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DECLINING FOREST AREA IN BIHAR – CHALLENGES AND STRATEGY

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ABSTRACT

Area under forest declined to very low after the division of Bihar, which has very serious threat particularly in the context of ecological imbalance. In divided Bihar, only 6.59 percent of the area under forest, which seems to be very low percentage of the total geographical area. In contrast, Zone-I of the state barely 2.7 percent of the area is under forests whereas Zone-II has about only 0.18 percent land is covered under forests. Zone-IIIa has much better in comparison of other zones of Bihar comprises 15.15 percent of the total area, while over 11.7 percent of the forests land are in Zone-IIIb. It is also worth pointing out for ecological soundness in any region, forest areas must be at least one third of the total geographical area. Besides, forests have a positive role in checking soil erosion and ground water level of water table. So, Agro-forestry & Mobile Agricultural School and Services are the best Strategy for awareness about afforestation programme for any state Governments in India.

Key words: ***Agro-climatic zones, Forest area, Forest policy, MASS.***

INTRODUCTION

Forests play an important role in the environment. Trees absorb carbon dioxide from the atmosphere and release oxygen. They also add water vapour to the atmosphere by the process of transpiration. Forests prevent soil erosion as the roots of trees bind the soil particles. They provide a safe habitat for wild animals, birds and other organisms. Forest encourages seepage of water and thus reduces the quantity of run-off and also provides raw materials for manufacture of wood pulp, paper and synthetic fibers, besides timber for construction and furniture making Basavraja and Dabalis (1999).

A large scale destruction of forest cover may result in environmental degradation. Besides soil erosion, floods are likely to be more disastrous affecting large areas in the state and level of water table may fall rapidly and wells dry up due to lower level of forest area which may affect adversely to habitat of animals and birds. In the state of Bihar, however, forests are neither abundant nor very rich in their products. Presently forest occupies an area about 618 thousand hectares which is 6.6 percent of the total reporting area. During the last three decades, the area under forest recorded a very slow increase

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in all the agro-climate zones of Bihar. Hence, this paper attempts to investigate into the region wise forest land, ecological implications & suitable strategies in the state.

Physical features of bihar :

Bihar lies between 24° 15' to 27° 31' N latitudes and 83° 20' to 88° 19' E longitudes with an average length of 483 (E-W) and width of 385 km (N-S). The state has subtropical sub humid monsoonal climate with moderate cold winter followed by hot dry and humid summer. It is bounded by Nepal from North, Jharkhand from South, Uttar Pradesh from West and West Bengal and Bangladesh from East. At present there are 38 districts in divided Bihar & grouped in four distinct agro-climatic zones which has also called as a NARP zones. Important features of different Agro-climatic zones are given in Table 1 & also sown in Fig. 1.

MATERIALS AND METHODS

The study is intended to analyze the structural changes in the forest cover area of Bihar over a period of 30 years. The district-wise secondary data were compiled from the various publications of the Directorate of Statistics and Evaluation, government of Bihar over the six periods of time from 1975 to 2005 and these information were analyzed in zonal basis. For the purpose of gaining meaningful insights into forest area, the study period was divided into six sub-periods, 5 years each from 1975 to 2005. Average area of five years (quinquennial) has been computed along with their proportion to respective geographical area.

Table 1. Important features of different agro-climatic zones of Bihar

Name of the Zone	Geographical area (in 000 ha)	Percentage area	Districts
Zone-I			
North-West Alluvial plains	3449.09	36.85	E/W Champaran, Saran, Siwan, Gopalganj, Siwhar, Muzaffarpur, Vaishali, Darbhanga, Samastipur, Begusarai, Madhubani, Sitamarahi.
Zone-I I			
North-East Alluvial plains	17 9 8.11	19.25	Purnea, Katihar, Khagaria, Saharsa, Supaul, Araria, Madhepura, Kishanganj.
Zone-IIIa			
South Bihar Alluvial plains (East)	1194.51	12.76	Munger, Shekhpura, Jumui, Banka, Lakhisarai, Bhagalpur,
Zone-IIIb			
South Bihar Alluvial plains (West)	2917.84	31.17	Patna, Gaya, Jehanabad, Nawada, Nalanda, Rohtas, Bhojpur, Aurangabad, Buxar, Bhabhua, Arwal.
Bihar	9359.56	100.00	-

