Title: Cultivation of *Picrorhiza kurrooa* (Kutki) in organized community cluster for livelihood and commercial production.

Background: Mountain communities living in the Himalayas are heavily dependent upon natural resources. Extraction of plants from nature offer age-old vocation to the people living in close proximity with nature to meet health and economic demand. Unplanned collection and marketing of medicinal plants from the wild in the Indian Himalayan Region (IHR) has threatened their diversity and livelihoods of rural people alike. *Picrorhiza kurrooa* is a well-known herb in the Ayurvedic system of medicine which has traditionally been used to treat disorders of liver and upper respiratory tract, fever, dyspepsia, chronic diarrhea, and scorpion sting. It is a small perennial herb from the Scrophulariaceae family found in the Himalayan region at elevations of 2500-3500 meters. It has a long, creeping rootstock which is bitter in taste and grows in rock crevices and moist, sandy soil. The active constituents are obtained from stolon. Although the plant is self-regenerating but unregulated over-harvesting has caused it to be threatened to near extinction. All harvesting of the species is from nature in Himachal Pradesh. The cultivation of Himalayan medicinal plants to meet industrial demand is gaining importance and efforts made at different levels in this direction have not yielded the desired results due to different constraints like limited agricultural land, non availability of planting material and lack of agro-technology. Proposed study will be first of its kind where all aspects of cultivation and product marketing will be addressed at one go to provide maximum benefits to the organized forest dependent community cluster.

Scheme: It is proposed that 50 farmers will plant a plot of 100 Sq meters with 250 plants/farmer each year for project duration of 3 years to set the annual harvesting cycle. In total three years, farmers will plant 1.5 hectare to start fist projection of about 250 Kg from first year plot in fourth year. Successively the yield will be doubled with harvesting of 1^{st} and 2^{nd} plot in 6^{th} year. In this way, new livelihood and employment opportunity will be created in remote and high altitude area of H.P.

Activities: Proposed project activities of *ex-situ* cultivation of *P. kurrooa* will be initiated with high altitude villages closer to the niche of *P. kurroa* under Gohar Block, Tehsil Chachiot of Mandi District above 2500 meter altitudes in the first go. High altitude villages namely Chhain Maigal, Ruhal, Bukhras will be selected where initial trials of cultivation were conducted. 12500 planting

material of *P. kurroa* will be arranged/year from existing nurseries of farmers and Research Institutions (HFRI, Shimla). Hand holding and regular technical support will be provided by the project field workers to establish the cultivation plots.

Costs involved:

A. Recurring					
A.1 Manpower					
Item	**Quantity**	**Year 1**	**Year 2**	**Year 3**	**Total**
Field worker	Rs. 20000/pm fixed for 3 months/annum	60,000	60,000	60,000	**1,80,000**
A.1 Consumables					
Item	**Quantity**	**Year 1**	**Year 2**	**Year 3**	**Total**
Planting material of *P. kurrooa*	12500 plants/year@ Rs. 10/plant	1,25,000	1,25,000	1,25,000	**3,75,000**
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 (A.1+A.2+B.1+B.2+B.3)		**2,35,000**	**2,30,000**	**2,30,000**	**6,95,000**

Financial Returns: This model will provide direct economic benefit of Rs. 2.5 Lacs/annum from 4th year onward to the growers. Additionally, planting material @ Rs. 5.00 Lacs/annum from 4th year onward is also expected to be produced which in turn, would further enhance the income of growers.

Cost Benefit Analysis: The Benefit : Cost = 22,50,000/6,95,000 = 3.23 which is very much sustainable. However, this benefit will be spread over a period of 6 years.

Sustainability: This cluster development project will manage the complete "value chain", the entire series of activities that begins with the community orientation, organization, training for cultivation, harvesting and marketing of this species with long gestation period of 4-5 years. The sustainability of this model is highlighted by the fact that side stolons will be harvested without uprooting of the mother plants which can further sustain themselves for 7-8 years. In this way, farmers will continuously generate stolon tips with roots for enriching plants and maintain mother plants for regular harvest.

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.