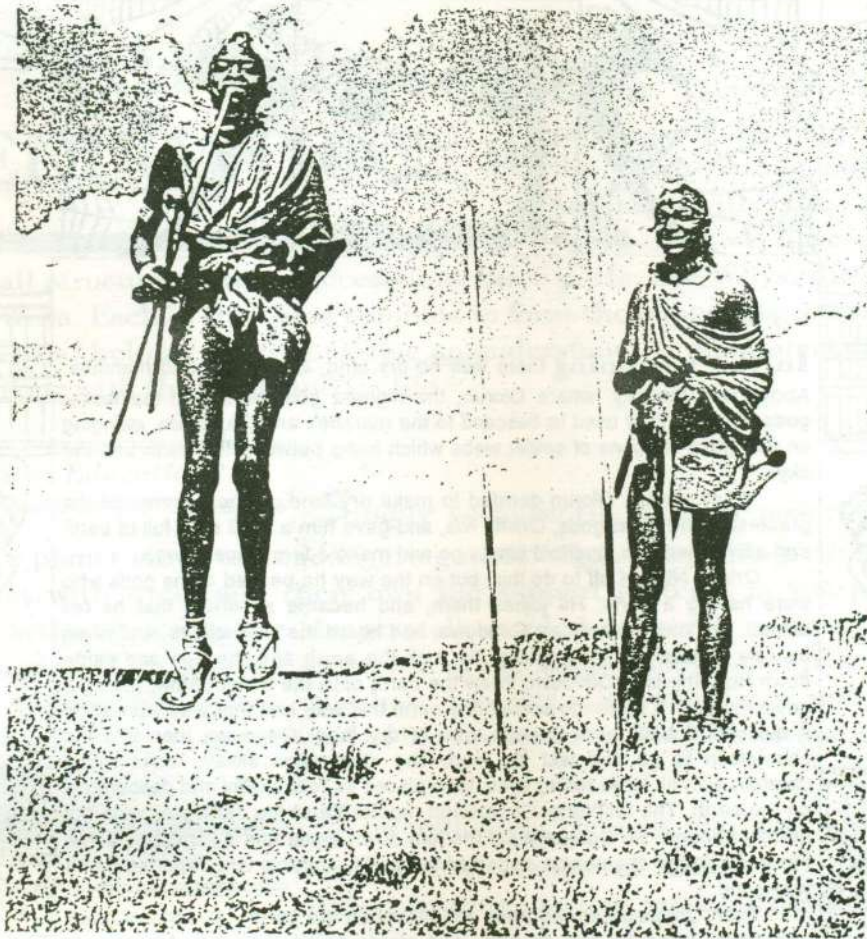
Jeremy, 15, Australia
I organized the Voice of the Children hearings in my state last year bringing the concerns of kids to state legislators. This year, we go nationwide. I also edited books of children's concerns and ideas. We're publishing the third this year.

FLORA/FAUNA IN A NUTSHELL (Know your animal/bird/plant)

Name	Feature	Description
<p>A. The Red Panda or Cat Bear (<i>Ailurus fulgens</i>)</p> 	<ol style="list-style-type: none"> 1. Local name 2. Size 3. Distinctive characters 4. Distribution 5. Habits 	<p>Aamchu dongka</p> <p>Head and body about 2 ft (60 cm); tail 16 in. (40 cm); weight 3 – 4 kg.</p> <p>Its rounded head, large erect pointed ears, stumpy muzzle and short hairy soled legs, combined with its bright chestnut colouring with ringed tail. Face and lower lips, white. There is a vertical red stripe from just above the eye to the gape.</p> <p>The Himalayas, Upper Burma, Southern China.</p> <p>Sleeps in trees during day. Descends in evening to hunt for food. Sight, hearing and smell not especially acute. Largely herbivorous (roots, grasses, leaves) though eggs, insects, grubs may be part of diet.</p>
<p>B. Walnut (<i>Juglans regia</i>)</p>  	<ol style="list-style-type: none"> 1. Local Name 2. Distinctive characters 3. Distribution 4. Uses 	<p>Ta shing</p> <p>Grows upto 25 m. Easily recognized by its big compound leaves. Each leaflet is 5 to 15 cm. long. Flower hang down in April-May in long catkins (7-15 cm). At a certain height, the main stem splits into many branches to form the crown.</p> <p>Found from Western to Eastern Bhutan but is more common towards the east (Shemgang, Khaling). Grows at approx. 1500-2500 m in mixed broadleaved forests. Also planted in many places for its fruit and valuable timber, at Lumichawa between Dochula and Mendegang.</p> <p>Best known for its edible fruit. Wood is highly valued, because it is very decorative and durable. Mostly used in furniture. Bark is used for making black dye.</p>

Name	Feature	Description
C. The House Sparrow <i>(Passer Domesticus)</i> 	1. Local name 2. Size 3. Distinctive Characters 4. Range and Habitat	Jichu Nyazim 14-15 cm Male has grey crown white cheeks and large black bib. Dark stripe through eye. Mantle chestnut streaked black, rump grey. Wings and tail brown, former with short white wingbar. Female, brown all over, paler beneath buff stripe behind eye. Very gregarious - lives in human settlements; rapid flight, hops and flicks tail. Many chirrups and cheeps strung together into song. Widespread. Mostly non-migratory.
D. Rose <i>(Rosa macrophylla)</i> 	1. Local name 2. Colour 3. Appearance 4. Distribution 5. Flowering season	Sewai metog Pink with red pistules Erect shrub; stems paired; straight prickles below leaves. Leaves ovate elliptic. Flowers terminal on short lateral shoots. Haa, Thimphu, Punakha, Bumthang and Mongar. Hillsides and forest margins between altitudes of 2100 - 3800 m. June - July

FLORA/FAUNA IN A NUTSHELL (Know your animal/bird/plant)

