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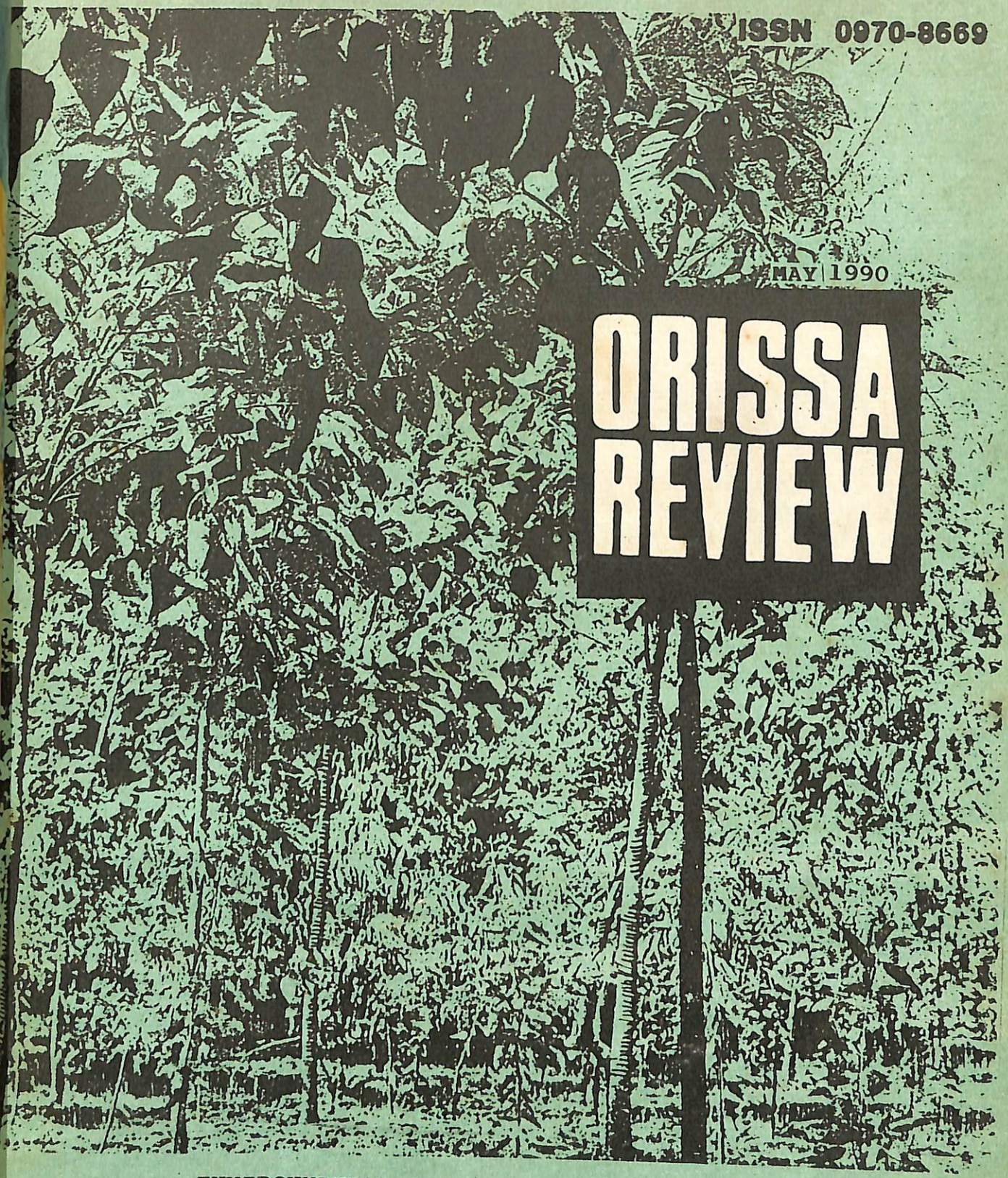

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ORISSA REVIEW

ENVIRONMENTAL PLANNING AND FOREST MANAGEMENT

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ENVIRONMENTAL PLANNING AND FOREST MANAGEMENT

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SYMBIOSIS OF MAN AND NATURE

The march of civilisation, as we understand it, has so far been at the cost of Nature. Human pastoral development settled agriculture, habitations and settlements, industrial development, railways, shipping and the other modes of communication, and not to speak of the wars, have always demanded a very heavy share on the so called "free-gifts" of Nature, which are no longer so free. But, as it appears, the human race has already taken or used up more of the natural resources than Nature can reasonably provide or renew. This is resulting in an imbalance, which if not corrected in time, may lead to unforseen consequences and insoluble difficulties in the future.

The belief that progress of science and technology, with more and more intimate knowledge and understanding of the Natural processes will continue to open up newer and newer vista and sources of power, for greater and greater development strides and for ever, no longer seems feasible. On the contrary, the ever rising population, their unlimited wants and the consequential scrambles for more and more resources, may ultimately mean the drying up of the limited resources of the world in not too distant a future, leading to more and more deprivation, conflicts and misery.

Man is possibly exceeding, or has already exceeded, the limits of the bearing capacity of Nature. It may, therefore, be necessary to ponder on the question of the mutual dependence of Man and Nature for a better equation for their long and harmonious survival in future. Possibly keeping this in view, some of the modern thinkers observe that at present the human race is perhaps enjoying not so much the bequest of the past, or the fruits of their own labour, as the borrowings from the future. This, therefore, calls for a more judicious use of the Natural resources as are available to the human race. What is called for is a Nature budgeting, that is, a planned development and utilisation of the Natural resources today, tomorrow and in the future.

Every individual and every family seeks more and more command over the resources to fulfil the ever increasing wants. Every economic group and unit seeks more and more income and profit, through more and more production, trade

and commerce. Every State and nation seeks to increase its power and prestige with greater command over the world's resources, through higher and higher feats in science and technology and through shining armours and impregnable fortifications and groupings. Development in science and industrialism has so far provided the wherewithal to satisfy some of these wants.

As the race continues, the symbiotic relationship of Man and Nature hangs in a very delicate balance. It gets distorted and exhibits signs of tension and strain. Human acquisitiveness and parasitism are gradually leading to exhaustion of Nature. While science and technology have developed fast, the social, political and the organisational aspects of mankind have not kept pace with the same. As a result, the overall limits of the World's natural resources have been lost sight of. Because of the usual microscopic attempts at development and resources utilisation, the cost-benefit calculations rarely take into account the environmental cost, the long term effects on environment, and the social cost arising out of the permanent withdrawal of resources from the future of mankind.

According to the Indian Philosophers, the Panch Bhuta (the five constituents) sustain life on Earth. Those are: Khiti (earth or soil), /Up (water), /Tej (Sunshine, light and power), /Marut (air and oxygen), /and Byoma (the void or the outer space). All these constituents are now showing signs of over-use, strains and exhaustion in varying degrees. These are warnings enough that everything is not so well with the world. It calls for a more sobre and guarded approach to resources utilisation.

The bio-sphere which holds life on Earth is a very complex and multi-component formation with a fragile structure. It is still and continually is in its process of evolution, notwithstanding the growing interference of Man. It is the thin layer of soil, rock, water, air and plant life which sorrounds our planet, alongwith the other living beings, for which it provides the life support. Our ever growing demands on this life supporting system, unless judiciously controlled, may progressively lessen its life-sustaining capacity and soon we may find ourselves in a very unenviable point of no return.

