

# Annexes

## MP SLEM Mid-Term Review

### Contents

	<u>Page</u>
<b>Annex 1: Mission Itinerary</b>	<b>A1-1</b>
<b>Annex 2: Documents Reviewed</b>	<b>A2-1</b>
<b>Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)</b>	<b>A3-1</b>
A3.1: Bamboo Rehab	A3-1
A3.2: Fodder Plantation	A3-7
A3.3: Energy Plantation	A3-11
A3.4: SMEs	A3-13
A3.5: Soil and Water Conservation	A3-17
A3.6: Home Garden	A3-18
<b>Annex 4: Additional Information on other RDBF Models and Programs</b>	<b>A4-1</b>
A4.1 Standard Model for Bamboo Rehab in MP	A4-1
A4.2 National Bamboo Mission Model for Bamboo Rehab in MP	A4-2
A4.3: Comparison of Standard Model and Bamboo Mission Model to SLEM's Bamboo Rehab Model	A4-3
A4.4: "Sustained Employment through RDBF" – An Earlier Program with Similarities to MP SLEM's Bamboo Rehab Model	A4-4
<b>Annex 5: Further Details on Project SMEs (Elaboration on Parts of Section 7.5 in Main Text)</b>	<b>A5-1</b>
A5.1: More Details on SME Role in Reducing Cutting of Fuel Wood for Sale by Residents of Non-RDBF Villages	A5-1
A5.2: Additional Findings from the Field Related to Rope Making	A5-1
A5.3: Discussion of Lac Economics during Site Visit in Madwas Range, Sidhi	A5-2
A5.4: Additional Details on Findings Related to Silk Spinning from Field Visits to West Betul and West Chhindwara	A5-3
A5.5: Additional Information from Site Visits to Incense Stick SMEs	A5-4
A5.6: More Details on other Types of SMEs Encountered in Field Visits	A5-5
A5.7: Further Detail from Discussions with the Two SME Consultancies	A5-6
<b>Annex 6: Rough Comparison of UNDP and PMU-Provided Expenditure Totals by Outcome</b>	<b>A6-1</b>

## **Annex 1: Mission Itinerary**

### **Wednesday, December 11, 2013**

Arrive in Delhi

### **Thursday, December 12, 2013**

(in Delhi)

10 am: meeting with UNDP (Mr. Suneel Padele and, later, Ms. Chhakchhuaki)

Afternoon: meeting with Ministry of Environment and Forests (Mr. Shashi Shekhar, Additional Secretary and GEF focal point; Mr. BMS Rathore, Joint Secretary; Mr. Vivek Saxena, Private Secretary to Minister of State (Independent Charge) Environment and Forests; and Ms. Nayanika Singh, GEF Coordinator for India)

### **Friday, December 13, 2013**

(in Delhi)

9:30 am: meeting with Ms. Nayanika Singh, GEF Coordinator for India, Ministry of Environment and Forests

10:30 am: meeting with UNDP (Mr. Suneel Padele and, later, Mr. Srinivasan Iyer)

Afternoon: Ministry of Tribal Affairs (Mr. Ashok Pai, Joint Secretary, and one of his team members)

### **Saturday, December 14, 2013**

(in Delhi)

Desk Work

### **Sunday, December 15, 2013**

(travel Delhi to Bhopal)

Desk Work

12:30 pm: Depart Hotel for travel to Bhopal

## *Annex 1: Mission Itinerary*

6:00 pm: Meeting with MP SLEM Project NPC Mr. Somit Burman

### **Monday, December 16, 2013**

(in Bhopal)

11:30 am – 5:30 pm: Meeting with MP SLEM Project NPD, CCF, and PMU (Mr. Ravi Srivastava, APCCF and NPD; Mr. Dharendra Bhargava, CCF; Mr. Somit Burman, NPC)

During the above period, brief meeting Mr. Anil Oberoi, MPFD PCCF

### **Tuesday, December 17, 2013**

(travel Bhopal to field)

8:30 am: Depart for Field Trip, Part I (by road)

Visit to North Betul project sites: rehabilitated bamboo site (near Tawa Dhana Village), home garden (in village) and facilities planned for chick rearing (in village). Interviews with villagers in Tawa Dhana. Discussions with Mr. AS Tiwara, North Betul DFO.

Night: Presentation on North Betul given by MPFD CCF Mr. Dharendra Bhargava and prepared and discussed by North Betul DFO AS Tiwari

### **Wednesday, December 18, 2013**

(in field: Betul District)

Visit to South Betul Division to see rehabilitated bamboo forest (near Ladi Village), energy plantation, fodder plantation, and watershed management work. Discussion with villagers in Ladi Village. Discussions with Mr. Sanjay Srivastava, South Betul DFO.

Night: Presentation by South Betul DFO Sanjay Srivastava

### **Thursday, December 19, 2013**

(in field: Betul District)

Visit to West Betul Division: Fodder Plantation (near Gadakhar Village), Bamboo Rehab (near Khokrakhera Village), Silk Spinning (Gawasen Village). Discussion with villagers at each site. Discussion with Mr. AKS Chauhan, West Betul DFO.

## *Annex 1: Mission Itinerary*

### **Friday, December 20, 2013**

(in field: Betul and Chhindwara Districts)

Morning: travel from Betul to Chhindwara

Visit to South Chhindwara Division: rehabilitated bamboo forest (near Borpani Village), fodder plantation, Borpani Village (saw fish pond and held interviews with villagers). Discussions with Mr. Prashant Singh, South Chhindwara DFO.