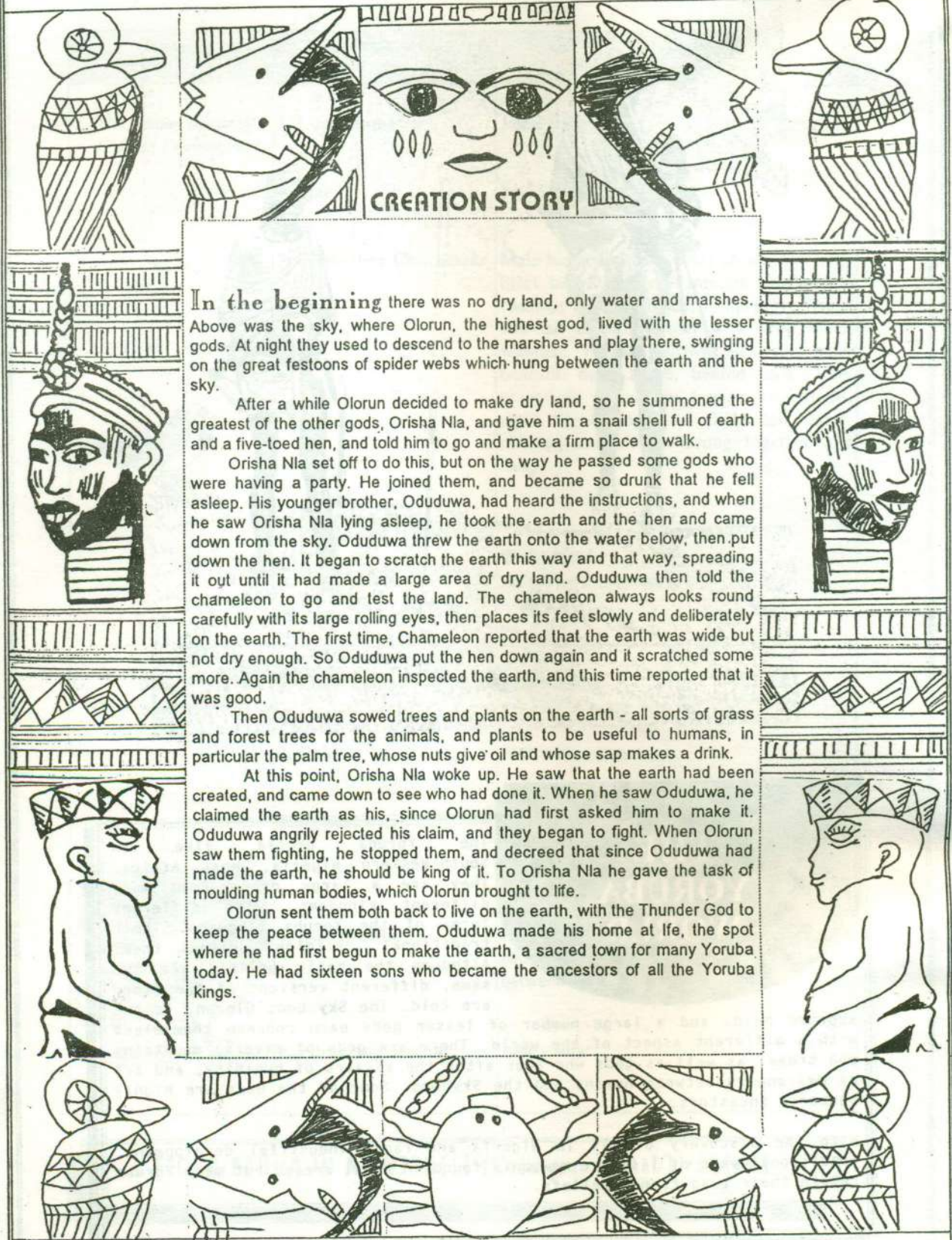


THE YORUBA WORLD

The Yoruba people live in South-Western Nigeria, West Africa. They are a large group from many different kingdoms, with different forms of the Yoruba language. Their traditional religion unites them. Although the basic beliefs are the same, different versions of the story are told. The Sky God, Olorun, is the

supreme being and a large number of lesser gods each concern themselves with a different aspect of the world. There are gods of rivers, mountains and trees, as well as gods who look after the affairs of humanity, and act as messengers between humans and the Sky God. Some of the Gods are highly honoured ancestors.

With the discovery of oil in Nigeria and rapid industrial development, traditional ways of life are now only found in rural areas, but many Yoruba retain their traditional beliefs.



CREATION STORY

In the beginning there was no dry land, only water and marshes. Above was the sky, where Olorun, the highest god, lived with the lesser gods. At night they used to descend to the marshes and play there, swinging on the great festoons of spider webs which hung between the earth and the sky.

After a while Olorun decided to make dry land, so he summoned the greatest of the other gods, Orisha Nla, and gave him a snail shell full of earth and a five-toed hen, and told him to go and make a firm place to walk.

Orisha Nla set off to do this, but on the way he passed some gods who were having a party. He joined them, and became so drunk that he fell asleep. His younger brother, Oduduwa, had heard the instructions, and when he saw Orisha Nla lying asleep, he took the earth and the hen and came down from the sky. Oduduwa threw the earth onto the water below, then put down the hen. It began to scratch the earth this way and that way, spreading it out until it had made a large area of dry land. Oduduwa then told the chameleon to go and test the land. The chameleon always looks round carefully with its large rolling eyes, then places its feet slowly and deliberately on the earth. The first time, Chameleon reported that the earth was wide but not dry enough. So Oduduwa put the hen down again and it scratched some more. Again the chameleon inspected the earth, and this time reported that it was good.

Then Oduduwa sowed trees and plants on the earth - all sorts of grass and forest trees for the animals, and plants to be useful to humans, in particular the palm tree, whose nuts give oil and whose sap makes a drink.

At this point, Orisha Nla woke up. He saw that the earth had been created, and came down to see who had done it. When he saw Oduduwa, he claimed the earth as his, since Olorun had first asked him to make it. Oduduwa angrily rejected his claim, and they began to fight. When Olorun saw them fighting, he stopped them, and decreed that since Oduduwa had made the earth, he should be king of it. To Orisha Nla he gave the task of moulding human bodies, which Olorun brought to life.

Olorun sent them both back to live on the earth, with the Thunder God to keep the peace between them. Oduduwa made his home at Ife, the spot where he had first begun to make the earth, a sacred town for many Yoruba today. He had sixteen sons who became the ancestors of all the Yoruba kings.

EARTH EDUCATION

Earth Education is the process of helping people live more harmoniously and joyously with the natural world. And we have divided

the overall structure of that process into three parts: the Whys, the Whats, and the Ways. Each of the three combine to form the supporting pyramid for the process of helping others building an understanding of, appreciation for, and harmony with the earth and its life.

Why Earth Education?

Simply because the human passengers on board the planet earth are endangering most other living things that share the planet with them and their own life support systems in the process. Today, earth advocates are desperately needed to serve as teachers and models and to champion the existence of our fellow non-human passengers. We also believe that people who have broader understandings and deeper feelings for the planet as a vessel of life are wiser and healthier and happier themselves.

What Does It Include?

Understanding, feeling and processing are the key components of the earth education edifice. In order to live more in harmony with other life on our planet, people first need a basic understanding of its ecological systems and communities. Next, they must feel a deep and abiding emotional attachment to all life. And finally, they must begin processing their new understandings and feelings by making changes in their own lifestyles.

How Is It Accomplished?

First, careful structuring provides the framework for creating complete programmes with adventuresome, magical learning experiences that focus on specific outcomes. Second, earth education immerses its participants in lots of rich, firsthand contact with the natural world. And third, relating these experiences to their own lives is encouraged by providing individuals with time to be alone in natural settings where they can reflect upon both the other life around them and their own actions.

THE WHYS	THE WHATS	THE WAYS
<p>preserving</p> <p>We believe the earth, as we know it, is endangered by its human passengers.</p>	<p>understanding</p> <p>We believe in developing in people a basic comprehension of the major ecological systems and communities of the planet.</p>	<p>structuring</p> <p>We believe in building complete programmes with adventuresome, magical learning experiences that focus on specific outcomes.</p>
<p>nurturing</p> <p>We believe people who have broader understandings and deeper feelings for the planet as a vessel of life are wiser and healthier and happier.</p>	<p>feeling</p> <p>We believe in instilling in people deep and abiding emotional attachments to the earth and its life.</p>	<p>immersing</p> <p>We believe in including lots of rich, firsthand contact with the natural world.</p>
<p>training</p> <p>We believe earth advocates are needed to serve as environmental teachers and models and to champion the existence of earth's nonhuman passengers.</p>	<p>processing</p> <p>We believe in preparing people to live more harmoniously and joyously with the earth and all its passengers.</p>	<p>relating</p> <p>We believe in providing individuals with time to be alone in natural settings where they can reflect upon all life around them and their actions.</p>

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There are four keys you will have to learn to become an earthkeeper.

The first key stands for Knowledge. Earthkeepers understand how all living things on earth are connected.

The second key stands for Experience. Earthkeepers realize that getting in touch with the earth is a good feeling.

The third key represents Yourself. Earthkeepers believe that their actions on the earth make a difference.

The fourth key represents Sharing. Earthkeepers know that helping others improve their relationship with the earth is an urgent task.

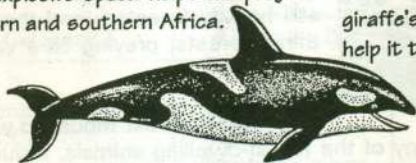


MAMMALOBILIA

THE FASTEST MAMMALS



Cheetah: Fastest land mammal over a short distance. May run at speeds of over 100 km per hour for 150-300m. It's explosive speed helps its prey. It is still found in eastern and southern Africa.



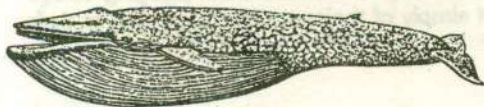
Killer whale: Fastest marine mammal over a short distance. Can swim at speeds of upto 55 km per hour for about 450m. Killer whales prey on fish, squid and marine mammals such as seals and other whales. Killer whales may be found in every ocean throughout the world.



