NET, IAS, State-SET (KSET, WBSET, MPSET, etc.), GATE, CUET, Olympiads etc. Essay: Significance of Forests

India is extremely rich in its ecology which is varied with genetically diverse forest resources and is one of the worlds top twelve nations having mega diversity in terms of biological resources. The plant wealth found in Indias forest are made up of 45000 species of trees, shrubs, herbs and climbers which account for about 12 per cent of the global plant wealth. The flowering plants alone number 21000 species and almost a third of these are endemic, located mainly in 26 endemic centers of India.Indias forests are the home of over 75,000 species of animals of which about 372 are mammals, 2,000 birds, 1,693 fishes and as many as 60,000 insect species.

Forests are removable resources and they contribute substantially to the social and economic development of the country. They have major role to play in enhancing the quality of our environment. The history of forest is linked with the history of civilization. The 4000 year old Agnipurana mentions that a man should protect trees to ensure material prosperity and religious merit. 2500 years ago, Gautam Buddha preached that a man must plant trees every five years. The great epics Ramayana and Mahabharata give attractive description of forests like Dandakaranya, Mandavana and Khandvan. The Supreme God of Indus Valley was supposed to live under Pipal trees. Pipal and Babul Plants were believed to have descended on earth from heaven.

The people in ancient times lived in harmony with their ecosystem, which was formed by the forests. They did not cut the trees recklessly and the forests produced more than enough for everybody. The first indication of forestry administration is found in 300 B. C during Chandra Gupta Mauryas reign, when a Superintendent of forests was appointed to protect forests and wild life. Nund Rishi, the saint of Chare-shreef, preached that there would be enough food only when there were forests. From top of the hill, he could could see the fertile valley down below and realize that the miracle was due to fertile soil produced by the hill forests. Similarly Lamboji, the founder of the Vaishnio sect in the desert of Rajasthan, was preaching that to survive in the desert, green trees should not be felled and no animals and birds be killed. The Bishnois have kept alive this tradition of saving the Khejadi Accacia trees even at the cost of their lives. Modern science too recognizes that forests are mothers of the rivers and factories of soil manufacture. For the British, Indian forests were an inexhaustible source of durable and ornamental timber and other forest products. Teak forests along the coast of Malabar were over exploited to meet the requirements of the

British Navy. The Sandalwood trees of South India were exploited for the European markets. The two world wars were also the periods of great devastation of Indian forests. Forests were cut recklessly to meet the increased demand. As a result, rich productive forests vanished, causing an irreparable damage to the ecosystem and to the Indian people, especially the tribes. Unfortunately, the forest destruction did not stop even after the British had left and it is estimated that India is losing about 1.5 million hectares of forests annually.

Forests have a significant role not only in ensuring the environmental stability but also achieving economical benefits. Forest is not just a group of trees, but is an ecosystem in itself, comprising all the living and non-living components. The main living components of a terrestrial ecosystem are plants dominated by trees, forming the consumer element and decompresses of the micro organisms. Soil, water, air and sunshine form the non-living components of a forest/terrestrial ecosystem. These components interact with each other and evolve the ecological energy cycle which consists of two other cyclic processes, namely water cycle and matter organic and inorganic cycle. These processes maintain the dynamic equilibrium between the living components and non-living components within an ecosystem. Any imbalance or deviation in this process will lead to a total collapse of the ecosystem. Droughts and floods are the two most important consequences of the imbalance in forest ecosystem caused by the indiscriminate felling of trees. The forest ecosystem fulfils extremely important protective, regulatory and productive functions both for the well-being and development of society.

The importance of forests in the ecosystem can never be overemphasized. Forests have numerous roles to play both natural and manmade. Natural functions involve protective and regulative services, while man imposed functions relate to production and socio-ecological services. Plants are valuable for us in many ways, besides protecting and improving the environment in which we live, they control run off, check floods and soil erosion, improve soil fertility and help in reducing temperature and pollution. Thus they work as environmental conditioners.