Source: NARP report, R.A.U., Bihar

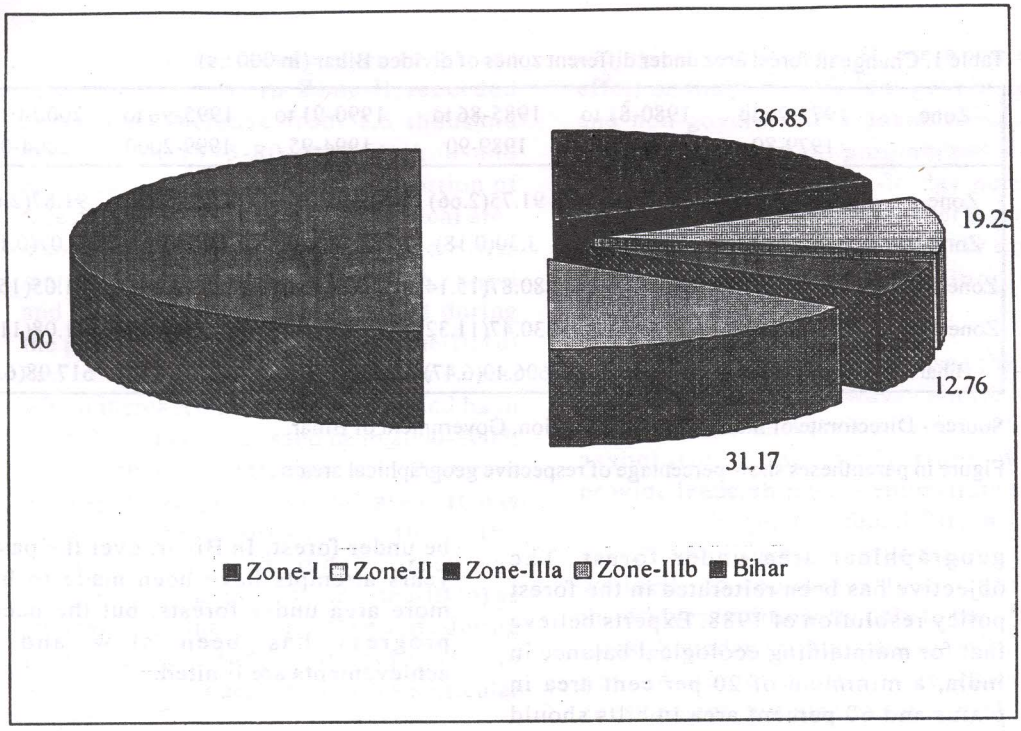

Table 2. Zone-wise Geographical Area(%) of Bihar

RESULTS AND DISCUSSION

The analysis of data revealed that the area under forest observed an increasing trend in Bihar during period under study (Table 1). Proportionate area under forest increased from 6.1 per cent in first period (1975-76 to 1979-80) to 6.6 per cent at the present situation (2000-01 to 2004-05) but in three consecutive periods i.e. third (1985-86 to 1989-90) to fifth (1995-96 to 1999-2000), it showed almost static (only 6.47% of the total reporting area) which is also shown in Fig. 2.

The static trend of forest area during three consecutive periods was probably due to increase in productivity of field crops which might have influenced the government policies with respect to forest area.

A decline in real prices of agricultural commodities during late nineties had created just reserve situation which resulted in an increase in forest area during the period. Considering the tropical climate of the state and the predominance of agriculture, the area under forests is much less than desired.

The "National Forest Policy" of the Government of India (1952) had recommended that the country should aim at maintaining one-third of the total

Table 1. Change in forest area under different zones of divided Bihar (in 000 ha)

Zone	1975-76 to 1979-80	1980-81 to 1984-85	1985-86 to 1989-90	1990-91 to 1994-95	1995-96 to 1999-2000	2000-01 to 2004-05
Zone-I	85.00(2.46)	88.00(2.55)	91.75(2.66)	87.91(2.54)	91.86(2.66)	91.87(2.66)
Zone-II	1.60(0.08)	1.00(0.05)	3.30(0.18)	3.61(0.20)	4.61(0.25)	3.07(0.17)
Zone-III(a)	179.00(14.98)	181.30(15.18)	180.87(15.14)	183.66(15.33)	181.20(15.16)	181.05(15.15)
Zone-III(b)	301.40(10.32)	321.33(11.01)	330.47(11.32)	330.47(11.32)	328.27(11.25)	341.08(11.68)
Bihar	567.00(6.05)	591.60(6.32)	606.40(6.47)	605.60(6.47)	605.95(6.47)	617.08(6.59)

Source - Directorate of Statistics and Evaluation, Government of Bihar.

