

Socio Economic Development through Cultivation of Medicinal & Aromatic Plants (MAPs)

Background:

Medicinal Plants & Herbs has a native roots in Chhotangpur Plateau. Nagarjuna, one of the most prominent physician and botanist of the age went to the extent of planting and developing many of the herbs, Shrubs and plants in the area extending from Rajgir to various part of Chhotanagpur region, now carved out from Bihar and known as the State of Jharkhand. This area was used by Nagarjuna and his contemporaries of the ancient Nalanda University as herbarium of Medicinal plants. The species are still found in plenty in this zone. The climate and atmosphere together with its location and approach made it the choicest place for use as ancient herbarium.

The state of Jharkhand is abode of innumerable medicinal plant. It has more than 1000 herbal plant species. The floristic variation occurs over different altitudinal range and therefore occurrence of medicinal plants species in Jharkhand is highly diverse in nature.

Bokaro district is the industrial district of Jharkhand. As planned that the benefits of the industry will trickle down to the general mass, but it has failed to do so. Still the literacy and health indices is very low in the district. Bokaro itself provides employment to 48000 in Steel plant and organized sector and more than a lakh of employment to unorganized sector. But more than 80% of the population are from outside. Local villagers have hardly got benefit of the industry in the district. In Bokaro district there are 8 blocks with a total population of 18.75 lakh, out of which 4.25 lakh in Bokaro Steel City and periphery itself. Rest of the population lives in villages.

Nearly 12- lakh population lives in villages. Agriculture is the main source of livelihood. Agriculture is purely rain fed and it is not sufficient to meet the food requirements of general mass. Most of the population either migrate to big cities in search of job or do petty things to earn their livelihood. Women of the tribes & backward classes go to Steel City and engaged them self in petty works. Slowly they start migrating to bigger cities to earn livelihood and settle in peripheral area and slums.

As 24% is the forest land which is fast dwindling and major part of agriculture which is rain fed is at the subsistence level and there has been virtual stagnation in agriculture, these areas needs to be focused for employment generation and maintenance of natural resources.

Ultimate aim of the project is the enhancement of functional capability of forest dwellers, agriculturist with low yield by training them in identification collection and processing of medicinal plants, for their own use and for meeting the demand of the market in crude form and processed form along with increase in the availability of

medicinal plants in natural forest. As a matter of fact there is a great demand of forest species in various forms in pharmaceutical (Unani, Aurved, Homeopathic, Allopathic). The Holistic approach mentioned in project concept will create the prospect of development of several home industries in preparation of diverse cosmetic item, herbal oils, pesticides, preservatives of cereals, aromatic material for enhancing the taste of food recipes, agricultural uses and fodder processing for domestic animals along with the empowerment of People.

Not only that India has only .5% share in world trade. Jharkhand can contribute much in earning foreign exchange if the organized and conscious effort is made at State level in all district in Jharkhand.

Department of Forest and Environment, Govt. of Jharkhand started a pilot project named Cultivation and Marketing of Medicinal plants project in the year 2000 and took initiative to train forest dwellers in identification, collection processing and cultivation of Medicinal plants with a view to promoting alternative source of livelihood, preserving the availability of medicinal plants in the natural forest, meeting the demand of medicinal species in various forms in pharmaceutical (Unani, Aurved, Homeopathic, Allopathic) in domestic and international market, to be a link between growers and traders and to make it a commercial venture.

SWOT ANALYSIS

STRENGTH

Bokaro Forest Division, Bokaro.

1. Department of Forest & Environment has gained sufficient experience in the propagation of Medicinal Plants through a pilot project which was conceived for conservation, identification and development of medicinal plants aiming revival of traditional system apart from general socio economic benefit and health care at grass root level at Petarwar in Bokaro district.
2. Infrastructure – A training centre equipped with modern facilities at Petarwar named VAN AUSASHIYA PRASHIKSHAN KENDRA.
3. Demonstration Nursery
 - ⇒ Herbal garden on 1.0 hectare area.
 - ⇒ 202 species planted
 - ⇒ Providing medicinal plants saplings or planting in the private land of the local people estimated 50,000 sapling each year.
 - ⇒ Documentation of medicinal/aromatic plants readily available in Bokaro Forest Division.

