FINANCIAL VIABILITY AND BANKABILITY OF JFM PROJECTS IN INDIA*

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Introduction

India's population of more than 900 million continues to grow steadily at the rate of 2% a year. By 2050 AD it has been estimated to be 1.5 billion. The nation's natural resource base will require extremely careful and intensive management to meet basic human and environmental needs. At present forest, ground water and soil resources are being degraded and drawn down at a rapid unsustainable rate. The conservation requires to arrest further degradation as well as increase production to meet the demands of the local communities as well as that of the nation. The country already has 25 million hectares of degraded forest areas with crown density between 10 and 40 per cent and another 10 million hectares with crown density below 10 per cent (i.e. more or less barren). The massive afforestation/social forestry programmes could not reverse the trend of degradation due to various reasons. To make the natural resources, especially forests, sustainable on long term basis the new concept of Joint Forest Management (or) Participatory Forest Management has been introduced. The participatory approach emerges as one of the most viable strategies to rehabilitate degraded forests through empowerment of people to exercise their choice in matters relating to protection and management for sustainable use.

Present Status

West Bengal is pioneer of this approach and in few other States like Haryana, Gujarat and Orissa similar efforts were simultaneously initiated by Forest Departments. The Ministry of Environment & Forests, GoI, in June 1990 issued a circular/guidelines for involving village communities in the rehabilitation of degraded forests and later in protecting and managing assets created and finally in equitably sharing the usufructs. It is estimated that there are over 12,000 Forest Protection Committees (FPCs) taking care of around 1.5 million hectares of forest lands. In addition, there are a number of self-initiated forest protection groups, especially in the tribal areas of Orissa and Bihar, guarding forest patches near their villages without entering into a formal agreement with the Forest Departments. At present, JFM resolutions have been adopted by almost all the States.

The lessons learnt so far suggest that JFM is more complex than traditional forestry practices. In the latter the primary focus was on technical management of

* The view expressed are those of the authors and not of the organisation they work for.

forests, whereas in the case of *JFM* the technical prescriptions have to be matched with the diverse needs of the community. JFM embraces ecological, economic, social, institutional and political aspects which are closely interwoven. Though many case studies have been conducted on JFM, few attempts have been made at analysing systematically on :

- The incentives, the costs and benefits - of local communities to participate in JFM and manage the forest area.

- There is a need for getting an estimate of the total costs of putting a JFM initiative in place (e.g., purchase of seedlings, costs of maintenance and protection etc).

- Information is also needed on the costs of plantation versus natural regeneration of degraded forests and also the potential for making alternative use of the land (e.g., orchards, cash crops, agro-forestry etc.)

- It is important to analyse data from several sites under a variety of ecological and social conditions and to ascertain whether JFM projects are bankable, since in future there could be prospects of channelising bank money to JFM projects.

- The biological relationships and production functions for timber, non-timber forest products, fodder, fuelwood, and other products need to be estimated with greater degree of reliability for a variety of ecological conditions and under different management practices.

- The economic sustainability of JFM needs to be examined in particular, the contribution of time and money by the State, FDs, FPCs and financial institutions.

- The institutional implications of the JFM approach need to be studied.

Initiative by Government of India

- The National Forest Policy of 1988, the GOI guidelines of June 1, 1990 and the State Governments' Orders on JFM are all positive steps to benefit the forest communities in particular and the rural people in general.

- GoI has projected a target of 10 million hectares degraded forests to be protected under JFM by 2005 AD i.e., 1 million hectares annually.

- Based on this, annual fund requirements would be around Rs. *27,000 million presuming a cost* estimate of Rs. 27,000 per hectare.

Budgetary allocation for forestry sector is less than 1% and there is no likelihood of increase in future. It is therefore necessary to involve institutional credit to sustain JFM movement and also for sustainable management of forests.

