



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Vol XXII  
No. 4

ISSN 0019-5014

CONFERENCE  
NUMBER

OCTOBER-  
DECEMBER  
1967

# INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF  
AGRICULTURAL ECONOMICS,  
BOMBAY

## FORESTRY ECONOMICS IN INDIA — SOME AREAS FOR RESEARCH

G. S. CHANDRAS AND S. S. SRIVASTAVA

*Gokhale Institute of Politics and Economics, Poona-4*

### SUMMARY

To know the basic problems in optimal utilization of forest resources and also to evolve their solutions, research in economics and other allied problems of forestry is essential. So far, little or no research has been done in this direction. This paper illustrates the type of problems which need be looked into from the economist's point of view and then goes on to discuss in a little more detail two specific problems. One relates to the determination of total land area which should be under forest at a given point of time, and the other to the problem of grazing of animals in the forest.

Even though the National Forest Policy of 1952 has laid down that the proportion of area under forest to the total geographical area should be one-third, there does not seem to be any rational basis for the forest area to be at the aforesaid level. The question of distribution of land resources among various sectors has to be decided—in totality—on economic and technical considerations, *i.e.*, in a way which will maximize the total economic benefits to the society. This implicitly means that land under forest cannot be of any fixed proportion. In other words, it has to keep on adjusting with time. It has to be examined for every region as to the most profitable enterprise that can run on it.

In the context of grazing, it is seen that the very large livestock population is the main obstacle to controlling grazing in the forest. Therefore, the main problem is to discover the ways and means to regulate the livestock numbers. In the meantime to minimize the damages to the forest from grazing on the one hand, and to improve the condition of animals by making available to them better and more feed on the other, it is necessary that a sound grazing policy is evolved and adopted by the forest administrations. For this purpose it would be desirable to carry out studies to determine (1) the best method of grazing, *viz.*, rotational, intermittent, etc., (2) present and future grazing potentials and (3) possibilities and implications of increasing the grazing rates which are presently as low as Re. 0.23 per animal per annum. Effective demonstration programmes will go a long way in ensuring success in securing farmers' co-operation.

---

## FOREST POLICY AND MANAGEMENT IN INDIA

P. P. MADAPPA

*Indian Institute of Management, Ahmedabad*

### SUMMARY

Forest policy and management have received the attention of the State since Mauryan times in India. However continuous neglect and misuse of forests through the ages have left in their wake a lot of destruction and depletion of forest wealth. The 1894 policy while recognizing the need for forest management was not clear in its objective and no thought was given to long range planning. The 1952 policy was a landmark in the history of forestry. Unfortunately, the policy goals have not been concretized in Plan formulations and further, whatever has been planned had been implemented to a very limited extent. Perhaps insufficiency of statistics, inadequate staff, lack of inter-departmental co-ordination are the major reasons for the various shortfalls.

Farm forestry and soil conservation programmes have met with limited success. Wood-based industries are facing a drastic shortage of raw material; timber planting has not kept pace with recent demand trends and patterns. Game laws are observed more in breach than in compliance and wild life management is yet to be practised as an urgent and immediate necessity. These observations focus attention on further problems for research and study in the much neglected field of forest management.

## FORESTRY DEVELOPMENT IN THE MADRAS STATE

M. SRINIVASAN

*Professor of Agricultural Economics  
Agricultural College and Research Institute, Coimbatore-3*

## SUMMARY

The influence of forests in the economy of India is stressed and forestry development in the two decades of planning with components, targets and achievements are indicated in this paper. There are schemes to raise fuel plantations in urban areas and to raise teak plantations and other valuable timber species in forest areas occupied by non-descript species hitherto. The forestry programme at the all-India level is discussed along with an assessment of the *Vana Mahotsava* or tree planting programme. Two forest-based industries intimately connected with the economic life of Madhya Pradesh and Kerala are discussed with the deficiencies and shortcomings. A micro study of the economics of teak plantations in the Tunacadavu range of the Coimbatore district is outlined with the various operations and it is clear that the net income from teak on one hectare of land is Rs. 1,21,492. The cost of raising eucalyptus hybrid on one hectare of land in the Pollachi range is also indicated. The conclusion is drawn that forests have an honoured place in India's history, culture and economy and due recognition should be accorded betimes before it is too late and all the forests are denuded by the rapacity of mankind. The target of 33 per cent of total area under forests should be the distant goal which all efforts should try to attain.

