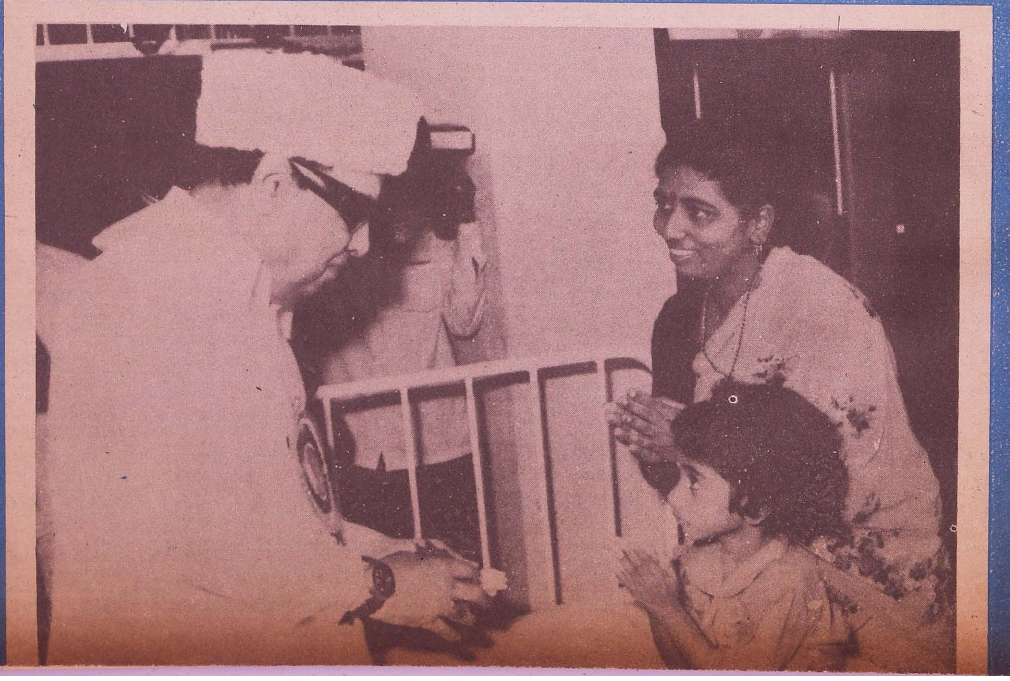
DECEMBER 1986 Re 1.

National Environment Month

Hon'ble Chief Minister Dr. M.G.R. cuts the ribbon to inaugurate the opening of the newly constructed 10-storied annexe to the Government Children's Hospital at Madras Egmore on 8-12-'86. Hon'ble Health Minister, Thiru P.U. Shanmugam was present.



Tamil Arasu

In scope this month

NATIONAL ENVIRONMENT MONTH

Nov. 19th to Dec. 18th

The month following the 19th November, the birthday of Late Prime Minister, Indira Gandhi has been declared by the Union Government as the "National Environment Month". Tamil Arasu presents you a variety of articles on "Environment", the dangers that loom large on mankind if adequate steps are not followed and the ways to preserve the environment.

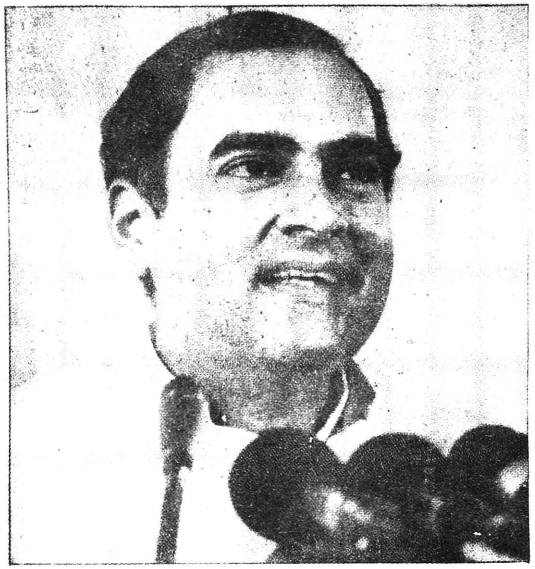
Thiruvalluvar Year 2017

December 1986 **Karthigai - Markazhi**

SAFEGUARDS

AGAINST POLLUTION

Thiru. Rajiv Gandhi



Policy Direction

In a developing country one has to balance the costs and benefits of exploiting resources and protecting the environment, whether it is in terms of destruction of certain areas to put up industry or to put up mines or other development projects; whether it is in terms of pollution of rivers, of air, of various areas. We must bear in mind that ultimately there is no short cut. If we do not pay a price today we will invariably pay a much heavier price tomorrow. We must build this into our awareness.

Water Pollution

Water pollution is one of our major problems. We have tackled our first major project that of cleaning up the Ganga. This is a project which is close to the heart of every Indian and it will not only bring about a new spiritual feeling but, much more than that, it will also give clean water to thousands of villages and millions of people living in the Gangetic base. Sometimes the problems is fairly simple. It is just a question of better administrative control to get things going.

Industries and Environment

Industry while chasing profit, does not pay adequate attention to the dangers of particular chemicals. We know that highly toxic chemicals are still carried in drums, in tankers across the country. We have stopped it in our country. But we know that this happen even in developed countries. Industry is not taking the responsibility of protecting the environment from its side effects. This responsibility must be squarely fixed on industry. It is by bringing about an awareness of the dangers of failure or slip that the people will accept the extra cost of protection.

Integrated projects

We have found in India that by protecting specific areas we are able to protect the environment. By protecting a particular animal like the tiger, we have protected not just the tiger but we have protected the whole environment in that area. Through such integrated projects, integrated in regard to protection and integrated in the matter of location and grading of industries having proper laws to control the damaging effect of industries, we have started out on actually improving the environment in spite of the pressure of development and the pressure of the population.

This is only a first step. This awareness must be brought about to a much greater degree in our country. We are doing this. It is equally important to bring about this awareness in other countries, more specially in the developing countries where there is a feeling that environment protection costs tremendous amount. But the costs that we have to pay by changes of climate, by natural calamities caused by environmental damage, the costs what we have to pay if we do not protect our environment today will be much greater tomorrow. This awareness right across the globe is what we must work for today.

M.G. Ramachandran
Chief Minister

St. George Fort
Madras - 600 009
Date : 12.11.'86

The health of mankind depends in future upon the protection of land, water and air from environmental pollution. This has been realised recently throughout the world; yet environment control calls for more concerted efforts. Tree-felling and deforestation lead to atmospheric changes, lesser rain fall and loss of fertility, soil erosion and droughts. The pollution of air, land and water pose a threat and challenge to the health of society.

2. Industrial development and human living should not lead to the destruction of natural resources. It is said that more damage has been done to natural environment by the effluents coming out of factories than the benefits accruing from industrial development. It is high time that we arrest this trend immediately. Our efforts in this direction will not only save the present generation but also provide protection to posterity.

3. Protection of natural resources and prevention of environment pollution cannot be achieved by legislation alone. The society as a whole has to be vigilant and involve itself. Let us all join together in this task of generating new awareness and enthusiasm among the people.

(M.G. Ramachandran)

Co-existing with Nature

Smt. Indira Gandhi

We humans share the earth with many species. For a long period after the human race came into being, we were close to nature, yet at war with it and other larger species for our very survival. Over the millennia the development of the human brain has enabled humankind to gain unimagined control over our planet. What awesome responsibility it is to have such authority, to have the power to mould the future not only for ourselves but for all species, and it may be of this planet too.

Any one who loves the wild and the cultivated, cannot but be wonder-struck by the infinite variety of nature and its creatures, and be deeply conscious of our relationship with it and with all the living and even seemingly inanimate things with which we share our environment and which are all composed of more or less the same elements. We draw life from the air and water from what we now know is only a thin layer encasing our plannet.

Concern for birds and animals has characterised Indian civilization from very early times. We started this function with a 'shlock' from the Ramayana-compassion for all loving creatures which was preached by the Buddha and Mahavira. Through out his vast dominion and in his vassal states, Emperor Ashoka established medical centres for animals, the earliset attempt, I believe, at veterinary services on so large a scale. If the needed medicinal herbs were not available he imported and planted them. This tradition resurfaced in the era of the Great Moghals, all of whom were distinguished by their love of animals. Jahangir described his father, Akbar's policy in these words: "During three months of the year he ate meat, and for the remaining nine, contented himself with sufi food and was in no way pleased with the slaughter of animals. On many days and in many months this was forbidden to the people". Babar and Jahangir were both keenly interested in nature. In his famous autobiography Babar has described five types of parrots and recounted his studies of the banana plant. With considerable scientific study, he observed that the rhinoceros resembles the horse more than any other animals. I believe, this is confirmed by modern Zoologists. By any standards Jahangir was an out-standing student of natural history. His passion was so widely known that foreign emissaries visiting the Moghal court brought him some exotic bird or beast as a gift.

One of my earliest associations with animals was with snakes because my mother's brother who was not only a keen botanist but had a passion for snakes. When I was, I suppose, not more than six or so, we used to come to Delhi and stay with my grandmother. Anything you opened, out popped a snake. It might be a cigarette box, it might be a drawer or it might be out of the pipe in the bathroom much, of course, to the distress of my grandmother. And later when he has grown up, he kept two pythons, in his garden as pets. Unfortunately on his marriage be had to give them away.

I must deny myself one of my greatest pleasures which is to go to the sancturaries and our national parks because, I think, this is in the interest of the wildlife there. I do not want the masses of security people swarming all over them.

For those who care, conservation needs no justification or explanation. But there is a big gap between the intention and the deed. The exploding population, expanding cultivation and industr y and other development programmes, the desire to hasten material progress and perhaps above all, human greed have already done incalculable damage to many species of plant and animal life and to the earth earth's capacity for self renewal. Basically, there is no conflict between conset ation and economic development or between what is immediate and what is encuring . In deed, as you have shown in your film, in the long run neither can survive without the other. But we cannot wish away the problem. We cannot allow people to think that we worry more about animals and plants than about the underprivileged. If a development project is to be abandoned, it has to be substituted by something equally meaningful to the local population. In order to succeed any such programme needs public awareness and involvement on a mass scale. Education through books, word to mouth or any other means is our best instrument.

We must also do something about mental attitudes which are inculcated from early childhood by language. The vices of humans are attributed to one or other bird or animal. The instances are far too many to list-sly as a fox, vain as a peacock, even the dog such a friendly and loyal creature has been given a bad name. This is a challenge to members of this society and all those who are interested in conservation.

CIVILISATION

"Civilised man was nearly always able to become master of his environment temporarily. His chief troubles came from his delusions that his temporary mastership was permanent. He thought of himself as 'master of the world', while failing to understand fully the laws of nature.

"Man, whether civilised or savage, is a child of nature—he is not the master of nature. He must conform his actions to certain natural laws if he is to maintain his dominance over his environment. When he tries to circumvent the laws of nature, he usually destroys the natural environment that sustains him. And when his environment deteriorates rapidly, his civilisation declines".

"One man has given a brief outline of history by saying that 'civilised man has marched across the face of the earth and left a desert in his foot prints.' This statement may be somewhat of an exaggeration, but it is not without foundation. Civilised man has despoiled most of the lands on which he was lived for long. This is the main reason why his progressive civilisations have moved from place to place. It has been the chief cause for the decline of his civilisations in older settled regions. It has been the dominant factor in determining as trends of history".

"The writers of history have seldom noted the importance of land use. They seem not to have recognised that the destinies of most of man's empires and civilisations were determined largely by the way the land was used. While recognising the influence of environment on history, they fail to note that man usually changed or despoiled his environment."

"How did civilised man depoil this favourable environment ? He did it mainly by depleting or destroying the natural resources. He cut down or burned most of the usable timber from forested hillsides and valleys. He overgrazed and denuded the grasslands that fed his livestock. He killed most of the the wildlife and much of the fish and other water life. He permitted erosion to rob his farm land of its productive topsoil. He allowed eroded soil to clog the streams and fill his reservoirs, irrigation canals, and harbours with silt. In many cases, he used and wasted most of the easily mined metals or other needed minerals. Then his civilisation declined amidst the depoliation of his own creation or he moved to new land. There have been from ten to thirty different civilisations that have followed this road to ruin (the number depending on who classifies the civilisations)."