Examples of environmental degradation are not very far to seek. In many places, due to over emission of smoke by industries, installations and vehicles, and due to absence of proper lavatory facilities, we do not have even some fresh air to breathe. Too much noise is created in many places due to continual harsh sounds of industries, locomotives, vehicles, microphones and the like. People even can't read or peacefully rest or go to sleep, leave aside the number suffering from psychological disorders for this. In many

places water has been so contaminated as to be unfit for use. Such polluted water even kills aquatic life. There is apprehension that even safe drinking water may not be available is not so distant a future. Piling of wastes, refuse and garbages lead to grotosque and ugly sorroundings. Over-mining activities in certain places have led to deformation of the affected areas and permanent loss of forests over these areas.

Deforstation and loss of the top soil have led to the common spectacle of ravines, bald hills, barren wastes, deserts and desolations. Conservation of soil is one of the crying needs of the day. Drastic reduction in the forest areas and the tree cover is held to be somewhat responsible for lack of good rains on the one hand and for very high floods and soil erosion on the other. Continual encroachments and disturbances into the core forests have made wildlife and bird-life progressively more and more scarce and even extinct. All these reduce the quality of our life and the richness of our sorrounding.

The cities and towns that we once loved in our childhood, appear to have mal-developed in many ways and have become less lovable. The serene atmosphere has gone. Habitations have increased in an unplanned way. Traffic has become unmanageable. Accidents have become a daily feature of life. Garbages get piled up and unremoved or remain undestroyed for long, increasing the health hazards. The drainage systems get choked up. Encroachments have increased. The flowering trees and green parks have either shrunk or have disappeared altogether. Schools, Colleges, institutes, hospitals, public utilities, and almost all institutions, show signs of overcrowding, over use and consequential strain, exhaustion and indifference. While our number has increased, our quality of life has declined. It is, therefore, rightly said that true civilisation consists not so much in multiplication of our wants but in their conscious and voluntary reduction.

ENVIRONMENTAL PLANNING

Environmental planning is a multidisciplinary approach. It takes into account various disciplines and studies and concerns itself with aspects like life conservation measures, /eco-development, /balanced use of natural resources, land capabilities and proper land-use,/arrest of soil erosion, /treatment of degraded and critical earth surfaces,/population control and distribution,/energy conservation and diversification of energy resources,/elimination of hunger,/hygiene,/protection of purity of water and water resources/protection of purity of air,/preservation of forests and wild life,/development and propagation of appropriate technology, /preservation and proper use of the outer space,/fostering of environmental consciousness. Each

of these aspects is quite important and aims at a better quality of life with greater security for the future.

Environmental planning has, therefore, assumed great importance in the modern world. It is specially necessary in high density areas, in hyper-activity areas and in the critical and degraded areas. Negatively it consists of prevention of environmental degradation of the targetted area and positively for improvement of the environmental conditions through suitable planning and action-oriented programmes.

A global view of environmental planning is possible. For instance one can point out to the vast desert areas where not a bladegrass grows. There are hot deserts and cold deserts. They are just lying waste without any substantial use for humanity. Environmental planning to arrest, control and improve the deserts with multi-nation participation is possible. It can be suggested that the new Isles and Islands under formation in the Oceans and in the Seas should be left undisturbed in order to stabilise and must not be encroached upon. It can be argued with justifications that the vast coastlines in the world should normally have coastal dressing forests, say in minimum one Kilometre deep, with normal exceptions for the built-up areas, ports, fishing areas, salt-farms and the like. One can point out to cut-and-burn farming belt from Venezuala to the Phillipines and prescribe better and less harmful methods of land utilisation for greater productivity. Mountain belts, important from the global view points, can be identified to be left undisturbed and not to be brought under the plough above a certain limit of height. A global norm can be laid down for every country or nation to set apart a certain percentage of its land to be maintained as forests. A global understanding can be developed in order to preserve the agreed and identified monuments and wonders of the world, alongwith their surroundings from environmental degradation for the future generation.

In the skies and in the outer space, one can point out to the numerous jet planes, satellites and other floating objects leaving trails of thick exhaust smokes, day in and day out and propose a scientific study of their adverse effects, if any, on the falling of the Sun's rays on earth so vital for mankind and all the life forms on Earth. It is also necessary to study their adverse impact on the world weather conditions. The main question here, as anywhere, is the knowledge about the exact limits of the bearing capacity of Nature and whether we are presently not overburdening the same or exceeding those limits to their own detriment.

A national view of environmental planning is possible, from a study of the specific problems and needs of the country in question. Its history, geography, social and economic conditions, cultural heritage and educational

consciousness largely determine its state of environment. While a global view of environmental planning sometimes borders on the etherial, a country-view of the same seems more practical and feasible. The latter can give concrete shape to environmental planning by pin-pointing the problem areas and in offering the solutions.

For instance, from a global average, it is generally stated that a country should have about one-third of its surface areas as forests. But there are practical difficulties in applying this uniform standard to each and every countries irrespective of their differing status and conditions. Some countries are too small, while other are too big. Some are in growth-favouring regions, while others are in difficult geographic locations. Some are industrially too advanced, while others are still in the pastoral and nomadic stages. A standard yardstic cannot possibly be applied to them all uniformally. It is, therefore necessary to calculate, country by country, the areas that each should have as forests or under effective green covers.

Same is the case with the human population. The present day population in the world is about 4500 millions. China, India, USSR and the USA top the lists in that order. In some countries the population is stable. In others, it is slowly growing. In yet others, it is rapidly expanding. But no guidelines have yet been evolved as to how much population a country can safely have, judging from its resources and potentials. No doubt such a mathematical limit or a scale can be worked out or evolved. But it will always be open to challenge, with newer and newer refinements entering consideration including military considerations. Nontheless, it is worthwhile to have such a scale as a policy guide.

Human population cannot be considered in isolation to the other living things. Domestic animals and poultry as well as wild-life birds will no doubt constitute other important competing claims on the resources of the area. The team of experts who will, let us assume, undertake the stupendous task of laying down the bearing capacity scales may very likely get confused and go mad and give up the efforts. What of factual status data, trend statistics, long range observations etc. will thwart such an endeavour from the very beginning. Military considerations may even point out for a greater population of all kinds, while resources considerations may point out to the contrary. The main question before an environmental planner is, therefore, how to bring out an orderly system out of the existing confusion.

Even if any presently workable perspective standards are evolved for the countries and the world, these will have to be continually checked and evaluated with the coming unforseen changes and then revised and re-defined.

A project-view of environmental planning in a micro

scale is most practical and rewarding. Because of the limited nature of the targetted area, the specifics can be well defined, faced and tackled. Land-scape planning, town-planning, structure of planning, a less trouble some urban transportation system, urban beautification scheme, smokeless and soundless industrial units, treatment of ravinous areas reforestation of bald hills, catchment treatment or river valley projects, rejuvenation of degraded forests, developing shelter-belt coastal plantations, Sandune greening, developing lakes and parks, plantation belts running parallel to the roads and the railways and the like are examples of such environmental planning.

The basic recognition of all our development goals should, therefore, be that Man exists as a part of nature and not in isolation,/that man and nature are inseparable;/ that nature with all its bounties and beauty should not only be used and utilised now, but should also be substantially conserved and preserved for the future,/that all tensions, stresses and strains developing in the relationships of Man and Nature must be identified, controlled, reduced and if possible eliminated altogether. We must not for a moment believe that Man lives in the present alone, that our past and future can be totally eliminated from our consideraions.

FOREST MANAGEMENT

WORLD PICTURE

Forest management is one of the main planks of Environmental planning. The self-purifying qualities of mother Earth are mostly derived from her plant life. It is said that the forests hold the land together and keep the water cycle functioning. They regulate the atmosphere and also recreate the spiritual energy in man. Now-a-days it has almost become a common concern that the forest covers are getting progressively reduced and at very fast rates. According to one estimate about 50% of the world's total forest resources have been finished by now, out of which the post-Industrial Revolution area alone account for half. During this period also the world population has rapidly grown. In 1650 the world population was about 545 millions. In 1750 it became 728 millions. In 1850 it came to be 1171 millions. By 1950 it became 2400 million. Now it is arounnd 4500 millions. Hunger for land for habitation and agriculture and fuel wood requirements to meet the energy needs of the ever expanding population takes its toll on the world's forest resources.