## THE STATE OF FORESTRY AND ITS DEVELOPMENT IN WEST BENGAL

B. K. CHOWDHURY

*Agro-Economic Research Centre  
Visva-Bharati, Santiniketan*

## SUMMARY

Since the importance of forestry in the economy of a country is well-recognized by the national Government of India, a National Forest Policy was adopted in 1952 to reorient the forest policy of the country. It stated *inter alia* that in the plains and in the hilly areas at least 20 per cent and 60 per cent respectively of the total area should be kept under forest and there should be even distribution of forest area in the constituent regions. In West Bengal, the area under forest accounts for only 13.30 per cent of the total area of the State as compared to 24 per cent for the country as a whole. The forest area in the State, therefore, falls much short of the desired level. Further, the area under forest in West Bengal showed a declining trend from the 'forties which continued upto the 'fifties so that between 1949 and 1962 the forest area declined by about a quarter. The decline was due to the Second World War, partition of the country, settlement of refugees, acquisition of zamindari, schemes taken up under the Plans and the increasing pressure of population. The interdependence of agriculture, animal husbandry and forestry is not yet properly understood by the general population. The distribution of the forest area in the districts is found to be most uneven. Out of 14 districts, only three have crossed the minimum desirable limit while the rest lagged much behind. The situation in Burdwan, Birbhum, Hooghly, Nadia, Murshidabad, West Dinajpur, Malda and Cooch-Bihar is critical and extremely unsatisfactory—their forest area ranging from 0.13 to 4.4 per cent of the total area. The pressure of population being very high and the availability of large open spaces being ruled out planting of trees on river and canal banks, rail and road sides, small open spaces and marginal land should therefore be taken up on a war footing.

The problems of individual districts are of varied character which need different solutions; but the most common problems which need immediate attention in the State are afforestation and soil conservation. To reach the minimum target of 20 per cent of forest land as much as 15 lakh acres of new land should be brought under forest. The problem of soil erosion is no less acute. A soil survey revealed that nearly 1,000 sq. miles of land have gone out of cultivation in only four districts, namely, Burdwan, Birbhum, Bankura and Midnapore due to soil erosion.

Soil erosion is also posing a serious menace to the river valley projects. The rate of siltation is found to be as high as four times the expected rate in the D.V.C. It is much higher in the Kanga-

bati and Mayurakshi projects. To save these projects from early ruin, soil conservation should be given the highest priority.

In the three Plans completed so far, highest importance was rightly attached to afforestation and soil conservation and necessary finance was provided for them. During the last 15 years, 50 thousand acres of land were afforested and soil conservation measures were undertaken on 2,21,588 acres of erosion-affected lands. In view of the immensity of the problem the achievement was far from satisfactory.

Forestry, however, is a long term venture and desired results can be expected only after a considerable time lag if a sound forest policy is followed. It appears that a sound forest policy is being followed in West Bengal but two deficiencies are to be removed. Firstly, the people who are kept isolated so far should be educated about the need and importance of forest and their co-operation should be sought. Secondly, a thorough soil survey should be carried out to assess the extent of loss due to soil erosion in the whole State so that adequate corrective measures may be taken up in the subsequent Plans.

---

### FORESTRY DEVELOPMENT : INTENSIFICATION OF PRODUCTION THROUGH AREA SELECTION

G. S. CHANDRAS AND S. W. MURANJAN

*Gokhale Institute of Politics and Economics  
Poona-4*

#### SUMMARY

It is now a well established fact that the gap between production and demand of industrial wood would widen if immediate steps are not taken to intensify the production. An attempt is made in this paper to examine if it would be possible to intensify the production mainly through selecting areas for the purpose according to the ecological considerations. The analysis of the data for a region covering seventeen districts of Maharashtra State shows that for a given age an average teak tree in the areas receiving over 200 cms. of rainfall gives an output which is nearly twice the one obtained in the lower rainfall areas. On the basis of these results it appears that it should be possible to develop an industrial wood production programme in a compact area of seven high rainfall districts in Western Maharashtra, which are also closely connected to the industrial cities of Bombay, Poona and Nasik. Large tracts of culturable waste lands are also available for the purpose in this area. Much of the local population in this area could also be saved from the present forced migration to the cities by provision of employment in forestry and wood-based industries.