Blackbuck: One of the fastest herbivores. Can easily run at 70 km per hour for 15 km and can reach speeds of 90 km per hour. Being able to run fast for long periods of time helps blackbuck outrun their predators. Blackbuck are found only in India.

THE LARGEST MAMMALS

Blue Whale: Largest living animal in the world. Also one of the largest animals that has ever lived. May grow to more than 30 m in length and weigh more than 135 tonnes - the combined weight of 25 elephants or approximately 1600 men. These immense mammals feed on tiny, shrimplike sea animals called krill. Blue whales are found in the waters of the arctic and temperate oceans.



RANQZHIN



African Elephant: Largest living land animal. This elephant may stand more than 3.2 m high at the shoulder and weigh more than 6000 kg - almost as much as the combined weight of 100 adult human beings. The Asian elephant is approximately 3 m tall and weighs about 5000 kg.



Giraffe: Tallest land mammal. Can measure upto six metres in height. The neck of an adult giraffe is about two-and-a-half metres long but it contains the same number of vertebrae as the human neck. The giraffe's long neck and tongue measuring upto 53 cm help it to reach leaves and other food high in the tree

THE BEST JUMPERS



Cougar: Can jump 15 m high (more than the height of a four-storey building) and can broad jump 9 m. A cougar stalks its prey, then often leaps onto the animal's back. Also known as mountain lion. Found in North America.

Red Kangaroo: Can leap more than 12 m in one bound (about the length of a bus) and can jump more than 3 m high. Kangaroos bound in a series of zigzag jumps. Found in Australia.



Jerboa: Can broad jump upto 3 m in a single bound. The jerboa's body may be less than the length of a postcard! Like kangaroos, jerboas escape predators by jumping away in a zigzag pattern. Live in arid areas in North Africa, Middle East and Central Asia.



The Smallest Mammal

Savi's Pygmy Shrew: It is 6-8 cm long - about half the length of a postcard - including the tail, and weighs 1.5-2 gm. Found in South Europe, Africa and South Asia.



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THE RETURN OF THE WILD DOGS?

Some 2000 years ago, the world abounded with wild dogs (or wolves?). At that time the land was still heavily forested, and the wild dogs lived in these forests, preying on a wide range of other animals.

Over the next thousand years, early farmers began to clear the forest. As a result, many of the forest-dwelling animals, including the wolf, also started to disappear. By 1000 AD, these animals had been brought to the point of extinction.

The wolf in particular suffered. Over many centuries stories of the wolf's ferocity had become a part of folklore (Remember Little Red Riding Hood?) and the wolf was now greatly feared. People killed wolves at every opportunity. And the fact that wolves often attacked domestic animals, especially sheep, meant that they were relentlessly hunted out of existence.

In Bhutan, one of the last strongholds of this endangered species, the dwindling of the wild dog's numbers created an ecological imbalance which resulted in the reciprocal proliferation of the wild boar. When the predator is decimated, its prey must thrive. The high incidence of crop damage in recent years thanks to the wild boar was an unforeseen consequence of the vanishing of the wild dog.

However, all is not lost as a recent report received by the RSPN from its sister organization Singye Karm, the Sherubtse College Nature Club, throws a rosier light on an otherwise depressing scenario. Singye Karm had organized a field trip to Singye Dzong for non member students of the college during the last summer break. The aim of the trip was to impart to its participants the rudiments of trekking etiquette.

"One of our major interests," writes Nidup Peljor, the Nature Club's Secretary, "was to find out the validity of the rumor on the prevalence of wild dogs, which we believe to be extinct, in the area."

"On 20.6.'94," he goes on to report, "we found that a cow had been killed by a small pack of these animals some days earlier. This was above the village of Khoma in Lhuntshi. Again on 1.7.'94, another cow died in a similar manner near the village of Tangsibe in Bumthang. In both cases the style of attack was unmistakably characteristic of wild dogs, i.e., starting from the rear end of the victim."

Interviews with some farmers around Bumthang reveal that crop damage by wild boars has been progressively diminishing of late indicating a probable decrease in the wild boar population. This could be the result of wild dogs preying upon them - another reason to believe that the wild dogs are back. However, the wild dogs have not put in an appearance around Kanglung and local farmers here are on a constant vigil against the pestilential wild boar, who make their pillaging forays between ten and twelve at night depriving the farmers not simply of their valuable crops but of their precious sleep as well!

The WINNERS... !!!

of the EARTH DAY Writing Competition

	Category A	Category B	Category C	Category D
ESSAY	1. Kunzang Dorji DCC 2. Ohm P. Nirola MTI 3. Kunzang Wangmo LIS (Survey)	1. Om Bhandari XII (Sc) Sherubtse College 2. Dechen Wangmo XA J. Sherubling HS 3. L. K Namgyel Punakha HS	1. Chencho Dem 7A Phuntsholing PS 2. Anish 7 Sarpang PS 3. Madhu Kaushik 8A Lungtenzampa JHS	1. Bimraj Tamang 3 Dagana PS 2. Palden Dorji 5 Rangthangwoong PS 3. Rinzin Wangmo 4A Tingtibi PS
STORY	1. Karma Demma P.B. 305, Thimphu 2. Nima Gyaltshin Sarpang HS 3. Pema Chhoden Teacher Daga JHS	1. Karma Wangdi XII (Sc) Sherubtse College 2. Karma Jamtsho XA Chukha HS 3. Nima Tshering XB J. Sherubling HS	1. Namgyel Tshering 8B J. Sherubling HS 2. Roshan Kolar 6B Drugyel HS 3. Norbu Zangmo 7 Sarpang HS	1. Rinzin Wangmo 4A Daifam PS 2. Phurpa II Daifam PS 3. Dujay 4A Rangthangwoong PS
POETRY	1. Sonam C Dorji Motithang HS 2. R D Darkar Sarpang JHS 3. Hem K Acharya BSc Sherubtse	1. R. K. Rai IX Mongar HS 2. Pema Wangdi XII(Arts) Sherubtse College 3. Subhasish Pal IX C Jigme Sherubling HS	1. Pranita Rai 8A LJHS 2. Drukda Wangdi 5 Samtse JHS 3. Gopal Giri 8 Jakar JHS	1. Migmer 3 Phekoma PS 2. Gurtej S Bains 3B LJHS 3. Hari M Gurung 3 Phekoma PS

THE TOP TWELVE

**A look at the
distinguished dozen
winning entries**

ESSAY**CATEGORY A**

**THE RURAL TO URBAN MIGRATION IN BHUTAN:
IS IT IRREVERSIBLE?**

With the development activities in Bhutan rapid urban growth is taking place. Urbanisation has become a dominant feature in the growth and distribution of population in Bhutan. Urban centers always attract the most people, bringing along unprecedented problems of sharing scarce resources and facilities available. The urban regions are considered as the catalyst for development and also the vital receiving points for migrants. Every country, whether developed or underdeveloping, will continue to face the challenges of structural changes due to population drift. Rapid urbanisation stemming in major measure from population growth has many ill effects on the society at large, particularly in the developing countries.

Realising that the problems of population distribution and migration have powerful intersectoral ramifications, migration studies are gradually becoming an important issue for the planners and policy makers in the country. Rural to urban sector migration in the long run result in the degradation of the urban environment and depletion of the agriculture lands near towns and cities. There are more acute problems as well, such as shortage of adequate water supplies, wiping out of green vegetation, congesting transportation facilities, putting pressure on health, school systems and housing services. Such shortages of basic facilities directly contribute to over crowding and unacceptable living standards. If there are no adequate measures taken today, they may be the cause of many families forced to settle down in the slums amidst extreme squalor and deprivation.

In recent years, many Bhutanese towns have already shown signs of population pressures. With increase in the size of population, the basic facilities indicative of a healthy society automatically diminish. Bhutanese towns have been growing faster than anticipated in the last decade or so and more and more people are leaving their villages to seek opportunities of employment in the cities. The urban centers over the years have shrunk as a result of rural to urban drift and are seemingly becoming less and less capable of absorbing new arrivals.