Apart from the traditional requirements of (a) fuel wood, (b) timber for agricultural implements and (c) house construction materials, vast quantities of timber are needed for (d) Ship-building, (e) Railways (for construction of wagons, and for sleeper for the railway lines), (f) body building for Trucks and Lorries and the like. The two global

wars fought during 1914-18 and 1939-45 were responsible for the vast demands on timber and the lumbering activities.

The surface area of the earth is said to be around 197 million sq. miles or around 315 million sq. km. About one-tenth or 10% of the land surface is estimated to be now under agriculture/cultivation. The shifting cultivation areas from Columbia/Venezuala to Phillipines/New Guinea has been estimated at 0.1%. This will indicate that the pernicious practice of shifting cultivation through the method of cut and burn, through very damaging to the forests when considered from a local micro point of view, does not appear to be a major cause of forest degradation from the global view point.

Some of the countries with large forest areas in the world are indicated below :-

	Country	Million Hectares of Forest areas.
01	USSR	910
02	Canada	443
03	USA	306
04	Zaires	129
05	Indonesia	122
06	China	115
07	Sudan	92
08	Peru	87
09	India	67
10	Argentina	63
11	Maxico	44
12	Burma	39
13	Australia	35
14	Japan	26
15	France	14

It is on the Forestry policies of these few countries that mostly the world environment will depend. This of course is not to minimise the mischief value of other factors like the atomic explosions and implosions that the atomic countries can perpetrate on the world environmental scene, and the like.

At present the major logging and timber working industries are in Europe and North America. Unless cheap and accessible substitutes are discovered or invented for our many-

fold timber requirements, the steady decline in the forest areas in the world cannot possibly be prevented. It is an area which is worthy for mounting a global research programme.

Reliable statistics are not available on the issue. But, from the various pointer statistics one can realise that the world's forest areas are declining at very alarming rates. In 1949, it was estimated that the world had 4000 million hectares of forests. In 1974 according to one estimate it became 4850 million hectares, whereas according to another estimate it fell to 3800 million hectares. Similarly, according to one estimate the closed forest areas of the world in 1978 was 2563 million hectares, which is likely to be reduced to only about 2117 million hectares in 2000 A.D. The annual deforestation rate of the world has been variously estimated at 6 to 7 million/ or 10-12 million/or 18.20 million hectares per year, depending on the differences in the variable in the deforestation scenario taken into account.

One peculiarity marked in this decline is that the reduction in the forest areas is likely to be much more, that is about 60 times more, in the Developing Countries than in the Industrialised Countries. It is estimated that between 1978 and 2000 A.D. the closed forest area of the Industrialised Countries will get reduced from 1464 million hectares to only 1457 million hectares, that is a shortfall of only 7 million hectares. Whereas in the same period, the reduction in the closed forest areas of the Developing Countries will be from 1099 million hectares to 660 million hectares, that is, a shortfall of about 439 million hectares. This appears to be a very disturbing trend. It is, therefore, needed to be examined whether in the Developing Countries, forestry can be long considered as a main or substantial source of revenue for the States,/whether forest raw-materials should at all be exported as such or should be manufactured into finished or semi-finished value-added products for purpose of such exports. Be that as it may, exploitation of the forest resources should be on conservative, rigid and strictly on scientific lines, consistent with the ecological conditions of the area.

Trees grow slowly. Forests once destroyed will take very long years to regenerate, provided the area is left alone to recuperate. Soils are formed through the process of millions of years and they get eroded with the destruction of forests, thereby further accentuating the problem. In view of all these facts, it is not prudent to consider the forests as a renewable source of supplies. It is somewhere in between the renewable and the non-renewable sources;/and perhaps it is nearer the non-renewable sources. Maintenance of a standard number of tree population in an hectare of forest and harvesting anything surplus or incremental above the standard, can, therefore, be considered a wise policy.

Even then, a forest is not merely tree or timber. It has a number of other values, eg. its fauna and flora, ornamental plants, medicinal herbs, streams and gems, multitude or aquatic life and so on and so forth. The UNEP while emphasising the estimated corelationships between population and their development with the available natural resources and the environment, has rightly emphasised on the maintenance of ecological processes and the life systems, preservation of the genetic diversities, and the sustainable utilisation of the species and the ecosystems. The world Conservation strategy, therefore, revolvs round controlling deforestation, controlling over-grazing, arresting soil degradation, arresting the spread of deserts, curbing over-exploitation of terrestrial and aquatic resources, maintenance of genetic diversities and preventing environmental pollution.

FOREST MANAGEMENT IN INDIA

The total land mass of India is stated to be 329 million hectares. The statistics about the forest covers in India have been differently reported at different times. According to one estimate it is around 75 million hectares. According to another estimate it is about 67 million hectares. The 1972-75 Satellite results reported the forest covers at 55 million hectares. The next 1980-82 Satellite results showed the forest areas at 46 million hectares.

The accepted norm for the country has been to retain 33% or about 100 million hectares as forest. As against this aim, the different statistics on forest covers indicate that we have either 23%, or 20%, or 17% or 14% of the area as forest. It is also stated that really good forests are only 11% of the total land mass of the Country.

The annual rate of deforestation in India is estimated at 1.5 million hectares. As against this, the average annual achievements under the different plantation and regeneration schemes has so far been around 0.15 million hectares. These statistics, howsoever unreliable they may be, point out to the need for accelerating our planting and regeneration efforts to about 10 times so as to catch up or balance out the losses, in order to maintain the existing level of the forest lands.

If the forest cover in the Country has to go up to 33% then the plantation and regeneration efforts have to be intensified by 10x3=30 times annually and that too for about half a Century or more. Otherwise we see no hope of either maintaining the existing level of the forests or their suitable augmentation to atleast 100 million hectares. In view of the existing 175 million hectares of waste-land available in India, this targest seems achievable and should be achieved.

In respect of the Country's fuelwood requirements,there are divergences in estimates. According to the NCA, at present (1970) India uses 150 million C.M. of fuelwood;/

out of which only 13 million C.M. is accounted for and the rest are not accounted for, presumably being theft and pilferages;/ and by 2000 A.D. India will be needing about 225 million C.M. as fuelwood.

According to yet another estimate (1985) about 130 million C.M. of fuelwood is being used in the Country. The reduction of fuelwood consumption from 150 million C.M. in 1970 to 130 million C.M. in 1985 is not explained, though partly it might be due to the fuel substitution devices.

According to yet another estimate, the annual firewood need of India is around 133 million M.T. out of which only 48 million M.T. is reported produced or available. The shortage of about 85 million M.T. of firewood has not been explained.

One view is that from a study of the Himalayan forest depletion it has been estimated that 10 times more number of trees are cut to meet the firewood requirements in the Country than those cut for the Industrial supplies. But there is also a diametrically opposite view that most harm to the Indian forests is done through the extractions for the Industries including shipping, railways, and the constructions, than done for the firewood;/that the thieves destroy the forests more than the fuel gatherers.

In absence of correct bench-mark data and the periodic trend statistics to compare the positions, such disputations will naturally arise and the assertions or the counter-assertions cannot either be accepted or refuted in absence of the correct basis data. In short, we are in a highly critical and sensitive area without much reliable parameters to guide us for the future. The sooner these defficiencies are remedied, the better.

