

Constraints in adoption of *Acacia mangium* – A case study in Konkan region of Maharashtra

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ABSTRACT: The present study was conducted in Kasu village of Raigad District of Maharashtra. The data were collected from 60 farmers through structured questionnaire method. The constraints faced by *Acacia mangium* growers were identified by asking them to indicate the problems in the areas of credit/loan, labour, inputs, technology and marketing aspects, respectively. The farmers felt that the non-availability of agricultural labour was the primary reason lead to 85% for opting *A. mangium* plantation, followed by high income within a short period (75%). Among the difficulties, non-availability of credits/loan was the major constraint of farmers having 88.33%. In the category of input constraints, the major constraints were faced by majority of mangium growers in the cost of fertilizers (75%). More than 60% mangium growers reported that, prior permission from forest department should require for felling of trees. The mangium growers suggested for provision of loan and subsidies, keeping the process of inputs like fertilizers and insecticides reasonable. The government should lift the ban on obtaining prior permission for felling of trees planted by them on their field. If this is done, it will be helpful to increasing the adoption of mangium cultivation.

Key words: *Acacia mangium*, constraints, credit, inputs, labour, marketing and technology.

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1. INTRODUCTION

We have been observed plant species receiving rapid increasing, international media attention based on their acclaimed potential to increase social, economic and environmental sustainability. *Acacia* plantations deliver high economic benefits and there are opportunities for improving productivity, research and development strategy focused on underpinning sustainable management and application would serve the nation well (Nambiar *et al.*, 2015). *Acacia mangium* is an important multipurpose and nitrogen fixing tree species used in plantation. Due to tolerance of very poor soils and also helps to increasing important role in efforts to sustainable supply of tree products *viz.*, fuel wood, timber, poles etc., while reducing the pressure on natural ecosystem. It produces a wood that can be used for variety of purpose. The timber is good for furniture, cabinets, etc., and is also suitable for particle board, plywood firewood and charcoal etc. *A. mangium* grows well under low productivity land (Purohit, 1994). *Acacia*'s were acclimatized for degraded soil condition (Laurita, 1992) and its fast growing nature, huge market demand for timber, pulp and furniture, this species were

introduced and domesticated among the farming communities as block plantation for multipurpose and also under agroforestry systems. Therefore, the present study was conducted with the objectives of 1) to know the reason for adoption of *A. mangium* and 2) to identify the constraints faced by the farmers in adoption of *A. mangium* growing under Konkan condition of Maharashtra.

2. MATERIALS AND METHODS

The present study was conducted in village Kasu of Raigad district in Maharashtra. *A. mangium* seedlings were supplied to the farmers of Kasu village under investigation by All India Coordinated Research Project on Agroforestry, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli during 2015 on farmers demand. Farmers who had established the *A. mangium* plantation were selected as respondents. The primary data were collected from 60 farmers through structured questionnaire method. Collected data were tabulated and analyzed by using frequency and percentage. The constraints being faced by *A. mangium* growers were identified by asking the *A. mangium* growers to indicate the problems in the areas credit/loan, labour, inputs,

technology and marketing aspects. Accordingly the responses were recorded and quantified using frequency and percentage of distribution.

3. RESULTS AND DISCUSSION

The reason for planting the *A. mangium* trees was analyzed by the 'Garrett scoring Technique' (Garrett and Woodworth, 1969) and the results were presented in the Table 1. The farmers felt that, non-availability of agricultural labour was the primary reason (85%) for opting *A. mangium* plantation, followed by high income within the short period (75%). Further, less attention needed ranked third with 68.33. Less risk for *A. mangium* was the fourth important reason with 53.33 per cent (Table 1). Among the problems faced by the farming communities in cultivation of *A. mangium*, non-

availability of credits/loan is the major constraint (88.33%) (Table 2). Even, loan facilities are not available for making drip irrigation facilities. Nimje *et al.*, (1991) reported the non-availability of loan is a major constraint in adoption of forest trees. Non availability of agricultural labours is second important constraint faced by the farming communities (85.00%) and their wages are high (83.33%). Similarly, Saravanan (2012) also reported that the non-availability of agricultural labour is another important constraint faced by the farming communities (80%) and their wages are very high (76.25%).

