

ABSTRACTS OF PH.D. THESES

Balooni, Kulbhushan. 1998. "Financing of Afforestation of Wastelands". Sardar Patel University, Vallabh Vidyanagar. *Advisors:* Kartar Singh and A.S. Patel.

In India there is enormous diversity in the physical landscape, and the utilization of land varies widely across different land types. Due to the increasing pressure of population, there is excessive demand for land for both agricultural and non-agricultural activities which has resulted in the over-exploitation of land and consequent decline in agricultural productivity and production and environmental degradation. To arrest this trend, reclamation of lands lying unused for ages or which are termed as wastelands has become absolutely necessary and urgent. The most commonly accepted estimate of wastelands in India is 174.95 m ha, out of which 36.5 m ha of wastelands have been treated till the end of 1992-93.

There exists many alternative methods/means of reclaiming wastelands spread across different parts of the country. The choice from amongst the different alternatives of reclaiming wastelands depends on the type of wastelands, the degree of degradation, and the costs and benefits involved. Afforestation has been identified as one of cost-effective and environmentally sound uses of the wastelands.

Afforestation of wastelands requires a lot of capital investment, appropriate technologies for raising trees, production inputs, processing and marketing infrastructure and managerial and organizational capabilities. Besides, it also requires concerted action by various governmental organizations and non-governmental organizations (NGOs). In conjunction with technical guidance, financing is an important determinant of the success of wastelands afforestation programmes. In view of this, it becomes quite imperative to study and analyse various issues related to the financing of wastelands afforestation. The specific objectives of the study were: to examine the roles played by the government, non-governmental organizations (NGOs), financial institutions, and international aid agencies in wastelands afforestation; to find out the major constraints on financing of wastelands afforestation; to determine financial feasibility of wastelands afforestation projects; and to outline a strategy for financing it.

The Gujarat state was purposively selected for the research because it is one of the states of India where a lot of wastelands development work has been done by various government agencies and a number of NGOs. Eight case studies were conducted for fulfilling the objectives of the research. These case studies included three NGOs; one co-operative; one semi-government agency; one international donor agency; two financial institutions.

The study revealed that the investments in forestry sector are low vis-à-vis the contribution made by this sector towards Indian economy. The use of forestry sector's contribution to National Income Accounts as an indicator for national investment decisions has resulted in lower investment in this sector. This indicator is not judicious owing to conservation oriented strategies practised at present and moreover, many forest goods and services do not enter into the market.

It was found that a sudden spurt in investment in afforestation by the Government of India (GOI) in the last two decades (1980s and 1990s) has been accompanied by the initiation of a number of afforestation programmes. This is also due to substantial investment by international donor agencies. The foreign assistance, monetary as well as technical has had marked impact on the development of forestry sector in India as it has supplemented the government's efforts in this direction.

The study revealed that many of the forest-based industries have already entered into an agreement with the farmers to grow trees on their agricultural lands to meet their demand for raw material. As they have realized the fact that forests owned by the government cannot meet their demand for raw material on sustainable basis. It was found that the academicians, foresters and financial analysts are skeptical about the performance of private entrepreneurs involved in tree plantation business with the involvement of investors both on technical and financial grounds. The failure of many commercial plantations for one reasons or the other has confirmed their doubts and instilled fear in the minds of investors.

The study on National Bank for Agricultural and Rural Development (NABARD's) contribution to financing the wastelands afforestation in India revealed that it had not done much in this field since its inception. The number of forestry schemes refinanced by NABARD through financial institutions has increased at a very high rate (annul compound growth rate of 21.66% during 1981-82 to 1989-90). However, these schemes constitute only 0.61 per cent of the total number of schemes sanctioned and account for only 1.64 per cent of the cumulative disbursements made by NABARD up to 1992 under schematic lending. Since the whole

amount of funds disbursed to the forestry sector is not allocated for afforestation of wastelands, NABARD's contribution to his important activity in India has remained paltry.

NABARD's refinancing schemes for wastelands afforestation through its implementing agencies have suffered owing to a number of constraints, viz., technical, institutional, organizational and legal. The origin of most of these constraints could be traced to the lackadaisical government policies. There are also some inherent constraints, viz., scattered landholdings of farmers and low repayment capacity which poses difficulties for the financial institutions in allocating credit for farm forestry schemes.

The macro analysis of funds availability for afforestation at the national level does not paint a good scenario vis-à-vis large extent of wastelands in the country. However, the micro analysis based on the case studies revealed that it is not the lack of availability of funds from the government agencies and the external agencies that hamper the progress of wastelands afforestation in India. But there are many other constraints such as: problems in acquisition of government lands (village common lands) for afforestation programmes; encroachment of village common lands; lack of co-ordination among various agencies involved in wastelands afforestation programmes; and lack of arrangements for equitable distribution among beneficiaries of benefits from community plantations that dampen the interest of people in wastelands afforestation programmes and thereby slow down their pace. These constraints also adversely affect the financial viability of wastelands afforestation programmes.

It was found that non-cooperation among the village community in the implementation of the afforestation programme and in distribution of benefits accruing from the Plantation among the villagers had hampered such programmes. The low level of people's participation often results in higher transaction costs for the organizations involved in the afforestation programmes thereby increasing the overall Plantation cost.

The financial feasibility analysis of the afforestation programmes on degraded private and revenue wastelands respectively revealed that they are financially viable propositions. The analysis suggests that the afforestation programmes are worthy of financing by the financial institutions as the financial internal rate of return (FIRR) from these plantations were quite high as compared to the prevailing interest rate on long-term loans. This also suggests that state forest departments/ state forest development corporations, forest-based industries, entrepreneurs as well as individuals should come forward to undertake the wastelands afforestation as it is a profitable business and for this

purpose they can also avail of the loan facilities from the financial institutions.

The study also revealed that differential rates of interest should be adopted by financial institutions for wastelands afforestation programmes across various regions of the country. The criterion of differential rates of interest for wastelands afforestation can be based on classification of farmers' landholdings and different types of wastelands across the different regions of the country.

The estimates of investments required for afforestation of wastelands per annum at rather conservative afforestation costs per ha and at various afforestation rates per annum revealed that the present rate of investments in wastelands afforestation in India is not sufficient.

There is no doubt that the various steps undertaken by the government and its agencies, NGOs, forest-based industries/entrepreneurs, and international donor agencies in increasing investments in afforestation efforts in recent years have resulted in giving a facelift to the forestry sector in India. However, continuing deterioration of the land resources as a result of surmounting pressure from a growing economy and a persistent increase in the population highlight the need for more investments in wastelands afforestation in the coming years. For this purpose the state machinery will have to gear up its activities by involving the financial institutions and other organizations to the greatest possible extent to increase investments in wastelands afforestation.

To sum up, the need of the hour is to have a sound policy that could ensure efficient utilization of funds available for wastelands afforestation programmes and which could remove various obstacles in the way of wastelands afforestation in the country.

M. Maibangsa, 1998, Small Scale Rubber Plantations in Assam - An Economic Analysis, Tamil Nadu Agricultural University, Coimbatore, Major Advisor : S.R. Subramanian

Rubber industry plays a crucial role in Indian economy as it is put to a variety of uses. The demand for rubber has been steadily growing in the modern times. However, the prices of rubber have been widely fluctuating in the country not only due to factors operating domestically but also globally. Rubber is mainly grown in Kerala State. It is slowly being expanded to other non - traditional areas including Assam. Most of the rubber plantations in the state are on small holdings. Therefore,