—*Tom Dale* and
Vernon Gill Carter.

THE GARDENER AND THE GARDEN

He Cleared the bushes
Enriched the soil
Made seed-beds
And laid a garden.
Roses and jasmine,
Creepers and crotons,
Flowers and fruits
With freshness and fragrance —
A pleasing green,
With colour, variety and beauty.
The gardener was happy
With his hard work rewarded.

II

One day when he lost vigil and slept,
Stray cattle entered the garden
Surveyed the 'Pleasing Green' with delight.
And with temptation high
Browsed and blunted the "Green" and all, and
Laid waste the beautiful garden.

III

The lovely Woods and forests
The flora and the fauna
The Peaks and the Mountains
The flowering Valleys
And the flowing rivers —
All are laid in gaiety and grandeur
By Nature, the Great Gardener.
Alas! Mankind — the stray cattle —
Enters, determined,
To lay them all waste in a trice.

A.PADMANABAN,I.A.S.
Chief Secretary to
Government of TamilNadu.

Making Madras more green

The need for establishing and preserving a proper environ which would enable healthy living has never been felt as much as in the present days. The period from November-December, 1986 is being a observed as National Environment month throughout the Country and the Corporation of Madras has also in a befitting manner launched a massive Tree planting programme during this period. The planting programme is being organised in various locations in the city and the fullest involvement of all sections of people especially the student communtity, the residents of the concerned locality, etc. is also enlisted to make this attempt a successful one.

With a view to make use of the services of Industrial establishments., Banks, Voluntary Organisations etc. in this endeavour, a meeting was held with the representatives of these organisations in October 1986. The response from these organisations was encouraging and many organisations have agreed to meet the cost of Tree Guards to be provided for individual sapling for good protection and in this direction M/s. Bharat petroleum is presenting a cheque for Rs. 60,000/ to the Corporation of Madras on the eve of organising Tree planting in Anna University premises on 28.11.1986 for 200 Tree Guards and many more organisations like Spic, I.O.C., O.N.G.C. I.O.B., Andhra Bank, Mylapore Academy would also give sizable amount for Tree Guards.

The Tree Planting is being organised for the past few weeks and so far about 3000 plants have been planted in various locations against a total target of 10,000. Since the participation of the student community is considered very important in a programme of this nature, a massive Tree Planting in Anna University

with the direct participation of the students on an barren area of the premises close to the students hostel has been arranged and 300 trees would be planted in this premises. The students would be taking care of the plants planted today and a green groove would be in existence after few years adjacent to the hostel for the use of the students.

It has been the experience that the attempt of greening this city and making it beautiful could be taken to fruition only with the fullest and whole hearted co-operation and involvement of all sections of the community. It is in this direction that the Corporation is organising the tree planting programme during the observance of National Environment Month.

Madras Corporation has programmed to launch a massive tree planting programme during the Environment month, November-December 1986, and it has been proposed to plant 10,000 Tree Seedlings during this period. With a view to ensure good success in this attempt, the involvement of all the sections of the society and the Assistance of Welfare Organisations, Public Sector Undertakings, Voluntary Organisations, etc., have been enlisted in this endeavour. In the residential colonies, individuals who are coming forward to accept the maintenance of the Trees Planted now have been identified and planting is being organised in front of the residence of such individuals.

After having realised the need for ensuring proper protection to the Trees, it has been decided to provide suitable tree Guards for the trees and various Public Sector Organisations, Voluntary Agencies, etc., have been requested to adopt certain areas and the cost of the Tree Guards in these area would be met by these organisations. The planting programme has been drawn in such a way that there will be coverage of Educational Institutions, the various premises of the Madras Corporation, Corporation Schools, etc., so as to create the required awareness among the Younger Generation especially the Student Community.

In this attempt, the planting work has been taken up in Sastri Nagar and Besant Nagar areas and 100 individuals have been identified for accepting the maintenance of the trees proposed to be planted. The planting has been inaugurated by the Chief Secretary on 18-11-'86 on the eve of NATIONAL ENVIRONMENT DAY 19-11-'86. The Corporation proposes to arrange such Tree Planting programmes in other areas also throughout the Month synchronising with the celebration of Environment Month. On 28-11-'86 Massive Tree Planting Programme involving nearly 300 Students of Anna University was held. The Hon'ble Minister for Local Administpation participated along with the Vice Chancellor of Anna University.

THE LARGEST DAM

China has postponed construction work at its Three Gorges dam site on the Yangtze river. But the postponement may be for only two to five years.

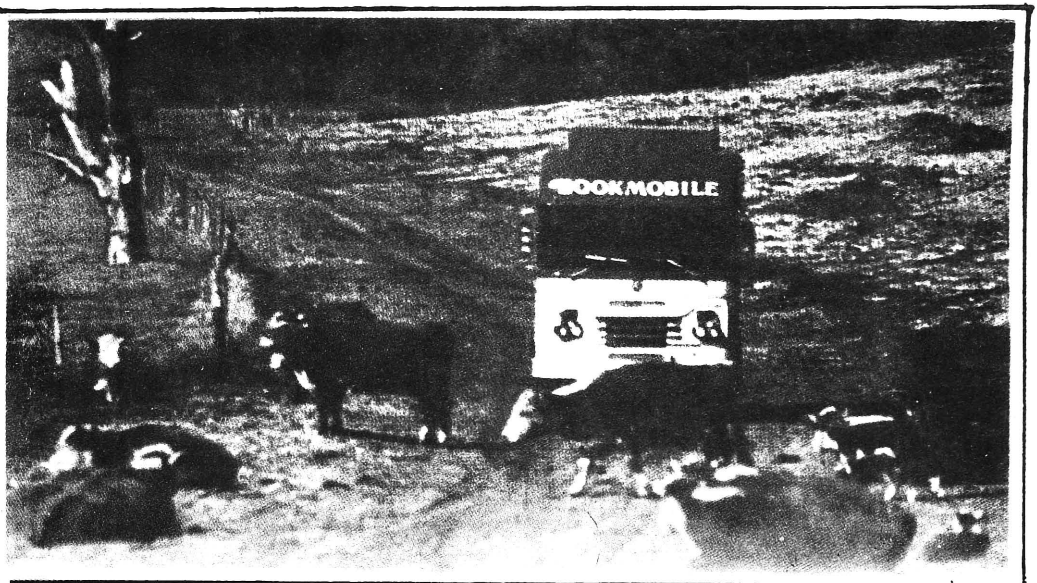
Hailed as the world's largest hydroelectric producer, the project with a price tag of 8-12 billion dollars is also China's costliest construction project since the cultural revolution, and possibly since the building of the Great Wall.

According to New York Times, the proposal calls for a concrete dam 180 m high and 2 km across, producing 13,000 megawatts of electricity equivalent to 20 per cent of China's generating capacity in 1980.

The controversy over the proposed structure, epitomizes the clashing visions that increasingly surround dam projects around the world.

Chinese engineers assert that the proposed dam would provide a permanent solution to the floods that have ravaged the densely populated Yangtze basin for thousands of years, and spur economic growth by permitting large boats to penetrate China's interior. Floods scourge the Yangtze valley once about decade. In a major flood, in 1954, surging waters killed 30,000 people. According to some Chinese engineers, preventing one large flood will tepay the entire cost of consruction.

But the dam could cause environmental damage and human suffering on an equally gargantuan scale, say critics in China and abroad. It would flood a scenic 160 km stretch of the Yangtze known as the Three Gorges, whose fantastic stone spires and swirling eddies are immortalised in paintings and poems. Backed-up water would uproot 300,000 to a million people, and innundate prime farmland and hundreds of archeological treasures. Changes in river ecology both above and below the dam could spread parasitic diseases, destroy valuable fisheries and radically alter a rich estuary.



Glimpses of Environment & Pollution Control

GANGADHAR DAS, I.A.S.

Chairman, Tamil Nadu Pollution Control Board, Madras.

The protection of environment entails tasks on many fronts. It covers myriads of activities from nature education for children in schools to steps for averting a nuclear holocaust. One important aspect of environmental management is the promotion of environmental awareness at different levels in the entire society. Seminars, workshops and group discussions are an important instrument for arousing environmental consciousness by highlighting environmental issues.

Air and water pollution and other environmental problems have been there with man from the beginning of civilization. Despite the frequent recurrence of environmental problems throughout human history widespread concern about environmental quality is a surprisingly recent phenomenon. One explanation for this apparent paradox may be that the growth of national income in many countries in the last half century has transformed environmental quality from a generally free good into a scarce good, that is, the demand for clean air, potable water and other amenities of life exceeds their supply at a zero price.

What is that the expression, environment, exactly means ? A standard dictionary meaning will be the aggregate on surrounding objects, region or conditions. There is an old English song : The head bone connected to the neck bone, the neck bone connected to the collar bone." This song implies that the parts of an organism are closely related to each other. Similarly, organisms of diverse origin are related in time and space in a complex system of action and reaction. Ecology deals with organisms relations to one another and to their surroundings. Ecosystem connotes a particular, identifiable set of ecological inter-relationshops. A lake is an example of an ecosystem. The biosphere denotes regions of earth's crust and atmosphere in which living matter is found. The environment of man includes the biosphere and man's relationship to nature as well as his own created surroundings. In a broad sense, it may be said that man's environment encompasses almost every aspect of life.

Nature tries to keep the ecosystems in a balanced condition. Man's interference with nature disburbs the balance. For achieving economic development, man uses science and technology. This leads to the economic well-being of man. But, one adverse consequence is that it also causes degradation of the environment. For the treatment of some diseases, dictors prescribe modern medicines. Some-

times, these medicines cause some adverse side-effects. Similarly, use of science and technology for economic development is necessary for man's economic well-being. But it may lead to degradation of the environment unless proper safeguards are adopted. Let us take the case of tanneries. It provides employment for workers and helps in earning valuable foreign exchange. But the trade effluent coming out of tanneries is harmful for streams or rivers in which or land on which it is disposed of unless it is scientifically treated before its disposal.

The manufacturing processes in the industrial sector generate solid, liquid and gaseous wastes. With a view to protecting the environment, the Government of India enacted the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. These Acts are in force in Tamil Nadu. The Tamil Nadu Prevention and Control of Water Pollution Board, later renamed as Tamil Nadu Pollution Control Board, is in charge of enforcement of these Acts. The main objective of the Board is mitigating pollution of water resources, land and atmospheric air in the State and maintaining or restoring the wholesomeness of air and water in the State.

Under the law, new and existing industries and local bodies have to obtain the consent of the Board for the discharge of sewage or trade effluents into streams or wells or on land by making an application to the Board for consent. All the existing industries were to apply to the Board for consent on or before 31-5-84. Contravention of this provision is punishable with imprisonment for a term not less than six months, which may extend to six years and with fine.

The State Government declared the entire State as air pollution control area with effect from October 1, 1983. As regards persons who were operating industrial plants for the purpose of any industry specified in the Schedule to the Act before the declaration of the entire State as air pollution control area, time was given to them till 31-3-84 to apply to the Board for its consent. Failure to adhere to this time limit is punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both.

One factor responsible for air pollution is the emission of pollutants from the exhausts of automobiles like cars, buses, trucks, etc. Cars emit the noxious gas, carbon monoxide. Heavy vehicles like buses and trucks emit substances like hydrocarbons, which in extreme concentrations or in combination with other gases, cause serious health problems. It is a pity to see automobiles running on city roads, leaving a trail of dense black smoke, reducing the visibility on a sizeable stretch of the road apart from being a health hazard to other citizens. If all vehicle-owners, whether individuals, institutions or corporate bodies, make it a point to keep their vehicles in good repair, the transport authorities and pollution control authorities will be spared the task of taking penal action against the offenders.

Concern for the environment is not just a fashionable stance. It is based on some sound principles. One important principle is recognition of the sanctity of life. Another important principle is that the present generation of men should not damage the environment to the detriment of the well-being of posterity.