In the category of input constraints the major constraints faced by majority of *A. mangium* growers cost of fertilizers (75%), followed by cost of insecticides and pesticides, therefore the government should keep the cost of fertilizers, insecticides and pesticides at reasonable price for greater adoption of *A. mangium* plantation. Non availability of seedlings in time (25%), insufficient quantity of seedlings (15%) is also constraints faced by some farmers. Therefore, sufficient quantity of *A. mangium* seedlings made available to farmers in time to raise forest trees along with field crops on individual land. Dove (1988) and Bhople *et al.*, (1991) also reported the non-availability of seedlings in time

Table 1. Reasons for planting *Acacia mangium*

S. No.	Reasons	Frequency	Percentage	Ranking
		N=60		
1	Non availability of agricultural labour	51	85.00	I
2	Higher income	45	75.00	II
3	Less attention needed	41	68.33	III
4	Less risk	32	53.33	IV
5	Low input cost	29	48.33	V
6	Inadequate water for other crops	28	46.66	VI

Table 2. The problem faced by farmers in *Acacia mangium* cultivation

S. No.	Constraints	Frequency	Percentage
		N=60	
1	Credit / Loans		
	i. Loan not available in cash	41	68.33
	ii. Non availability of tree loan	53	88.33
2	Labour		
	i. Non availability of agricultural labours	51	85.00
	ii. Higher wages of labour	50	83.33
3	Inputs		
	i. Cost of fertilizers	45	75.00
	ii. Application of manures and fertilizers increase the cost of cultivation	43	71.66
	iii. Cost of insecticides and pesticides	40	66.66
	iv. Insufficient quantity of seedlings	15	25.00
	v. Non availability of seedlings in times	9	15.00
	vi. Poor quality of seedlings	4	6.66
4	Technology		
	i. Non availability of silvicultural cultivation technique	50	83.33
	ii. Poor extension strategy	21	35.00
5	Marketing		
	i. Non availability of marketing information	42	70.00
	ii. Monopoly in price fixation	36	60.00
	iii. Low price for pulp wood	31	51.66
6	Others		
	i. Maintain records of mangium plantation	40	66.66
	ii. Obtain permission from forest department for felling of mangium trees	32	53.33

as the main difficulty in adoption of agroforestry. Regarding technological constraints majority of *A. mangium* growers opined that non availability of silvicultural technique (83.33%), it demands more technical knowledge and attention, and hence there is a need to find out a silvicultural techniques that will be practically feasible to *A. mangium* growers. Dove (1988), Chauhan and Dhayni (1989), Muir and Casey (1989) and Bhople *et al.*, (1991) also reported that lack of appropriate technologies is a major constraint in adoption of agroforestry. So far as the informational constraints majority of the *A. mangium* growers (70%) stated that it is difficult to get information about *A. mangium* cultivation and some of them also reported that they do not have knowledge about information sources for *A. mangium* plantation (60%). Tewari (1991) also reported that lack of information on the part of teak grower as the major constraints in adoption of social forestry programme. In *A. mangium* cultivation there seemed to be some other constraints faced by the *A. mangium* growers. More than 60% of the *A. mangium* growers reported that prior permission from forest department was required for felling of trees (66.66%). Bhople *et al.*, (1991) and Tewari (1991) reported the uncertainty regarding the permission for felling of trees as one of the major constants in adoption of agroforestry.

4. CONCLUSION

Cultivation of fast growing *A. mangium* tree has to be encouraged as an integral part of farming system, in small wood lots, in home gardens or in mixtures with other trees and agricultural crops as agroforestry system. The study revealed that majority of the mangium growers faced the constraints in adoption of *A. mangium* cultivation were namely non-availability of loan and skilled labour, high prices of fertilizers and plant protection chemicals, difficulty in getting information about *A. mangium* plantation and permission to fell *A. mangium* plantation in future. So

as to overcome these constraints, the *A. mangium* growers suggested for provision of loan and subsidies, keeping the process of inputs like fertilizers and insecticides reasonable. The government should lift the ban on obtaining prior permission for felling of trees planted by them on their field. If this is done, it will help in increasing the adoption of *A. mangium* cultivation and adoption of agroforestry.

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