According to one estimate the real value of a 50tonne medium sized tree, by adding the prices of all items of its produce and social benefits, rendered during the 50 years of its life time, economic benefits of around ₹ 15,70, 000/-is generated to the community in the form of generation of

- oxygen valued at ₹ 2.5 lakh
- controlling of soil erosion and improving soil fertility by ₹ 2.5 lakh
- recycling of wastes to the tune of ₹ 3 lakh
- controlling of air pollution valued at ₹ 5 lakh and other secondary benefits to the tune of ₹ 3.5 lakh. Thus one can visualize how much economic benefits trickle down silently to the community through a single tree over its life span of 50 years.

Rapid destruction of forests results in natural calamities, soil erosion and also contributes to the greenhouse effect. Plantations cannot be the substitute for the natural forests as forests are ecosystems in itself but it can reduce the pressure on natural forests for timber, fuel, fodder and other forest products. Therefore, opting for plantation will be beneficial to the

man and as well as to environment in the long run spite global awareness, tropical forests are brindled at the rate of 72 acre a minute.

Worlds five billion acres of tropical forests are threatened by agriculture and poor farmers in the developing world alone. Some 350 million people in the tropical countries live in forests and depend upon them in one way or another for subsistence. During the process the farmers slash and burn patches of forests to grow crops and once the soil gets depleted of nutrients then the poor farmers move on to clear another patch. This wanton destruction of forests is seriously affecting the environment and is straining the biosphere.

India has a land area of 38.50 million hectares under good forest cover which works out at 19.46 per cent against a target of 33 per cent for the plains and 66 percent for the hilly regions. Although located in the tropics, the productivity of Indian forests is amongst the lowest in the world. At the present level of consumption of forest resources, the country needs a minimum 0.47 hectares of forest land for every individual against the actual availability of 0.09 hectare. Forests in most of the states in India are qualitatively and quantitatively very poor. The foremost reason is the drastic growth in population.Comparing Indias per capita forest land of only 0.09 hectare, Canada has per capita forest land of 12.4 hectares and 6.8 hectares for Australia. The human demands on forests are complex and diverse. They are related not only to matter and energy but also to space and diversity. On the basis of available data, India needs to have 101.33 million hectares. 33.33 per cent of reported area under forests whereas it has only about 67million hectares at present leaving a deficit of 34.33 million hectares. This deficiency can be made upto 83.75 per cent by afforesting the land under miscellaneous tree crops and groves. The rest can be covered by afforestation of 5.56 million hectares of barren land from the available 20 million hectares of barren and uncultivated land in the country. The solution to problems of Indian forests are a lot more complicated than simply passing new laws or restricting losing companies, or echo-labeling or any other panaceas that are often on offer. Forest science needs to make a conceptual shift if it is to contribute its full potential to todays needs. It was poorly linked in the past to research on social, economic and biological issues relating to forests.

During the post independence period, efforts have been made to conserve the forests, however, the performance does not seem to be encouraging. There is dire need for a comprehensive effort to plug root causes of deforestation, viz population, steeped in poverty, bad natural resource management and of course distorted forest policies, otherwise we are heading for a Stressful biosphere as we enter the next century 2001. Depletion of forests on the planet earth will be contributing to growing concentration of carbon-dioxide and by the middle of the next century civilization might oe on the threshold of Mesozoic heat warming, spelling doom. A rise of 1 degree to 2 degree C around equator and 7 degree to 10 degree C at the north and South Pole, will result in melting of static glaciers on mountains and the sliding of huge icebergs from poles, rising of sea level and consequent inundation of coastal areas. The wanton destruction of forests is seriously affecting the forests and the environment. This is going to lead us to disaster. The demand for timber, pulp wood, fodder etc. Is increasing at a very high rate. Measures to minimize the gap between demand and supply of these products do not indicate any positive response,

since the demand is increasing with the increase in the population, accompanied by the increase in income levels of the people Taking the demand of greeting cards, each greeting card requires 10 gas of paper pulp and if we assume that 1 per cent of the total 850 million population of the country uses greeting cards to the extent of 150 cards per individual, then the paper pulp required will come to 1.25 million tonnes and such a huge quantity of paper pulp will entail the felling of one million trees to obtain 3.8 million tonnes of wood. This is just, one example of the demand of natural resource and the severe strain this biosphere has to undergo.