---

### ORGANIZATION AND WORKING OF FOREST LABOUR CO-OPERATIVES IN BIHAR

DINESHWAR PRASAD

*Lecturer in Economics  
Ranchi College, Ranchi University, Ranchi*

#### SUMMARY

The scope of the paper is confined to the study of the organization and the working of forest labour co-operative societies in Bihar. Various commissions and committees appointed by the Government have drawn attention to the ruthless exploitation of forests and labourers and corrupt practices by the forest contractors. The increased association of labour specially tribals in the working of forest has been emphasized by the Planning Commission in the Third Plan. This has to be achieved by the formation of Forest Labour Co-operatives. Its formation is an attempt to improve the situation for the benefit of labourers. As regards their organization, so far 45 such societies have

been established in Bihar. The maximum number of members in a society is 50. In most of the societies poor labourers are not able to pay the full value of share. In the initial stage, working capital of Rs. 3,500 was provided to the societies by way of subsidy from the Welfare Department of the Government. Coupes are allotted to the societies on the "reserve price," which is calculated on the basis of an average of the settlement price of the last three years. From this average, 10 per cent is to be deducted. Ten per cent of the purchase price of the coupes is deposited by the society as security money. The value of the coupes to be settled with co-operative societies bears no relationship with its financial resources. There are three systems of marketing the produce of the societies. They are : (a) outright purchase system, (b) commission sale system and (c) pledging system.

The Management Committee consisting of nominated and elected members is responsible for the good management of the society. One manager generally of the rank of Forest Range Officer is appointed for each society to carry out the work of the society. All the societies are under the control of the Chief Conservator of Forests and function as specialized agencies of the Department. The Co-operative Inspector of the circle concerned is responsible for inspection, supervision and control of the societies.

Regarding the working of the societies, it has been found that the tribal people are yet to be enthusiastic about the societies and their function. The progress is not very satisfactory but the experiment is on the right lines. The share capital contribution in almost all the societies has been found to be inadequate. It amounted to about Rs. 300 and the society worked coupes worth Rs. 5,000 to Rs. 10,000. The formation of fake co-operative societies by private financiers like ex-forest contractors, businessmen, etc., is very common. Even the genuine forest labour co-operative societies most of which are financially handicapped cannot compete with the forest contractors at public auctions. Therefore, the settlement of coupes with the forest labour co-operative societies is done on concessional basis. A large number of established societies are defunct in the sense that most of them do not work out coupes and still incur huge maintenance cost. Very few societies have conscious members with the result that the Secretary is in a position to manipulate the accounts and profits, etc. The societies are not capable to have an effective marketing organization. Financially handicapped societies are not in a position to give tough competition to private traders. Various disadvantages of small scale marketing are present. There is lack of adequate co-ordination between the various departments of the State promoting these societies. In Bihar promoting or sponsoring agencies for such societies are also lacking.

Thus it has been found that important factors such as the difficulty of the tribals to pay the share capital, inability and ignorance of the co-operative workers, unsuitability of the co-operative workers' laws and promotion of the co-operatives not as an integral part of tribal life hinder the rapid growth of these societies. These anomalies and defects must be removed soon. A permanent labour force for forest must be created. Because forest work is seasonal, it is essential to devise measures to provide opportunities for supplementary work during the off-season. Care should be taken to see that financiers and such other influential people do not dominate the co-operatives and use them for their own benefits. Genuine but weak societies should be made financially strong so as to enable them to compete with the forest contractors in obtaining coupes at public auctions. For this purpose encouragement and guidance are needed. Regular working of coupes, technical guidance, proper control and supervision, training of forest labourers, education in co-operation, increase in work output of forest labourers, and financial assistance for purchasing modern mechanical equipment by co-operative societies are needed.