### **Saturday, December 21, 2013**

(in field: Chhindwara District)

Workshop with Chhindwara Circle CCF, DFOs, other FD staff, and bamboo beneficiaries led by Mr. Atul Srivastav, Circle CCF Chhindwara. Presentations by: Mr. N. Sanodia, West Chhindwara DFO; Mr. Ashok Kumar, East Chhindwara DFO, and Mr. Prashant Singh, South Chhindwara DFO.

Demonstration by Mr. Dharendra Bhargava, MPFD CCF, regarding incorporation of project information into MPFD online system.

Interviews with East Chhindwara beneficiaries and with East Chhindwara FD staff.

### **Sunday, December 22, 2013**

(in field: Chhindwara District)

Visit to West Chhindwara Division: bamboo rehabilitation site (Tamia area), fodder plantation (near Tamia, also saw nearby fish pond), and forest depot site in Tamia to which various villagers came to display their enterprises: silk spinning (in training), lantana furniture, and rope made of cloth rags. Brief villager interviews at sites, including discussions with non-beneficiaries. In-depth beneficiary and FD staff interviews at forest guest house. Discussion with Mr. Atul Srivastav, Circle CCF Chhindwara. Discussion with West Chhindwara DFO Mr. N. Sanodia

Evening: Interview with East Chhindwara DFO Mr. Ashok Kumar.

### **Monday, December 23, 2013**

(travel from Chhindwara District to Bhopal)

Discussion with Mr. Dharendra Bhargava, CCF, regarding bamboo growth and harvest

Travel back to Bhopal

## *Annex 1: Mission Itinerary*

Desk work

### **Tuesday, December 24, 2013**

(in Bhopal)

Meeting with JFM Cell APCCF Dr. A.K. Singh

Meeting with State Bamboo Mission, Mission Director and APCCF Dr. AK Bhattacharya

Desk work

### **Wednesday, December 25, 2013**

(in Bhopal)

Desk work

### **Thursday, December 26, 2013**

(in Bhopal)

Meeting with Indian Institute of Forest Management (IIFM) regarding TNA consultancy. Presentation by Dr. Rekha Singhal, Professor of Human Resources Management, and discussion with Dr. Giridhar Kinhal, Director of IIFM, and Dr. Singhal.

Desk work

### **Friday, December 27, 2013**

(in Bhopal)

Meetings with project contractor Access Consulting regarding TNA work and SME work. Access representatives: Mr. Neeraj Lal and Mr. Mimoh Kokhiya.

Discussions with PMU.

Desk work.

### **Saturday, December 28, 2013**

(in Bhopal)

Desk work

*Annex 1: Mission Itinerary*

**Sunday, December 29, 2013**

(in Bhopal)

Desk work

**Monday, December 30, 2013**

(in Bhopal)

Desk work

**Tuesday, December 31, 2013**

(in Bhopal)

Meeting with MP Vigyan Sabha representatives Mr. S.R. Azad, General Secretary, and Mr. Kumal regarding MPVS's SME work for the project's three Chhindwara divisions.

Desk work

**Wednesday, January 1, 2014**

(in Bhopal)

Meeting with Mr. Jawal Hassan, NPD of MP SLEM project during formulation stage.

Desk work

**Thursday, January 2, 2014**

(travel from Bhopal to Rewa)

Flight from Bhopal to Rewa

Interview with Mr. RB Sharma, Sidhi DFO

Brief Interview with Mr. Singh, Rewa Circle CCF

Evening: Presentation by Mr. RB Sharma, Sidhi DFO and group discussion

## *Annex 1: Mission Itinerary*

### **Friday, January 3, 2014**

(in field: Sidhi Division)

Visit to Churhat and Sidhi Ranges of Sidhi Division: Bamboo rehabilitation site near Maldeva Village in Churhat Range (interviews with beneficiaries on site) and fodder plantation in Churhat Range. Visit to Koludi Village (non-RDBF village in Churhat Range) to view incense stick making (both in workshop and outside) and interview involved women. Visit to Gandhigram Village (non-RDBF village in Sidhi Range) to view workshop and incense stick making, sisal rope and handicraft making, and cloth waste rope. Interviews with women involved in incense stick making. Visit to nearby village to view biodynamic farming and speak with expert and involved villagers. Visit to home in other nearby village to biogas installation and speak with expert and homeowner.

Additional discussions with Sidhi DFO RB Sharma.

Evening: Interviews at guest house with bamboo beneficiaries, JFMC chair, and forest staff from Sidhi Range.

### **Saturday, January 4, 2014**

(in field: Sidhi Division and travel to Umaria Division)

Visit to Madwas Range of Sidhi Division: Bamboo rehab site and energy plantation (both near Khajuria Village); visit to Khajuria Village (visit to lac cultivation area and discussion with those involved in lac cultivation; visit to main village area and interviews with villagers and JFMC chairs).

Discussion with Mr. Arvind Pratapsingh, SDO responsible for project ranges Madwas and Mohan

Drive to Umaria

Evening: Discussion with Umaria SDOs Mr. Tiwari (area of responsibility includes project range of Ghenghuti) and Mr. Shukla (area of responsibility includes project area within Panpatha Range, which is within Bandhavgarh National Park)

### **Sunday, January 5**

(in field: Umaria Division and travel to Jabalpur)

Visit to Umaria Divisions' Ghenghuti Range: Bamboo rehab site and energy plantation (both near Bijauri Village). Discussion with villagers by bamboo rehab site, viewing of broom work (in training), visit to home with home garden.

Brief discussion with Circle CCF and colleagues.

