

A Biotechnological intervention in Barren land of Gopiballavpur-I Block of Paschim Medinipur for sustainable Livelihood of Tribal People

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Summary: To make 25 acres of fallow land fertile and productive within 10 months by systematically adding humus to the soil, building of infrastructure (*irrigation, electricity, training centre & communication tools*), generation of livelihood, initiation of a new cash crop, introduction of a Rural Laboratory and creation of skilled human resources & creation of purchasing power ---- all in a comparatively low investment. It has been possible as the concept of Rural Biotechnology has been scientifically introduced and practised properly.

The Project was proposed to develop a Prototype of utilization of barren land with the intervention of Biotechnological Methods for sustainable livelihood of Tribal People with the introduction of *Organized Lac (shellac) Farming*, which is being promoted only by the Department of Biotechnology. These tribal people do not have any skill in any trade and lives only on income from the forest fringe produce. Moreover, as the area is devoid of basic economic infrastructure, it required specific **low cost techniques & interventions** which normal agricultural practices and methodologies cannot offer. But it was made possible through biotechnological interventions --- by choosing a new crop & using bio-elements to make it stable. The following points are the ramifications of utilizing the concept of Rural Biotechnology for the amelioration of tribal people.

1. Economic Benefits using 'shadow prices' : Increased value of land

- a. The soil analysis report on July, 2012 of this piece of 25 acres of cultivable waste land stated that it was virtually impossible (thanks to the cost of chemical fertilizer & pesticides in the prescribed volume) to initiate any regular yield from this land. Within a span of less than 10 months, using Bio-fertilizers, the land is as green as a crop field in rainy season yielding a variety of produces and it remains the same withstanding the high temperature (up to 48°C) of this part. Therefore, this piece of wasteland is getting converted to a fertile land. The comparative calculation of shadow prices (both in short run & in long run) between a waste land and a productive land will naturally go in favour of the latter.
- b. **Participation in Global Market:** As the output of this Project, Lac – the natural resin, is globally linked, this remote area is being economically accessed locally in the short run and in the long run, surely globally. Naturally, This Block has been experiencing the emergence of a new cash crop which was never in the crop-map of this arid zone of the District and learning the production of a cash crop in an altogether new method of farming

2. Investments in the society : Creation of Appreciating Capital Asset

- a. If a part of the Grant received is considered as a direct investment on land, the said wasteland has been converting to a productive land and will remain productive in the future years, if the support continues for a couple of years, generating income and employment as well . This achievement is tantamount to creation of a capital asset which will appreciate continuously instead of other depreciating capital assets.
- b. Introduction of a **Rural Laboratory** in the said area has created a new concept to accept biotechnological interventions in alternative livelihood programme. It is another capital asset that has already been created from the said Grant.
- c. The other parts of the Grant has started creating a set of **Skilled Human Resources** , to whom there was no available way to learn any technique of scientific production. If we could try to skill these set of human resource in a formal way, it would cost more and in that sense it is a major saving in the cost of generating skill.

3. Distribution of Income & Employment Generation: Though a long run concept, this Project has a specific pattern and target to link it with the global market, it involves a number of steps and each step is bound to generate employment initially in the form of wages. During the 17 months tenure of the project, the regular employment generation and wage earning, which was absent before, has made a small change in the life of the local inhabitants --- a market has emerged in the locality which runs twice a week and it proves that the Forward Linkage ---- - an ingredient of growth index has started working. Total Person-days generated from April, 12 to August 13 is 26703. It is noted that participation of women in on-field work is 55%, while male workers contributed 45%.

4. Other Contributions- Sustainable Livelihood: Before this initiative, there has not been any long term Government Programme which may help the participants to enter into a regular income- generating process and for that reason, unlike sporadic & seasonal initiatives, the concept and impact of sustainability are believable to the participants as they understand that the output is saleable, locally and globally , which in turn will reduce the insecurity in earning livelihood, from which they have been suffering generations together.

5. Agriculture cannot be a feasible alternative of livelihood - this was the saying in *Jangal Mahal*, but Biotechnology has proved and percolated the message that no adage is forever, it can be changed and commoners can share the benefit of such changes.

Person- Days Generated at Gopiballavpur Project (April,12 to Aug, '13)

Activities	Total	Male	(%)	Female	(%)
Nursery Making	1985	431	22	1554	78
Soil Preparation	2070	1354	65	716	35
Plantation	6406	2201	35	4205	65
Inoculation	2845	1159	41	1686	59
Harvesting	647	312	48	335	52
Post Plantation	3496	2368	68	1128	32
Office & Maintenance	9254	9254	100		
	26703	17079		9624	