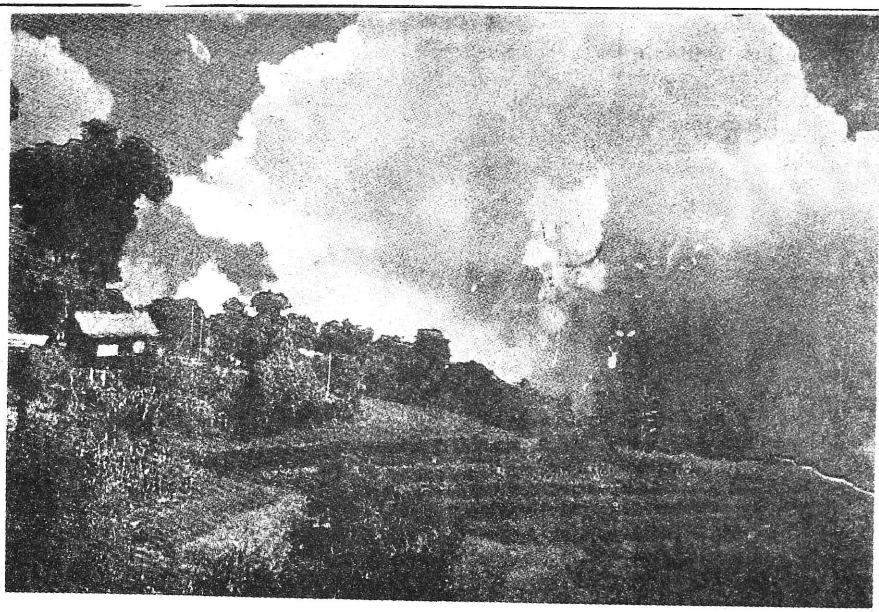
BIGGEST THREAT TO NATION

The biggest threat to a nation's security may not be armed aggression but environmental decline and debt, both legacies of the arms race. This is true for both developed and developing nations.

According to the Worldwatch Institute's State of the World Report, global military outlays in 1985 exceeded the income of the poorest half of humanity. Military spending in the United States and Soviet Union, the two countries most fervently pursuing the arms race, has resulted in growing debts, less investment in the industrial sector and weakened positions in international trade.

Some developing nations spend so much on armaments that they are sacrificing money needed to deal with shrinking forests, eroding soil, falling water tables, deteriorating grasslands and depleted oil reserves.

Economic deficits may dominate our headlines, but ecological deficits will dominate our future, cautions the report.



DEFENDING THE EARTH'S ATMOSPHERE

Study call for reduction of ozone-Depleting Agents

By
Jim Fuller

The emission of manufactured chemicals that damage the Earth's protective ozone layer could be reduced by one-third in the United States and worldwide over the next five years, according to a new report by the World Resources Institute.

The report, released on November 30, recommends the banning of aerosol sprays and the development of safe and inexpensive substitutes for chlorofluorocarbons (CFCs). The report also recommends a stiff tax on chemical companies that are unwilling to invest in the production of known chemical substitutes.

The report by the World Resources Institute, a non-profit policy research center, was released on the eve of a week-long United Nations conference starting in Geneva on December 1 to discuss ways to reduce chemical emissions into the atmosphere.

Chlorofluorocarbons, manufactured for use in such things as refrigerants, foams, aerosol sprays and cleaning solvents, break down the atmosphere's ozone, which acts as a shield against the sun's harmful ultraviolet radiation. Although the United States, Canada and Sweden banned most aerosol uses of CFCs in the late 1970s, global CFC use has increased steadily since then.

A draft report by the U.S.Environmental Protection Agency asserts that ozone depletion could lead to an additional 40 million cases of skin cancer and 8,00,000 cancer deaths in the United States by the year 2075. The report also predicts adverse effects on the human immune system, crop production, and aquatic organisms.

According to the institute's report, CFC emissions can be reduced in four ways: increasing efficiency and reducing losses in CFC-using processes; recovering and recycling CFCs; substituting CFC formulations less threatening to the ozone; or switching to processes and products that require no CFCs.

For example, the report says, most automobile air conditioners could use fewer CFCs with current design advances in equipment, and leakage, which represents a significant share of total CFC production, could be greatly reduced. The report also points out that the use of carbon filtration to recapture CFCs in flexible foams, such as foam rubber, can reduce operating losses by 50 percent and that similar techniques can halve emissions of CFCs used in manufacturing rigid foams, such as foam insulating board.

The report also suggests that some CFC formulations present much less of a threat to the ozone layer. For example,

one commercially available option is CFC 22, which "degrades so rapidly in the atmosphere that it is only one-fifth as powerful as CFC 12 in depleting ozone." CFC 22 could replace CFC 12 in air conditioners and refrigerators, the report says.

Total demand for CFC 12 and similar compounds is near the peak levels of the mid-1970s, when annual demand hit almost 800,000 metric tons, according to recent surveys. At the same time, aerosol use has leveled off and is expected to decline further as other countries follow the lead of those that, like the United States, have already banned the product. (USIS).

INDIA LOSING FOREST COVER

Satellite photographs of the Indian landmass have revealed that the country is losing its forest cover at an alarming rate of 1.5 million hectares per year and the total area under forests today may be as low as about 40 million hectares.

A study by the Department of Environment and Forestry has revealed that during the period 1972-75 the area under forests stood at 54 million hectares and when a similar study was carried out in 1981-82, it stood at 46 million hectares.

While none can dispute the accuracy of the satellite photographs, the statistics of the forest department shows that the area under forests is 74.74 million hectares. But official sources concede that the actual figure would be far less that that.

The existing forest policy prescribed that 33 percent of the country should be forests. On paper today, it is put at 23 percent but in reality good forest cover is perhaps only 11 percent. And this 11 percent is under continuous pressure to supply the population with forest produce way in excess of its capacity.

There is yawning gap between demand and availability of firewood with over 400 million head of cattle, the demand for fodder is far in excess of what the forests can sustain. So is the demand for forest materials for industrial and agro-based needs in excess of the supply. This has led to over-exploitation of forests leading to further destruction of the country's forest wealth.

In addition to this in ecologically sensitive areas such as the Himalayan region, the results of deforestation have been disastrous. It leads to a cycle where the soil cannot hold water and the run-off leads to the loss of valuable top soil and the situation of rivers, dams and to floods in many parts of the country.

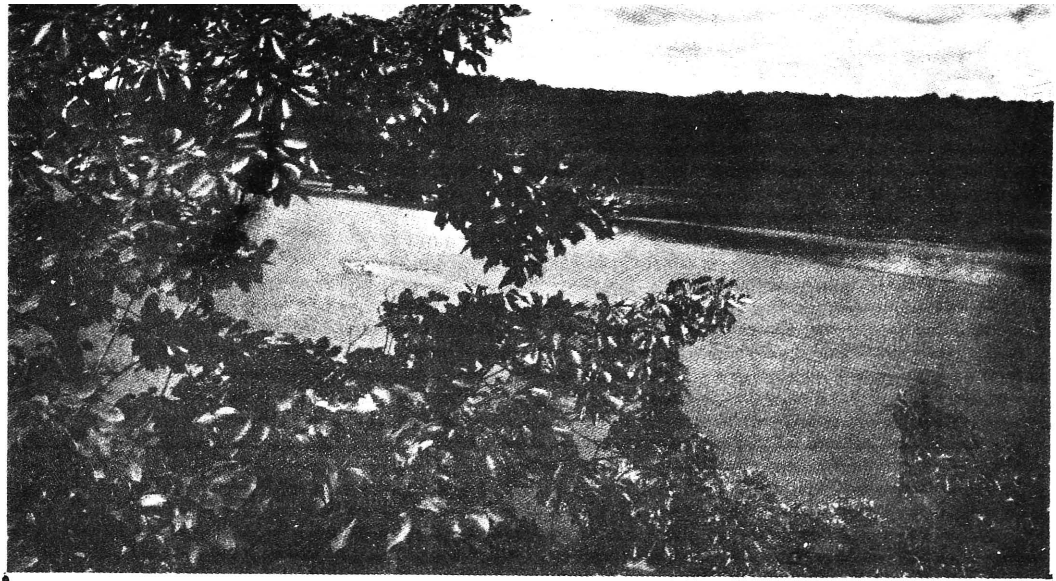
To bring home to the people the dangers of the present trend in deforestation, a meeting was recently held under the chairmanship of the Minister of Environment and Forests, Thiru Vir-Sen. It discussed the mechanics of peoples participation, identification of wastelands, species selections for planning, who would actually do the planting and other matters concerning the development of the infrastructure needed.

For 1985-86, a total of Rs. 250 crore has been earmarked to be spent as part of the approved annual plan at the Central and the State Government on social forestry schemes outside forest areas covering communally owned lands and farm forests. In addition 20 percent of the various schemes under the Department of Rural Development amounting to nearly Rs. 200 crore would be available for social forestry.

For 1986-87, the programme has been enhanced to conform to the national objective of planting five million hectares per year. TI is is aimed at not only halting the march of deforestation but to enhance the existing dwindling area under forests.

The meeting discussed the performance of the eco development projects undertaken by the department during the sixty plan period. It covers the development of technology and management package suitable for regeneration of degraded eco systems acutal demonsration of the viability of developed packages in the field and demonstration of 'know-how through a scheme of 'show how' so that practical application is made easier.

(ENS: Sept. 6, 1985)



The Silent Valley: A Stir Once More

It is three o'clock in the afternoon: yet nothing stirs in the green undergrowth. The dense canopy of trees aloows no sunlight to filter through - and it seems—no sound either. But 70 meters up, there are, here and there a few gaps where the branches thin out, where a little light sneaks in.

Keep watching these spots if one is lucky, one catches a sudden glimpse of a shadow moving sluggishly from treetop to top. If you have a pair of binoculars, the shadow resolves itself into the white mane and dark outline of **Macaca silenus:** the lion-tailed macaque. Once one's eyes get accustomed to the low light , the monkeys seem to multiply all of a sudden. Soon one is counting them in fours and sixes, swinging heavily in upper branches, never descending to ground level.

This is a grove of **culenia excelsa** trees at the south western edge of the Silent Vally, And at this time of the year— early November—one is reasonably sure of finding a few families of these famed simians cavorting the tree tops. It not always so.

Eight years ago, when the first bulldozers came here, clearing the ground for the Silent Vally Hydroelectric Project, these denizens of the tree tops were almost decimated. Anxious surveys by zoologist put their number as low as 400.

Then came the first stirrings of environmentalists as well as concerned citizens which snowballed into the Save Silent Valley Movement. In 1983 the macaques returned to their familiar haunts in the Valley.

So did other forms of life in the rectangular plateau in the southwest corner of the Nilgiri mountains, which scientists agree is perhaps our most valuable gene reserve—now and for centuries to come.

In March 1984, the Kerala government issued a gazette extraordinary declaring the Valley a National Park. Eighteen months later on September 7, 1985, Prime Minister, Thiru Rajiv Gandhi took the rough boulderstrewn jeep track to the southern corner of the valley and formally inaugurated the National Park. The irony implicit in the site chosen to put the inaugural slab of marble did not pass unnoticed: It was the highest promontory overlooking what would have been the 400 meterlong arch dam across the Kunthipuzha river which cuts through the Valley north to south before tumbling a 1000 meters down to the plains of Mannarghat town. Today with no dam across its gorge, the Kunthi river continues to nourish the tropical evergreen rainforest that surrounds it. Orchids can be seen in a blaze of colour clustered along the steep slopes. Step into the shallows, and here and there on the rocks you can see fossil-like the traces of quatic plant species like *dicraea,* Lichens, mosses ferns, each numbering over 50 species have been identified by periodic botanical surveys. But as the visiting scientists are the first to admit, they have hardly scrapped the top of what is a bottonists bonanza.

Casual visits to the Valley are not encouraged. But if you are the persistent type, you need to seek the prior permission of the Divisional Forest Office at Palghat, the district headquarters of the, Wild Life Warden at the Forest Checkpost of Mukkali, on the ghat road from the hill town of Mannatghat to Coimbatore. From here the Valley is 22km away by rough jeep track—local guides will take you by cuts which will lop off 5 km.