Obsolence, power shortages and other problems apart, the paper industries in the Country, with about 250 units or so, are reported to be suffering from occasional shortages of raw materials like bamboo, hardwood etc. Their annual installed capacity is around 2.40 million tons of paper, where as the actual production is around 1.50 million tons. Thus, their capacity utilisation is around 63%. Without greater and sustained production of bamboo and pulpwood it may not be desirable to set up more number of paper-mills and newsprint industries in the Country. Consolidation and modernisation of the existing forest-based industries should, therefore, be preferred to setting up of more and more forest-based industries, unless the forest raw materials base and the power supplies position substantially improve.

Finding that the forest based industries ranked the 5th in terms of value of production and the 4th in terms of employment generation, among the manufacturing industries in the world, NCA has recommended to expand and establish

a large number of industries based on forest raw materials. But this recommendation should rather be examined and implemented with caution,/and that without proper raw material studies and examination of the long term feasibility of such industries, such misadvantures are better avoided. Areas where the forest based industries are falling sick for want of raw-materials may have to be avoided, while in the hitherto unexplored areas where there is long term possibility to tap the available raw-materials, exploratory and expansionist industrial activities can be initiated. Even then it has to be ensured that the basic sources of MFP are not reduced/and regeneration efforts continued side by side.

Economy in the use of paper and all other products of forest-based industries which are in use in mass scales should be aimed at and insisted upon. The plantation policies of the company should take into account the raw material needs of the main forest based industries so that the raw material resources are not depleted but augmented.

Some of the main reasons for shortages of forest based raw materials like timber for the Industries are: unscientific exploitations, unscientific logging practices, slow development of timber engineering, illicit and illegal felling, unrestricted movement of timber throughout the Country, wasteful shortage practices, wasteful use of the raw-material by the Industrial units, non-renewal or very slow renewal of the forest resources and the like which need to be remedied.

India has about 44,80 km. of coast-line. The policy of having a coastal belt forest/plantations of atleast one km. deep from the high water marks of the sea, from Sunderban to Cape Camorin and from Cape Camorin to Kutch, with the well known exceptions of the built up areas, ports, coastal towns, beach resorts, brackish water pisciculture tanks, salt farms etc. appears to be a sound one. Such Coastal forests will also serve as wind-breakers and will minimise the risks and ferocity of gales and cyclones which are very frequent in these areas. This will serve the habitat needs of the sand deers or black bucks and of the other coast-line wild-life and bird-life. This will further consolidate the land formation action of the sea.

Some of the other critical areas which need rehabilitation treatment are the bald or semi-bald mountain ranges in the Himalayas, the Satpura and the Aravelis and the bald hills of the Eastern Ghats. The Chambal ravines and the Thar Desert are also in need of special treatment. According to one estimate, in India ravines grow at the rate of 10,000 hectares annually. Ravine control measures are, therefore, very essential. People living in the north-western India have experience of the hanging dust clouds for weeks together during the summer months. All such critical areas deserve special attention from the view point of environmental planning, conservation measures and forestry development. These also need regular monitoring.

Large scale deforestation of the catchment areas of the rivers invariably leads to greater intensity of floods, soil erosion, and accelerated siltation of the dam reservoirs. According to the N.C.F. the minimum and maximum cropped areas damaged due to floods in the Country in the recent decades has been as under:

(In Millions of Hectares)

Decade	Minimum	Maximum
Fifties	1957 = 0.45	1955 = 5.40
Sixties	1965 = 0.25	1969 = 4.34
Seventies	1979 = 0.20	1978 =10.00

Similarly, a study of the assumed rate of siltation and the observed rate of siltation of some of the important Dam reservoirs in the Country by the N.C.L. shows that the actual siltation has been 2 to 16 times of the assumed annual rate in acre feet, which may reduce the longevity of the systems.

It is, therefore, essential that the catchment areas of the rivers in general, and of the rivers having major and medium irrigation systems in particular, should not suffer from deforestation and soil erosion. The twin measures of protection of the existing forests in the catchment areas and intensification of plantation activities in the catchment areas have, therefore, been recommended for the purpose.

The tribal communities, constituting about 7.8% of the India's population, mainly reside in the forests and the hill areas and provide one very important dimension to our forest management. Realising their importance for forestry activities, the NCDBA recommended that the symbiosis between the tribal communities and the forests in India should be recognised and re-established. The tribal and the local communities should be accepted as partners in the local forestry development activities and a climate of participation should be forced. Social forestry and tree culture should be encouraged through them. High lands now under agricultural crops should be diverted to tree crops. Rotational exploitation of the MFP for regenerating the produce should be tried. Over exploitation of the forest resource should be checked and avoided. Training should be given to the tribal collectors for better collection of MFPs and their processing. Viable tribal co-operatives should be formed for the purpose. Mixed plantation should be preferred in all forests in contradistinction to monoculture forestry activities. Forest village development plans should be formulated and implemented. Development of the shifting cultivator should primarily be within the area of their traditional habitat. In the tribal areas, valley lands can be used for regular agriculture, moderate

slopes for horticulture, and the top hill areas for forestry activities. Migration and encroachment of fresh areas by some of the tribal communities should be discouraged, by providing them adequate means of engagement for livelihood in their own original areas. Advantage should be taken of the wealth of tribal knowledge about forests, their produce and wild-life, specially by the forest planners. Social forests when firmly established should be got managed by the local communities within specific and enforceable guidelines.

Between 1901 and 1981, the population of India has increased from 238 millions to 700 millions or about 3 times. The agricultural and forest lands in the Country do not increase. Land is fixed and limited asset. The net agricultural area sown has been around 143 million hectares. The area under forests have been taken at 67 millions hectares, which has since been reduced to only 55 million hectares. Unless the population of the Country gets stabilised, the pressure on the agricultural lands and on the forests will continue to mount up. It is, therefore, essential that the population growth is arrested and if possible moderately reversed.

In 1956 India had a cattle population of about 204 millions and a goat and sheep population of about 94 millions, totalling 294 millions. Of these, 21 million cattle, and 13 million goats and sheep exclusively grazed in the forests, causing serious damage to the forests and the tender plants. Now the cattle population of the Country is put at 400 millions. Over grazing, over-browsing and the complete freedom of movement allowed to the cattle population lead to recurring damage to the crops and the forests. It is, therefore, necessary that the cattle population as well as the population of goats and sheep should also be controlled and stabilised. Their hither-to free movements should also be restricted and controlled. Alongwith rotational grazing of the village pastures, stall feeding is also essential if the Country wants to show good progress in plantation and forestry activities. The "Tundi" system of restricted grazing by fixing a mouth-control or mask in the mandibles of the cattle which was being followed in the rural areas is fast disappearing. The system should perhaps be revived and encouraged. This will enable the cattle, goat and sheep to feed on grasses only without damaging or destroying the growing shoots and plants.

FOREST MANAGEMENT IN ORISSA STATE

So far as Orissa is concerned, different statistics have been given at different times, probably on the basis of different timings and differing surveys and computations, on the actual forest cover of the State.

In 1961 it was estimated that the total forest area of the State was 25,446 sq.miles, forming about 42% of the total land surface of the State which was 60,136 sq.miles.

According to an estimate in 1972 the forest areas of the State was reported as 67,461 sq.km. According to another estimate in 1980 it was reported as 6.77 millions hectares. It was reduced to 4.97 million hectares in yet another estimate.

But the latest statistics provide the following picture of the forest cover in the State of Orissa:

Year	Sq.km. of forest area in the State
50-51	45,717
60-61	65,851
70-71	67,768
80-81	59,963
85-86	52,323

Eventhough it was long regarded that about 43% or 42% of the area of the State constituted forests; the Satellite studies revealed that actually only 34% were forests, which have been further reduced to 28% by some and to 20% by others. All these varying statistics do not give a realiable bench-mark.