Although the proportion of rural - urban migration in Bhutan is not very high, we should not remain complacent on the issue. We are aware that a number of delayed efforts and programmes to resettle urban populations in many countries have been

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relatively unsuccessful, and it may be wise enough to go for the Bhutanese strategy of "drain before the rain; and ritual before the illness". The problems, if not paid early attention, would make remedial measures hard to come by.

In the context of Bhutan, the trend is still reversible. Remedies that can solve the problems related to rural - urban migration are still at hand. Concerted and consistent efforts to control urban population growth through policies to restrict rural out migration or urban in migration should be devised to safeguard the ill effects of depletion of rural knowledge, skills and brain drains.

We know too well that there are a number of factors which have greatly catapulted the rural to urban migration in Bhutan. For instance, the increase in family size has, to some extent, reduced agricultural lands in the villages. An equally contributive factor has been the discriminatory price policy of keeping the farm prices low thereby reducing rural income and the opportunities to job creation.

The net effect of various policies to achieve faster economic growth and development with emphasis in rapid industrialization systematically leads to disadvantage the agriculture sector in favour of modern industry. This imbalance should be checked. While recognising the potential of the new technology and industries in the foundations of economic growth in Bhutan, it is equally important to devise ways and means to instituting the villages as an important resource base for the urban centres, thereby creating an interdependent and inseparable relation between the rural and urban sectors. The benefits or gains in percentage by the rural families in the form of remittances from migrant family members working in the urban centres in the country have been always positive. They have directly contributed to the uplift of the family economy and welfare. Likewise the rural area should have attraction points that provide job opportunities and income.

Migrants are largely influenced by the infrastructural characteristics of the places of origin and destination or the place of origin may continue to shift as a result of the migration itself. Removing the imbalance or the rift between the rural and urban sectors may make the villages economically more attractive to the population.

Preferential tariffs for industry or discriminatory tariffs for agriculture that worsen the terms of trade between the rural and urban areas; the lack of incentives to develop transportation facilities, storage and marketing systems are also the the main causes behind the rural to urban drift.

The contributing factors in migration control are: education, income, employment, urban rural inequalities, investments, food supply, etc.. It is widely accepted that migration generally occurs in response to social, economic and political factors. Where there is the involvement of socio-economic and political forces the challenges are many. In Bhutan, in the absence of political force, social and economic factors are the primary causes of migration and through early intervention it can be corrected. The royal government in all its development plans have focussed on the



Steps to improve basic facilities and the living standard of the rural population are being taken by introducing improved agriculture and farming systems in the rural regions.

With Royal Government's continued and integrated approach in the design of numerous rural development programmes in the areas of health, education, and population control, Bhutan will be able to encounter the pressures of rural to urban migration quite effectively.

In Bhutan's situation the rural to urban drift is mostly associated with the students and the school drop outs. We have seen that a considerable number of primary and secondary students move to urban centers every year for higher education and also employment. The development programmers are aware that the push factors for rural-urban migration are the limited scope of employment in the agricultural sector of the rural areas, the increasing trend towards landlessness, and limited scope for non-manual employment of semiskilled and semi-educated people in Bhutanese villages. By taking development to the villages in the form of small scale industries and the like, opportunities for job and income can be created.

Kunzang Dorji

There must be efforts on the part of the planners to promote more distribution of population to natural resources,

between geographical regions and rural/urban sectors, and measures to plan for service and reduce population growth and its pressure on the limited resource base. Efforts to improve women's status, particularly through education, employment opportunities and legal provisions are crucial especially as such improvements have both direct and indirect effects on family welfare and family size.

The best answer to this is the decentralised development planning that can reduce the concentration of people in the urban centres. Bhutan has made decentralisation one of the corner stones of its development policies. Most of the development programmes in Bhutan are in consonance with the needs and aspirations of the rural people. Through His Majesty's policy of decentralisation, Bhutan is well positioned to adopt a progressive path to development. The policy has enabled the local communities to exercise greater control over decisions affecting their own welfare. The government has been able to successfully direct more emphasis to grassroots' needs as envisaged by the people.

The 7th FYP has adopted sustainable development as its development strategy. A healthy and happy population is necessary for the creation of a sustainable society. Bhutan must continue to meet the basic challenges of population distribution and resource allocation that emerge as a result of continuous change and evolution. Bhutan's small size and small population offer the most practical ground for setting an example of sustainable development to the world at large.

CATEGORY B

Biodiversity AND
THE WELL BEING OF A NATION

The living world or the biosphere is the world of plants and animals. The variety of life forms plants and animals in an environment is termed as the biological diversity or the bio-diversity.

If the variety of plants and animals in a certain locality is little, then the place is said to have a poor biodiversity. Because almost half of all species are believed to dwell in tropical regions, the region has rich diversity of life forms. How then is the well being of a community dependent upon its biodiversity?

A greater diversity implies more possibilities for the selection of immediate economic income through activities like wild life harvesting, tourism and maintaining agricultural production. Yet, there remain unfulfilled potentials of men, crops, new medicines and new industrial products.

The value of bio-diversity may not be calculated in terms of dollars but it is the summed value of the GNP's ever since the existence of earth till its end. We know that because our very lives and economics are dependent upon biodiversity, rich or poor. Assigning values to species appear like the clumsy courtiers of 'Emperor's New Clothes'.

From safe contraceptives to cures for cancer and from fibres to incense sticks, all come from a rich biological diversity. Almost all raw materials used by various industries, the spices, gums, dyes, resins, oils, drugs and animals in which the drugs can be tasted are part of good biodiversity. Besides, benefits of a rich diversity includes a better environment: amelioration of climate, reduction of wind velocity, thereby reducing the evaporation of soil moisture, air pollution control, noise abatement, waste water management, watershed production and erosion control, to name a few.

Communities who don't have a few good biological diversity may suffer from over population, chronic poverty, fuel shortages, which, in turn, create pressure to exploit the little resources which becomes more overwhelming as time passes. Where human activities threaten the survival of wild plants and animals, they threaten human welfare as well.

However, it is not true that a community without a good diversity of life forms will not prosper. Japan, for example, does not have a biological diversity half as rich as that of Indonesia or Malaysia but she has the best natural resources any country can have: hard working people. The nomadic bushman of the Kalahari Desert hunts for food and use the hides of animals for clothes. As they move, the plants and animals replace themselves soon. Different communities may view similar natural environment in different ways and use them differently.

Again, just because there is a lot of resource, we shouldn't harvest or control it without a deep second thought. Let us suppose you cut a pine tree near your house. In a resulting flood, a rare insect could be killed. That insect could be responsible for pollinating a certain flower, the plant of which is consumed by another animal. Thus a small biological system is developed which may have terrible consequences, though the species of pine is not endangered. A similar mistake in the controlling of nature took place in the construction of the Aswan High Dam on the river Nile. This resulted in loss of sediments, less fish, diseases carried by snails and less water ultimately!

Had the environment remained the same as that of early 1900s, trekking and birdwatching would be more interesting. The rules on hunting and fishing wouldn't have been as strict as they are. In other words, the greater the diversity of life forms, the greater is the recreational or amenity values enjoyed by the community.

Amazingly, of the estimated 75,000 edible plants, less than twenty species form 90% of our food. A community with a good biodiversity has a vast potential for developing new sources of food and medicine, only if they can sustain the biodiversity of their region.

Species have moral value. Thoreau could lead a better life after observing other species! It is shown in the Buddhist teachings that all living things are scared. If our activities kill our fellow species to extinction, it is considered a betrayal of our obligation to protect all life. Those who don't believe in God can still accept the fact that the very existence of biodiversity is its own warning for survival.

Of course, biodiversity makes an interesting conversation over the seminar table. It can also make an interesting essay. However, biodiversity must be treated more seriously as a global resource to be preserved and at the same time to be used but not abused.

Om Bhandari



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CATEGORY C

HOW TO MAKE THE HOME
AN ENVIRONMENTALLY FRIENDLY PLACE

I would love to make my home an environmentally friendly place because this is the place where I have grown up. This is my fondest place and I will also make it the friendliest place.