This still takes you only to the edge of the National Park which extends totolly across 8952 hectares—just 90 square kilometres. Except for about 5 km at the south western entrance to the old dam site, the Valley has no roads and is virtually impassable except by locals and forest department personnel. And of course it is almost a home for the rare experts—like zoologist Dr. Sat is Chandran Nair— who have been drawn again and again to to the Valley in an endless quest to study its riches. Earlier in the year Dr. Nair explored an old bridle path rarely traversed in this century — along which the British used to ride out of the valley to Ooty in Tamil Nadu.

Saved by such hostile geography from too many pattering feet, the valley shelters a fascinating cross section of animal species. A casual visitor is likely to see the giant malabar flying squirrel, the monitor lizard, the ibex or Niligiri taher on the upper slopes—and little else. But the game wardens the the small staff of forest guards and "watchers" tell of regular sightings of elephant and sloth bear and the spoor of panther.

Considering the value to science—and the nation—of the chunk of land they are policing, it is surprising how inadequately equipped the Valley's Warden and his staff are. When they receive information through the tribal 'grapevine' that poachers have been sighted somewhere in the Park, a team of three of four goes chasing in pursuit—empty handed. They have been issued no weapons. And often for days on end they are not in contact with the base office at Mukkali. They have no radio communication, not even walkie talkies. On trek they carry a small ration of rice and seem to live for days on end on rice **kanji** and bananas.

Now at last it looks as if changes for the better are around the corner. With the spotlight on the Silent Valley as it completed a year of its existence, the Prime Minister (addressing a national environmental seminar in Bombay on October 4) pledged his personal care and full attention to the protection of the Valley.

A day later at Palghat, Forest Minister, Thiru K. P. Nooruddin announced a special Rs. 2 crore fund during the Seventh Plan for the development of the Silent Valley **National Park.**

Money alone will not preserve the Park for posterity. But adequate funds for well equipped policing forces, for more forest rangers, for better communication links and especially for up-to-date fire fighting hardware, will help assure to the inhabitants of this priceless valley the privacy they need to thrive in peace, to be nourished and to grow—so that our children and their children can still marvel at the wonders of the Silent Valley (CEE-NFS).

ACID RAIN

Little known except among experts just a decade ago, acid rain has emerged as an important and exceptionally challenging environmental problem. Certain substances, primarily sulfur and nitrogen compounds emitted by power plants and smelters, can combine with moisture in the atmosphere or on the surface of the earth to form droplets with a high acid content sometimes as acidic as vinegar. Though the term "acid rain" has captured the public's imagination, it actually understates the problem. Acid precipitation includes not only rain but also acidified snow, hail and frost, as well as sulphur and nitrogen dust. When sufficiently concentrated, these acids can kill fish and damage material structures. Under certain circumstances they may reduce crop and forest yields and cause or aggregate respiratory diseases in humans.

Since the airborne compounds can travel hundreds and perhaps thousands of miles, ignoring city, state and national boundaries, a solution to the problem will require cooperation among numerous jurisdictions. The temptation to pass the buck will be great, and as concern about acid rain grows, questions will be raised as to whether our political institutions both national and international can keep up with an usually rapid advances in knowledge.

Press Conference

MINISTER ASKS TEACHERS TO DISCHARGE DUTY WITH RESPONSIBILITY.

The Hon'ble Education Minister, Thiru C. Ponnaiyan, on November 27th asked the teaching community to discharge their duties with a profound sense of responsibility to society at large.

Presenting the State awards for the best principals and best teachers in colleges and universities in Tamil Nadu, he said the Government should try to redress the legitimate grievances of teachers but at the same time the teachers ought to do their duty towards students. The Government realised that incentives like the presentation of awards helped enthuse the teachers to strive hard in educating students well.

The educational system had been undergoing vast and progressive chanks to the policies of the Government. Life oriented and vocational education being introduced now in the State was an indication of the importance attached to the practical side. But education at the college and university level must also undergo a radical change through linkages between concepts and application in the field, Thiru Ponnaiyan said.

Presiding Thiru T.D. Sundarraj, Education Secretary, said the awards were a recognition by the Government of the meritorious services rendered by the recipients in the field of higher education.

Earlier, Prof. N. Anantha-padmanabhan, Director of Collegiate Education, welcomed the gathering. Mrs. Vasantha Devi. Vice-Chancellor, Mother-Teresa University, Kodaikanal, and Fr. Kuriakose, former Principal, Loyola College, replied on behalf of the recipients Dr. V. Subramaniam, Deputy Director of Collegiate Education, proposed a vote of thanks.

Measuring Noise

If beauty is in the eye of the beholder, then noise is in the ear of the listener. By definition noise is any sound that is undesired or interferes with hearing. But one's response to loud sounds is conditioned by an individual's psychological makeup and social values- and often by his hearing ability. What may seem loud to one person does not trouble another. A dancer lost in the music of a disco might argue that the sound level in the room was music to his ears-if the dancer's argument could be heard above the din.

In spite of these non-scientific variables, the strength of sound can be measured accurately. The unit of measurement is the decible. A barely perceptible sound may register only a single decibel. At the other extreme, few people people can stand a sound above 440 decibels. The decibel scale is logarithmic. Thus a small increase or decrease in decibels may mean a great change in intensity.

TEN PRINCIPALS, 50 COLLEGE TEACHERS GET STATE AWARDS

Ten principals and 50 college/university teachers in Tamil Nadu were the recipients of State Awards presented on November 27th. These awards relate to the years 1979-80 to 1983-84, and for each year, two principals and 10 teachers have been selected.

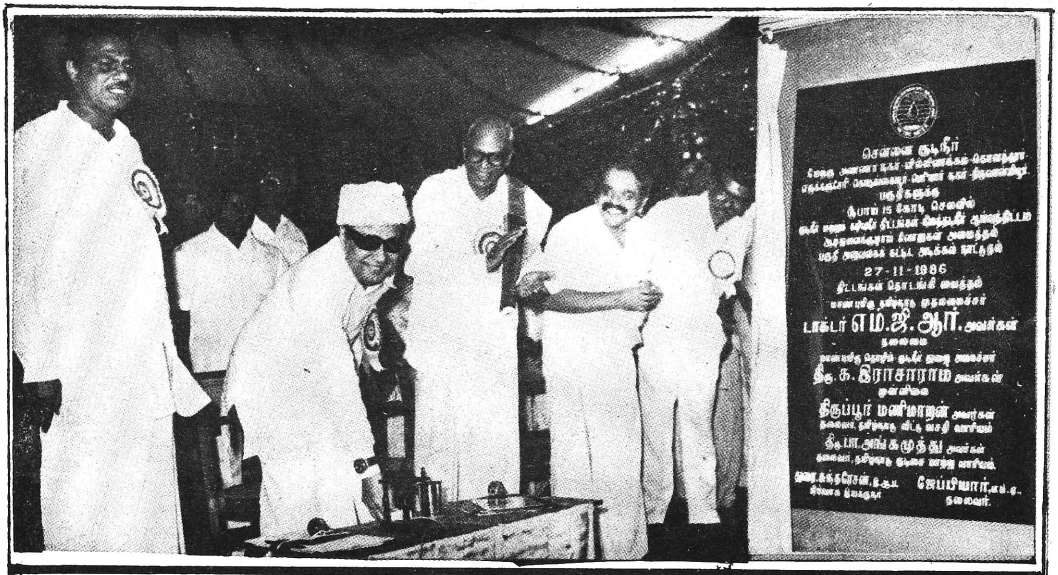
The following is the list of awardees, which include three teachers who have now risen to the position of Vice-Chancellors

Best principal award 1979-80, Dr. K. Meenakshisundaram and Dr. Miss. C. Parvathi; 1980-81; Fr. C.K. Swamy and Dr. A. Pownraja; 1981-82 Dr. Mrs. S. Sekhar and Dr. Sp. Annamalai; 1982-83; Fr. Kuria kose and Dr. Pankajam; 1983-84 Dr. M. Aruchami and Dr. P.B. Rajarajeswari.

State award for college, university teachers; 1979-80 Dr. Mrs. Rajammal P. Devadoss Dr. P.M. Annamalai, Miss. S. Bhagirathy, Prof. S. Jagadeesan, Dr. S. Krishnaswamy Dr. M. Shanmugam Pillai, Dr. Seetha, Dr. R. Balasubramaniam, Dr. P.B. Janardhanan, Dr. M.O. Mathew; 1980-81, Prof. V. Sarojini Devi, Prof. H. Newman, Miss. V. Kamakshi Dr. K.N. George, Thiru K.V. Viswanathan, Dr. A. Ghanam, Prof. T.E. Shanmugham, Dr. K.M. Marimuthu Prof. S. Agasthialingam, Mr. S. Subramaniam; 1981-82, Mr. K.G. Seshadri, Dr. Rm. Periakaruppan, Dr. Sr. Helen Vincent, Thiru N. Balusamy, Dr C.M. Abraham, Dr. K. Kulandaivelu, Mrs. Vasanthi Devi. Prof. Rm. Sethunarayanan, Dr. K.P. Varadarajan, Dr. T.R. Ramachandran,

1982-83, Prof. Lalitha Peter G. Prof. S. Sundaram. Dr. Gift Siromony, Thiru K.S Ramachandran, Dr. K. T. Mallika, Dr. M.P. Guruswamy Dr. T.B. Siddalingaiah Dr. P.K. Ponnuswamy, Dr. P. Shanmugham, Dr. V. Shanmughasundaram.

1983-84, Dr. M. Ramalingam, Dr. Rani Siromoney, Thiru Siromoney, Thiru R. Kanagasabapathy, Thiru L.C. Thanu, Mrs. Laxmi Doraipandian, Dr. V. Sachidanandam, Prof. V.R. Muthuveerappan, Dr. P. Natarajan, Dr. David Livingstone and Dr. K. Chellappan.



Rs. 15 crore Water Supply scheme inaugurated at Anna Nagar

The Hon'ble Chief Minister Dr. M.G.R said on November 27th that he had written letters to the Prime Minister and the Andhra Pradesh Chief Minister seeking their co-operation in the early completion of the Krishna water project to augment the drinking water needs of Madras.

"I am going to discuss this issue with the Andhra Pradesh Chief Minister shortly", Chief Minister said while inaugurating at Anna Nagar West, a Rs. 15 crore project consisting of four water supply schemes, two drainage schemes and an under ground water augmentation scheme designed to benefit 10 lakh people.

The water supply schemes are : West Anna Nagar (Rs. 1.41 crores), Villivakkam-Korattur (Rs. 2.77 crores), Erukanchery Kodungaiyur (Rs. 1.46 crores) and Tiruvanmiyur (Rs. 2.50 crore) The drainage schemes are : West Arumbakkam (Rs. 2.73 crores), Periyar Nagar in Purasawalkam (Rs. 2.32. crores) and the ground water augmentation scheme, with UNDP aid, of Rs. 1.36 crores.

Dr. M.G.R said the Metrowater had drawn up plans to provide drinking water supply in various areas and pumping stations would be set up to take up drainage works. A sum of Rs. 15 crores has been allocated for this purpose.