Andhra Pradesh Forestry Project and Banking scenario

Forest development in A.P. has benefited from the World Bank assisted Forestry Project, the credit for which became effective 29th July, 1994. The total project cost is estimated at US $89 million; community participation and management of the forest is an important part of the project. However, the project is scheduled to complete disbursement in September,

2000. Since the World Bank will withdraw support by 2000 and since Government of A.P. is unable to provide funds continuously for JFM on its own, there is a strong possibility of funding such community based projects by commercial banks. It must be kept in mind that without proper funding, success of JFM will not only be short-lived but may also create social unrest in the State. Realising this, Government of A.P. has requested for continuity of funding by commercial banks. In this connection, it may be mentioned that in India a large number of forestry projects have been funded by commercial banks but these are all through State-owned Forest Development Corporations where the beneficiary is the State. Thus, the banks are familiar with the forestry projects, only difference in the present case is that the beneficiaries are the village communities. With proper institutionalisation, JFM projects can be funded by the banks. If done, this will be the first such case in India.

NABARD's initiatives

A study was undertaken jointly by FAO and NABARD in A.P. State in April 1997 to assess the technical feasibility and financial viability of JFM projects besides legal aspects and ways and means to channelise institutional credit.

Findings of the study team

* Although it seems to be problematic, but challenging and has got promise for future forest management of the country.

* The mission is confident that there should be no problem from technical stand point in financing JFM on credit.

* Some initiatives on institutionalisation of the whole process need to be taken up for channelising the credit with proper legal safeguard.

* The estimated unit cost for such activities might be to the tune of Rs. 27,000/ha, with return varying from Rs. 1,00,000 to Rs. 1,50,000 per ha within a period of 15 years.

* In 15th year, repayment of bank loans might be made.

* It is desirable to have Government subsidy if the project is to be implemented. It would be better if in initial years forests are managed only through subsidy. The remaining years management might be undertaken by bank loans which will not only minimise interest burden on the project but will also minimise the gestation period for bank loan portion which may encourage the banks to finance the JFM projects.

* Marketing and selling arrangements of the produce must be tied up.

Studies further indicated that there might be three types of JFM projects that can be bankable viz., Sal regeneration, Teak regeneration and Bamboo plantation projects. Main expenditure is for maintenance in the form of payment of wages to the watchers. Bank loan with interest can be comfortably repaid within fifteen years, leaving a surplus that can be reinvested and or shared by VSS. Intermediate yield of grass within 6 months of protection will be available for sharing among VSS members. Besides, NTFPs can bring further revenue to VSS on sustainable basis.

JFM is a complex system involving ecological, economic, social, institutional and political aspects. Hence, financial packages for JFM would be different from that of traditional forestry. Thus the working out of modalities of financing JFM projects is necessary. The joint effort by FAO and NABARD might be able to formulate a few models for financing JFM. However, all JFM projects may not be bankable. Only forest areas where predominant trees are Teak, Sal (*Shorea robusta*) and Bamboo, are likely to be commercially viable. The aspirations of the rural people have been raised too high by adopting JFM concept in all the States. Failure to channelise fund continuously to the system would not only degrade the forests further but would also create social unrest.

Financial analysis

The field study conducted jointly by FAO and NABARD in Andhra Pradesh suggests that JFM project might be technically feasible and financially viable provided scientific management practices are carried out meticulously with the assistance of forest community.

Besides timber, the following Non Timber Forest Products (NTFPs) are expected from JFM within first year of protection itself :

- Fodder from grasses and tree leaves,
- Fuelwood from brushweel cutting, pruning and lopping,
- Food: (i) Vegetables: root crops, nuts, berries, honey etc., (ii) Wild animals like boar, goat, rabbit, deer, wild cocks and hen etc.,
- Medicines - Bark, resin, fruit, roots, flowers.

However, these benefits have not been taken into consideration while working out the economics. To be precise, to make JFM projects financially viable, the management of NTFPs may be incorporated in the strategic long term planning, which has not been considered so far since resource management plans were biased towards timber production. Because of this attitude, management know-how for sustainable utilisation of NTPFs has not been adequately developed. Research and training of the local people on NTFPs are also inadequate and need to be strengthened. Quantification of socio-economic benefits under JFM, marketing and trade of both Timber and NTFPs in the project areas are lacking and need to be developed.

Unit cost

Based on the studies in Andhra Pradesh, a model unit cost per hectare including estimated yield, rotation and financial analysis in case of Teak has been formulated and furnished in the Tables 1 and 2.

Thinning

The following thinning regime is prescribed.

The area will be worked under coppice with reserves on a 25 year rotation with 3 felling cycles in between.