First of all I would ask my uncle who is a carpenter to build a chorten with a prayer wheel inside it so that my drinking water will both serve the services of God and my own household.

Then I will have a cowshed, a chicken house, and a pig's sty a little bit away from the main house, to the left side so that my house will be able to hide the stys and the smell coming from the cows, chickens and pigs.

To my right I will have a small kitchen garden comprising what can be grown best in my village: potatoes, lettuce, radish, chillies and on the sides, near the fence, I will plant beans and maize and pumpkins and peas. In front I will have a small green lawn and flowers surrounded by some majestic willow trees. This way my house will have continuous fresh cool scented breeze coming from the flowers and trees.

The steps leading into my house will be lined with flowers and there will be a small prayer wheel. At the highest point of my environment, I will have the biggest and the most beautiful prayer flag. Near the back door of my house there will be a small chorten shaped fireplace in which my mother will burn the scared pine leaves and juniper every morning.

So in the morning when my mother wakes me up I will get up to the smell of the sacred smoke, the clear ringing bell of the prayer wheel, the mooing of the cows, the clucking of the chickens. This is how I intend to make my home an environmentally friendly place.

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CATEGORY D

WHAT I LEARNT IN SCHOOL ABOUT THE
ENVIRONMENT

I have learnt to keep our village clean, to keep away the diseases. I have also learnt to plant more trees to keep our village green. And to plant more trees where there are no trees in our school environment. I have learnt that the environment is the home for all living things. I have also learnt to take care of our living style through Driglam Namsha. That is what I have learnt of the environment from the school.

Bhim Raj Tamang

POETRY

CATEGORY A

MAN AGAINST NATURE

Why do we persist?
 WHY?
 This depredation,
 Desecration...
 Sheer dereliction?
 Stop!!

De riguer
 Is not the
 Reason why
 I pen this dirge...
 More a feeling
 From deep within.

I feel it now..
 Mother earth
 Crying out in pain;
 She looks at me
 Accusingly,
 Bemoaningly.

I am one
 Of the
 Gambling race!
 I want to tell her that
 It's an idiosyncrasy
 Of our times...

But words fail me
 When I see
 That we've
 Garbed her in garbage,
 Silenced her pleas
 In thick smog.

I shapeshift-
 Pretend that
 I am Earth
 And Earth is I-
 Good God!
 I feel the weight
 What agony!

The stench...
 Unbearable,
 The spills - so slick.
 I long to be
 Myself again...
 Why? Why?

Why do they do this
 To me?
 My children green,
 What can I say?
 My hands are tied
 While I watch you weep!

But wait!!
 I sense a lonely
 Someone
 Reaching out,
 Feeling with me
 My grief;
 I think we're one.

There's a lot
 To be done
 Such folk will
 Set me free!
 I'm back as me
 And Earth as she-
 Strange as my tale
 Is to tell...

Human beings
 Across the world,
 Hear this,
 Take heed
 And listen well!
 The pain we inflict
 On gentle Earth
 Will double fold
 Unleash itself!

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CATEGORY B

NATURE'S BEAUTY & BOUNTY

Often I wonder to myself why the sun shines
Behind the mountain where blue pines grow
Above the plain and along the blue skyline,
Where wild dogs bark and jungle cocks
crow?

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Why musical winds blow and singing
streams flow?

Why rolling hills hide wooded
hollow?

There are trees for fruit and fire and
shade,

Wood for mortals and food for herds
They are used for building, rich for
trade,

Permanent house for a million birds.
High on the crown of hills for all to
see,

Where pine cypress and
sandelwood are free.

To provide us with food and grain
While making soil fertile and rich,
Trees give us shelter and rain.

We get good yields out of which
Also bloom flowers about our feet
And tender grasses, so fresh, so
sweet.

Blue of stream and blue of sky,
Sweet song of birds and low hum of
bee,

Pleasant shade of branches high,
All the beauty we hear or see:
Mountains, hills, trees, big and small
Under Nature come they all.

Behind the smoky hills still stand mountains
high,

Scenes in the sweeping forest, a little spider
spins,

Down rushes river, sometimes open,
betimes shy.

In the midst of which, the finny fish swims;
And the river moves with sinuous grace,

For thereafter lies a sea to embrace.

Nature's so mysterious, yet so beautiful,
But for bounty, her treasures are robbed.
Still, then, ever generous and pitiful,
She smiles, saying nothing, though trees
are chopped,
For she knows that mortals believe
Without her gifts, no one can live.

In earth itself, Nature's glory lies,
Within her numerous and lovesome gifts,
Enabling us to live in paradise.
Let us keep good relations, no rifts,
Between kind Nature and low humanity.
Oh beloved Nature! I sincerely salute thee.

CATEGORY C

RURAL VS URBAN ENVIRONMENT

Fresh aroma of flowers float around,
Meadows running miles aground,
Birds chirp every single night and day
Happily singing their sorrows away.
Why can't people do the same?
Why can't people play this game?
Maybe peace would reside otherwise
Instead of hypocrisy and big tall lies
Sitting here, I think and compare
Luxury sought or healthy fresh air
Humankind in doubt about tomorrow
Heads high, pockets full, in books they
burrow.

What about the world so fine?
Will the sun tomorrow shine?

Cart on wheels and large strong bulls
 In fields plough and oxen pull,
 Yielding their reward and share;
 Yet how much for nature they care.
 Trees blowing in the breeze,
 Happiness gathers and angers freeze.
 If only this was heaven,
 If only joys were given.
 Open heart and friendly smiles,
 Even though work they have in piles.
 No cinema or worshipped idol,
 For them nature is the model.
 Flames of courage and confidence,
 No mental strain, no hypertense.
 No tradition and culture do they follow,
 Talismen and horoscope they do not
 hallow.
 Firm believers in the Lord,
 For them there is but one God.
 It's a brotherhood and unity that binds
 Hearts and bodies, souls and minds.



Pollution, smoke and dust
 In cities and towns, a must.
 Time runs and deserts you
 In lands friendless but for a few.
 What leads us to such ways?
 Hectic nights and long drawn days,
 Rolling in luxury and money they are,
 Truth and reality for them are far.
 When they die they shall know
 Wealth won't follow where they go.
 Tomorrow life has to end
 Even if today they may pretend.
 This is the truth and so shall it be;
 It's us who have to find out and see.
 Trendy styles and zany ways
 In flashy cars, bright as sun's rays.
 Finding fame wherever they go,
 But is life all but a show?
 Parties and politics are there,
 But for people, do they really care?
 Even if their speeches sound pleasing
 Poverty keeps right on increasing.

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Oh, if only people could really see
 That happiness is not what they think it
 to be.
 You can't find it but anywhere,
 For it lies within you somewhere.
 Give me the open fields any day,
 Let me sing, be happy and gay.
 Life with rhythm and song,
 Where peace'll linger long.
 Sitting alone in the shade,
 Letting the sunrays fade
 Across the hearts and faces;
 Rare in our world are there such places

CATEGORY D

My FAVOURITE Wild ANIMAL

Saw a wet deer
 Trying to find a home
 Among the wet plants.
 I wonder if it gets wet ?

I couldn't give it a raincoat
 Nor lend it an umbrella.
 Hope it didn't
 Catch a cold.

Wonder if its got a towel at all,
 To keep itself dry;
 And a warm fire
 To help it to sleep.

The next time I see it
 I will try to bring it home
 And satisfy my curiosity
 On how a deer avoids a cold.

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CATEGORY A

MEY PHA PHU JAO TSHU TSHEI

Once upon a time, a long long time ago, this happened and, to this day, people still speak about how Ap Sangay was hoist with his own petard.

This story took place in a sylvan setting: a village snugly nestling on a prosperous slope. The people there had nothing to complain about but indeed much to give thanks for. Nature had gifted them with fresh air, clean water, dense woods and a rich soil. As a result, they were bursting with health and vitality, blessed by and blessing God above. There was mutual harmony among the villagers with little or no conflict until the day Ap Sangay turned up.