- ⇒ Training in nursery technique for medicinal plants and herbs at the demonstration nursery.
 - ⇒ Training in agro-technology for cultivation of medicinal plants.
 - ⇒ Enrichment of demonstration plot – 100 Acre.
4. In year 2002-03 • 188 local people trained in Identification and use of medicinal plant as part of insitu conservation and development.
- In Year 2003.-04 • 120 local people trained as part of ex-situ development of medicinal plants. Cultivation by 40 trainees in 2002-03 on 6 decimal on own land on experimental basis.
- ⇒ 17 villages identified for intensive health care.
 - ⇒ Treated local patients by newly trained vaidya.
5. **MARKETING LINKAGES:**
- ⇒ Demand – Supply preliminary study in eastern zone (Kolkata).
 - ⇒ 40 species being grown by local people at Bokaro on high demand list.

WEAKNESS/CONSTRAINT:

1. **OTHER SUPPORT SYSTEM NON STARTER :**
- ⇒ NGO Linkages.
 - ⇒ Formation of Self Help group/cooperative.
 - ⇒ Linkages with financial institution.
 - ⇒ Data base
 - ⇒ Facilitation Center
 - ⇒ Due to lack of budgetary provision other support systems were not much effective.
 - ⇒ Trainees from far off blocks Gomia, Bermo & Nawadih could not attend training programme due to non provision of traveling expenses etc.
 - ⇒ No women participation.
 - ⇒ Community participation at low ebb.
 - ⇒ Capacity building at individual level not in group.
2. Uncertainly in demand and supply of medicinal plants materials. (Dabur Ltd. has restricted itself to procurement of seven medicine plants from market due to lack of regular and even supply position of medicinal plants at large.)
3. Lack of the availability of medicinal species, pharmaceutical companies unable to launch new Herbal Medicine which are so common mentioned in the materia medica of Ayurved.
4. Farmers unable to bear the risk due to lack of financial capability and technical capability. Together with 'information gap' with regard to prospects in this field.
5. Lack of scientific processing unit for value addition and integrating supply of medicinal plants material with demand of the market.

OPPORTUNITY/PROSPECTS :

1. **Abundance potential in the field of medicinal plants.**
 - US \$ 62 billion.
 - China a major contributor in world trading.
 - China exports worth 18000-20000 crore crude plants and finished drug.
 - Present share of India – 5.5 billion US dollar.
 - India Share (< .5 %)
 - Jharkhand – Nil
 - World Bank Projects world market of herbal produce by 2008 to be 3,50,000 crore.
 - World Health Organization Projects world market of herbal produce by 2050 to be US \$ 5 trillion.
2. Economic activity based on medicinal plants would create ample opportunity for self employment of farmer together with capacity enhancement and empowerment. It will be a new avenue of economic activity.
3. Village level community participation with the creation of village fund (as per govt. guidelines) for undertaking economic activity primarily based cultivation and processing of medicinal plants. Empowerment of women by way of participation and knowledge/technology enhancement.
4. Open an opportunity in many field i.e. organic pesticides and other chemical extracts for use in modern medicine.
5. Contribute to the revival of traditional system of medicine.
6. Maintaining critical equilibrium in demand & supply positions medicinal plants material.
7. It will facilitate if implemented at large scale the state of Jharkhand to become the market for medicinal plants.

THREAT

1. Monsoon failure, erratic monsoon, drought
2. Extremist activities.

STRATEGY :

- ⇒ People participation
 - Gram Van Prabhandhan awam Sankrashan Samiti (JFMC)
 - SHG/Civil Society/Women's Participation
 - Provision of village fund under JFMC to provide financial help for cultivation of medicinal plants and support price for the produce at least in the initial stages as a confidence building measure.
- ⇒ Rejuvenation of economic activity in village.
 - Rain fed cultivation on tanr land.
- ⇒ Skill Development/Orientation training for cultivation and marketing.
- ⇒ Entrepreneurship Development.
- ⇒ Processing of medicinal plants and marketing through processing unit to reimburse the support price for the produce to JFMC's village fund.
- ⇒ Involvement of experienced NGOs.
- MAHILA JANSWASTHYA SHISHU KALYAN KENDRA – for promoting cultivation of medicinal plants through self help group and marketing linkage.
- DESHI CHIKITSA VIKASH PARISHAD – Promoting tradition health care system based on locally available medicinal plant and providing support price of cultivated produce through processing unit run on commercial line.