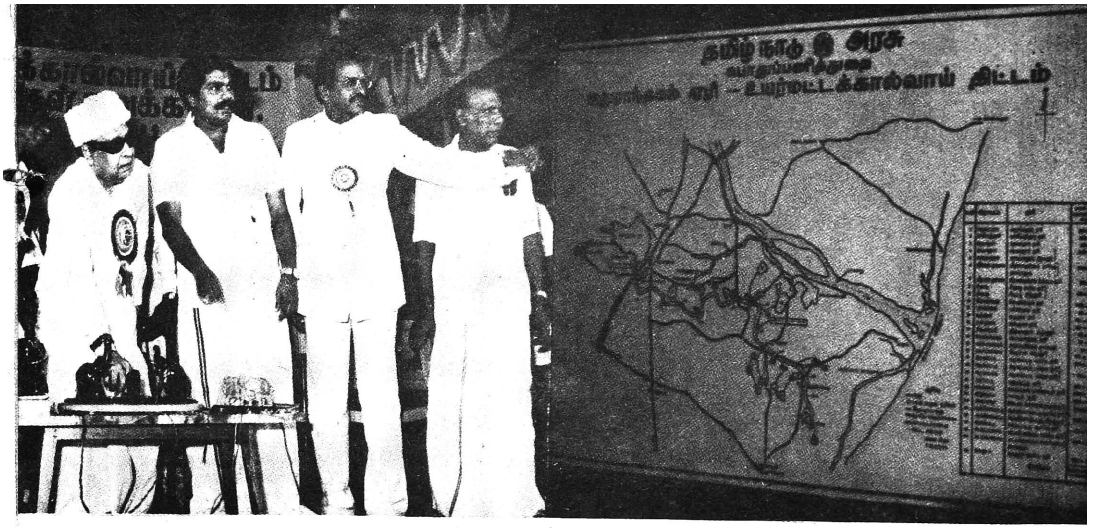
The Chief Minister said the Present Government since it assumed office in 1977 had spent Rs. 428 crores for water supply in the State, of which Metrowater's share was Rs. 60 crores. The scheme to supply drinking water to Anna Nagar West and Villivakkam at a cost of Rs. 3.75 crores was the first phase on the project in augurated he was happy that he was dedicating a project at Anna Nagar to fulfil a basic necessity.

Thiru K. Rajaram, Hon'ble Minister for Industries and Agriculture, who presided, said the Chief Minister had accorded first priority to drinking water supply schemes, unmindful of the costs involved. The water supply project was designed in the shortest possible time with the approval of the Chief Minister.

The Minister said Tamil Nadu under Dr. M. G. R today stood in the forefront in the implementation of social welfare scheme for the poor.

Thiru Jeppiar, Metrowater chairman who welcomed the gathering said steps had been taken to expedite the water supply schemes within a year by distributing the works to several contractors.

Thiru Durai Sundaresan, Managing Director, Metrowater, detailed the salient features of the project.



Welfare Schemes inaugurated at Madurantakam

The Hon'ble Chief Minister, Dr. M. G. R launched a package of development and welfare schemes, costing about Rs. 10 crores, for the people of Madurantakam and its neighbourhood on November 28th.

The projects include a high level canal at the Madurantakam lake, costing Rs. 4.5 crores, which would provide irrigation water for 31 villages, drinking water supply schemes for six urban and 54 rural areas at a cost of about Rs. 3.86 crores and a workshop of the Thanthai Periyar Transport Corporation at a cost of Rs. 8 lakhs.

Speaking at a function to launch the schemes, the Hon'ble Chief Minister said that the State Government was very much interested in the welfare of weaker sections of society and had been implementing several schemes for improving their standards of living.

The Chief Minister launched the schemes, numbering over 70 by pressing the buttons, to the accompaniment of the blaring of horns by the 10 new buses that were introduced by the Thanthai Periyar Transport Corporation.

Bow and arrow presented: A highlight of the function was the presentation of a pair of silver bow and arrow to Dr. M.G.R which to quote the speakers, signified that the Hon'ble Chief Minister was protecting the State just as Sri Rama of Madurantakam took care of the big lake there.

Rs. 20 crore scheme under study : Thiru K.K.S.S.R. Ramachandran, Hon'ble PWD Minister, presiding, said that the Government was considering a set of development schemes for Chingleput district costing about Rs. 20 crores.

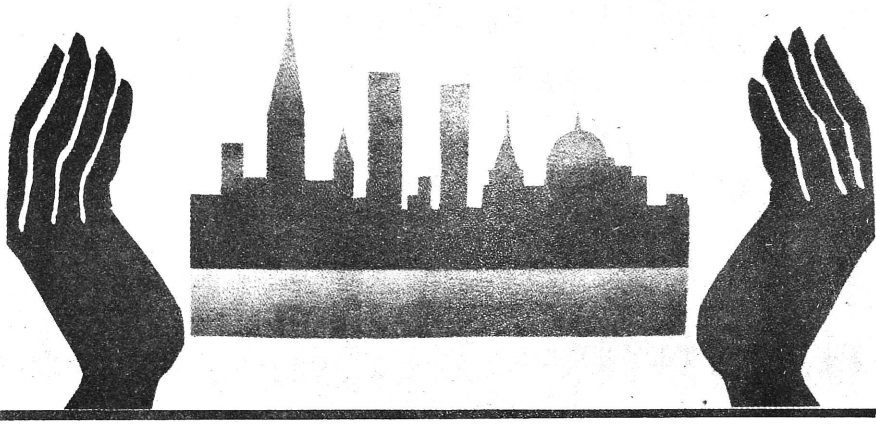
Thiru Anoor Jagadeesan, Hon'ble Rural Industries Minister, said it was to the credit of the Chief Minister that the breach that developed in the Madurandakam lake during the floods last year had been plugged with in a year.

Waiving arrears :

Thiru S.D. Ugamchand Chairman, Tamil Nadu Water Supply and Drainage Board. Thiru Muni Adhi, Chairman, Tamil Nadu Agriculture High power Commission, Mrs. Jagatratchakan, M.P., Thiru G.K.J. Bharati, M.L.A., Mrs. D. Yasodha, M.L.A., and others spoke.

Thiru S. Mohammed Mustapa, Chief Engineer, Public Works Department (irrigation) presenting a report on the proposed high-level canal said it would help utilise about half of the 1,000 million cu. ft. of water for irrigation. The canal would have the capacity to carry 275 cu. ft. of water per second. It would be 35 km long. 30 foot wide and 4 feet deep.

Thiru P. Pandian, Chingleput Collector, said that the schemes included development programmes in Madurantakam Municipality and Chingleput division at a cost of Rs. 14.64 lakhs and Rs. 17.6 lakhs respectively. The function also marked the handing over Rs. 1.16 crores as aid to the Tamil Nadu & Tubewell Corporation for buying rigs and distribution of land pattas to the destitute women and the aged.



Environmental Protection in India

(Courtesy :—Asian Survey Vol. XXII)

By O. P. Dwivedi and B. Kishore

Various forms of environmental degradation have been on the increase in India on account of the growing pressure of human and animal populations on resources. The watershed and forest areas that used to teem with sush green vegetation only two or three decades ago are in a state of environmental decay. The wildlife populations are also on the decline as a result of indiscriminate exploitation and habitat destruction. While laws on these subjects have existed for more than two decades, the situation has worsened. From the legislative angle, the reasons may either be inadequate legislation on the subjects or faulty implementation of the legislation. The sorry state of the quality of environment in India may be attributable to both causes.

It may seem that many of the existing laws are either quite antiquated or are updated modifications of earlier laws. Their object is primarily to utilize resources for specific economic benefit without a careful analysis of potential short-term or long-term adverse effects on the environment. As a result, activities permitted or pursued under the provisoins of the laws have tended to reduce environmental quality. It is necessary to include environmental assessment as an integral part of any major decision-projects, programs, policies, legislation, etc—since this should bring out both positive and negative influences such a decision may have on the environment. Adequate safeguards for the environment need to be built in at all stages of conception, planning, and implementation of decisions followed by vigorous monitoring and ameliorative action.

At present, there is no legislation in India for (1) protection of grazing lands: (2) protection of catchement areas of river basins; (3) protection of wetlands, estuaries,and mangroves (4) prevention of over-fishing in the economic zone; (5) sale, manufacture, import, use, and disposal of chemicals other than pesticides; (6) scientific land use; (7) prevention of noise population; or (8) recycling of resources. Legislation in these fields may be required for resources conservation and its optimum use.

The Water Pollution Prevention Act of 1974 and the Air Pollution Prevention Act of 1980 appear to be half-hearted attempts at the prevention ,abatement, and control of pollution. The Boards should be given executive authority for implementation of the programme and also empowered to issue "stop orders". The Government of India should allocate sufficient financial resources for pollution abatement programs to municipalities, including financial incentives to industries for installation of abatement devices.

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GRAMS : MINESALITE

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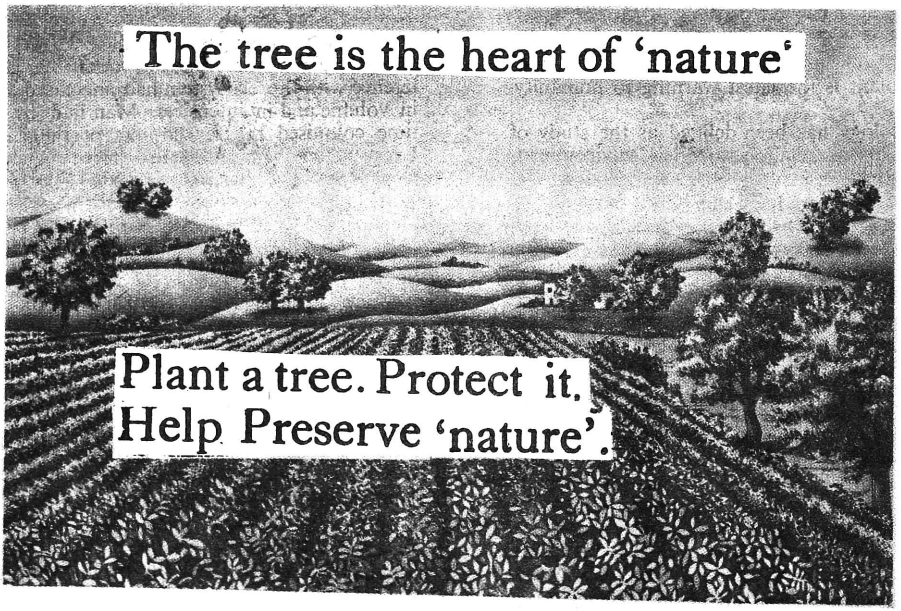
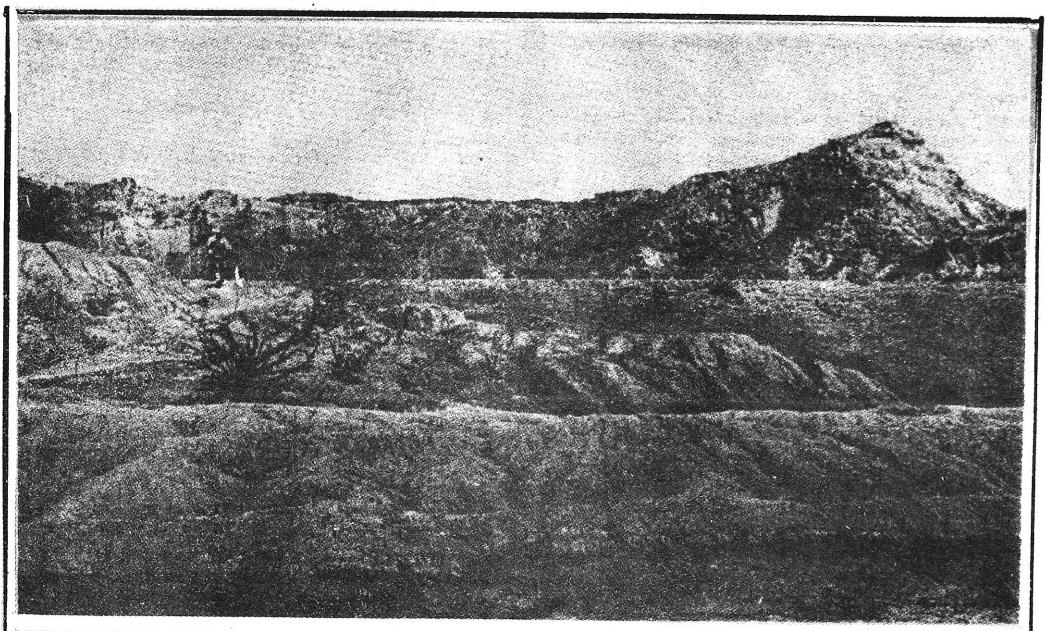
Since 1972, the National Committee for Environmental Planning and Coordination (and its successor National Committee on Environmental Planning) has been able to provide a focal point for discussion on environmental issues. But if NCEP is viewed as similar in function to the U.S. Council of Environmental Quality ,then the Department of Environment should be given neccessary regulatory and administrative authority akin to the USEPA. Thus, the newly established Department of Environment requires not only the necessary political clout but also needs a complement of professionals, dedicated and committed to seeing that environmental considerations are taken seriously in the national planning and policy management process. At the same itme, the Department should provide the necessary leadership by coordination all environmental issues at the central government level and by providing effective liaison with state government environmental departments. For this, the Department would require an adequate budget to carry out its responsibilities and to properly support its liaison activities. The central government's example in establishing appropriate administrative unit should be considered by all state governments; such state departments of environment would need authority not only to monitor and to provide surveillance but also to enforce environmental protection measures.

