

Title: Commercial cultivation of *Swertia cordata* (Chirayita) through organized women groups in Himachal Pradesh.

Background: Mountain livelihood comprises of complex and diversified economic, social and physical strategies to acquire assets and entitlements for living of individuals. Owing to heavy reliance of mountain communities on natural resources, unplanned collection and marketing of medicinal plants from the wild in the Indian Himalayan Region (IHR) has become a great challenge. *Swertia cordata* is one of selected few Himalayan medicinal plant species with high market value and easy cultivation technique. Complete plant of this species (Panchang) is used as raw drug in tonic, bile problem, chronic fevers, anaemia, bronchial asthma, liver disorder as Ayurvedic formulations. Annual demand of CHIRAYITA group in India is reported to be 60,000-100,000 Kg and is imported mainly from Nepal. Collection and extraction of this species in India have declined in recent years due to the excessive exploitation from nature before seed ripening. Therefore, commercial cultivation of this species to meet ever increasing demand is the answer which will provide high economic returns to the farmers and help in conservation of related species in the nature. The huge chunk of agriculture land is abandoned in the state due to animal menace and forced the farmers to shift to other places. Cultivation of *Swertia cordata* species on such lands on the hill slopes away from the human habitation will provide good niche to achieve organic certification and employment opportunities for rural people.

Scheme: Commercial cultivation of *Swertia cordata* will be initiated on 50 farmers' fields to produce 500 Kg dry material in 2nd year and 1000 Kg in 3rd year as demonstration. 50 organized farmers will cultivate area of 1.50 hectare in the selected area. Women farmers will be trained in agrotechnology of Chirayita and will be provided with seed, compost making technique and buy back guarantee for marketing of produce. The commercial cultivation in cluster

of farmers will be practiced to reduce the risk and provide benefit to larger section of society. Crop will be sown during March-April and will be ready for harvesting in the next year August-September after eighteen months. No irrigation is required for *Swertia cordata* cultivation. Vermicompost prepared from cow dung will be used only once after one year of seed sowing. Farmers produce will be tested for the quality in terms of concentration of marker compound like Amarogentin. Collective marketing of farmers produce will be done on pre-settled marketing arrangement.

Activities: Chirayita is growing naturally in the selected Gohar block. It was found in abundance and regular harvesting has almost wiped out the population of this species from the Chachiot area. Suitable topography and climatic conditions of Gohar block of district Mandi in Himachal Pradesh has been selected for the implementation of the proposed project. District Mandi is one of the largest producers of Temperate Zone medicinal herbs from the wild. The cultivation of medicinal plants in the Temperate Zone is expected to bring in a new revolution to make farmers prosperous. Success of the intervention can be easily replicated in other blocks of the districts and districts of the state. Keeping in view the maximum export of medicinal plants from Mandi district of mid hill region (Temperate), Gohar area has been selected for the implementation of the project.

Costs involved:

A. Recurring					
A.1 Manpower					
Item	Quantity	Year 1	Year 2	Year 3	Total
Field worker	Rs. 20000/pm fixed for 6 months/ annum	1,20,000	1,20,000	1,20,000	3,60,000
A.2 Consumables					
Item	Quantity	Year 1	Year 2	Year 3	Total
Planting material of <i>S.cordata</i>	500 grams/year @100/gram.	50,000	50,000	50,000	1,50,000
B. Other Items					
Items	Details	Year 1	Year 2	Year 3	Total
B.1 Travel	As per actual by commercial vehicle and transport	10,000	5,000	5,000	20,000
B.2 Contingency	Training of farmers and For incidental and expenses not covered in any other head	30,000	30,000	30,000	90,000
B.3 Overhead	Lumpsum	10,000	10,000	10,000	30,000
Grand Total (A1+A2+B.1+B.2+B.3)		2,20,000	2,15,000	2,15,000	6,50,000

Financial Returns: It is anticipated with the involvement of 50 farmers with three plots of 100 sq m each will produce about 500 Kg of dried *Swertia corda* of Rs. 1.50 Lacs after 18 months of sowing in 2nd Year and in 3rd year 1000 Kg of of Rs. 3.0 Lacs after 36 months in 3rd year. This cycle continues with capacity building and production of seed by the cluster farmers.

Cost Benefit Analysis: The Benefit : Cost = 900,000/6,50,000 =1.38 which is very much sustainable. However, this benefit will be spread over a period of 6 years.

Sustainability: Communities in mountains are dependent on subsistence agriculture and natural resources to meet their socio-economic requirements. Nowadays, farming sector is less economical in its traditional way. Either farmers need to opt for technical advancements or go for diversification. Therefore, it is imperative to look for new economically rewarding and less labour intensive crops to involve young generation. Cultivation of high value crops like *Swertia cordata* is a step in this direction. Complete package for cultivation with farmer oriented model from arranging quality seed, sowing method, crop maintenance, harvesting, quality testing and marketing along with natural farming shall ensure sustainable development not only in terms of the agricultural output but also on socio-economic and ecological parameters.

This Model will be outsourced by floating RFP since it involves complete package from propagation of the species to marketing and long term sustainability, on private land by the communities.