Proposed Activities :

- A
 - ⇒ Bokaro Forest Division
 - ⇒ Orientation Training in identification use and propagation of medicinal plant.
 - ⇒ 100 persons – including women - twice a month.
 - ⇒ 2 camp training every month.
 - ⇒ Establishment of equipped processing centre.
 - ⇒ Coordinating the tasks entrusted to two NGOs to maintain critical demand supply equilibrium of medicinal plants material.
- B
 - ⇒ MAHILA JANSWASTHYA SHISHU KALYAN KENDRA
 - ⇒ Formation of self help group 100 Nos. in 6 block.
 - ⇒ Intensive training and cultivation by the group 1000 acre.
 - ⇒ Capacity Building on dynamic of self help group.
 - ⇒ Linking SHG to livelihood.
 - ⇒ Study demand/supply and maintenance of supply position through activity of SHGs.
 - ⇒ Organizing exposure visit for farmers.
 - ⇒ Organizing buyers meet workshop/seminar – National/State level.
 - ⇒ Linkage to financial institution.
 - ⇒ Monitoring
 - ⇒ Documentation.

C ⇒ Deshi Chikitsa Vikas Parishad

- ⇒ Providing support price to farmers by way of sale of finished/semi finished products obtained for the processing unit run on commercial line.
- ⇒ Assisting in the establishment of processing unit.
- ⇒ Providing technical input.
- ⇒ Running of unit. (Administrative, working & Production)
- ⇒ Marketing linkages.
- ⇒ Processing unit will act as facilitation centre for market linkage.

D Ex-situ cultivation of Medicinal Plants

1st Year: Along with the formation of 10 SHGs, 100 acres of land will be brought under cultivation for MAPs involving Rs. 1351390.00 as investment. As per the support price, Rs. 2788700.00 would be required to reimburse to individuals of SHG as per the physical achievement and produce harvested and provided to the Processing Unit.

2nd year: With the formation of another 50 SHG, market-linkage and demand supply study, cultivation on 1000 acres of land would be taken up for medicinal plants. This would require investment of Rs. 13513900.00. Half of the investment would be reimbursed to the farmers through JFMC and another half of the investment would be reimbursed as per the produce harvested and made available to the Processing Unit as a confidence building measure. Profits i.e. difference of support price and investment would be made available after sale of the produce.

3rd year: With the formation of 100 SHG, market linkage, demand supply study and other follow up actions in place, cultivation on 2000 acres of land would be taken up for medicinal plants. Half of the investment amount i.e. Rs. 13513900.00 would be required to be reimbursed to the farmers from project cost. Other half required at the time of harvest would be available from the sale of processed medicinal produce of 2nd year through the processing unit.

PROJECT COST

A. TRAINING (WOMEN) AND MONITORING

First Year:

I.	Basic training in identification uses and Propagation of medicinal plant 100 persons × twice a month × 12	240000.00
II.	Two health camp cum training every month 5000 per camp × twice a month × 12	120000.00
III.	Resource person Rs. 500 per day × 4 days a month × 12 × 2 No.	48000.00
IV.	Traveling expenses on resource persons	48000.00
V.	Monitoring evaluation, documentation and other contingency	40000.00

Second Year:

I.	Basic training in identification uses and Propagation of medicinal plant 100 persons × twice a month × 12	240000.00
II.	Two health camp cum training every month 5000 per camp × twice a month × 12	120000.00
III.	Resource person Rs. 500 per class × 4 classes a month × 12 × 2 No.	48000.00
IV.	Traveling expenses on resource person	48000.00
V.	Monitoring evaluation, documentation and other contingency.	75000.00

Third Year:

I.	Basic training in identification uses and Propagation of medicinal plant 100 persons × twice a month × 12	240000.00
II.	Two health camp cum training every month 5000 per camp × twice a month × 12	120000.00
III.	Resource person Rs. 500 per class × 4 classes a month × 12 × 2 No.	48000.00
IV.	Traveling expenses on resource person	48000.00
V.	Monitoring evaluation, documentation and other contingency.	75000.00