Thus, the central and state environmental agencies will have to assume the role of "population watchdogs". They would also have to assume the role of the environmental conscience of the country. Finally, unless the public is convinced that by protecting the environment and controlling pollution its health will be safeguarded, all the best legal pronouncements and administrative mechanisms would remain only in books. Public awareness and public partictpation are the two key elements of environmental policy planning and management. In this respect, the leadership will have to come from educational institutions, the mass media, and the judiciary. It is up to the educational authorities to launch a national environmental awareness program and to begin an environmental education programs from the junior high school level. Mass media will have to be more vigilant by constantly publishing exposes of pollution cases. Finally, is it up to the judiciary to safeguard the concept of social justice (enshrined in the Constitution), because in the final analys, is it the poorer section of the population which suffers most from the lack of environmental quality.

O.P.Dwivedi is Professor and Chairman, Department of Political Science. University of Guelph,Canada; B. Kishore is Deputy Secretary Department of Environment, Government of India, New Delhi;





Ecology: What is it all about?

Man's medling with nature, chemical effluents, nuclear waste, acid rain and ever increasing presence of carbon-dioxide in the atmosphere have resulted in the greatest ecological crisis known to mankind. The death of 2500 persons at Bhopal in 1984 due to inhalation of poisonous gas leaked out of an insecticide plant is the latest warning to humanity.

Ecology has been defined as the study of organisms in relation to their environment. This covers the whole world of organic life-plants including fungi, animals including microbes and man. Then, there is the environment itself, which includes not only the animate organisms that populate the biosphere but also the inanimate forces operating in nature.

Man-made Crisis: Though ecology covers all species of life, the species which occupies the centre of the stage is man, because he, alone of all species, had set out on a confrontation with nature. His fight with the established natural systems has had a long history. But it is only in the latter half of the 20th Century that it had assumed the proportions of a crisis. This is what is described as the Ecological Crisis.

When man gave up living on what food he found in nature and settled down to grow his own food, he began inferfering with natural systems. This happened during the very dawn of history when men built the first great river valley civilizations of Sumeria, Egypt and the Indus Valley. Ever since, man has been incessantly engaged in struggles of one kind or another with natural systems.

Since the Industrial Revolution, his interference with the ecosystem had increased both in volume and in intensity. Man had by the time colonised the far corners of the Earth. Every where he went he had fought nature and won. In the first flush of success be described his progress as the Conquest of Nature. Now he wonders who is conquering whom.

Exploitation: It is evident that man has to exploit natural systems, if he is to assure himself of better living conditions. When we clear virgin land and plant crops we are unbalancing a functioning natural system. Once we unbalance a natural system we have to maintain that imbalance in order to grow more crops in future. There is thus an ever present conflict between man's need to maintain its stability. This is inevitable. As Gordon Harrison puts it. "If man is to continue to exploit the natural systems to his own advantage, then his first prescription is to see that these systems stay around to be exploited".

"The question", says Dr.Holling, "really concerns itself with the stability of the natural systems, in the degree to which they can absorb

disturbances and this is really the central question that ecologists have been facing. We do know that despite arguments for the delicate balance of nature, natural systems are profoundly resistant to change. But this resistance is not infinite". It can and does break down under a persistent attack.

In the circumstances, the sensible course for man is to stop and consider how the natural systems react to his exploitation and assess their powers of endurance and resilience before he proceeded to exploit further. But this is precisely what mankind has so far refused to do.

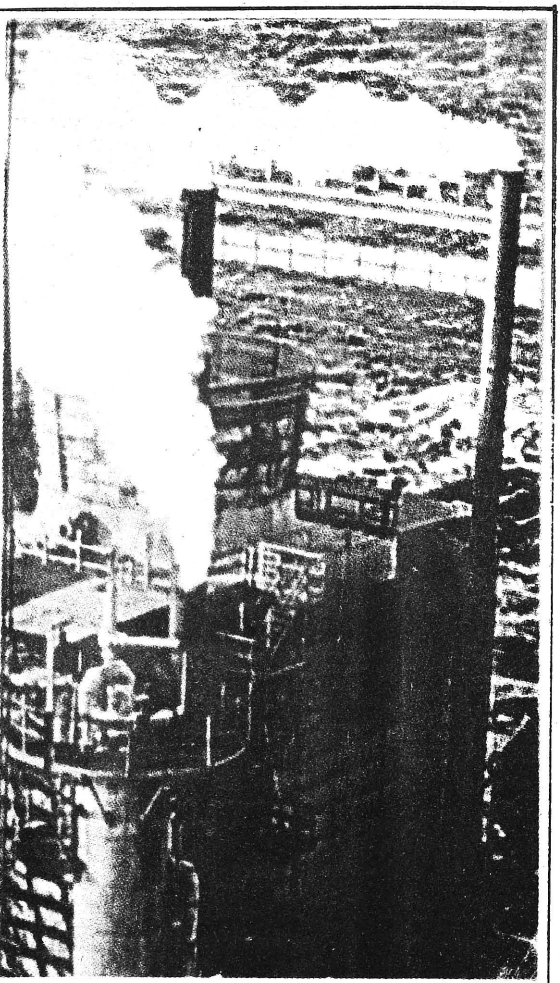
Interdependence: In the ecosystem all species of life, plant and animal, are inter-linked with one another. Interference with any species will have long standing repercussions on others. We have been massively inter vening in the environment without quiet understanding its complications. Often enough, we realise the magnitude of the damage we have wrought long after the mischief had been done and the situtation has passed beyond repair.

It is clear that biosphere is an intergated whole and that its numerous parts are interconnected. Prof. Barry Commoner points out that these interconnections, especially along the food chain accelerate the impact of our inroads into the enuronment and amplify them greatly. Commoner gives the following example. If we put one unit of insecticide per gram in the soil, the earthworms living in the soil will contain 10 to 40 units per gram and in woodcocks feeding on the earthworms, the insecticied level will rise to 200 units per gram.

Says Prof. Commoner, "In the bioshere the whole is greater than the sum of its parts. Beause of such amplification, a small intrusion in one place will trigger a huge response elsewhere in the system. Often the amplification feeds on itself until the entire living system is engulfed. It is not surprising then that the introduction on any killing chemical into the environment is bound to cause a change somewhere in the tangled web of relationship".

Natural Resources: "Our Physical milieu" as Prof. Harold Cassidy reminds us. "is finite, not only the surface of the Earth, but the waters of the sea and the gases in the atmosphere". Land is limited and good land scarce. There is plenty of water in the sea but it is not infnite. Anyhow, the supply of usable water is woefully short. Even air which is freely available every where may run short of the most vital gas that we need and need every moment - oxygen.

Add to this, the fact that we are recklessly exploiting all natural resources, coal, oil and minerals and we have a perfect set-up for a crisis of resources. We do not seem to be



aware of any such impending crisis, judged by the way we are squandering our resources. But any moment, a shortage of one or other may stare is in the face.

LAND &WATER

Agriculture was man's first great challenge to natural systems. He cleared forests to grow food for himself and built huge irrigation systems to assure a perpetual supply of water for his crops-and prospered. The ancients knew-as Plato tells us, that over cropping and overgrazing will lead to soil erosion which may make deserts of fertile land. But that did not stop them. Look at the debris which our great civilizations have left behind them.

Ancient Sumeria- modern Irag- was the granary of the great Babylonian Empire. The Sumerians harvested two crops and grazed sheep between the crops. Today less than 20 percent of the land in Iraq is cultivated. "The lands-

Always bear in mind that your own resolution to succeed is more important than any other thing (for success)

—Abraham Lincoln.

In the mountains of truth you never climb in vain.

—Friedrich Nietzche.

cape is dotted with mounds representing for gotten towns, the ancient irrigation works are filled with silt - the end produce of oil erosion- and the ancient saport of Urs is now 150miles- from the sea with its buildings buried under as much as 35 feet of silt".

Take a much later civiliztion in another continent - the Mayan civilization in America. "Archaeologists have long wondered how the Mayans managed to support what was obviously a high civilization on the now unproductive soils of Guatemala and Yucatan. Evidentaly, they exploited the land as intensively as possible until both its fertility and their civilization collapsed" Sorry stories like this could be told of country after country.

Salinity:

Apart from erosion there is another factor that may convert good land into barren tracts. This is salinity. Salinity appears where the groundwater table is lowered owing to the excessive consumption of groundwater resources. All over the world there are large tracts of land blighted by salinity - in Mexico and several other part of America, in Tanzania and many other parts of Africa, in India, China, and South East Asia. Inspite of this bitter experience, the reckless lapping of underground water goes on merrily all over the world. Peter White writing on Greece in the National Geographic (March 1980) says, "Driving eastward in Macedonia, I get more intimations of new-found prosperity. Around peela, so many wells have been dug that the fountain of Alexander the Great has dried up".

We have through the centuries created vast deserts of fertile lands. But we do not yet know how to make the deserts bloom. Despite the claims of Israel, it is still a far-off dream. All out natural resources are going the same way. We are consuming our minerals with an abandon that is hardly credible. According to one 'guestimate' iron may last till 2,500 A.D. Aluminium and magnesium and some other minerals may be available till 2100. But lead and several other materials may disappear even earlier, say by about 2050 A.D. There are several other estimates. They all tell the same tale. We are running dangerously short of essential raw materials.

Alternate Power:

Since the Industrial Revolution our exploitation of natural power resources, coal and oil, has assumed alarming proportions. The Industrial Revolution itself was powered by coal. Then came oil. Both threaten to give out, oil sooner than coal. Now that the OPEC countries are holding the rest of the world to ransom for oil, we have begun to think of alternate sources of power that will not run out on us like coal and oil. This is the only silver lining on the overcast power front.

What we destory, we can't replace. Nor can nature, not at this speed. It has taken millions of years for nature of stockup our present supply of minerals and fossil fuels but it will take us only a few centuries to run through them. As pillagers and predators, we surpass all other species just as we do as thinkers and creators. Only our thinking and creative abilities are poor compared to our capacity for unthinking destruction.

Dumping Waste: No bird fouls its own nest. But the doubly wise man (homo sapiens) excels in this obnoxious practice. It has been estimated that in Britain the average person throws out about 1.5 lb of garbage every day. In the US the wastes dumped into the biosphere are much greater-more than 4.5 lb per person per day. To these familiar wastes are added whole heaps of industrial by-products, which neither the producer nor the consumer wants.

The advance of technology in recent years has been dubbed the Technological Revolution. This revolution, like all revolutions, has backfired. While at one end it has hastened the consumption of scarce materials, it has at the other end thrown up a lot of unwanted wastes. These wastes are piling up and have already become unmanageable. Some of these wastes like synthetic plastics are not 'bio-degradable'. Therefore they may persist for years as abiding threats to the eco-system.

Pollutants: But worst of all, are the pollutants which a sophisticated technology has been spewing all around us. Careful studies have shown that air pollution can damage vegetable crops and in general affect plant growth. This is reflected in the low nutrient quality of the plant products and consequent ill effects on the health of the animals and people who depend upon these crops. Here again, we have a remarkable amplification. But far more important are effects that arise secondarily.