Ap Sangay was an altogether different kettle of fish from the folks he had come to settle amongst. In that he was city bred, a retired bureaucrat to boot. People were amazed when they heard that the haunted holdings above the village had been bought by some urban outsider. The place had been in ruins for as long as anyone could remember. Once, before a plague had tragically and totally struck it down, there thrived a bustling household there.

Now it was avoided by the villagers like the plague itself. Which is why I say the people were surprised to hear that the place had been purchased.

Still the villagers weren't too unhappy to find the place occupied once again and were in fact excited to see its new inhabitants.

Soon there was much activity, reconstructing and renovating the place with the village people happily lending a hand. In next to no time, the house was ready and fat, bald and obviously wealthy. Ap Sangay and his family moved in. There was a puja and a party and everything seemed to come up roses.

The days of wine and roses had hardly begun than the honeymoon was over. The stream that watered the villagers fields and supplied their household needs ran first through Ap Sangay's newly acquired vast estate. One day while this man of property surveyed his land from a height, he felt a sense of extraordinary power. The village looked tiny far below and he looked down on it with contempt. It struck him that the stream was his alone and that the villagers were

Story

availing of it for free. He decided then and there to put an end to the practice.

He ordered his servants to dig a channel from the stream through his fields and right by his house. This reduced the original gushing stream to a mere gurgle, barely enough to quench the villagers' thirst, let alone irrigate their fields. The poor folk now had to go a long way to fetch water from the river. As time passed, their crops grew as parched as thirsty their throats, their livestock fell like flies. Their women and children shrunk to mere shadows of their former selves.

They decided to send a delegation to Ap Sangay to plead for a reconsideration of his diversifying the stream. They were met with deaf ears and despatched with a flea in theirs. In desperation they resorted to the local authorities who regretted their inability to help as the landowner was well within his rights to do as he pleased with what ran through his property.

With their hopes dashed and their hearts weighed down, leaden, the villagers returned to



CATEGORY B

HOW I BECAME A VEGETARIAN

their artificially drought-stricken farms. On still nights they could hear the waters roar in Ap Sangay's fields above, while down below, against the laws of gravity, it dripped. And so things went on; Ap Sangay flourished while his fellow villagers foundered.

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Then fate stepped in. One night in the midst of the monsoon, a flash flood swelled the stream to bursting. Too late did Ap Sangay appreciate its perilous import. Before he could say whatever one says on such occasions, the waters had washed away his crops, his livestock, his house and, had he not acted as quickly as his weight allowed him to, almost his family as well.

D
E
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M
A

When morning came so did the villagers to help despite Ap Sangay's ill treatment of them. All was desolate. Ap Sangay sat amongst the rubble of his house and his lamenting relatives, his head in his hands. He looked up briefly to wave away the solicitous villagers crying aloud, "It's no use! I have paid for my greed. I am leaving now. There's nothing for me here."

So saying, he departed never to return. To this day, the house remains in mossy ruins and the land lies forest-covered and fallow in mute testimony to the power of avarice to vanquish man.

The day promised to be bright and sunny. I sat at my window watching the dawn unfold like a sky bride. "How quickly nature changes its mood." I mused aloud. Only the previous night I had gone to bed with the sound of rain in my ears - a sound that drowned all other sounds, now whispering, now roaring - and my last thought before sleep claimed me was of a wet tomorrow. And now this beautiful dawn mocking my late night predictions.

I was attending school then and I did not have to look at the calendar to know the date. The only dates that were etched clearly in the unending monotony of classes were the holidays. It was the second of June, the Coronation Day of His Majesty, also celebrated as Social Forestry Day. All the students of my school (Samchi High School) had gathered to plant tree saplings. I, along with nine of my class 7 mates, were sent to a selected site near the office of the Samchi Forest Department to carry out the plantation.

The mild dawn had melted away to a scorching sun, mercilessly shooting its rays at us. Beads of perspiration dropped from our foreheads and after two hours labour, we managed to finish our work. It was unbearably hot and feeling exhausted we decided to rest for a while in a nearby wood under the

beckoning shade of towering teak trees.

The breeze was refreshing, filled with a delicate fragrance of the wild flowers around. As we sat there, cradled by nature, my mind started wandering and its circuit was slightly philosophical in nature. It was pondering over the puzzling aspects of nature - how does one comprehend, or even begin to, that scorching, merciless heat, on the one hand, and this cool, refreshing heat, on the other, opposite aspects of simultaneous phenomena? My metaphysical ruminations were rudely terminated by the sound of voices carried by the wind from a group of people who had gathered at a butcher's establishment about a hundred yards from where we sat. Curiosity yanked us there.

Reaching the spot, the sight that encountered us was nauseating, to say the least. Broken bones lay scattered all around the place. The air was suffocated with the stench emanating from the putrefying blood. Flies buzzed about, stray dogs, diseased and half starved, roamed and the crows were raucously cawing a dirge. Amidst this assortment, were men, and women, with polythene bags in their hands, clamouring, "Keep some liver for me," "I want the heart," "Give me three kilos," "One of the thighs," ...

In front of them stood the beast, whose anatomy they were discussing and desirous of, an ancient ox tied to a rusted iron pole. The animal (I'd come to learn later) had laboured all of its miserable life for its thankless master. Aged now, its energy dessicated, it had been sold in death as a morsel of meat. Both its ears were drooping, its short horns totally worn out. Its moisture-laden eyes, strangely lustreless, looked on us with profound fear and compassion. I was beginning to feel that, contrary to common sense, the animal understood what the people around it spoke of, for it turned its head away and bent low as in weighed down in sorrow and shame..

Just then a man wearing a bloodstained shirt and dirty khaki shorts, probably in his early forties, stepped forward. He had a thin body. His dark face bore an aquiline nose protruding between a pair of prominent cheekbones, a wide froglike mouth and a pair of hard eyes, so deeply set in their sockets that he didn't need to shade them with his hands against the direct rays of the sun.

What struck me about this person were his hands, stained as they were with dried blood. The right one dreadfully clenched a dagger that glimmered in the sun. The other held an abrasive. And as he walked towards the ox, whetting his knife, the crowd drew closer, with the anticipation of an audience

when the protagonist appears on the stage for the first time.

The animal stirred. Its big eyes blinked at the buyers and bystanders with increasing frequency. It dug its legs into the ground, groaned now and then in anguish and I could clearly see the effort with which it was struggling to break the rope and get away! But emaciated as it was, any chance to succeed remained only a far flung dream. The butcher was sufficiently close to the animal. He rolled his sleeves and stretched his arms and behind him. The people murmured, "He's gonna... he's near... see!" - almost applauding him.

KARMA WANGDI

Death was breathing down the animal's neck now. The grim reaper's sickle lay close at hand. The beast's eyes shed profuse tears. It wanted so passionately to live through its natural span. The flowers of summer would bloom, the cypresses would still soar, straight up like pillars to the blue heavens, but he would not be there to see either. The soft tender grasses of summer, the fresh spring water, others would eat and drink them but not he. Others would be, in blissful ignorance, happily ploughing their masters' vast fields in the bright sun, but his fate was to be different; killed and wiped off the face of this wonderful earth.

I could not look upon the scene. Something caught

me hard in my gut but I did not know what caused it, the mute helpless animal or the bloodthirsty crowd. I did not want to be a part of it and took to my heels. But alas! I had but retreated a yard when a deafening bray struck my ears. Involuntarily, I turned back and there in a pool of blood lay the same old ox - only it was minus its head. The crowd moved forward, drawn onwards by the heady scent of hot blood.

Back in school it was supper time. Thick chunks of fried and spiced beef made every mouth water. The smell permeated the hall and the students were restless, waiting for the prayer to end. No sooner were the last words of the prayer uttered than the feast was devoured. But I who earlier had a burning desire for beef could not bear to even look at it now. The sight of it was burning my eyes and choking my heart. Its odour asphyxiated. All I could think of was that once there lived an animal and now here floated its dead meat.