But generally it is believed that forests in the State are shrinking due to various reasons, e.g. due to irrigation and power projects, settlement of dis-placed persons, for purpose of roads, canals, industries and for bringing more lands under the plough. Activities of the forest thieves in some of the theft-prone areas of the State also add to this shrinkage. Besides, there are about 35,300 hectares of degraded forests which are in need of regeneration, reforestation or rejuvenation.

The area of the Reserved Forest in the State was around 13,880 sq.km. in 1962. This increased to 24,148 sq.km. by 1972 due to maturity of several forest reservation proposals. This further increased to 25,637 sq.km. by 1978. According to the 33% or one-third norm, the State should have around 50,000 sq.km. as forests, its total area being 155,707 (or 0.15 million) sq.km. This target can be met if the DPF of 15,793 sq.km. and the UDPF of 26,495 sq.km. can be brought into the fold of the Reserved Forests.

For this end, certain practical difficulties have to be overcome. The Forest Conservation Act being rigid, a developing State like Orissa, which has also needs more of power and irrigation projects and more land for industrialisation, captive plantation etc., has to carefully weigh and balance the several competing needs for the available and limited land resources. Further, the rural people who have been habituated to collect their firewood from the DPF and the UDPF

under the 'Nistar' Cess arrangements, may very likely resent the disciplines of the R.F. Hence, there is a need to educate the people why the strategy should be accepted.

The annual timber production of the State was reported to be 1.36 million C.M. in 1972. The production figures have subsequently fallen to 0.45 million C.M.

It has been estimated that by 2000 A.D. the annual timber requirements in the State would be around 1.89 million C.M., that is, about 6 times of its present level of production. The wide gap has to be met by strengthening the forest administration and through intensification of afforestation and plantation measures.

The annual fuelwood production in the State was reported to be about 3.00 million C.M. in 1972. According to one estimate this has since declined to 0.68 million and then to 0.62 million C.M. in subsequent years.

But the latest statistics provide the following figures of annual fuelwood production in the State of Orissa:

Year	Fuelwood production in million C.M.
1950-51	4.27
1960-61	7.74
1970-71	6.69
1980-81	6.26
1985-86	5.29

It has been estimated that by 2000 A.D. the fuelwood requirements in the State would rise to around 9.00 million C.M., that is, about 2 times of the present level of production.

This wide gap has to be bridged by avoiding timber and firewood losses by improving the harvesting techniques and the retrieval position during felling, logging and extraction and by launching a massive drive of village fuelwood plantations in the 50,000 and odd villages in the State.

The annual bamboo production of the State was reported to be 106.49 million pieces in 1972. In one of the years, it has even gone up to 112.44 million pieces. But it is reported that due to over-exploitation, theft etc. bamboo production in the State has since declined by around 50%.

As the demand for bamboo pieces is steadily rising to meet the needs of constructions, paper industries, rural artisanry etc, it is necessary to rejuvenate and re-stock the

existing bamboo forests and bamboo plantations and also to take up new areas for bamboo plantations, particularly in the river-bank forest areas of the flood-causing rivers.

The annual production of Kendu leaf (otherwise also known as Tendu Leaf or Bidi Leaf) in the State remains at the level of 0.35 million to 0.40 million quintals a year, despite the suspected reduction of K.L. areas by around 10% in the recent years.

The latest statistics on Kendu Leaf (Tendu Leaf or Bidi Leaf) production in the State gives the following position:

Year	Kendu Leaf, Tendu Leaf or Bidi Leaf production in Million Quintals.
1970-71	0.009
1980-81	0.312
1985-86	0.379

The annual production of Sal Seed (a seed whose oil is used as a solvent for chocolate production and has an international market) has recorded 0.10 million M.T. But this is a very fluctuating M.F.P. and the average annual production can be taken as 50,000 M.T.

Because of involvement of the various conflicting interests, the Sal Seed is some times known as the "Seed of discord". The Sal forests need regeneration for which it is not desirable to collect all the Sal seeds to the last seed. Seeds falling after the first rains onwards should be left in the Sal forests to germinate and to bring out new trees. The interest of the tribal collectors for a fair price, the interest of the collecting agencies for a modest profit, the interest of the local industries for a fair quota of the Seeds at a reasonable price, are all needed to be reconciled and balanced.

Shifting cultivation, (also known as "Podu" in the State), affects about 12,000 sq.km. of forest areas or more.

According to one estimate about 0.36 million tribal families or more eke out their living from this practice. In the name of "Podu", forest thieves also sometimes manage to indulge in illicit felling and removal of timber from the State's forests. The issue being very snesitive, it is desirable that the various schemes for control of the shifting cultivation and rehabilitation of the "Podu" practising families should be largely acceptable to them. Deliberations of the State's Tribes Advisory Council and the State Foestry Board on the subject provide the needed guidelines for the purpose.

Another special feature of the Orissa State is the custom of supplying the needed sacred wood for the Deities of the Puri Temple and for the annual construction of the Chariots for the Car Festival. The needed timber, which is of special species, girth etc., is usually obtained from the forests of Gania and Daspallah. With the progressive denudation of the forests, the sacred forests also suffer. With this trend in view, it may pose a problem in future, unless the sacred forests have sufficient stock of the needed species. Maintenance of such forests, therefore, poses special problems.

The main tenets of the Forest Policy of the State have been indicated as under:

(1) Afforestation measures in degraded and denued Reserve Forests.

(2) Protection of Wild-life and their habitat.

(3) To meet the rural fuelwood needs through fuelwood plantations and village wood lots.

(4) Giving employment to the landless and SC/ST labourers through the different forestry programmes.

(5) Aiming at self-sufficiency in forest product to meet the economics, industrial and housing needs.

The strategy evolved for the 7th plan has been:

(i) To involve the rural population in developing, protecting and managing the afforestation and plantation programmes which are aimed to meet the ecological requirements and the needs of the rural population.

(ii) Developing and consolidation the Reserve Forests and to replenish the depleted/degraded forests.

(iii) Upgrading and intensifying Forestry management including resources planning, evaluation of the forestry schemes, and forestry research.

(iv) Expansion and improvement of the forest education and training programmes.

(v) Developing infrastructure for scientific extraction and utilisation of the forest produce.

The above aims are sought to be implemented through different types of forestry programmes eg. Coastal shelter-belt plantations,/Catchment afforestation including river-valley and inter-State projects/Reforestation of defraded forests,/Economic and Commercial plantations,/silvi-pastoral

plantations,/Compensatory plantations,/Rural Fuelwood Plantations,/Energy plantations,/Sericultural plantations,/Recreation and tourism forestry/Green belt park development Horticultural plantations in and around the tribal villages,/Development of wild life reserve and zoological parks/ various social forestry and farm Forestry Schemes, and the like.

EXPERIENCE OF SOME OTHER COUNTRIES

In this context it is worthwhile to know the experience of some of the Countries in environmental planning and forestry mangement.

In the Soviet Union every development scheme whether affecting the forests or not, is reported to have an ecological content. The assumption is that each and every development schemes has some adverse effects on the environment and leads to some ecological, degradation. Hence, each and every development scheme seeks to have an in-built arrangement for countering the specific imbalances and for fostering the ecological balance.

One of the main concerns of the Soviet Union is about re-vitalising the Karakoram Des ert in Central Asia. Water is the essence of life. Even though two-third of the Earth is water all these are salty water and not fit for human consumption, sweet water constitutes only 1 to 2%. Therefore, water resources management is essential for human survival as well as for the existence of the animal kingdom and the plant life. Water conveyance systems have been developed to bring water to the Karakoram Desert through 1000 km. long canals from Amudaria and Sirdaria. It is also planned to convey water from Siberia. The institute of Desert Control at Askabad is seized of the problem and appears to have recommended conveyance of water, wind-breakers, giving rest to the land, Soil creation, protection of the Desert wild-life etc.