Courtesy:- Malayala Manorama

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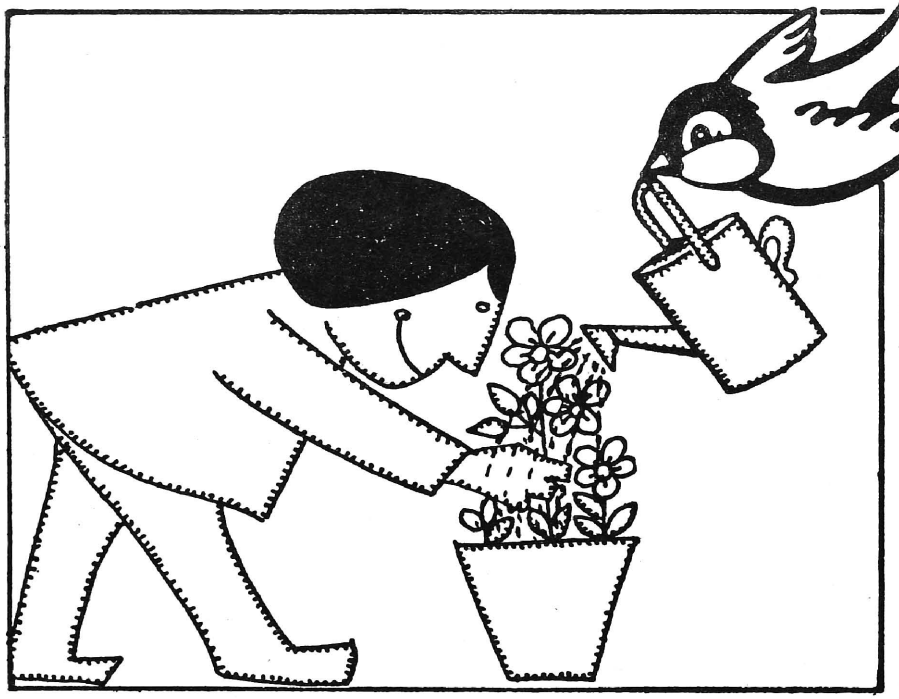

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NOVEMBER '86 OBSERVED AS QUALITY MONTH

ZAIL SINGH
President,
Republic of India

MESSAGE

I am happy to note that the Ministry of Industry has announced a programme to observe the month of November 1986 as "Quality Maintenance and improvement Month". Quality consciousness has to permeate every sphere of our activities in order to achieve efficiently our goals of economic development. I hope that this Campaign will help spread quality culture all round so as to make it an integral part of our national endeavours.

I wish the Campaign all success.

RAJIV GANDHI
Prime Minister of India

MESSAGE

The need of the hour is a national commitment to quality in all walks of our life. We should not be satisfied with anything but the best in the goods and services that we produce. I hope that this campaign will stress the responsibility devolving on all of us to achieve excellence in whatever we do. Let me wish the campaign all success.

Dr M.G. RAMACHANDRAN
Chief Minister of Tamil Nadu

Message

Our responsibility does not end with increasing production in terms of quantity alone. To produce quality products is our national duty. Not only the management but everyone in the Industry should deeply involve themselves in this task. Only then prestige for our products will grow within the Country as well as outside. The importance given to quality alone will ensure stability for our growth. November, 1986 has been announced as the Quality Improvement Month by our Honourable Prime Minister and this is being observed all over the Country. Let us cooperate in efforts to instil in the minds of all those who are engaged in the production of goods about the importance of Quality Production.

UNDERSTANDING QUALITY

The colour of the dress fades... the electric bulb blows out within a few hours of usage... the shoe that pinched your purse earlier now bites... you look at them in discomfort and say, "No Quality"... Then, **What's Quality?**

The term **Quality** is understood by each one in one's own way, Excellence, goodness, satisfaction are just a few attributes used to describe **Quality. Quality** means conformance to specification. There is also an erroneous assumption that quality is intangible and therefore not measurable. In fact, Quality is precisely measurable by the oldest and the most respected of measurements - 'hard cash'. As the Japanese put it, Quality is measured as the loss imparted after Shipping-that is the repeat expenses on the 'Sold Product' as After Sale Service. In the final reckoning , one could describe Quality as the fitness for use by the customer.

For the manufacturer, one defective product which gets rejected or reworked costs money and eats into his profit and delays the project. Rework amounts to spending more time on repairing a job than a productive work.

It is thus clear that **Quality** and **Productivity** go hand in hand. **Quality** is achieved by the improvement of the process. This increases uniformity of output of product, reduces rework and mistakes, reduces wastes of man-power machine time and materials and thus increases output with less effort. Other benefits of improved **Quality** are lower costs, better competitive position, and happier people on the job, and more jobs, through better competitive position of the company.

Minorities of Tamilnadu

Minorities Welfare under 15-Point directive of the Prime Minister in Tamil Nadu.

The main reason for the TamilNadu State being free from communal and religious riots unlike other states is due to the feeling of integration and brotherhood existing between minorities and majorities. Such feelings of unity lead to the development of National integration.

As far as TamilNadu is concerned Muslims, Christians, Sikhs and Neobuddist s Parsis and Jains are considered as minorities. The people belong to the above religions acquire minority status based on these religions. As per 1981 census, the total population of TamilNadu is 4,84,08,077. Among those Christians are 29,98,048 (i.e. 5.78%) and Muslims are 25,19,947 (i.e. 5.21%). Others namely Jains, Sikhs and Neobuddhists are below 0.01%. The Muslim and Christian minorities exist largely in the following 'Districts in Tamil Nadu :—(1) Madras (2) The Nilgiris (3) Tirunelveli (4) Ramanathapuram (undivided) (5) Thanjavur (6) North Arcot and (7) Kannyakumari. The Muslims and Christians minorities population in the above seven Districts is more than 5% and 10% respectively. As the standard of livings among minorities is comparatively lower than that of the majority, the former Prime Minister of India has given a 15 Point directive for implementation in all States with a view to improving their Socio-economic condition and to ensuring that the minorities get adequate share of the benefits of all development programmes. The details of implementation the 15-Point directive in Tamil Nadu is given below point-wise :—

1. One of the 15 directives of Prime Minister is about posting of police officials of the highest known efficiency,—impartiality and with a secular record in communally sensitive areas in Tamil Nadu. The clashes are mainly between Scheduled Castes and other communities in Tamil Nadu. Except the communal clash between Hindus and Christians in the year 1982 in Kanniyakumari District and the conversion of

religion from Hindu to Muslim in Ramanathapuram District during the year 1985, no major communal clash ever occurred in Tamil Nadu. Moreover though there is no major communal clash, the D.G.P. has been given suitable instructions to post Police Officials of highest known efficiency, impartiality and secular record in the communal sensitive areas and to post members of minority communities at the Police Station level.

2. Rewarding of Police Officials for their good work in the prevention of communal tension.

In ordert to boost the morale of the Police department and to instil courage and confidence in the minds of the Police Personnel, this Government have already formulated a scheme for sanction of a special exgratia payment to the Police Personnel killed or injured in action under heroic circumstances. This scheme permits the payment of a special exgratia grant of Rs. 10,000 to the Police Personnel killed and between Rs. 1.000 and Rs. 3,000 to those who sustained injuries according to the nature of injuries and Rs. 5,000 to those who are permanently incapactated for further service as a result of the injuries sustained under similar circumstances. This Government are also implementing a scheme known as family benefit fund scheme under which an amount of Rs. 20,000 is paid to the family of the deceased Government servant who die while in service. In addition to the above schemes, the Police Personnel upto the level of S.I. are eligible for money rewards under Police Standing order No. 40 (1) (41) for their service of special merit. Money rewards are being given in extraordinary cases. This Government are also rewarding medals for gallantry in one or two cases from C.M's gallantry reward.

3. Severe action should be taken against those who incite communal tensions or take part in violence.

The existing instructions in this State will ensure severe action against those who incite communal tension or take part in violence. In TamilNadu apart from the regular IPC and Cr. P. C. the State Government have special enactments. One such act is prevention of Instruction of Public Prosperties Act and the other Act is Act 14 of 1982 (i.e goondas Act) by which the Government can detain people who incite communal tension for one.

4. Setting up of special courts for trial of cases relating to communal offences.

A proposal to constitute special courts of Coimbatore, Kanyakumari and Ramanathapuram Districts for trial of cases under communal offences is under examination of this Government.

5. Providing immediate relief and adequate Financial assistance for the reliable victims of communal riots.

Government have issued orders permitting the sanction of monetory relief to the members

of the family of S.Cs. and S.Ts. who become victims of atrocities committed by members of other communities due to caste consideration. The victims of communal riots belonging to Minority Communities are also given financial relief in the above scales. As per this scheme if the victims happens to be an earning member or permanently incapacitted Rs. 2,000 is given to the family of the victim and Rs. 500 given in the case of temporary incapacitation. Further the proposal of the Government of India to enhance the compensation to communal victims is under examination of the Government.

6. Restoring confidence and communal Harmony is affected areas through Radio / T.V.

Instructions have already been issued to the Radio and T.V. authorities in this regard through Information and Public Relations Directorate Madras. Programmes on communal harmony is included in the dramas and folk songs programmes are implemented.

7. Enacting suitable Law to prevent irresponsible and perverted reporting relating to communal violence in the parts :

The Government of India are examining the proposal regarding to enact suitable laws to prevent irresponsible and perverted reporting relating to communal violence.

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8. Giving special consideration to minorities in the recruitment of police personnel and the representation of minorities in the Selection Committees :

In the matter of recruitment to Police personnel the candidates belonging to Minorities Communities are given due consideration. In TamilNadu Police Force there are 6.4 % Muslims and 11.3% of Christians employed in all ranks. A D.I.G., who belongs to Muslims and two Deputy Inspectors who belong to Christians are working in the Police Department. In the TNPSC, there is a member who belongs to Muslim Community.

9. Central Government taking similar action in the recruitment of Police Personnel in the Central Police Force.

This relates to Government of India hence action will be taken by the Government of India at the all India level.

10. Giving Special consideration to Minorities in recruitment to the Public Sector Undertaking :

As per the rule of reservation existing in this State 18% and 50% of vacancies in Government Services are reserved for SCs/STs and BCs respectively. The balance 32% of vacancies in Government Services are filled up on merit basis by open competition. Most of the Muslims & Christians are included in the Backward Classes list and they are also eligible to get the reservation for B.C. Communities. The Government has also issued orders to all Public Sector Undertakings to follow the rule of reservation.

11. Starting of coaching classes in Minority educational institutions :

At Madras there is an institution which conducts Special coaching classes for I.A.S. and other examinations into which students of minority communities who belong to BCs are eligible for admission. The S.C. converts to Christianity are also eligible for admission to the institutions intended to SCs & STs. The educational institutions run by the Minorities are conducting coaching clases to minorities students for I.A.S. and other examinations. To implement the 15 directives of the Prime Minister's instructions were issued to the Collectors to convene meetings with the minorities educational institutions and all religious institutions. To conduct special coaching classes, 25 colleges have submitted necessary proposals through the universities concerned. Because of the above schemes training will be given to 1250 students for writing various competitive examinations.

12. Setting up of I.T.I.'s and Polytechnics in minorities concentrated areas :

There are 40 I.T.I.s in this State. Out of this 5 institutions are for women. In these institutions 15,000 girlstudents are studying. Out of this 15,000 girl students, 1,200 are minorities communities students. The Muslim students are not attracted by the I.T.I.s. They depend on self-employment. The Muslims communities run 6 educational institutions. In each institutions 500 students are studying. Out of this 500 students Muslim students are only 200.

13. Ensuring that Minorities secure fair and adequate measures the benefits flowing from various development programmes :

As per the guidelines issued by the Government of India in Tamil Nadu for the uplift of rural people the schemes such as Integrated Rural Development Programme, Rural Land-

less Employment Guarantee Programme and Bio-gas scheme under the 20-point programme are implemented. The Collectors of all districts have been instructed to implement the suggestions of the Prime Minister.

The following statements shows the benefits derived by the Minorities :

Name of Scheme	*Hindus*	*Muslims*	*Christians*
IRDP	87%	7.4%	5.6%
TRYSEM	86.1%	4.5%	9.4%
NREP	84%	4.24%	6.8%
RLEGP	95.85%	1.15%	3%

This shows that the minorities people get their share from the schemes. In the Committee of implementation of 20-Point Programme and Development Programmes representation of Minorities were examined. In some districts, the development council which consists of minorities also examining the schemes.