It could be said that forests have moved from diffused ownership wise unmanaged and unlimited resource-status to a fully owned Govt. ownership, centrally managed forest department and very scarce resource status in the last century.

All attempts of the Government to conserve this resource appear to have isolated the resource from the people as far as their responsibility towards maintenance and development of the resource is concerned, while their dependency and in-built pressures on the-resources have on the contrary increased due to population explosion and advancement in the use of technology.

The alarming increase in human population will demand at least four times more energy than today by the year 2040 and the projected increase in the use of industrial wood 13 fold. Where will the huge volume of wood required for energy use solid wood products and paper making come from? To thinking people around the world, wood from natural forests is becoming an unacceptable answer. A recent report of the Food and Agricultural organization says, the demand and consumption of forest products has risen so steeply that large investment would have to be made for future use. It recommends private initiatives in the industry.

To meet the instigated demand of the domestic market, it is essential to redefine the objective of forest management in the context of the national development. Thus there should be a change from the present conservation oriented forestry to a more dynamic program of production forestry. Considering the advantages of an aggressive orchard silviculture or creation of manmade forests by planting, the future program should concentrate on clear felling the mixed forests on good soils, opening them by communication, and the planting of these areas with fast growing and valuable species, indigenous or even exotics, yielding higher returns per unit area, per year. Wood remains one of the most basic needs of man, with large scale uses in construction of homes, ships, furniture, sleepers for railway tracks as well as fuel. With industrialization and urbanization, forests have been indiscriminately felled all over the world. The earth loses almost forty million hectares of forest area with no replacement, adding to an ever increasing shortage of timber.India is having the best agro climatic conditions viz. Tropical, sub-tropical and temperate climatic zones where diversified tree species can be planted thus increasing the production with elite management practices to have maximum biomass. This would go a long way in conserving the ecosystem of the country within a short span of time.

The estimated cost of such national level plantation efforts comes to several thousand crores. Such an investment is surely beyond the government resources which are already under constant pressure to increase social spending. However, the magnitude of investments required to establish plantations is within the scope of the business sector. For this purpose production of forests should be increasingly privatized and involvement of people must be from the initial stages of plantation. This further envisages that the state forest departments should have a broader approach in forest management activities and involve people at various decision making levels. The present day forester no doubt talks of involving people in the protection and management of forests, but the people at the grassroots level feel alienated. Such a situation does not augur well in the forest management and immediate corrective measures need to be undertaken. Of late, there is a positive response from the corporate sector, in forestry development. Many a private companies with dedication have Undertaken mass area plantations in various parts of the country. Although this is mostly to cater the needs of the industries, it would also go a long way in adding to the quantum of forest products available to the people at large, that is why private sector companies are attempting to raise captive plantations to augment raw materials for industries. Thus their sphere of activities encompasses, providing soil cover and thus reducing the pressure on biosphere and side by side provide employment opportunities to the rural poor and above all involving the people at the grassroots level in restoration of tree environment. Efforts need to be made by the government both at the centre as well as at state levels to involve all possible agencies in a massive tree planting efforts based on sound management practices accompanied by latest technologies. A world think-tank, headed by Dr. Wiliiam Sultan, Director of Research and Strategy at Fletcher Challenge Forests, New Zealand; advocates a bold and novel concept.

- A major portion of any increased wood supply, must come from newly created plantations
- The initiative and capital to grow large scale plantations must come from business sector.