Figure in parentheses show percentage of respective geographical area

geographical area under forest. The objective has been reiterated in the forest policy resolution of 1988. Experts believe that for maintaining ecological balance in India, a minimum of 20 per cent area in plains and 60 percent area in hills should be under forest. In Bihar, over the past 30 years attempts have been made to bring more area under forests, but the pace of progress has been slow and the achievements are limited.

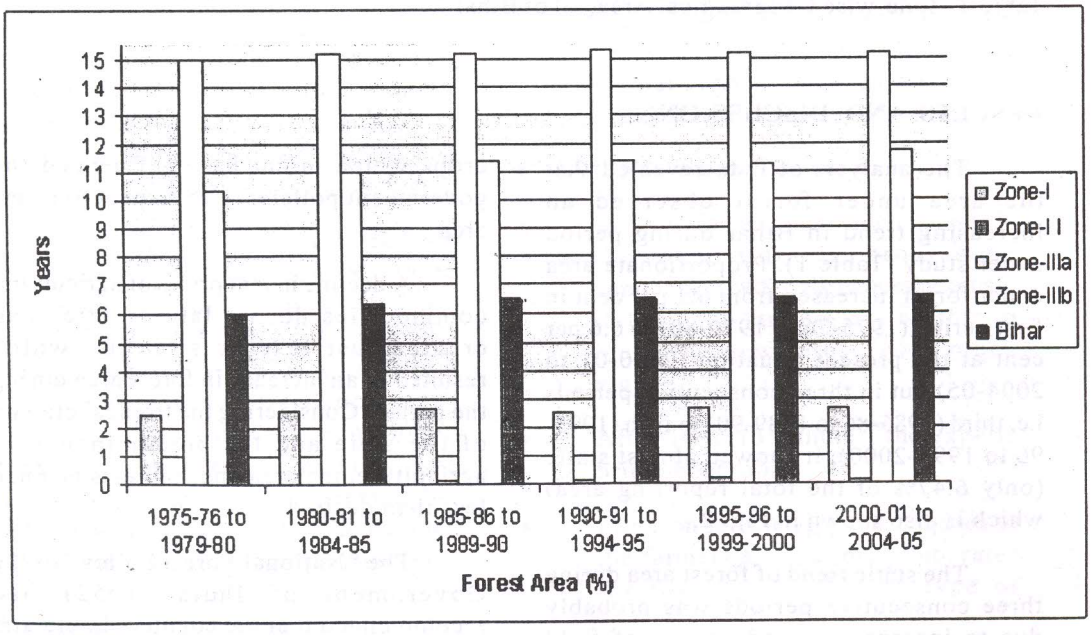

Fig. 3. Forest area in different zones of Bihar

Zone-wise analysis revealed that the area under forest in Zone-II recorded continuous increase from 1.6 thousand hectares in 1975-80 to 4.61 thousand hectares in 1995-2000. The proportion of forest area to respective geographical area also observed the same trend. There was marginal increase in forest area in Zone-I and II, but no trend was observed during the period under investigation. Zone-III (b) had comparatively large area under forest, which increased from 301.4 thousand ha in 1975-80 to 341.1 thousand ha in 2000-2005, constituting 10.3 percent and 11.7 percent of respective geographical area. It has further been observed that the proportionate area under forest was comparatively high (15%) in Zone-III (a) as compared to other zones of the state during period under study, but there was no growth in area under forest in this particular zone.

The marginal variation in forest area might be due to extent of deforestation and tree plantation in different zones of Bihar, but slow increase in area under forest in all the zones of Bihar was mainly due to public and government supported efforts to increase in forest area to achieve the norm set under National forest policy. However, the enactment of the forest (conservation) Act (1980) might have some positive affect on the rate of diversion of forest land to other uses. However, area under forest did not increase significantly during early green revolution period mainly due to increase crop productivity Pandey (1987).

The distribution of forest in Bihar is not only low but skewed among different agro-climate zones are uneven. The low and uneven distribution of forests in all the zones of Bihar is not desirable from ecological point of view. Hence, a concerted effort on the part of various governmental and non-governmental agencies towards planned afforestation programmes with a view to meeting the day-to-day needs of local community, under the pressure of growing population, the demand for timber, fuel wood and bamboos increased substantially (Prasad, 1987).

The forest policy expressed the hope that the defense, railways, public work departments, universities and colleges, associations and institutions would provide leadership and demonstrate to the people at large, the feasibility and the usefulness of such a programme. Foresters wedded to conservation, confined themselves traditionally only to the official forest boundaries, but such an attitude is not adequate in the fast changing environment, but also counter productive in the long run. The training and research programmes designed over a century ago underwent little changes. The public, administrators, planners and academicians took little interest in the development of forestry in the state, which resulted in poor awareness among masses about benefits of forest. So, there is a dire need of government intervention for planned effort in the forestry development.