In addition to the above, the Research Officer and the Research Invstigators in the Research Unit created in SW Department is to see whether schemes are implemented properly for the minorities Communities.

14. Redressal of grievances relating to encroachment of Wakf properties :

Suitable steps have been taken to restore amity wherever necessary. Tamil Nadu Wakf Board is taking action to convict the encoachers under section 36B of the T.N. Wakf Act 1954, whenever the encroachments are brought to the knowledge of the T.N. Wakf Board by addressing the Collectors for eviction vigorously through the Civil Courts whenever the issues needed Court intervention. There are 11,000 such eviction cases pending with the Wakf Board. Out of this 2 531 cases were decided by the Court in favour of the Wakf Board. 2,955 cases are decided against the Wakf Board by the Court. 5,751 cases are pending before the Court.

15. Creating a Special Cell in this State to deal with the matters relating to Minorities :

This Government have issued orders sanctioning the creation of a Research Unit consisting of one Research Officer and two Research Investigators for monitoring the implementation of 15 Point directive of the Prime Minister for the Welfare of Minorities.

Health Effects of Major Pollutants

Sulfur-dioxide. This corrosive and poisonous gas is associated with coughs, colds, asthma and bronchitis and can aggravate heart disorders. Together with nitorgen dioxide, sulfur dioxide can go through chemical transformations in the air to form acid rain, which can kill fish and retard growth of vegetation.

Nitrogen dioxide. A poisonous and highly reactive gas, nitrogen dioxide can be fatal at very high concentrations. At lower level, it can reduce resistance to respiratory diseases such as bronchitis and pneumenia.

Ozone. A pungent smelling, faintly bluish gas, ozone is a poisonous from of pure oxygen. It irritates the mucous membrances of the respiratory system, causing chocking and coughing, and aggravating respiratory diseases.

Carbon monoxide: This colorless, odourless gas replaces oxygen in red blood cells, reducing the amount of oxygen that reaches cells in the body. Sustained exposure to high levels affects the brain initially, impairing perception and thinking ,slowing reflexes, weakening judgment and inducing drowsiness. Eventually the heart is affected as well. At every high levels of exposure, a person can die from heart failure or asphyxiation. Other Symptoms of exposure to carbon monozide include headaches, dizziness, nausea and difficulty in breathing.

Particulates: Generally thought of as dust, soot and smoke paticulates can include many kinds of solid and liquid substances, some of them highly toxci. The health hazards caused by particulates can be physical, resulting from the clogging of the lung sections by fine particles, or chemical. Particulates passing to vital organs via the lungs and bloodsteam can react adversely with substances in the body. The presence of particulates in conjunction with sulfur oxides can severely aggrevate respiratory diseases.

Lead: Roughly 90 percent of airbone lead comes from autoemissions. Lead smelting and processing industries also are significant sources Lead concerntrates in bone and soft body tissues. Its most pronounceed effects are on the bloodforming, nervous and kidney systems.

Hydrocarbons: Primarily a product of automobile fuel combustion, hydrocarbons are unburned fuels in gaseous or vapour form. At the levels generally prevailing in the air, hydrocarbons may have no direct effect on human health. In a confined space of ours, they could cause asphyxiation by displacing the air.

Flag Day Festival in Tamil Nadu

Flag Day is celebrated every year on 7th December since the independence of India and the Armed Forces Flag Day is to honour the valiant dead, to salute the veteran brave and to renew their pledge with the services personnel who are in active services. This year (i.e.) 1986 Flag Day is being observed throughout the country on 5th December.

Funds are raised through Hundi collections on Sale of Flags and by getting donations from the generous public on Flag Day. Out of these funds various welfare activities are being carried out by the Government through the Directorate of Ex-Servicemen's Welfare. The Directorate of Ex-servicemen's Welfare looks after the welfare of ex-servicemen and their families, the families of serving men and also the resettlement of war disabled and war widows. The ex-servicemen population in Tamil Nadu is approximately 6.50 lakhs.

During the year 1985-86, 6,542 ex-servicemen and their Dependants were paid grants to the tune of Rs. 35.59 lakhs which includes the constructional activities for building of Jawans Bhavans, Ex-services Centres etc. The grants include monthly grant to the destitutes, lumpsum grant, marriage grant, pocket money to the TB/Leprosy/Cancer patients, Immediate Relief Grant as spot assistance, funeral grant, flood and fire relief grant, educational scholarship/stipend to the children of ex-servicemen, annual maintenance grant to war widows, financial assistance to the pre 1-1-1964 widows, widows of personnel served during the II World War, Old Age Pension to destitutes etc.

Rehabilitation schemes such as establishment of Jai Jawan Stalls for assisting ex-servicemen in self employment scheme by providing training facilities are also implemented.

A special Employment Cell is functioning at the Directorate of Ex-servicemen's Welfare which sponsors suitable ex-servicemen candidates against the vacancies reserved for ex-servicemen. So far about 4,664 ex-servicemen placed in suitable employment through this were Special Employment Cell.

Coaching classes have been conducted for ex-servicemen for appearing for Banking Services Recruitment Board. During the period from 1983 to 1985, 185 exservicemen were trained. During this year 121 ex-servicemen were trained, bringing up the total to 306.

Coaching classes have been conducted for exservicemen and their dependants for appearing in the Tamil Nadu Public Service Commis-

sion Examination. Previously, 210 persons were trained. During this year 101 persons were trained.

Under the scheme of PEXSEM (Preparing Ex-servicemen for Self Employment) 174 ex-servicemen were given training in Electrical wiring and welding, Poultry farming, (Broilers and Layers) dairying, specialised farm equipments, handling and repairs etc. in the Rural Extension Training Centre, Arni, North Arcot and in Rural Unit for Health and Social Welfare, K.V. Kuppam, Gudiyatham Taluk, North Arcot District.

Under this scheme, 171 ex-servicemen were trained. out of them 21 have availed loan and subsidy. 66 were awaiting the sanction of loan by banks. With effect from 1-4-1986, the Government of India and the Government of Tamil Nadu share the expenditure on this scheme on a 50:50 basis.

Defence Service Personnel are given training in Industrial Training Institutes in various trades and paid stipend of Rs. 250 p.m. during their post release training period. 96 persons have been trained and a sum of Rs. 1,57,950 was disbursed as stipend. The Government of Tamil Nadu is also sanctioning grant of upto Rs. 1 lakh towards this scheme.

Women dependants are given free training in the 12 tailoring units run by this department. 5,168 women dependants have undergone training and at present 263 women dependants are undergoing training. The annual expenditure on this scheme is about Rs. 2 lakhs.

Ex-servicemen and their dependants are given training in Typewriting and Shorthand in the 3 institutions run by this department. So far 1,000 persons have been trained. The annual expenditure on this scheme is Rs. 60,000.

269 Jai Jawan Stalls worth Rs. 12.80 lakhs have been established all over the State, so that ex-servicemen and widows could rehabilitate themselves and earn a decent livelihood.

As a self employment venture 114 ex-servicemen were allotted automatic Milk Vending Booths/Aavin Parlours.

72 Exservicemen and their dependants have been granted lump sum grants for starting Petty Business/Trades to the tune of Rs. 49,500.

Under the scheme of BLISS (Bank Loan Interest Subsidy Scheme) 1,371 ex-servicemen have availed loans from the Nationalised Banks to the tune of Rs. 103.83 lakhs for starting

remunerative self employment ventures. A sum of Rs. 2.68 lakhs has been paid as interest subsidy from the Amalgamated Funds.

Widows received considerable assistance in the form of various grants. Marriage Grant of Rs. 1,500 is paid to all widows of defence personnel killed in action towards the celebration of their daughter's marriage. Widows who have lost their husbands invarious battles after independence receive Rs. 600 every year as Annual Maintenance Allowance, as a token of gratitude and rememberance. Housing grant of Rs. 5,000 is also sanctioned to these war widows. So far 101 widows have been sanctioned housing grants to the tune of Rs. 4,78,500.

Ex-servicemen and widows are assisted to celebrate one daughters' wedding with grants and kind worth Rs. 1,000. During the year 1985-86, 922 were assisted to the tune of Rs. 4,61,000.

Destitute ex-servicemen and widows of ex-servicemen who are above 60 years of age are given a monthly financial assistance of Rs. 100 till their life time and 129 ex-servicemen/widows are being assisted with an annual commitment of Rs. 1,54,800. Widows of Defence Personnel who retired prior to 1-1-64 with service pension and died subsequently were not eligible for family pension. In order to help these widows they are sanctioned a sum of Rs. 50 per month and children allowance of Rs. 10 per month restricted to two children. So far 1,492 widows have been paid to the tune of Rs. 27.76 lakhs.

A sum of Rs. 2 lakhs has been set aside to assist the ex-servicemen who undergo major surgeries like heart surgery/kidney transplantation.

There are eighteen 12 bedded wards for ex-servicemen in Taluk Headquarters Hospitals. The amount spent for these purposes from the welfare funds is Rs. 15.47 lakhs.

Under the scheme of grant of monthly financial assistance of Rs. 100 per person affected by Leprosy/Cancer and total blindness in Tamil Nadu as at present 58 persons are being assisted with a total financial expenditure of Rs. 69,600 per year.

OTHER ACTIVITIES

Revitalisation of Meyyur Gudapakkam Land Colonisation Co-operative Society :— 34 new members have been inducted after proper training in agriculture methods. The land holdings of each member will be 4.4 acres for cultivation purposes.

Since this is a dry farming area with inadequate irrigation potential through the existing 13 wells, a scheme to bring water from the Coum river bed at an approximate cost of Rs. 8.30 lakhs is being progressed.

Nearly 56,000 palmyrah nuts have been sown. A scheme is also under processing to plant casuarina in about 150 acres by which the ex-servicemen residing in the colony will be benefitted by a cash inflow of about Rs. 7.5 lakhs by the end of 5 years is expected.

Election Bandobust Duties :—Nearly 18,000 ex-servicemen were mobilised and were appointed as Special Police Officers during the period of Local Bodies elections in 1986. TamilNadu is the first State to utilise ex-servicemen in large number for such a public cause.

There are 8 Jawans Bhavans constructed each one at Tiruchirappalli, Salem, Coimbatore, Thanjavur, Madurai, Sivakasi and 2 at Vellore at a cost of Rs. 73 lakhs. Construction of Jawans Bhavans at a cost of Rs. 33 (Thirty three) lakhs at Cuddalore and Saidapet is under progress.

District Ex-services Centres exists in all the districts of Tamil Nadu except Chengalpattu, Anna District, Kanniyakumari, Pudukkottai, Ramanathapuram and Pasumpon Muthuramalingam Districts. These ex-services centres provide lodging facilities to the ex-servicemen/serving personnel in transit for a short duration.

Flag day collection - Award for TamilNadu

Contributions by the public on Flag Day constitute the main stay for implementation of welfare measures for Ex-servicemen /dependants. In this aspect, the people of Tamil Nadu have always been generous and over the years, the targets have been achieved through the efforts of the collection machinery, and above all the generosity of the people and their kindness and affection for the personnel of the armed forces.

Tamil Nadu, during 1985, has collected Rs. 64,25,816 towards Flag Day funds and thus merited the first award of the special Trophy instituted by the Government of India for highest collection. The Trophy was received at New Delhi from the Hon'ble Prime Minister, Thiru Rajiv Gandhi by the Hon'ble Minister for Finance Dr. Navalar V. R. Nedunchezhiyan, at the meeting of the Kendrya Sainik Board held on 10th December 1986.

Edited & Published by R. Karpoorasundarapandian, I.A.S., Director of I & PR., Govt. of Tamil Nadu.

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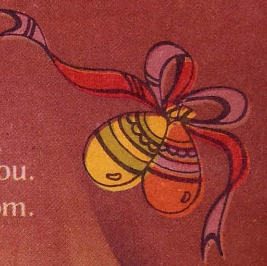

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