## *Annex 1: Mission Itinerary*

Discussion and review of presentation with Mr. Tiwari, Umaria SDO with responsibility for Ghenghuti Range.

Evening: Drive to Jabulpur

### **Monday, January 6**

(travel from Jabalpur to Bhopal)

Flight from Jabulpur to Bhopal

Desk work

### **Tuesday, January 7 – Thursday 9**

(in Bhopal)

Desk work

### **Friday, January 10**

(in Bhopal)

Presentation of MTR to stakeholders and discussion.

### **Saturday, January 11**

(departure from Bhopal)

End of mission/departure from Bhopal

## **Annex 2: Documents Reviewed**

### **I. Project-wide Information**

1. Project Document
2. Project Inception Report
3. PIF Document
4. Annual Work Plans (2009, 2010, 2011, 2012)
5. 2013 Project Implementation Report (PIR)
6. Various documents provided by MPVS, SME consultant for Chhindwara divisions
7. PSC Meeting Proceedings (meetings 1 – 7, first one in English, rest in Hindi only)
8. Project brochures on bamboo (2 brochures), incense (2 brochures), chindi rope, fisheries, lac, vegetable cultivation, and watershed management
9. Project promotional video
10. TOR for SME work and corresponding award letters and contract values
11. TOR for TNA work and corresponding award letters and contract values
12. Resolution of MP Forest Department (Oct. 2001) regarding JFMC rights and duties
13. MP State Bamboo Mission Overview
14. Data tables on annual project expenditures by division

### **II. Information Provided by Divisions**

1. Presentation on project achievements in North Betul
2. Presentation on project achievements in South Betul
3. Presentation on project achievements in West Betul
4. Presentation on project achievements in West Chhindwara
5. Presentation on project achievements in East Chhindwara
6. Presentation on project achievements in South Chhindwara
7. Presentation on project achievements in Sidhi
8. Presentation on project achievements in Umaria (Ghenghuti Range)

### **III. Responses to MTR Team Information Request Templates or Questionnaires**

1. Response to expenditure information request
  - a. Activity-wise expenditures by outcome (provided by PMU)
  - b. Co-financing information by division (provided by PMU)
2. Response to individual questionnaires prepared for DFOs (7 distributed)
  - a. East Chhindwara (provided by East Chhindwara DFO)

## **Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

### **A3.1: Bamboo Rehab**

Project aims to present alternate model for sustainable forest management more specifically bamboo forest management. Forest Departments of various states of India, having realised the need of community participation in forest management have been experimenting with various participatory models called as JFM. Essentials of JFM are:

1. VLO - These models invariably provide for formation of a VLO generally called JFMC which is acronym for the executive committee of VLO for JFM.
2. Participation - JFM to be formally accepted require varying level of participation of villagers from 50% to 80% that has now been increased to 100% in MP. This in effect makes the JFM participation universal and the General Body of JFM is now coterminous with Gram Sabha that has recognition in various laws of land. This effectively makes the JFM scheme/policy law compliant, a question that is being asked after enactment of PESA and FRA.
3. Sharing: There are provisions for sharing of usufructs from forests assigned to the village for JFM. These vary from state to state. Though the PESA and FRA has made the situation clear on many aspects of this issue.
4. Participation in management: There is emphasis on community participation in management. JFMC as VLO is to facilitate participation. Various models have aimed at participation in planning for forests, species selection, detailed micro planning for village that includes use of available natural resources as also opportunities for development and employment generation.

The success with JFM has been mixed and enthusiasm un-sustained. The critical component of active participation in management of forests has often been lacking in spite existence of VLO (JFMC) that has large participation of villagers and share in the forest produce and income. Efforts are made through various inputs, including entry point activities, providing JFMC with initial funds, giving JFMC responsibility of fire protection together with the funds for same and implementing afforestation program through it.

There has also been concern for user groups that have been conventionally using specific resource/produce. It is argued that JFM pursued has laid too much emphasis on community at cost of user groups. It benefits vociferous sections of community that have less or little interaction or dependence on forests at the cost of those depending on forests on day to day basis and so have stake in forest sustenance. It is argued that this

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

may adversely affect age old relationship of user groups with forests and their stake in forest sustenance. It is further argued that the larger community to which benefits are extended do not have interest and dependence on forests and so may be interested in extracting benefits only with little concern for sustenance of forests.

The project supports experimentation with an alternate model wherein user group is identified for bamboo forest management. The project provides for regular earning from bamboo rehabilitation work during project period and sustaining the interest of participating families with earnings from bamboo both in harvesting and profit, thus creating stake in sustenance of bamboo forests.

We propose to analyse the model as it is implemented, identify social, economic and technical issues and possibility to replicate.

#### The Model

The model provides for allocation of 5 ha of degraded bamboo forest every year for 4 years to a beneficiary recognised as Hitgrahi family. The Hitgrahi is required to undertake rehabilitation works that include cleaning of clumps, soil working and protection of forests from theft, hacking, grazing and fire. The Hitgrahi is paid an amount of Rs.3500 pm (earlier Rs.2500) as compensation for the works carried out under technical supervision of forest department. The degraded bamboo forest is expected to be restored and ready for harvest after 4 years. As allocated, each year 5 ha area shall be available for harvest and the bamboo clumps will be managed on a 4 year cycle.

#### Achievements

725 families have joined the program in 9 forest division spread over 5 districts of the state. It will lead to rehabilitation of 14,500 ha degraded bamboo forests. Improvement works have already been undertaken over 11390 ha and rest are in progress. MTR team visited the works in 7 divisions. Observations are summarised in table 1.