---

## FOREST ECONOMY OF UTTAR PRADESH

G. S. LAVANIA

*Director  
Economics of Farm Management Scheme, U. P.*

AND

M. M. BHALERAO

*Lecturer in Agricultural Economics  
Banaras Hindu University, Varanasi*

### SUMMARY

The State of Uttar Pradesh had 37.94 lakh hectares of area under forest in 1961 accounting for 12.80 per cent of the total area. This was quite below the all-India average of 21.90 per cent (proportion of area under forest to total area) and far below the optimum—33.3 per cent recom-

mended by the National Forest Policy of 1952. The forest area per capita in the State was also very low—only 0.064 hectare as against 0.216 hectare for all-India.

Besides their moderating effect on the climate, the forests reduce the severity both of drought and flood. This emphasizes the need to preserve an adequate area of land under forests in the interest of agriculture. The neglect of forestry has aggravated the problem of soil erosion in Uttar Pradesh. Thus in the hill regions of the State over-grazing and reckless cutting of the forests have removed the ground cover, and the encroachment on forest land in the plains also for extending cultivation has been carried too far to upset the desired balance between agriculture and forestry. Almost every year the beds of the Ganga and its tributaries get raised by the silt carried from the eroded areas increasing the severity of floods not only in Uttar Pradesh, but also in Bihar and Bengal. Further, in the Gangetic western plains, wind erosion is a major problem and the threat from the Rajasthan deserts marching ahead is also alarming. Good forestry practices, shelter-belts and wind breaks in this region as such are of great importance.

From 35,169 square kilometres of forest lands under the control of the Forest Department of the State in 1961, a gross revenue of Rs. 6.9 crores was earned from the sale of the important forest products. Besides, about Rs. 1.13 crores worth of forest products were given to the local villagers under various concessions, rights and grants. These forest yields represent 0.53 cubic metres per hectare. The area devoted to commercial timber production yields only 0.46 cubic metre per hectare, which is about an eighth of the typical yield in the representative timber forest areas of the world. No doubt, the net output from forestry in Uttar Pradesh has increased by 23.4 per cent from Rs. 11.90 crores in 1950-51 to Rs. 14.69 crores in 1960-61. The contribution of forestry to the State income in Uttar Pradesh, however, was as low as 0.7 per cent as compared to the all-India average of 1 per cent in 1960-61. In respect of the gross revenue per square k.m. from forests the State ranked seventh with Rs. 1,069 per sq. k.m. as compared to the all-India average of Rs. 685 per square k.m. It may further be observed that in terms of employment also, forestry in the State has made not much contribution. Thus, forest-based industries in 1960 accounted for hardly 1.93 per cent of the workers employed in all the industries in the State.

The foregoing analysis of the forest economy of the State reveals that the scope for increasing the area under forest is limited in the State because of the demands of agriculture on the land resources. However, with a positive forest policy forestry can become complementary rather than competitive to agriculture. It is, therefore, suggested that the future forest policy in the State should be based on the following considerations: (1) expansion of area under forest; (2) prohibition of the destructive practices; (3) development of forest roads and communications; (4) restocking programme; (5) expansion of bamboo and eucalyptus cultivation; (6) stepping up the farm forestry programme; (7) development of forest-based industries; (8) development of minor forest products. The accelerated programme of development of forestry would of course necessitate the expansion of staff and training of personnel of the Forest Department, which should go hand in hand with the programme of educating the people, regarding the necessity of good forest maintenance for sustaining the agricultural development of the region.