Total: 1558000.00

B. PROCESSING UNIT AS SUPPORT MECHANISM

(i) EQUIPMENT AND MACHINERY

1.	Disintriator	65000.00
2.	Auto plastic packet packing machine	35000.00
3.	Distilling unit with all accessories	90000.00
4.	Filtering unit with paper and cloth	25000.00
5.	Weighing Balance	15500.00
6.	Pulp Making machine	15000.00
7.	Glass jar with lid – 40 No.	2000.00
8.	Steel Container – 20 No.	20000.00
9.	Rake 10 No.	10000.00
10.	Earthen vessels – 50 No.	2500.00
11.	Water Drum – 3 No.	4500.00
12.	Steel Pan 3 No.	1500.00
13.	Dab Khanta	500.00
14.	Furniture & Fixture	20500.00
15.	Tray etc.	1500.00
16.	Water Hand Pump	25000.00
17.	Ware house repair and renovation	150000.00
18.	Miscellaneous cost	12000.00
19.	Diesel generator 5 H.P. with accessories pully etc.	70000.00
	Total :	565500.00

(ii) PERSONNEL (PROCESSING)

HONORARIUM

a) I. Chief Coordinator Managing Director	
Deshi Chikitsa Vikash Parishad, Bokaro.	
@ 12500.00 per month for 3 years.	450000.00
II. Work Manager No. 1	
@ 5000.00 No. 1	180000.00
III. Skilled Worker	
@ 3000.00 No. 2	216000.00
IV. Sales Promoter	
@ 4000.00 No. 1	144000.00

V.	Accountant cum store Keeper	
	@ 4500.00	162000.00
VI.	Care Taker	
	@ 2000.00	72000.00
b)	I. Working Capital	200000.00
	(Packaging shodhan, Development of literature, conversion of raw material herbs & shrubs plants)	
	II. Miscellaneous	
	(Fuel, Electricity, gas replacement, Coal wood, caw dang cake, repair etc.)	
Total :		1424000.00

**C. EXTENSION ACTIVITIES:
HONORARIUM**

I.	Chief Harbalist cum programme coordinator 12500.00 as honorarium including traveling expenses.	450000.00
II.	Extension worker per block @ 3000 per month 2000.00 as honorarium and 1000.00 pol allowance. No. – 3	324000.00
III.	Extension Coordinator 5000.00 as honorarium.	180000.00

ACTIVITIES COST

a)	I. Skill Development, Orientation, Focused training, Nursery technique, cultivation training, organic manure, Entrepreneurship Development 4000 × 100 SHG.	400000.00
	II. Fooding, Training materials, Books	
	III. Training material (literature, bags, stationery etc.)	
	IV. Traveling Allowance	
	V. Out side faculties	

b)	I.	Exposure Visit	200000.00
	II.	Buyers meet/Seminar/Workshop No.-3 1 programme in year	
	IV.	Documentation, training input, monitoring follow off demand supply analysis market study Publication of Journals	
	V.	Organization expenses	

Total Rs. : 1554000.00

D. Ex-situ Cultivation of Medicinal and Aromatic Plants.

a)	1 st year: - Cultivation on 100 acres. Support price for the produce required	2788700.00
b)	2 nd year: - Cultivation on 1000 acres. Investment for cultivation required	13513900.00
c)	3 rd year: - Cultivation on 2000 acres. Contribution for cultivation would be 1/2 investment amount	13513900.00

ABSTRACT

A.)	Training	1558000.00
B.)	PROCESSING UNIT as support mechanism	1989500.00
C.)	Extension Activities	1554000.00
D.)	Cultivation on 3100 acres of MAPs	29816500.00
Total Rs. :		34918000.00

Consolidated Financial Requirement.

PROJECT PERIOD – 3 YEARS

INVESTMENT PROPOSITION

1.	Investment for cultivation on 3100 acres of MAPs	41893090.00
2.	Training and monitoring	1558000.00
3.	Processing Unit as support price mechanism	1989500.00
4.	Extension Activities	1554000.00
Total Rs. :		46994590.00

PROJECT COST

A.)	Training	1558000.00
B.)	PROCESSING UNIT as support mechanism	1989500.00
C.)	Extension Activities	1554000.00
D.)	Cultivation on 3100 acres of MAPs	29816500.00
Total Rs. :		34918000.00

* Amount provide for the cultivation of MAPs on 3100 acres would be available to 100 SHGs through “**Gram Vikas Nidhi**” of VFMC as revolving fund for undertaking this commercial activity in future also. **Fund flow chart is annexed.**