For countering the denudation of the Taiga grass lands, due to over-browsing etc., "planned movements of the flocks of sheeps with their sheepherds, with rotational grazing, have been introduced.

In the United States the forest areas have been largely stabilised and there is no fear of diversion of the existing forests to other uses. The US is one of the World's important countries in both production and consumption of wood products. Even then due to increase in paper consumption, newsprint, and use of fuel-wood in house holds and industries in preference to oil, gas and electricity, it is estimated that by 2000 AD the demand for timber and wood products may exceed the available supplies.

In regard to Range management, the US has been able to effectively counter the damage and degradation of its Western Range, and has imposed reasonable restrictions on expan-

sion of the Range live-stock activities, by restricting the cattle and sheep population to the carrying capacity of the Range, fixed according to the availability forage vegetation per animal unit.

Most of the European Countries have lost two third of their original forests due to diversions of land for agriculture, City building, industries, institutions, and for other intensive uses. The united kingdom has only 7% as forests. France has only about 20% as forests. Even then, Europe leads the world in forest science and forestry management. The average per-hectare out-turn of production from the forest in Europe is about two times than that of the New World forests. This is mainly due to superiority in management, intensity of care, better skill, soil management, pest control meeasures etc.

The major reforestation programme of the U.K. is in the Scottish highlands. These hill areas which were progressive got depleted of their tree covers and were burnt and grazed into ruins, have since been revitalised.

Germany experienced with large-scale artificial forests and monoculture plantation of the needed species by clear felling the original forests. But they found that by the third generation of the trees, their quality and yield declined,/deseases and stroms increased,/and that single species forests disturbed the Soilminerals cycles and ultimately damaged the soil. Hence, Germany has since veered round towards more natural forests and mixed plantations. Clear felling and cutting have been replaced by selective felling and cutting. This system of forestry management is known as the "Daurewald" system in that country.

In Switzerland, most of the forests belongs to the Cantons and the Communes. But their management principles are laid down by the Federal laws and are rigidly enforced. Diversion of forest lands to other uses is not allowed without Federal permission. Clear cutting of forest is also not allowed without specific permission from the Federal Government.

It is reported that Isreal has been very successful in containing the march of thee Arabian. Desert to the West and has been able to reclaim its desert for productive use.

Among the African Countries, in Sudan, the "Gum Arabic and Tree Fallow" system is followed. It is a type of Silvi-agricultural practice in which the cycle of food crop production is followed by a fallow period during which gum arabic is produced. Apart from producting gum, the trees are also used for fencing, timber production, fuelwood, rope making etc.

In Nigeria, the "Taungya Farming" system of agroforestry is followed. While taking up Departmental Commercial

plantations like Teak, pulpwood etc., the farmers/labourers also grow their own food crops in the same land for two years or so in the initial stages when the plantations are being established. This is sort of temporary "intercropping practice, temporarily combining agriculture with plantation activities.

Australia and New Zealand have been able to meet their soft-wood timber requirements for construction purposes by undertaking vast and extensive plantations of California pines. But it is feared that the German experience may be repeated and the yield may go down in future years.

In China, an Integrated village Forestry Scheme is followed consisting of agriculture, farm forestry, animal husbandry and fisheries. In average per family or farming household, about 74 trees are grown and maintained. China has a total forest area of 115 million hectares (of which about 28 million hectares are new forests), and it is proposed to achieve a target of 150 million hectares of forests in that Country. Compared to the Great Wall of China, the Country has launched a scheme of the New Great Wall, a shelter-belt forestry development in its Northern provinces, which is to be around 5240 km. long, out of which about 800 km. has already been reported achieved. There are about 4,065 State Forestry Farms and about 1,75,000 as Collective Forestry Farms in China.

Of the 115 million hectares of forests in China, 73% are timber forest, 10% economic forest, 3.5% fuelwood, 3% bamboo forest, 1.2% special-use forests, and the rest are miscellaneous forests. About 44% of the fuel requirements of China are met from their farm agricultural residues, 40% from firewood, and 16% from biogas, electricity etc.

Among the Countries in South East Asia, in South korea, under the 'Saemul' movement, which is a self-help programme for rural development, a policy of self-reliance is sought to be instilled among the villagers, and village fuel wood plantations are encouraged.

In Indonesia, under the Social Forestry schemes, they are introducing forests into the uplands in order to stop soil erosion and to provide fodder to the cattle.

In Thailand, a programme for creation of Forest Villages, with the landless people, is under trial in order to stop nomadism and the migratory instability in their lives.

In Phillipines, Tree-farming schemes for the small farms have been taken up in a big way.

The main purpose of all these plans, programmes, projects and schemes seems to be: Ecological Security, arresting the deteriorating environment, conservation of forests, crea-

tion of local fuelwood resources, achieving self-sufficiency in the requirements of forest raw materials for the industries and the like.

CONCLUDING OBSERVATIONS

Mother Earth appears to be the only planet in the Creation, so far as it is known to us, to be containing life. The different life forms are mutually dependent on each other and thrive in the hospitable and insulted climate of its biosphere. It is, therefore, necessary that nothing should be done to reduce the qualities of the environment of the biosphere so as to reduce it life-sustaining capacity. The purity and vitality of the "Pancha-Bhuta" or the five primeval elements of life, should not be reduced but continually ensured. Man must respect nature.

The natural resources of the World are neither inexhaustible, nor free. Those are definitely finite and limited in time and space. Those are meant not only for the Humans but also for the other forms of life on Earth. Those are meant not only for the present generations but more for the future generations, which are yet unborn and still to come. It is, therefore, necessary that there is more equitable, fair, prudent and judicious tapping and use of the natural resources.

Environmental degradation and the mounting pressures on the limited resources of the World were more marked in the post-Industrial Revolution and the Colonial era. Those have been accentuated due to wars and the phenomenal growth of the world population in the recent Centuries. These call for avoidance of wastes and extravagance, better management and conservation of resources, demographic stabilisation through population control, and a better climate of international peace and understanding.

Economic development programmes must take into account the limits of the natural resources and the long term effects on the environment. Sustainable economic growth is not possible by eroding the resource base. With progressive depletion of the natural resources and continued strains on the environs, scarcities and problems may develop even in unsuspected fields.

On the major aspects of environmental degradation being deforestations, environmental planning and forest management go together, hand in glove. While natural forests should be preserved, artificial man-made forests should be grown to meet the day to-day needs and for the raw-material supplies of the Industries.

Forests play two major roles. They provide ecological security. They also provide the requirements of the people and the Industries. Ecological principles should govern the use of the natural forests. Their core areas should be left

undisbursed. Operation in such forests should be limited to harvesting the old or the dead trees and to the annual "increment" without touching the basic biological capital. The annual "incremental" produce should be objectively assessed per forest unit. Artificial forests can be grown and captive plantations developed in the barren wastes and fallow lands and in the marginal agricultural lands to meet the requirement of the Industries and the rural communities. Economic and commercial principles can be followed in these categories of forests and plantations, even here also rotational use and harvesting are necessary for providing a long term resources base.

Plants and vegetations are the primary producers of food. They exercise imperceptible control over the atmosphere, climate, water-cycles and the soild regimes. They, therefore, play a key role in maintaining the life supporting system of the biosphere. The future of mankind, nay of any form of life, will be bleak on a plant-less Earth. It is, therefore, necessary that deforestation and denudation of forests are avoided. The forest resources should better be conserved, maintained, developed and more scientifically harvested and utilised, without depleating the corpus/nucleus.

