Title: Propagation of *Sapindus mukorossi* (Reetha)

A: The propagation will be carried out as intercropping on community land already fenced under Departmental scheme

Background: *Sapindus mukorossi* (commonly known as soap nut or reetha) is a large sized deciduous tree belonging to the family Sapindaceae. It may grow up to a height of 12-20 m with a girth of about 3-5 m in nearly 70 years. The plant is indigenous to India and China and prefers tropical and sub-tropical regions of the Indian Continent. It is widely grown in the upper reaches of Indo Genetic plains, Shivaliks and sub-Himalayan tracts at an elevation of 200-1500 m. This plant is quite common in Shivaliks and the outer Himalayas of Himachal Pradesh. According to Ayurveda, Reetha is a perfect medicine for the treatment of skin and psychiatric disorders. In addition to that, it is used as a hair cleanser traditionally. Due to this, it is used in making formulations which are used as hair care products for maintaining hair shiny, lustrous and healthy. While traversing through districts Bilaspur and Mandi, its natural zone of occurrence has been found at the aforementioned altitudinal range. Therefore, it is felt that if the propagation of this species is initially undertaken in these districts, the same may easily be developed into a model site and replicated to other appropriate areas subsequently.

Scheme: The scheme includes identification of areas in the above altitudinal zone of Bilaspur and Mandi Districts as per availability, suitable soil and water source. CIGs of interested families will be formed to take up its propagation in the adjoining fenced forest plantation areas of VFDS. In order to compare and monitor the progress more efficiently, the propagation will also be undertaken on private land. Marketing will be carried out by the marketing committee set up at Cluster level of VFDS and under the aegis of Manager (Marketing) from PMU.

Activities: The suitable areas for propagation will be identified in the above mentioned districts. Depending on the soil moisture and season, the irrigation in pit areas is required and the plants may need to be irrigated at least once a week in summers. In addition, Potassium acrylate will be used for moisture retention as per requirement in the field.

Nursery raising: The improved quality grafted plants will be procured from COHF, Neri (Hamirpur) @ Rs.70/plant as agreed with them. Also, the stock will be raised in the JICA nurseries for 2.5 years and subsequently used for grafting with the genetically improved stock, therefore, 3 years old plants will be used for planting in VFDS areas. Initially, the grafting will be done under the supervision of experts from COHF, Neri and subsequently by master trainer field staff being trained in the Project. The expected cost per plant for the improved stock will be Rs.70/- (approx.).

Costs involved: Estimated projections have been broadly worked out as below:

No.	Activities	Units	Quantity	Norms	Cost
1.	Constitution of CIG from VFDS	1			
2.	Cost of Planting Material	1	3,000	70	**2,10,000**
3.	Agricultural Implements	LS		LS	**7,000**
4.	Digging of pits (60x60x60) cm size	%	3,000	3,490.90	**1,04,727**
5.	Filling of pits (60x60x60) cm size	%	3,000	708.80	**21,264**
6.	Planting of plants in P-bags	%	3,000	436.50	**13,095**
7.	Potassium acrylate	LS		LS	**15,000**
8.	Manure cost/NPK	LS		LS	**20,000**
9.	Carriage of manure	LS		LS	**2,000**
10.	Initial Watering Cost	LS		LS	**50,000**
11.	Carriage of extracted material	LS		LS	**20,000**
12.	Cleaning & Packing cost	LS		LS	**20,000**
13.	Packaging material cost	LS		LS	**5,000**
14.	Cost of labels				**1,000**
15.	Sale & Auction	LS		LS	**1,000**
16.	General Overheads/Other Charges	LS		LS	**50,000**
	Total				**5,40,086**

The maintenance and recurring costs will be reflected in the Business plan.

Financial Returns: Total expected average yield/annum (**from 5th year onward**) will be 10 kg/tree (approx.) which on the minimum market price of Rs.5,000/quintal may give annual return of Rs.15,00,000/- (for 10 ha). However, the average yield/annum may increase up to 2 quintal/tree after 15 years of propagation under ideal conditions.

Cost Benefit Analysis: The Benefit : Cost = 15,00,000/5,40,086 =2.78. Any project which on PNV gives a value of 2.78 times that of investment is sustainable.

Sustainability: The sustainability of this activity will depend on motivation of people after the project period. If the practice of cultivation coupled with proper care of the above medicinal plant species is adopted on their cultivable land and/or village common lands, they are bound to get rich dividends out of it.

B: Public distribution of Plants:

The beneficiaries of VFDS will be encouraged for propagation of Reetha on their private lands. The cost and carriage of planting material will be borne by the Project.