For a while my mind went berserk. Instead of the ox, I saw myself tied to the same rusted iron stake. Instead of beef on the plate, I saw my own flesh nicely quartered, not looking like Karma Wangdi, not looking like anything for that matter, all spiced up, waiting to be relished in consumption.

My revulsion for meat persists to this day...



CATEGORY C

AN ENCOUNTER WITH A WILD ANIMAL

One fine day, early in the morning, a few years ago, I went for a walk in the forest so that I could see the nameless grace and serenity of the surroundings. The sun was up and its heat beat down mercilessly. The path twisted here and there. The breeze rushing through the woods made a fluttering sound. I heard the birds singing at the tops of their voices, enjoying the late summer weather. The flowers bent with the wind and bees clutched at it. The environment was to me like a place in heaven, without hustle and bustle. The space was filled with the fragrance of all types of flowers. I didn't feel solitary and sang a song to please myself.

After a few minutes, I realized I was away from the sight of my home and was almost in the midst of the forest. I went through the bushes, crossed rivers and also climbed a cliff. The river flowed silently; it was like a sliver glowing in the sun. I was exhausted and sat on a branch of a dead tree and wondered at the awe of nature's magnificent gleam.

I was lost in the captivating beauty of the environment, when I heard a faint deathly sound! I was suddenly on my feet! Then I began to tremble and the fear was tapping to the rhythm, driving me to look around. I heard a squeaky sound. I ran my hand across the dagger, which I usually take with me when I trot in the forest. I forgot the place around me, the fear brought my dagger out of its sheath. If it were a monster or a ghost, I could have died at the spot. But before I could move a step, like lightning, a stag appeared before me. The stag too was perhaps confused whether to

run back or, perhaps was chased by a tiger or a dog. I stood like a cliff facing the stag.

It had a long branched horn, thick blackish yellow fur with a white strip below the chest. My fear was so great that I could do nothing. After a while, the sound of a barking dog filled the atmosphere. The stag stirred, eyes bulging out, turned its head around and slowly came closer to me. I was afraid too and looked down from my place. There were three dogs, their tongues hanging out, sniffing, looking up. I rolled down a big stone and chased the dogs away. As soon as they disappeared into the forest, I turned around and saw that the stag was lying down. I knew that it wouldn't hurt me; neither did I frighten him.

On a closer inspection I found that it had a big cut on its right ankle and the blood was oozing out like water from the tap. Cautiously I went closer to the stag, step by step and gently ran my hand across its back. I feared that it might kick or knock me down with its long horns. But luckily it didn't move and this encouraged me to take hold of its injured leg. Plucking a few leaves from around, delicately I rubbed its blood from the wound. At the moment, I thought I must call someone from my village, but it would be worse, they would kill it mercilessly. And the next thought ran in me that in one way it was a mere chance in life to have encountered a harmless wild animal. In the other way, it's wonderful that animals can recognize that some humans give refuge.

My heart was filled with sorrow to see the ignorant animal harmed and seeking refuge from humans who usually are their enemies. If I

had not been there, the stag would have lost its life. One way or the other, there would be a fall in population of the stags, which means the loss of sons of the heavenly environment. If the tall thick forest, with leaves and flowers like stars and planets were not there, we would never be able to see such an animal, and the land would become barren, baked like a hard road and nothing would grow. The air you take in would hurt your lungs and eyes, as it would contain more carbon dioxide and other poisonous pollutants. Living too would be like hell, no fresh air to breathe, good water to drink and no joyful nature. And, of course, if too much exploitation of the forest is done, life too would cease to exist.

After an hour or so, the stag staggered to its feet and moved of through to the bushes and I lost sight of it very soon after. On my way back home, I tried to please myself by singing a song in praise of the loveliness of the environment and the beings that reside in it. My song went as follows:

It's a home of countless creatures, created by God himself, with flowers of all sizes to please them and trees for shade and fruits and roots for food, fresh air to breathe; it's a home, a sweet home. A place next to heaven, the paradise!

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CATEGORY D**BE KIND TO ALL SENTIMENT BEINGS**

Long long ago there was a deer and a man. One day, a man went to kill animals. He saw a deer.

The deer said, please don't kill me.

The man didn't shoot and went along the road. He was walking sadly, when he saw the same deer walking along the road. When the deer saw the man, it ran to the forest. The man went looking for another animal. Then he saw a tiger.

The tiger said, grr, grrr, I will eat you.

Please don't eat me, begged the man.

The tiger said that he was searching deer and asked the man to find them for if not, he would eat the man.

The man agreed to bring the deer to the tiger.

The man searched and searched; he didn't find one anywhere. He went to a big forest. There he saw a big deer. The deer ran away. The man was very sad.

He went along the road. Again, he saw the same deer

with its baby. Then the deer ran to his house and went inside. The man came with a rope to the deer and said that he had to take the deer to the tiger, otherwise the tiger would kill him.

The deer said, You go and hide inside my house. The man agreed, and went quickly to hide inside the house.

The tiger came to the deer's house. The tiger demanded, open the door, but the man didn't answer.

The tiger thought that there was none in the house and went along the forest. The man peeped through the window; there was no tiger.

He came out and went back to his house. When he reached home, his mother gave him food and asked him

where he'd been. The man told the whole story to his mother.

He went to hunt again. He saw the same deer. The deer said that he wanted to go with the man. The man took him.

When they were in the man's house, the deer said, please kill me now.

The man said, I won't kill you.

The deer said, the tiger is coming to eat me.

Don't worry I will help you, said the man. In the right hand he had an arrow and in his left, he had a bow. The tiger came to eat the deer. The man stood at the door. The tiger saw the man and got scared and ran away.

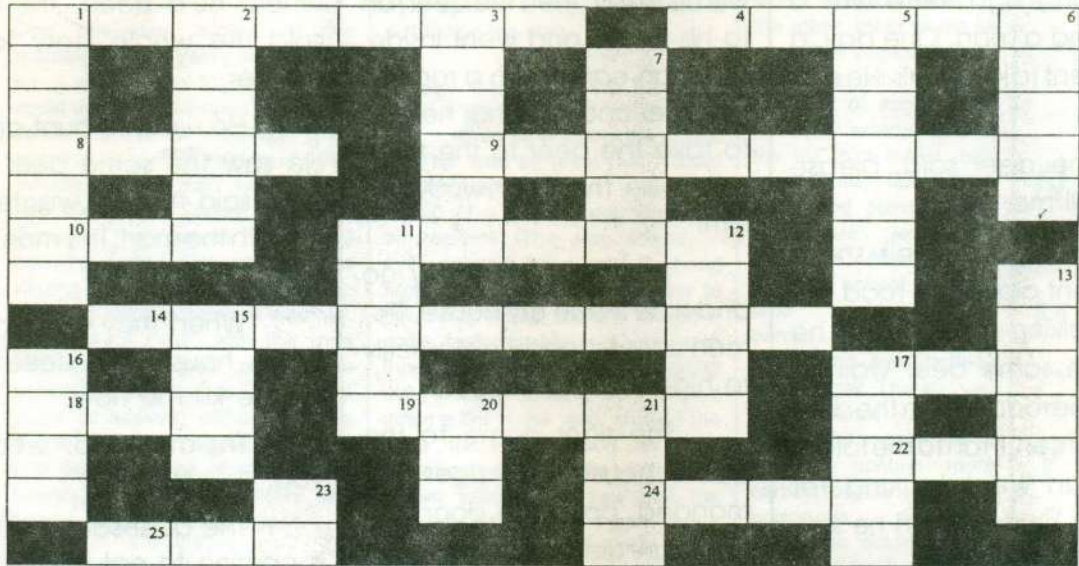
They lived happily ever after.