(Gist of talks delivered to the Commonwealth Trainees organised by the OUAT and THRTI at Bhubaneswar on 23.1.84 and on the World Forestry Day organised by the Forest Department at Nandankanan on 21.3.87)

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Chief Secretary,
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Shri Biju Patnaik, Chief Minister, Orissa planting a sapling at Nandankanan on March 23, 1990 on the occasion of the Vanamahochhab.

Shri Jagya Dutt Sharma, Governor of Orissa addressing on the occasion of 14th anniversary of the "UNIVERSE" and Indo-Japan Cultural Friendship Celebration held at Cuttack on February 20, 1990.

Shri Yagya Dutt Sharma, Governor of Orissa going round the exhibition after inauguration of Red Cross Festival (Basant bahar) at Bhubaneswar on February 10, 1990.

Shri Prasanna Acharya, Minister of State, Food and Civil Supplies delivering his inaugural address in the State Level Consumers' Protection Seminar organised in the Hotel Kalinga Ashoka, Bhubaneswar on March 24,1990.

Shri Surendra Nath Nayak, Minister Revenue & Excise addressing the meeting on 'World Heritage Day' observed at Konark on April 18, 1990.

Chief Justice, Supreme Court of India Shri Sabya sachi Mukherjee, who was on a three day visit to Orissa from April 27 to 29, 1990 discussing with the Chief Minister Shri Biju Patnaik, on April 27, 1990. Shri Yagya Datta Sharma, Governor of Orissa was also present.

Shri Biju Patnaik, Chief Minister, Orissa addressing the Convocation of the XAVIER INSTITUTE OF MANAGEMENT, Bhubaneswar on March 31, 1990.

Shri Padmanav Behera, Deputy Minister of Sports & Culture is lighting the lamp to mark the function inaugurated in connection with Utkal Gourava Madhusudan Das Jayanti Celebration held on 28.4.90 at Soochana Bhavan.

Shri V.De,Visscher, First Secretary (Development), European Economic Committee Appraisal Mission, along with Experts in discussion with Shri R.K.Mishra, Chief Secretary, Government of Orissa in his office chamber on 26.4.90.

EXTENT OF ADOPTION OF SOCIAL FOREST PROGRAMME

Sri P.Kar
Sri B.Mishra
& Sri B.P.Mohapatra

Along with the growth of human civilisation and in the process of relentless efforts to bring about scientific development, man has disturbed the ecological balance to a great extent by altering the distribution of natural flora and fauna on the planet. Extensive deforestation has taken place not only for meeting the demand for agricultural land of the ever increasing population but also to meet the requirement of fuel wood, fodder and timber for the rural population. According to Government of India report the forest area lost for different developmental activities since independence has been about 4.3 million hectares.

Recognising the inherent dangers of large scale deforestation Government of India came out with an Ordinance followed by the Forest Conservation Act in 1980 banning the felling of natural forests and conservation of forest areas. Along with enacting of such act, there is great need of the active involvement of the people. Social Forestry Project aims at this objective and also makes wide spread publicity to create awareness among the people, so that they will be interested to adopt this programme. Considering all this an attempt was made in this study to find out the extent of adoption of social forestry programme by the participants and the major constraints faced by them during the adoption.

METHODOLOGY

Three villages namely Tangiapada, Paiktigira and Thakurpada of Khurda Block were selected at random. These three villages were covered under the Social Forestry Programme. Ninety numbers of participants (30 from each village selected at random) were interviewed by means of a structured schedule and result so obtained was analysed and discussed.

RESULT DISCUSSION

Period of Participation

Information was collected from the participants regarding their period of participation in the project.

Table - 1

Period of participation in Social Forestry

N = 90

Period of participation	Frequency	Percentage
One year	5	5.55
Two years	13	14.44
Three years	33	36.66
Four years	39	43.33
More than four years	-	-
Total	90	99.98

From Table-1 it is clear that majority of the reespondents participated almost from the beginning of the programme. The five respondents who had participated since last year revealed that they became interested after much publicity of the programme in their village. It was also found out that the average number of seedlings planted for participant is 36 (thirty six) since his/her participation in the programme.

Area devoted to Special Forestry :

One of the criteria to assess the extent of adoption is to find out the amount of land area devoted by the respondents towards the project.

Table - 2

Land area devoted towards the project

N = 90

Land area	Frequency	Percentage
Upto 1/4 ac.	64	77.11
1/4 to 1/2 ac.	19	21.11
More than 1/2 ac.	7	7.77
Total	90	99.99

It may be seen from Table 2 that about 77% of the respondents had diverted land upto one fourth of an acre for tree plantation. But 7.77% of the respondents diverted more than half acre of land for social forestry. Those having more amount of homestead and agricultural land, diverted more land for plantation. But however, majority of the respondents devoted land for tree plantation upto a satisfactory level.

Types of trees adopted :

It was observed that more than 70% of the respondents planted fodder, fuel-wood and timber producing plants whereas only 41% of the respondents planted soil conserving plants. Probably the respondents had not known the names of soil conserving plants or they had no sound knowledge about the benefits of plantation for soil conservation. Most of the respondents got the seedlings from the social forestry people and the technical guidance was mainly supplied by the officials like S.F.S. (Social Forestry Superviser) and F.E.O. (Forest Extension Officer).

Constraints :

The respondents were asked to give their opinion about the difficulties which they had experienced during Social Forestry Programme. In light of the opinion made by the respondents the most important constraints were listed out in order of merit which were experienced by majority of the respondents.

1. Financial help/loan was not given in Social Forestry Programme. It gives money to raise nurseries or for fencing materials. When some people are getting financial help, it is logical for others to expect money from the project.

2. Return from planting trees was not available quickly; so people begin to fell trees before their maturity. It is obvious that plantations cannot give quiick return because it takes some years for forest trees to come to maturity.

3. Destruction of saplings by stray cattle was found to be another important constraint. Those are allowed to graze on outside field and thereby destroying the seedlings.

However, from the study it was found that the programme had been accepted well by the people. They were benefited through the programme upto a reasonable extent. As the concept of social forestry in studied block was not very old, many people were still unaware of the benefits of the programme. Besides, there are certain difficulties which should be removed by the administrators and persons responsible for smooth running of the .social forestry programme to make it a vital i put for development.

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TENTH ASSEMBLY ELECTIONS IN ORISSA: AN OVERVIEW

Sri Debi Prasad Rath

Orissa has an area of 155,842 sq. km and a population of 26 million. It consists of 13 districts. The geography of Orissa divides it into two well-knit regions: the coastal plains and the uplands of western Orissa. Out of a population of 26 million, the rural population of Orissa is about 20 million. Only 8.4 percent of the total population are urban based. Another important demographic feature of Orissa is its large tribal population i.e. 23.1 percent. The percentage of scheduled caste population is 15.1.

The total number of seats in the Orissa Legislative Assembly from 1952 to 1971 was 140. It was increased to 146 in the year 1974 i.e. at the time of the sixth assembly elections. From 1977 onwards, the strength of the assembly is 147. The total number of reserved seats in the Orissa legislature is 56.

The seventh assembly elections in Orissa were held in June 1977. The Janata Party in Orissa led by Mr. Biju Pattnaik swept the poll and out of 147 seats bagged 110 seats with 49.24% votes as against the Congress taking 26 seats and 31.01% votes. The 1977 poll for the first time gave a non-Congress party convincing support throughout the state. A Janata government was formed in Orissa under the Chief Ministership of Sri Nilamani Routray with a two tier ministry.

In June 1980, poll for the eigth assembly elections in Orissa was conducted. The Congress (I) led by Sri J.B.Pattnaik came to power with a sweeping majority and Sri J.B.Pattnaik became the Chief Minister and enjoyed a full term of five years with a three tier ministry.