**Table 1**  
**Observations from field visits of RDBF areas**

S.No	Site	No. of beneficiaries	Village community	Est. clump per ha	Recruitment /clump/year	Quality of cleaning & soil working	Quality of recruitment	Observations
1	Tava Dhana, N. Betul	40	Korku tribal	95.8	3.66	good	Numbers good but new culms being thin as clumps are degraded	1. Being near town Sarni have been subjected to high pressure. 2. Positive aspect –40 of the 50 (approx.) families of village are Hitgrahi. Thus entire village keen on protection. 3. Head loading for fuel wood sale in Sarni township

**Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

								has stopped promoting forest conservation.
2	Bichhukhan, Betul south (visited from Ladi)	120 from 7 villages 14 women, (17 very poor, 79 BPL)	Korku, Gond, Katiya (SC), Gavli	82.33	1.66 – 2.00	satisfactory	Site quality is not good. Number of recruits is low and of girth size up to 15cm.	1. Hitgrahis work in their own village as group. 2. At times of fire all join. 3. Smaller clumps with significant damage. 4. People not aware of benefit sharing. 5. Stress migration was common in these villages. 6. May be compelled to restart distress migration if project closes. 7. JFMC runs fair price shop.
3	Khokhar kheda, West Betul	40 from 5 villages	Korku, Gond, Gavli	50	1.5	Conservative Cleaning satisfactory soil working	Recruitment is low. Should pick up in next cycle.	This is inferior site. It requires continued protection before it may start yielding good number of quality culm.
4	Jobanikha, (Borpani) Chhindwara South	10	Gond	30		Good	Recruitment low due to conservative cleaning. Removal of < 2 year old culms justified as clumps not worked since long.	1. Site is good. 2. Works are yielding result. 3. Villagers unhappy with wild boar as it destroyed Soybean crop.
5	Kuvanbada, Tamiya, W Chhindwara	30	Gond	64.53	1.87	Satisfactory. Difficult and not desirable to dig too much soil on steep slopes	Site quality is good and recruitment is observed to be of good size both in terms of length and girth.	1. Hitgrahis are excited about yields and reflect high level of commitment. 2. Hitgrahis of four villages work together.
6	Maldeva, Sidhi	32	OBC	76.42	4	Satisfactory	Degraded area that was subjected to severe hacking is responding to protection. Good diversity growing.	1. Conflict in community as forests in villages rehab has led to wild animals raiding crops, making village farmers jealous of Hitgrahis who gaining while others lose. 2. There is large root stock in the area which is showing up as tree growth.
7	Jhapri, Madwas, Sidhi	32	Gond	31	4	Satisfactory	Good	1. Hitgrahis work in their own plot but join for protection. 2. Hitgrahi using RDBF area for lac also. 3. Mahuva in RDBF area equally shared with other villager.
8	Khajuriba, Ghunghuti, Umaria	12	tribal	400	5 to 6	Incomplete and congestion observed even in cleaned clumps	Thin and short	1. Hitgrahis work on their plot. 2. Join for fire protection. 3. Area flowered in 1989. 4. High clump density but poor quality. 5. Hitgrahis find the work too much. 6. Mahuva collected as per tradition.

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

#### **Comments:**

1. RDBF works are generally good.
2. Soil work has yielded results.
3. There is hesitation to cull <2year culms as per usual Working Plan prescription for harvesting. This may not be justified in present operations. Cleaning operations in first phase may need/justify removal of <2years culms.
4. There are significant site variations and they reflect in number and quality of new culms.
5. Overall this is a promising effort and addresses the immediate objective explicitly.

#### **Significant observations:**

1. Recruitment of 2-5 culms per clump is observed. Though at some places it is estimated at five culms per clump and even claimed to be 10 culms per clump.
2. There is good all round protection. This has led to emergence of root stock and recruitment of seedlings of local tree species.
3. Fire protection is highly effective not only in the RDBF area but in entire forest of the village.
4. Tending of upcoming vegetation observed.
5. Villagers collect fuelwood and graze cattle in other forest areas that they call as open areas. This may lead to excessive pressure on remaining forests.
6. There is some reduction in head loading for sale as Hitgrahi no longer do so.
7. Hitgrahi in Betul and Chhindwara districts work jointly while in Sidhi and Umaria they work in their allotted plot and join for protection.
8. Generally there is no resentment over selection of Hitgrahis. But many now want to join. In tribal areas there is spirit of accommodation while it is less in other areas.
9. There are no members of Basod community among Hitgrahi. There live few Basod in project area.

An effort is made to estimate returns to Hitgrahis and it is presented in table 2. It required certain assumptions. The assumptions are listed below.

1. 50% of the culms recruited over 4 year period shall be harvested. This provides for, crooked and malformed culms, losses and expansion and growth of the clump.
2. 75% of the new emerging culms grow into commercial bamboo with rest contributing to industrial bamboo.
3. All commercial bamboo is sold in market at an average rate of Rs.30 per bamboo.
4. The harvesting labour is earned by Hitgrahis only. Thus deductions for harvesting costs are compensated.
5. Expenditure on transport & handling are compensated by additional returns from sale of industrial bamboo.