RINZIN WANGMO

ECO-CROSSWORDS No. 3

Check out how tuned in you are to nature



ACROSS

1. Spin a chhetrum to get greens (7)
4. The tree whose wood made canes (5)
8. An essential part of a wind instrument (4)
9. Marsupial from Down Under (8)
10. Porridge is made from this (3)
11. Chocolate is obtained from its bean (5)
14. The National Flower of Bhutan (4, 5)
17. This bird in a group forms a parliament (3)
18. A right slippery customer! (3)
19. This leaf lies ample about (5)
22. Bulbuls seen in this number stand for joy (3)
24. A tiny insect whose name flatters to deceive (4)
25. "Crazy like a - " So was it said of King Herod (3)

DOWN

1. A special missile hits a bird (7)
2. Section upset without nothing for small invertebrate (6)
3. A bird associated with clocks (6)
5. "O my love is like a (-)²(-)" Robert Burns (3, 4)
6. I missed heroin but got the bird! (5)
7. Go about NAM for this succulent fruit (5)
11. It's found in lucre, amethyst and milk (5)
12. Its daily intake may keep docs on the dole (5)
13. Land left uncultivated is described thus (6)
15. Cowards are said to be - livered (4)
16. This creature sounds official (4)
17. Aquatic mammal whose pelt is prized (5)
20. If you've got one in your pants, watch out! (3)
21. "Like a - to the slaughter." (4)
23. It's 25 across beheaded, yet strong (2)

Grid by Dr K. Ramadevi

Clues by Editor

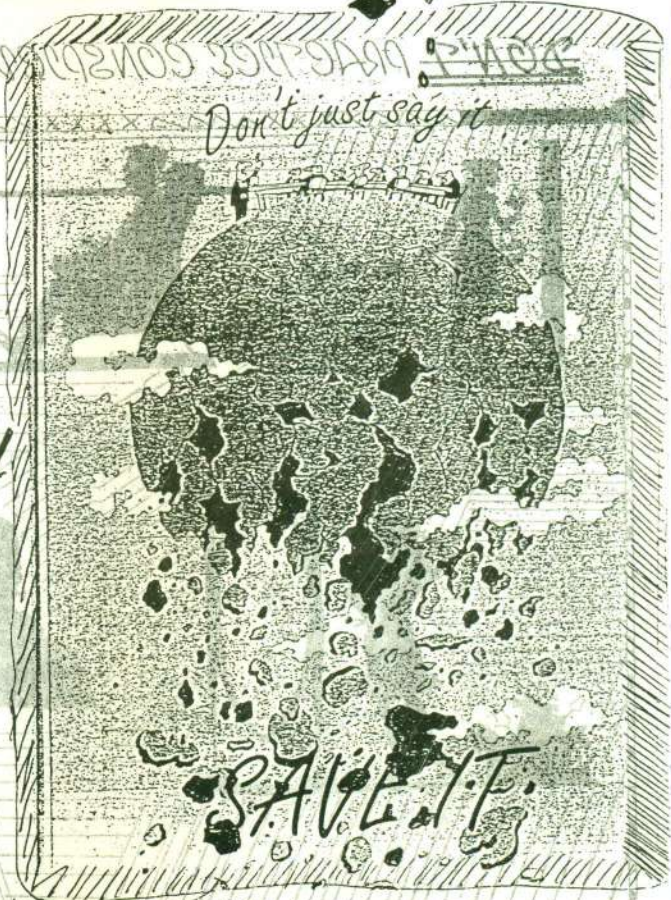
ANSWERS TO ECO-CROSSWORD # 2

Across: 1. Kestrel 4. Pear 6. Roar 7. Sty 8. Maps 10. Ostrich 13. Leo 15. Eye 16. Crocus 18. Bat 19. Acid 21. Bear 23. Panda 25. Gnat 26. Use 27. Hiss 28. Peaches

Down: 1. Kernel 2. Tern 3. Lotus 4. Pumice 5. Asp 9. Sow 11. Taste 12. Hyacinth 14. Octopus 17. Ozone 18. Birch 20. Dates 21. Baa 22. Acre 24. Ass



HEAL THE WORLD



THINK ABOUT IT



After all, there is but one race

(HUMANITY)



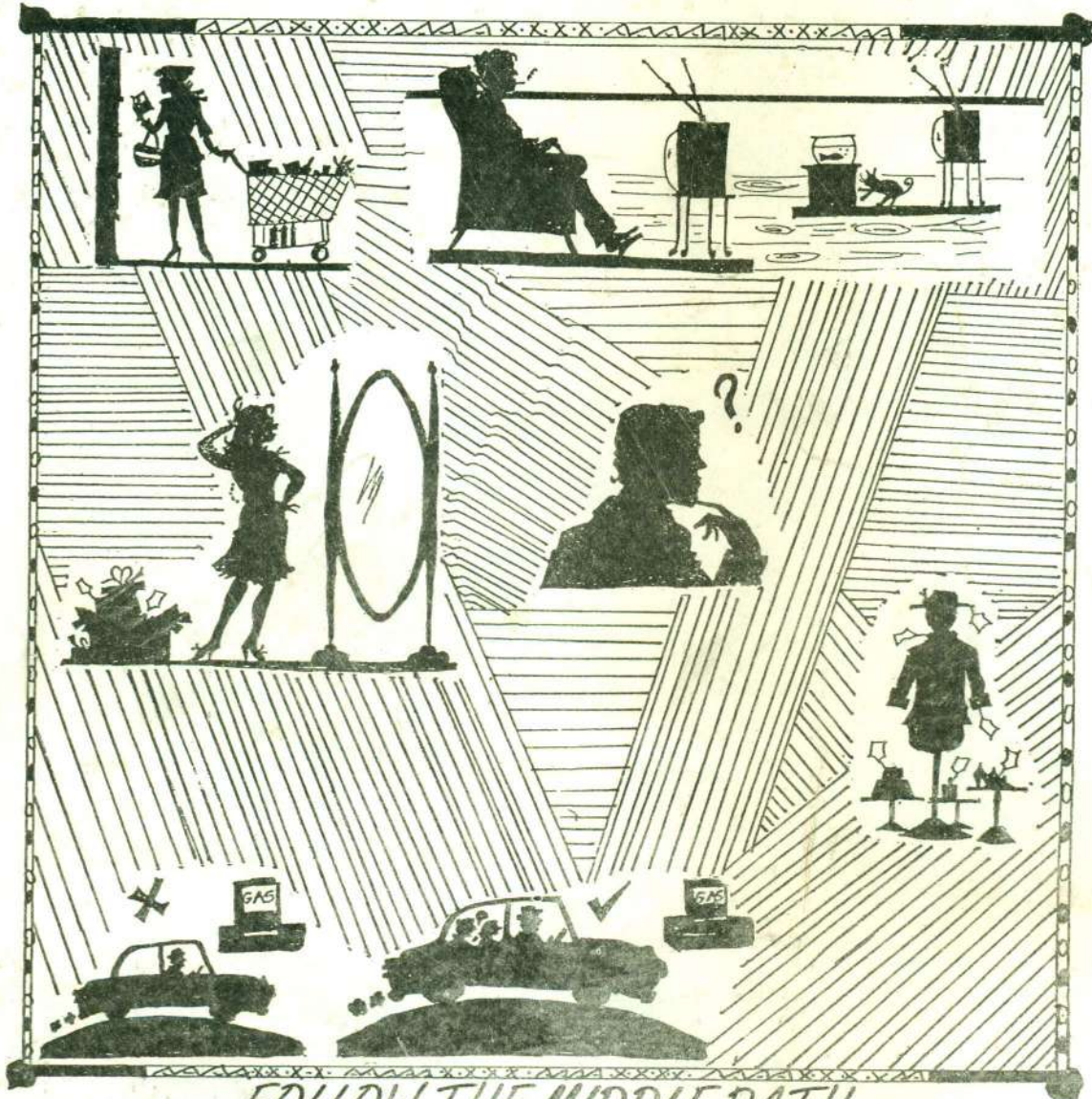
One dwelling place
EARTH



Let's join hands and make it worthwhile

ENVIRONMENTAL RESOLUTION # 3

DON'T PRACTICE CONSPICUOUS CONSUMPTION



FOLLOW THE MIDDLE PATH

MODERATE YOUR LIFESTYLE