The 1985 assembly elections were a cakewalk for the Congress (I) again. The leadership remained unchanged. Sri J.B. Pattnaik continued as the Chief Minister with a three tier ministry. The second term of the J.B.Pattnaik ministry was said to be due to the Congress wave in the centre and state after the brutal assasination of the then Prime Minister of India, Mrs. Indira Gandhi.

The Ninth Lok Sabha elections were held in the last week of November 1989. The people all over the country wanted a change of government at the centre and the states. And finally the newly formed Janata Dal has formed the government at the centre with the support of Left Front and the B.J.P. After

the party's debacle in the ninth Lok Sabha elections in the state, Mr. J.B.Pattnaik owning moral responsibility resigned from the Chief Ministership. Mr. Hemananda Biswal, took over as the new Chief Minister in December 1989.

Soon after the ninth Lok Sabha elections, elections were held on 27th February 1990 for eight state assemblies and one union territory, Pondichery. Out of 139 seats contested out of the 147 assembly seats in Orissa, the Janata Dal won 123 seats. The Congress (I) got only 10 seats out of 145 contesting candidates. The CPI got 5, CPI(M) 1, B.J.P. 2, independent and others bagged 6 seats.

The position of different political parties in the tenth assembly elections held on 27.02.90 is as follows :

Name of the party	Valid Vote	Percentage	No. of contesting candidates	No. of Elected
Janata Dal	58,84,477	53.78	139	123
Congress(I)	32,65,100	29.78	145	10
C P I	3,26,364	2.98	9	5
C P I (M)	91,767	0.84	3	1
B J P	3,12,236	3.58	62	2
Janata Party (J P)	95,618	0.88	71	-
Independent & others	9,05,251	8.26	494	6
T O T A L	1,09,60,823	100.00	913	147

The Janata Dal under the leadership of Sri Biju Pattnaik captured 53.78% votes whereas the Congress (I) got only 29.78% votes and failed to qualify as a recognised opposition party in the assembly. The Janata Dal has created a history in Orissa by getting a record number of 123 seats out of 139. In the eighth and ninth assembly elections in 1980 and 1985 Congress (I) bagged 110 and 117 seats.

The Congress (I) ministry under the leadership of Hemananda Biswal resigned after the landslide victory of the Janata Dal. Sri Biju Pattnaik, the leader of the Janata Dal legislature party, took oath as the 11th Chief Minister of Orissa on 05.03.90 which was also his birthday, Sri Ghasiram Majhi, senior elected member of the Orissa legislative assembly took oath as the protem Speaker. The newly elected members took oath on 6th & 7th March 1990. The election of the speaker was held on 9th March 1990. Sri Judhistir Das, elected member from Kisannagar assembly constituency of Cuttack district, was unanimously elected as the 11th speaker of the Orissa Legislative Assembly.

In the tenth assembly elections of Orissa, three prev ious Chief Ministers of Orissa, Sri Biju Pattnaik, Smt. Nandini Satapathy and Sri Hemananda Biswal contested and got elected. Thirty eight women candidates contested in the tenth assembly elections from different political parties and six were elected i.e. one from Congress (I) and five from the Janata Dal. Similarly out of 494 independent and others who contested, only six were declared elected to the tenth assembly.

After a lapse of nearly 27 years, Sri Pattnaik took over the reigns of the administration of the state.His first term after 1961 mid-term poll provided for the first time a stable Congress ministry which had eluded the state in the previous two elecctions. Sri Pattnaik resigned in October 1963 under the KAMRAJ PLAN. His ministry in Orissa was responsible for some major developments and he gave the administration a new orientation, tone and movement. Himself a great industrialist, he provided the basic infrastructure for the industrial deve- lopment in Orissa by the construction of Express Highway and the establishment of Paradeep Port for the export of iron ore from Daitary mines. In his second term in 1990 Sri Pattnaik is the only active Chief Minister-politician of the Nehru era.

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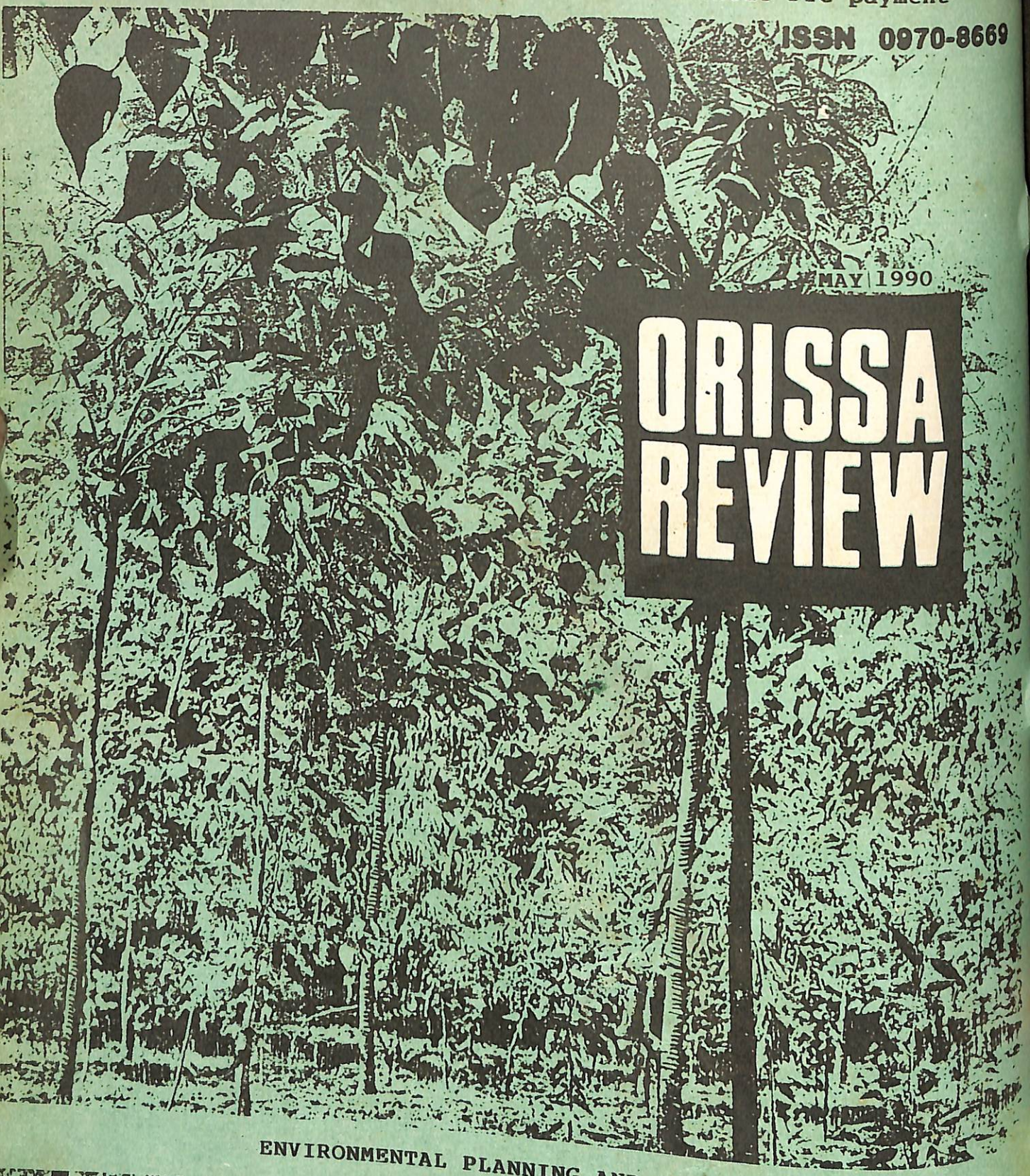

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