* 8th year : Thinning will be carried out to provide adequate space for remaining trees to grow better. Removal of 50% of stock is prescribed.

Table 1

Unit cost for protecting and managing forests under JFM with viable root stock.
Model : Teak : Average stocking >> 2000 trees per hectare.

Wage Rate : Rs. 40.00 Per Manday

Sr.No.	Year	Unit (ha)	Particulars								Total (Rs.)
			Pruning and Lopping		Climber Cutting		Watch and Ward		Thinning		
1	1st	1	10 MD	400	***	***	36 MD	1440	***	***	1840
2	2nd	1	10 MD	400	***	***	36 MD	1440	***	***	1840
3	3rd	1	10 MD	400	***	***	36 MD	1440	***	***	1840
4	4th	1	5 MD	200	***	***	36 MD	1440	***	***	1640
5	5th	1	***	***	***	***	36 MD	1440	***	***	1440
6	6th	1	***	***	***	***	36 MD	1440	***	***	1440
7	7th	1	***	***	10 MD	400	36 MD	1440	***	***	1840
8	8th	1	***	***	***	***	36 MD	1440	1	800	2240
9	9th	1	***	***	***	***	36 MD	1440	***	***	1440
10	10th	1	5 MD	200	***	***	36 MD	1440	***	***	1640
11	11th	1	***	***	***	***	36 MD	1440	***	***	1440
12	12th	1	***	***	***	***	36 MD	1440	***	***	1440
13	13th	1	***	***	5 MD	200	36 MD	1440	***	***	1640
14	14th	1	***	***	***	***	36 MD	1440	***	***	1440
15	15th	1	***	***	***	***	36 MD	1440	2	800	2240
16	Sub Total	Rs.		1600		600		21600		1600	25400
17	Contingency	5%		80		30		1080		80	1270
18	Total	Rs.>>>		1680		630		22680		1680	26670

NB : One Watch and Ward for 10 ha of plantation.

Yield and Rotation : first thinning in 8th year and second thinning in 15th year. Survival has been presumed 80 % i.e.. 1600 trees.

Year	Produce	No.s./Vol.	Rate (Rs)	Income
8th	Pole	800 nos.	50	40000
15th	Pole	400 nos.	200	80000
			Total Rs.>>>	120000

NB: 1. Yield has been considered from first coppice rotation only. Second and third coppice rotation have not been considered for working out the economics. Yield from grass, fuelwood, fodder and other non-timber forest products have not been considered for working out the economics. 2. 400 Nos. of healthy trees will be retained till maturity and will be sold as timber. 3. Price of pole has been assumed at farm gate price.

Table 2

Repayment schedule (Teak) under JFM

Interest Rate	15.00%														
Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Loan	1840	1840	1840	1640	1440	1440	1840	2240	1440	1640	1440	1440	1640	1440	2240
Simple Interest	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276
Simple Interest	***	276	276	276	276	276	276	276	276	276	276	276	276	276	276
Simple Interest	***	***	276	276	276	276	276	276	276	276	276	276	276	276	276
Simple Interest	***	***	***	246	246	246	246	246	246	246	246	246	246	246	246
Simple Interest	***	***	***	***	216	216	216	216	216	216	216	216	216	216	216
Simple Interest	***	***	***	***	***	216	216	216	216	216	216	216	216	216	216
Simple Interest	***	***	***	***	***	***	276	276	276	276	276	276	276	276	276
Simple Interest	***	***	***	***	***	***	***	336	336	336	336	336	336	336	336
Simple Interest	***	***	***	***	***	***	***	***	216	216	216	216	216	216	216
Simple Interest	***	***	***	***	***	***	***	***	***	246	246	246	246	246	246
Simple Interest	***	***	***	***	***	***	***	***	***	***	216	216	216	216	216
Simple Interest	***	***	***	***	***	***	***	***	***	***	***	216	216	216	216
Simple Interest	***	***	***	***	***	***	***	***	***	***	***	***	246	246	246
Simple Interest	***	***	***	***	***	***	***	***	***	***	***	***	***	216	216
Simple Interest	***	***	***	***	***	***	***	***	***	***	***	***	***	***	336
Annual Accrued	2116	2392	2668	2714	2730	2946	3622	4358	3774	4220	4236	4452	4898	4914	6050
Total Outstdg.	2116	4508	7176	9890	12620	15566	19188	23546	17894	22114	26350	30802	35700	40614	46664
Income								40000							80000
Repayment @								9426							46664
Surplus								30574							33336
Expenditure	1840	1840	1840	1640	1440	1440	1840	2240	1440	1640	1440	1440	1640	1440	2240
Income	0	0	0	0	0	0	0	40000	0	0	0	0	0	0	80000
Net Icome:	-1840	-1840	-1840	-1640	-1440	-1440	-1840	37760	-1440	-1640	-1440	-1440	-1640	-1440	77760
Discount Factor	20%														
IRR	32.86%														