**Table 2**  
**Estimate of earning of Hitgrahis from harvest of bamboo**

S. No.	Site	Hitgrahi	ha	Clumps /ha	Culm/clump	Expected culms/ha	Culm/Hitgrahi/year	*Estimated value Rs.
1	Tavadhana, Betul N	40	800	95.86	3.66	701.70	3508	78941
2	Parsada North Betul	40	700	96.06	1.76	338.13	1691	38040
3	West Betul 2010	60	300	50	1.47	147.00	735	16538
4	West Betul 2011	60	300	50	1.47	147.00	735	16538
5	West Betul 2012	60	300	50	1.5	150.00	750	16875
6	South Betul 2010	120	2400	55.37	5	553.70	2769	62291
7	South Betul 2011	120	600	112.54	3.5	787.78	3939	88625
8	South Betul 2012	120	600	90.97	2	363.88	1819	40937
9	Chhindwara E	72	1380	73.77	3	442.62	2213	49795
10	Chhindwara W	60	1200	64.53	1.87	241.34	1207	27151
11	Chhindwara S	10	200	30	3.5	210.00	1050	23625
12	Sidhi, sidhi	28	560	76.42	4	611.36	3057	68778
	Sidhi, Churhat	32	640	108.37	4	866.96	4335	97533
	Sidhi, Madwas	32	640	30.99	4	247.92	1240	27891
	Sidhi, Mohan	28	560	64.12	4	512.96	2565	57708
13	Umaria	117	2340	300-400	4	#VALUE!	#VALUE!	#VALUE!

\* Note: Earning to Hitgrahi will be the proportion of total that is allocated to them as per agreement/assignment by JFMC

### **Discussion**

- a. The programme has led to successful rehabilitation of degraded bamboo forests. The cleaning and soil conservation operations have resulted in good growth of culms. Soil and moisture conservation together with soil working has contributed to improved health of the clumps. There is effective protection against biotic damage and forest fires.
- b. Additionally there is regeneration of naturally occurring tree species of the region. The regeneration is tended by Hitgrahis. This has contributed to biodiversity conservation.
- c. Other positive output is improved subsoil moisture regime in the lower reaches of watershed, though villagers ascribe it to watershed works, leading to increased agriculture yields.

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

1. Growth and Yield:
  - a. There are wide variations in clump density. This leads to differing level of labour input required on part of Hitgrahis' though they earn same compensation. The clump density ranges from 30 to 100 with exceptionally high in forests of Umaria where it could be of the order of 300-400.
  - b. The wide variation in clump density and site conditions would result in fluctuation in yields and so income to Hitgrahis'.
2. Social acceptability and sustainability of the rehabilitation results:
  - a. Selection of Hitgrahi has been fair and with consent of community. Yet there are others who would now like to and need to be benefitted from the program. While some of these did not have faith in the scheme others were indifferent or absent having migrated for employment or did not fit the criterion. Yet they are aware of basis of selection.
  - b. There is spirit of accommodation in tribal areas but it is not so in other rural area. Tribal communities did make mention of crop raiding by wild animals like wild boar and blue bull but did not complain violently. In Sidhi division at Maldeva the rural folk were agitated and made vociferous complaints that while some are benefitted others are suffering loss and FD is doing little to help them. They went on to say that this is no good a programme.
  - c. There is sense of ownership amongst Hitgrahis' though not uniform. At the same time other villagers would like to exercise their right over NTFP – Mahuva as noted in Sidhi and Umaria divisions. Though villagers have generally shown spirit of accommodation yet the FRA gives ownership to Gram Sabha, there could be issue of reconciliation of the individual interest with that of Gram Sabha.
  - d. It may be relevant to bring out the fact that these are not natural bamboo user groups. The specific bamboo user groups, the artisans known as Basod were not found to inhabit the villages near forest in the project area. It leads to conclusion that the project is causing creation of a user group with specific intent to provide livelihood and the objective of rehabilitation of degraded bamboo area. Would such a group be acceptable to community when larger extent of resource is committed to the model?
  - e. In this model there is safe guard against privatisation of forest yet issue may come up if Hitgrahi get too possessive and extend concept of ownership to entire bamboo produce and /or other produce.
  - f. FD is yet to bring out instructions regarding details of sharing arrangements with Hitgrahis'.
  - g. It is not clear as to what will be the impact of such a policy on concessional supplies. There is lack of experience with sale of commercial bamboo as all or most of it is supplied for Nistar and to artisans. Whether the government will be willing to allow sale of bamboos in free market at peril of its policy for concessional supply to larger masses. This question will be more relevant if and when the program is expanded to cover substantial areas of bamboo forests. This raises issue regarding possibility to replicate the model.

Thus, while the model presents a successful alternative approach, there are socio-political issues that need be studied and addressed. The SME work has focused not only on Hitgrahi but has covered whole community. This may be a good strategy as common villager perceives FD benefitting all and they start looking up to FD. This is addressing some of the community tension.

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

Thus, though there are many issues that need to be addressed, yet this model presents opportunity to successfully rehabilitate large extent of degraded bamboo areas. It may be examined if details of the model could be suitably adjusted to accommodate larger sections of rural/tribal community who has time, inclination and interest in this work. It is seen that there is a significant community which may find greater interest in pursuing other means of livelihood more specifically agriculture. This presents opportunity to facilitate creation of user group that has unhindered stake in sustenance of bamboo forests. At the same time there are opportunities in bamboo processing, not only incense stick making, which may further promote sustenance of bamboo user groups and so bamboo forests.