## GROWTH AND DEVELOPMENT OF FORESTRY IN ORISSA

PRAFULLA KUMAR DAS

*Assistant Professor*

*Orissa University of Agriculture and Technology, Bhubaneswar*

### SUMMARY

The growth of forest revenue in Orissa over a period of 11 years is estimated at 10.22 per cent per annum. But this revenue as a percentage of gross revenue has tended to decrease over a period of time and therefore, it suggests that the former lags behind the latter. The main sources of forest revenue are timber, firewood, bamboo, Kenda leave, etc. The relative income is much encouraging in case of timber over this period of time. While the growth rate of revenue from timber and firewood are estimated at 16.51 per cent and 10.77 per cent per annum, in physical terms the growth rates are estimated at 8.46 per cent and 11.75 per cent respectively. The rate of growth of revenue in the case of timber is double its physical growth rate, as such it is in conformity with the rise in prices of the product, but the revenue growth rate is almost equal to the physical growth rate in the case of firewood. There has been rapid development of forestry during the Second and the Third Plan compared to the First Plan particularly in the field of plantations and introduction of silviculture system of management. Casuarina and cashewnut are two competitive plants and are best grown on the sand dunes of the State. A study of their economics in Orissa shows that the gross margin per acre per year is greater in casuarina.



## FORESTRY DEVELOPMENT IN ASSAM—PROBLEMS AND PROSPECTS

NIRANJAN SAHA

*Research Officer*  
*Agro-Economic Research Centre for North-East India*  
*Jorhat, Assam*

## SUMMARY

The National Forest Policy of India (1952) laid down a national minimum of one-third of the total land area of the country under forests and tree lands. The available data on forests in India show that only Orissa, Madhya Pradesh and Himachal Pradesh possess forest area above that national minimum. Assam which is endowed with favourable soil and climatic conditions for the development of forests lags much behind with only 20.7 per cent of her total geographical area under forests. But on a closer scrutiny, it is found that the position of certain districts in Assam compares favourably with the national minimum. But these districts are in the plains of Assam which have a high population pressure of 167 persons per square kilometre. Against this, the hills division of Assam with four districts—Garo Hills, Khasi and Jaintia Hills, Mikir and North Cachar Hills and Mizo Hills—has a very low percentage of area under forests, though the density per square k.m. is only 22. These districts have also favourable climatic and social conditions and they are also the home of certain rare species like pines (*Pinus Khasia* and *Pinus Insularis*), teak and some other vaneer species. This sad state of forestry in the hills owes its origin mainly to the existence of 'Jhum,' a form of shifting cultivation practised by the hill tribes.

Though *jhumming* has remained a problem to the State due to its high land requirements for rotation in space and denudation of forests resulting in accelerated soil erosion in the hills and recurrent floods in the plains, no serious attempt has yet been made to estimate the area affected and population dependent on *jhumming*. In this paper estimates have been made of the extent of area required for and population dependent on *jhumming* in the four hill districts. It is found that against an average of 1.49 acres per capita of land utilized for settled cultivation in the plains, *jhumming* requires 4.5 acres per capita. This is sheer wastage of scarce land and other resources like forests.

But though *jhumming* is predatory in nature against forestry development, the system could not be done away with due to the attachment of the tribes for whom it is more a way of life than mere a system of agriculture. Moreover, this has given rise to peculiar land tenure systems which again differ from district to district and even from tribe to tribe. As such, control of *jhumming* requires tackling many problems pertaining to legal, social and economic aspects of life of the heterogeneous tribal elements. But so long these tribal groups are not weaned away from this type of agriculture by giving them alternative occupations in poultry raising, livestock husbandry, horticulture and terraced cultivation, there is no prospect of development of forests in the hill districts of Assam. This paper pleads for research on and intimate knowledge of the tribal groups practising *jhum* cultivation for the proper solution of the problems posed by *jhumming*.

---

 ENTERPRISE RELATIONSHIP BETWEEN FORESTRY AND  
 CROP HUSBANDRY IN INDIA

B. P. SINGH

*Assistant Extension Specialist (Farm Management)*

AND

A. C. SHARMA

*Assistant Professor of Agricultural Economics*  
*Department of Economics and Sociology*  
*Punjab Agricultural University, Ludhiana*

## SUMMARY

The enterprise relationship between forestry and crop husbandry could be described as supplementary or complementary under certain circumstances. The relationship would be supplementary so long as land is apportioned between the two enterprises which are mutually exclusive groups



in accordance with land use capabilities. It would be complementary to the extent forests supply the required amount of fuel wood to divert cattle dung from its present use as fuel to compost for obtaining higher yields. The afforestation of the catchments of the Indian rivers also has complementary effect on crop husbandry because the former reduces the siltation rates in storage dams for the maintenance of the supply of irrigation water in the canals.