NB: 1.Yield beyond 15th year has not been considered for calculating the economics. However, it is presumed that 50% of the income generated in 15th year will be reinvested in the project for further maintenance, since neither Bank loan nor Govt. grant are expected to be available.

2. In 8th year only cumulative interest will be repaid.

* 15th year : Thinning will be carried out again to provide more space to the existing trees by reducing the stock to almost half.

* 25th year : Final harvesting of tree growth leaving reserves will be done on 25th year.

Conclusion

Financial viability and bankability of JFM projects does not seem to be doubtful, however it is a very complex system with involvement of several partners viz. the Government, the community, the NGOs and the Banks. How these partners can work with cohesion to make JFM projects financially viable has to be evolved through more studies, interaction and proper legislation. JFM is still in its infancy, especially if we consider the financing mechanisms which involves many complex legal and institutional issues which have to be resolved soon. NABARD in association with FAO, Rome is at present studying the pros and cons of the JFM projects that might be financed by the banks in the near future. Now almost all the States have adopted JFM approach for rehabilitation of degraded forests and since neither the Central Government nor the State Governments possess enough financial resources for this activity, there is an opportunity for the banks to play a major role in future management of forests.

SUMMARY

The paper describes the possibilities of funding JFM projects by commercial banks. The authors opine that to develop India's vast stretch of degraded forest lands of JFM approach is here to stay. Since neither the Centre nor the States have enough financial resources for their rejuvenation there is a strong possibility of the involvement of commercial Banks to finance such projects in near future. Although all JFM projects may not be bankable, case studies suggest that JFM projects where Teak, Sal and Bamboo are predominant species, there is a strong likelihood of such projects being bankable. It is also presumed that for sustenance of JFM on long term basis continuity of credit will play a major role in future management and protection of our forests.

भारत में संयुक्त वन प्रबंध परियोजनाओं की वित्तिय चलन-क्षमता और बैंक सहायता योग्यता

एम०एस० हक़, एस० कन्नपिरन् व ए०एम० पॉल

सारांश

इस अभिपत्र में संयुक्त वन प्रबंध परियोजनाओं को व्यापारिक बैंकों द्वारा धन राशि उपलब्ध कराने की संभावनाओं का वर्णन दिया गया है। लेखकों की राय है कि भारत की विस्तृत व्याहसित वनभूमियों का विकास करने के लिए संयुक्त वन प्रबन्ध टिका रहने वाला है। वह पुनर्जीवन लाने के लिए चूँकि न तो केन्द्र के पास और न ही राज्यों के पास पर्याप्त वित्तीय संसाधन उपलब्ध हैं इसलिए निकट भविष्य में ऐसी परियोजनाओं को धनराशि उपलब्ध कराने के लिए उसमें व्यापारिक बैंको को साथ मिलाने की बहुत संभावना है। यद्यपि यह ज़रूरी नहीं कि संयुक्त वन प्रबन्ध वाली सभी परियोजनाएँ बैंक सहायता पाने योग्य हों फिर भी विशेष अध्ययनों का सुझाव यही है कि ऐसी संयुक्त वन प्रबन्ध परियोजनाएँ जिनमें सागौन, शाल और बांसों की जातियों का बाहुल्य हो वहाँ इस बात की बहुत ज़्यादा संभावना है कि ऐसी परियोजनाएँ बैंक सहायता पाने योग्य होंगी। यह भी माना गया है कि दूरगामी आधार पर संयुक्त वन प्रबन्ध को चलाते रहने के लिए धनराशि की निरन्तर उपलब्धता को वनों के भविष्य में प्रबंध और सुरक्षा करने में मुख्य भूमिका रहेगी।

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