## **A3.2: Fodder Plantation**

The fodder plantations over 200 ha land are provided in the project to improve the provisioning of ecosystem service to meet local fodder needs. The description of the component suggests revival of pasture land too but implementation focuses on raising fodder plots. It is proposed to form SHG of fodder users to manage the fodder plantations. The project established 210 ha fodder plantation over degraded forest land. The MTR team visited 6 sites of fodder plantation. The fodder plots have seeds of grass species (mostly *Cenchrus* species locally called Dinanath and at one place Maldeva Sidhi Themeda) sown with planting of 625 to 825 (some time more) tree seedlings per ha. The plantations have established well with luxuriant growth of sown grass. Trees too reflect good survival and growth. It was observed that villagers invariably allowed seeding to ensure sustenance of the fodder plantations. They took green harvest during monsoon but stopped collection towards end of monsoon to allow the seed to set in and fall. At one place Gawasen Betul West villagers left strips of grass for seeding as the MTR team visited the site. At most of the places villagers are sharing the fodder as per need amicably. At one place Kuvanbadla Chhindwara West initially only Hitgrahis were harvesting the grass fodder but subsequently other villagers wanted share and same was agreed in village meeting. Now the share of fodder taken is in proportion of labour input in harvesting. Table 3 summarises the observations of the MTR team for the sites visited.

**Table 3**  
**Fodder Plots Raised Under Project**

table 3 for fodder in column 7 row 5 for Chindwara west div tamiya range Na may be replaced by 150q 2011, 210q 2012, 220q 2013.

S. no	Site	Area	Species		Spacing	Harvests	Sharing	Uses	Species selection	comments
			Grass	Tree						
1	Bijadehi Betul South	15ha 2011, 5ha 2012	Dinanath (Cenchrus species)	Bamboo, Khamer, Aonla	3x2m Terraced beds for grass	Good growth observed no estimates available	Collective harvest after seed fall, with all villagers harvesting and sharing as per	For local cattle there are cow and ghee is made and sold	1. Though not perennial yet with efficient management of harvest time regeneration obtained. 2. Bamboo planting at 3x2m may	1. Good growth of fodder 2. Nutritious fodder seems to promote stall feeding. 3. They wait for seeding of grass. 4. Moisture conservation works –

**Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

							need.		retard grass growth in long term due to shade.	Good.
2	Gadakhar Betul West visited	2001-5ha, 2012-5ha	Dinanath (Cenchrus spp.)	Aonla 800, Subabul 400, bamboo 1450,	530 tree plants per ha indicating a spacing of about 4x5m	10 tractor trolley (est. 60q) per year	Entire village shares as per need	For local cattle. There are cow and ghee is made and sold.	1. Though grass species not perennial yet with efficient management of harvest time it is sustained. 2. Use of Subabul is just. 3. Too much bamboo even at larger spacing may retard growth of grass.	1. Dinanath grass showing good growth. 2. Terracing and sowing of seeds in beds on sloping land is desired practice and has shown results. 3. Villagers have cattle and also feed dry bamboo leaves in lean season.
3	Gawasen, Betul West	5ha 2012	Deenanth	Subabul, Khameer	3x2m	100q per year	All villages share as per need. Sustenance assured by leaving grass strips for seeding.	Villagers make Ghee as town for selling milk far away. Sell Ghee when saleable quantity ready	Excellent growth of grass observed. Tree species selection too desired.	1. Observed strips of fodder plants left for seeding-innovative. 2. Good soil. Suitable selection of species & management has given dividends in form of high yield.

**Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

4	Job and era Chhindwara South	Visited 5ha 2011, 5ha 2012	Deenanth, also Themed a grass observed	Bambo o-1500, babool -125, Aonla-750, Khame r-750, (2011 plot), other species reported sissoo, karanj	3x2m	2011-301q, 2012-517q, 2013-871q av. 59.5q per ha per year	Fodder is in demand. All villagers join in harvest & share as per labour input in harvesting. There is no formal sharing arrangement. Villagers wait for seeding	Milk sold at Bhajipani where there are vendors making Khova.	1. Grass doing well. Themed a may be way for perennial grass 2. Practice of taking green fodder in monsoon & then waiting for seeding help optimise yield. 3. Tree species selection not just. 50% bamboo at a spacing of 3x2 m not desirable.	1. 50% villagers have milk cattle (250 buffalo). 2. Milk is sold at Bhaji pani where they make khoya 3. Fodder shared by all as per the labour put in for harvesting. It lasts till Jan. 4. Ag. Waste used thereafter. 5. Villagers report stall feeding increased milk yield 2.5-3 L to 4-5L.
5	Kuvambadla Chhindwara West	5ha 2010, 5ha 2011	Dinnanth	Bambo o, Khame r, Aonla some regeneration tended	3x2m	150q in 2010 210q in 2011 220q in 2012	Entire village shares as per need.	Fodder is shared by 4 villages . There are fewer cattle with lesser milk giving. Stall feeding not preferred so less fodder demand	Dinnanth grass doing well. Tree species are local. Bamboo density too high.	Cattle holding going down. Reason- there is no practice of rearing cattle for milk. Since now children go to school there is no one to graze cattle. Few lowly productive cattle do not justify their going for fodder collection. So free grazing in nearby forest areas preferred.
6	Maldeva Sidhi	5ha 2011-12, (other 5ha, 2012-13)	<i>Stylosanthes hamata</i> (Dinnanth in 2012-13 plot)	Sisso o, Subabol , Neem , Karanj	3x2m	64 families taking benefit	Entire village takes as per need.	Significant demand from nearby large non-tribal village. Though they report cattle	Stylo doing well.	The area is little away from village. Beneficiary of fodder were not at site. In view of tension with Hitgrahis it would be interesting to observe how they share

**Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

								are poor.		fodder.
--	--	--	--	--	--	--	--	--------------	--	---------

**Observations-**

1. Fodder plantations are producing good fodder yield and villagers are happy to harvest available fodder.
2. The fodder plots within the micro watershed are not essentially linked to RDBF areas.
3. Dinanath, the grass species used is annual and needs careful timing of harvest for sustenance.
4. Tree species used are not essentially fodder species and sometimes density of trees including bamboo saplings is too high for a fodder plot.
5. There is no formal management by JFMC or user group. However, informal arrangements are effective and leading to sustenance of the fodder plot.
6. The fodder produced meets only part of the fodder need of the village.
7. Agriculture residue is other important source of fodder.
8. Villagers are encouraged with increase in milk yield from stall fed cows. It is difficult to market milk from interior areas. But market for milk products Khoya (milk concentrate used for making sweets in India) and Ghee (clarified butter) in nearby towns encourages them to produce more milk.
9. However, only milk bearing animals are stall fed. Other animals are only grazed. Villagers find investment of labour in harvesting fodder to feed cattle that do not provide milk uneconomical. The non-milk bearing animals are grazed in forest areas that are not under RDBF program called open areas.
10. In tribal areas there are few milk bearing animals and so less appreciation for fodder available for collection.
11. In one village they say there are no children to graze animals as they go to school so they are now keeping fewer animals.

**Analyses**

The fodder plots have encouraged the villagers to stall feed cattle. Some communities got initiated to stall feeding due to availability fodder from fodder plantation. However, being small fodder plot availability does not match the requirement. Therefore, the fodder plantations have made only a small impact on grazing intensity in forests. Key benefit of fodder plots are:

- a) Initiation of stall feeding amongst population that depends on free grazing in forests for rearing their cattle;
- b) Appreciation of benefits of stall feeding, though this is limited to milk bearing cattle.
- c) Promotion of economic activity in rearing milk cattle.

It may be considered to give preference to perennial grass species in fodder plots. The programme be linked to cattle improvement and market preferably for milk or alternatively for milk products. It may require longer gestation before this makes real impact on intensity of grazing in forests.

This seems to be timely intervention as socio-economic development is leading to a favourable environment as borne out by reply of Hitgarhis of Tamiya in FGD at Tamiya. During discussion on fodder, grazing and cattle the participants observed that there are fewer cattle in villages. They said, 'there is no one to graze cattle as children go to school'. Thus significant social change is taking place in local community. The society that viewed number of cattle owned as status symbol is now giving preference to education of children over cattle holding, their valued possession. This is further confirmed through response to use of new found earnings. Education of children was second most common use after improvement of

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

agriculture. Number of respondents during FGD said they could now afford better education for their children, both son and daughter, and are sending them for higher education to nearby town. One person proudly announced that his son has joined MP Police as he could complete education of his son with the earnings from bamboo work. They also said that now that they are not required to migrate they can send their children to school regularly.

Thus the fodder plots are doing well and apart from reducing grazing pressure from forests are making significant contribution to the socio-economic development of the communities living in and near forests.

### **A3.3: Energy Plantations**

Project provided for raising 200ha of energy plantation, 5ha in each of the 40 JFMC areas to improve the provisioning of ecosystem services to meet local fuelwood needs. It aimed to address the biotic pressure due to fuelwood collection by the villagers for their own needs and the head loading to nearby town for livelihood. Estimated 600,000 people (10% population) in project districts are dependent on head loading of fuelwood for livelihood (Pro doc observation). This causes fragmentation of forests and progressive deterioration of forest cover in area close to habitation. It envisaged planting of seedlings of species that are fast growing, native to the region, suitable to low rainfall areas, able to grow rapidly in higher rainfall areas. This was to ensure that it did not have any adverse effect on biodiversity. The project proposed energy plantations to be co-managed with concerned JFMC.

FD has raised 220ha energy plantation. The MTR team visited four energy plantations and DFOs provided information about the energy plantations raised in their respective divisions. Table 4 summarises the observations of the MTR team for the sites visited.

**Table 4**  
**Energy Plantations Raised Under Project**

S. No.	Site	Area	Species	Village reaction	Plantation status		Comments
1	Bichuchukhan , Betul south	10 ha 2011, 5ha 2012	Neem, Aonla, sisoo, Karanj, bamboo, Su-babol, cassia	Treat it as another plantation where they may get some fruits, Aonla	Good survival (90%) but growth poor	nil	Species planted and spacing do not meet Su- babol not seen numbers reported. Probably site being poor, dead replaced by other spp.
2	Gadakhar, Betul	5ha 2011	Su-babol- 6000, bamboo-1000, Mahuva- 335, Aonla-1000	8335 plant @ 1667 per ha amounting to a spacing of 2.5x2.5m	95%+	na	A rare case of proper species selection and spacing. Even presentations by DFO clearly indicate in-appropriate species

**Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)**

							selection for most sites
3	Jobandera Chindara South not visited	2010-5ha, 2011-5ha, 2012-10ha, 2013-5ha	Khamer-1800, Aonla-3500, Bamboo-9925, Babool-907, Karanj-1521 & Sisoo-3177, total 20,830, (3x4m)	Varying with av. 800+ seedlings per ha	Survival 95% with good growth reported	na	Species mix does not support objective. It may lead to good forest patch.
4	Jhaperi, Sidhi	5ha, 2011-12	Aonla 2200, Neem 1900, Karanj 2131, Siras 2104, total 8335 (3x4m)	Villagers are happy with availability of fodder.	Survival 80-90%. Grazing damage by wild animals observed. Good growth of fodder grasses mainly due to protection.	na	It is forest area and is regenerating well with fodder grasses showing up with protection.