---

## FORESTRY DEVELOPMENT IN INDIA

B. N. SAHU

*Deputy Director of Statistics  
Bihar State Electricity Board, Patna*

### SUMMARY

The first forest policy was framed in 1894. The guiding principles were : (a) preservation of climatic and physical conditions; and (b) promotion of the well-being of the people. Conditions changed with the lapse of time, and this policy was reviewed and modified. A National Forest Policy was formulated in 1952. Its main objectives were: (i) evaluation of a system of balanced and complementary land use; (ii) control of denudation and soil erosion; (iii) maintenance of sustained supply of forest produce; (iv) provision of grazing facilities; and (v) maximization of forest revenue.

A review of forestry development shows that the proportion of area under forests has slightly decreased during the period 1950-51 to 1960-61. This might have been caused by heavy exploitation. The area under unclassified forests has decreased due to rigorous enforcement of categorization. The area under protected forest has increased. This shows a growing consciousness for its preservation or creation. A sharp decline in the forest area under private individuals may be due to acquisition by the State or indiscriminate exploitation. The decline in forest area may be checked by afforestation and regeneration. It is desirable that the forest area in the country be raised from 22 to 33 per cent. The total value of major forest produce has increased mainly due to increase in prices. Due to non-availability of quantitative data regarding minor forest produce it is not possible to ascertain whether the increase in value is due to increase in prices or in produce or both. With the improvement of forest management, the expenditure per unit of forest area and area productivity have also increased.

Uncontrolled and excessive grazing in forests is detrimental to their scientific preservation and growth. On the other hand, it has been gathered from the past experience that a moderate and rotational grazing is advantageous in reducing the risk of fire in forests. Moreover, it would be very difficult to completely rule out the possibility of grazing in forests. Having these limitations in view, the following guide-lines have been suggested in the National Forest Policy of 1952 in regard to cattle grazing in forests.

(i) Cattle grazing should not be permitted continuously on the same area by a larger number of cattle, otherwise it will lead to destruction of better strains of grass. But, if there is persistent demand for grazing in certain areas, it should be allowed on rotational basis. (ii) Cheap grazing of cattle should not be encouraged at any cost, for it may lead to an increase in their number and ultimately tell upon their breed. To discourage free and indiscriminate grazing of cattle, some nominal fee for grazing should be charged but the prime consideration, while doing so, should be regulation of grazing for improvement of breed and not revenue. (iii) Grazing should not be permitted in regeneration areas for it will damage the process of regeneration. It should also be reduced to a minimum in protected forests. (iv) Experience in India and abroad shows that the grazing of sheep and goats does more damage to young plants, and as such it should be prohibited. But considering the requirements of villagers living in the neighbourhood of forests, special fodder reserves under strict rotational control should be created.

It is rightly felt that mere forest legislation, forest education and research will not be enough for efficient forest management unless due co-operation, welfare and goodwill of villagers residing in the neighbourhood of forests are assured. Those villagers should be given due preference and privilege in utilizing forest produce for the satisfaction of their domestic and agricultural needs. They should also be encouraged to show direct interest in better utilization and preservation of forests. Middlemen, who exploit both the forests and the village labourers to serve their own ends, should be replaced by forest labour co-operative societies. Preservation and exploitation of forests

should be balanced for the benefit and welfare of the people. By doing so, people residing in areas adjacent to forests will be induced to feel that while it is their right to utilize forest produce at concessional rates, it is also their obligation to co-operate in the conservation of forests. At present there is a serious time lag in the publication of forest data. For assessment of the progress in the field it is necessary that annual forest statistics are published regularly and timely.