Strategies & Conclusion :

One of the main strategies for forest development of the state is to ensure Agro-forestry development on sustainable basis. Public-private partnership should be also required to facilitate Agro-forestry programme in Bihar.

There is wide scope for bringing additional area under forest through vertical & horizontal expansion by the government. But the prevailing extension

system of the government is not strong enough to reach at doorstep of farmers in time. Forestry growers/farmers always live in limbo in terms of getting new technology and inputs.

It may be due to lack of manpower, delayed planning & lack of interest of government officials as well as extra-governmental sectors. Government has tried much to reach at the doorstep of the farmers with its all information & inputs in time through several methods but some parts of Govt. programme are successful and maximum live in vein. The institutions and organizations, which have worth effort for the mass of people, are not able to give its timely touch. So, "Mobile Agricultural School and Services" can be other best strategy for awareness of poor peoples in the state of Bihar. Two years ago, Mr. Vijay Bharat* had been launched an innovative programme "Mobile Agricultural School and Services" (MASS) ** in Jharkhand and is now getting overwhelming success in tribal areas of the state. This type of services should also be launched in the Country in general & Bihar in particular through public-private partnership. If possible, MASS should be including in National Horticulture Mission at the country level.

Vijay Bharat (2009), a Post Graduate Student in Soil Science from Rajendra Agricultural University, Pusa (Bihar), choose to work independently with his innovative idea i.e. Mobile Agricultural School & Services for the downturn farmers. It was a big challenge for him to launch this concept. Initially, he approached the Jharkhand Government but failed to convince them. Then he decided to plunge into a risk by taking a handsome loan from a bank & only after a consistent effort did he get success to launch MASS just after two years since its conceptualization.

MASS and how does it function:

It is a big Bus with well-carpeted floor, well-equipped with all required facilities for the execution of a successful training session, viz, Projector, Screen, Laptop, generator, cooler & Package & Practices of various crops and ideas.

- MASS work like an out-sourcing agency for different organizations viz, Govt. bodies, NGO'S and farmers on hired basis. (50 to 100 farmers per session for 3-4 hrs. are called for training by MASS).
- MASS charges for its services depending upon total distance traveled, number of farmers, stationary, snacks & inputs provided to the farmers etc.
- The organizing institutes or organizations passes on the necessary information to the farmers of their concerned area about the venue & tenure through MASS.
- MASS reaches its venue on time.
- Once, 50 farmers (maximum) sit inside the Bus, training programme commences with folk dances & music to bring the farmers in a rhythm to learn the new things with much vigour.
- After 10 to 15 minutes, the experts brief about topic.
- Films on selected topic are shown to the farmers & the expert elaborates the topics to avoid any type of

confusion & reciprocate the problems of farmers.

- All required information about the current market price of different agricultural produces in different cities of India through internet
- Training materials in print are supplied to the farmers as handouts.
- Inputs also supplied at their doorstep at much lower cost in comparison to local & nearby markets.

Regions of Success of MASS:

- Films give a clear picture to understand the matter.
- Film's final version comes out only after due consultation and suggestions of different scientists and hence the quality training is of the best quality. Also, there is no discrimination in training because every farmer gets same information about government planning and other facts. Based on that particular film, experts elaborate the things related to local problems.
- Every farmer pays his full attention during training and hence gets maximum benefit.
- This method does not need the proof of methods involved in cultivation.
- The energy of scientists/experts is utilized in the field & hence there is sufficient time to solve the problems on practical level.
- Usually one week is required to arrange one training programme in conventional method but MASS comes in very short periods of time.
- Time and money of poor farmers would be saved.
- Bus gives a good impact over the villagers and propels them to visit it ultimately raise the level of interest in learning.
- It sets a remarkable ambience & creates a new environment of learning at their doorstep and farmers love to be inside it.
- It is convenient to train the farmers in all climatic conditions.
- Due to closed system, the concentration of trainees goes up to an optimum level.
- The proper space inside the bus helps sufficient number of farmers to be trained at a time, which is essential for a successful training programme.

Achievements:

- MASS has developed more than 50 films till date on several topics.
- It has trained more than 30,000 farmers with overwhelming response.
- MASS has undergone for a MoU with Birsa Agricultural University, Kanke, Ranchi (Jharkhand).

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