---

## EXPORT POTENTIAL OF FORESTRY PRODUCTS IN INDIA

I. J. SINGH

*Department of Agricultural Economics  
U. P. Agricultural University  
Pantnagar (Nainital), U.P.*

### SUMMARY

In this paper, an attempt is made to project the general economy of the forest industry in India by 1980 with specific reference to three issues: (a) the value of exports and imports of forest products; (b) the value of forest products; and (c) the level of employment possible in the forest industries. Based on the 1964 data, by 1980 the exports and imports of the forest produce are expected to increase by 60.6 per cent and 46.6 per cent respectively. The value of forest produce is projected to increase three times and employment per day is expected to double by 1980. Empirical evidence suggests that there are possibilities of increasing the volume of exports of forestry products. Besides the measures for export promotion, this may be done by intensified forest operations, such as thinning, salvage cuttings and the use of smaller materials from the trees cut. The situation of major forestry products, which are economically useful in the production of timber and plywood, is not satisfactory in the country. At present forestry industry is facing uncertainty of production of major products. But at the same time the amount of minor forestry products is constantly increasing. This indicates that there will be large quantities of wood produced for which there currently is no use because of the size and shape of the pieces in which it occurs and their scattered physical location. If development in technology and markets were to make the collection and processing of this material feasible and profitable, a considerable expansion of the forest products industries and exports could take place. In the absence of such developments, this wood will continue to exist as a physical material but not as an economic resource.

---

## SOME OBSERVATIONS ON THE ROLE OF FORESTS IN INDIAN AGRICULTURE

NAROTTAM NANDA

*Lecturer in Economics  
M.P.C. (Government) College, Baripada, Orissa*

### SUMMARY

India's prime concern in the context of her agricultural development is securing "a revolution in the yield per acre of our farm lands." This increase in yield is sought to be achieved through building up and preserving soil fertility. It is in this context of preservation of soil fertility that the role of forests requires to be studied. Forests help in the preservation of soil fertility in five possible ways: (a) Forests prevent soil erosion in both the hilly areas and flat lands. (b) They reduce the danger of floods and minimize the possibility of washing away the fertile top layers of soil. (c) They increase the water-holding capacity of the soil and thereby help maintain adequate soil moisture necessary for plant growth. (d) They help in the maintenance of adequate ground water supplies which can be brought to the surface for irrigational purpose. (e) Finally, they supply the plants with 'forest litter' that are fed by the fresh fall of leaves as their nutrition and they release a large amount of cattle dung for use in land instead of being used as fuel. In India "large areas in all parts of the country have been rendered useless as a result of soil erosion." The erosion of high magnitudes calls for "preservation of forests and other natural vegetation." If the vegetative cover provided by

the forests increases the water-holding capacity of soil, the role of forests in maintaining soil moisture will remain undiminished even in the long run. If the forests can contribute to the enrichment of underground water by preventing the degree of evaporation and high rate of water-flow to the river system, the necessity of their preservation under Indian conditions gets enhanced.

If shortage of firewood is expected to be about 100 million tons by 1975, this indicates that the burning of cow dung is likely to continue unhindered. But such loss of cow dung in India needs to be prevented.

In view of such important role of forests in Indian agriculture, both in the short run and in the long run, forests have to be properly looked after and systematically developed so that they can become "an indispensable ally and foster-mother of agriculture" as was envisioned by the National Forest Policy Resolution.

---

### THE CONTRIBUTION OF ORISSA'S FORESTS TO NATIONAL ECONOMY DURING PLAN PERIODS—AN ANALYTICAL STUDY

T. SATPATHY

AND

N. C. MOHANTY

*Utkal University, Orissa*

#### SUMMARY

This paper makes an attempt to study the contribution of Orissa's forests to the national economy during the Plan period. The importance of this study is borne out by the fact that the total forest area of Orissa is nearly 42 per cent of the total land area of the State. This paper examines the net revenue outturn of forests to the State exchequer by considering the difference between revenue accruing from forests and total expenditure incurred (both Plan and non-Plan) on the forests. In order to present a more accurate picture of revenue potential of Orissa's forests, considerable loss of revenue sustained by the State exchequer every year due to the prevalence of the system of enjoyment of various rights and concessions by the local people has also been taken into consideration. It also makes a reference to the scope for development of Orissa's forests and conclusively proves that scientific management of forests can give a sufficient boost to the revenue contribution in the State. A comparative statement regarding the revenue outturns, expenditure and the surplus over all expenditure in certain important States of India show that the total revenue surplus over all expenditure per square kilometre of forests is considerably low in Orissa. In conclusion, the paper makes out a strong case for substantial increase in investment on the forests in Orissa.