**Observations**

1. Plantations are generally at a spacing of 3x4m.
2. Seedlings planted included Neem (*Azadirachta indica*), Aonla (*Phyllanthus emblica*), Sisoo (*Dalbergi sissoo*), Karanj (*Pongamia pinnata*), Bamboo (*Dendrocalamus strictus*), Su-babool (*Leucaena leucocephala*), , Mahuva (*Madhuca indica*), Khamer (*Gmelina arborea*), Siras (*Albezia* ), *Cassia* etc.
3. Plantations have good survival and growth.
4. JFMC were hardly aware of the energy/fuelwood objective of the plantations. Co-management of plantations with JFMC was not observed.
5. Chain link fencing was used to ensure protection of the plantation.
6. Villagers continue to avail fuelwood from forests for their own use.
7. Bamboo beneficiaries have stopped head loading for livelihood. Some of the women participating in SME work too have stopped head loading.

**Analysis**

The plantations raised under energy plantation component are establishing well. It may be seen as good afforestation effort of largely local species. Villagers like them as Aonla and Mahuva are planted and they expect to get fruits that may add to their income in future. However, the plantation so raised may not provide for village energy needs. Except for Su-babool there is hardly any species that can be used for fuel on sustained basis. But at the same time Su-babool is not indigenous to the area and has tendency to occupy the site especially in moist areas as it regenerates vigorously- Gawasan Betul West. However, fuelwood head loading for livelihood has reduced due to employment opportunities created, though collection for self-use is unaffected. In one village in Chhindwara West division some

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

villagers have procured LPG. But this is exception and use of fuelwood for cooking and heating is likely to continue in foreseeable future. There is need to distinguish between head loading of fuelwood for self-use and for livelihood. Head loading of fuelwood for sale is directly linked to employment opportunities in the locale. It is reduced when alternate gainful employment opportunities are made available. Nearby town are sensitive to price and have access to alternate fuel. However, collection of fuelwood for self-use is seen as legitimate and natural in the villages in vicinity of forests. There is an effort to introduce eco-chulha (improvised fuelwood stove) that uses less and small fuelwood. There is some availability of dry fallen fuelwood in forests but that many times is insufficient to meet needs of growing population. There is need to extend alternatives that are easy to use and meet needs of villagers and meet the cost economics of local villagers who highly undervalue labour in collection of fuelwood from nearby forest for self-use. One bio-gas plant was observed in Sidhi division.

#### **A3.4: SMEs**

Project includes promotion of Small Medium Enterprise (SME) to provide gainful employment and develop stake of local people in sustenance of resources. It aims to address the SLEM objective from two ends. Firstly it directs the energies that are targeting unsustainable exploitation of natural resources and setting in vicious cycle of degradation reinforcing degradation to a gainful enterprise. Second it proposes to create stake of local community in sustenance of the resource by linking the resource to enterprise. It is departure from the approach that tries to wean away forest dwellers from forests. Accordingly the project gives primacy to NTFP based SME that lead to creation of year round employment. Other objectives associated with the SME effort are to reduce stress migration and economic empowerment of women. It is envisaged that the JFMC shall manage the SME as a cooperative.

SME are required to be identified in consultative mode with local people and detailed business plans are to be worked out by professional consultants. Project proposed to develop a shelf of SME with few to be financed and made operational by the project. Remaining SME business plans prepared by consultants are to be made available to agencies willing to support the activity within scope of their agenda. However, the process of engaging appropriate consultant took time causing delay. The DFOs initiated some SME under the project while the process of engaging consultants was taking time. MTR team had opportunity to visit number of such initiatives. These SME are in varying stages of development. During 2013 project could enlist services of three consulting agencies to prepare SME plans. The Access consultants are assigned to work for three divisions of Betul district and Umaria division, MP Vigyan Sabha is working for the three forest divisions of Chhindwara district and IIFM is attending to SME needs of Singrauli and Sidhi divisions. MTR team interacted with Access and MP Vigyan Sabha. IIFM is assigned the responsibility

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

only about three months back and are yet to make any significant progress. The MTR team visited operational SME initiated by DFOs as detailed below.

1. Production of bamboo sticks for incense stick at Maldeva Sidhi. Women make bamboo sticks that are procured for Rs.15 per kg after deducting Rs.5 per kg towards cost of bamboo. Women work from home. Earnings vary according to effort and time put in by them.
2. MTR visited central processing facilities for making bamboo sticks, rolling doe on the sticks, adding perfume and packaging of incense sticks at Kolhudeeh and Gandhigram in Sidhi division. It was observed that there are electric driven machines at central processing centre at both Kolhudeeh and Gandhigram for making sticks and then coating it with doe. This activity is largely attended to by women. In addition there are large numbers of women who work from home with hand for making sticks and rolling doe on them. DFO informs that over 6000 women in various villages are involved in making incense sticks. At central processing facility they make finished packed product after due addition of perfume. The women working with machine at central facility have stories of making significant additions to family income and even supporting family in distress. One girl, school dropout, ably supported her family consisting of sick father and younger siblings. She and her two sisters are presently working and she while working has joined back the school in class IX. Women working with hand make small additions to family income and some feel disadvantaged. They are largely from nearby villages and find it inconvenient to come to central processing facility to work. At Gandhigram some such women demanded that machines be made available in their villages so that their effort is adequately compensated.
3. Silk thread spinning at Gawasen Betul West division. Women are engaged in spinning silk thread from cocoon made available by the department for sericulture. The machines though having electric motor are being driven with feet in absence of electric power. Expert trainer from sericulture department is helping women acquire skill. Women are making good earning ranging from Rs.2000 to Rs.6000 per month depending on time they put in. At Gawasen 20 women are working in this enterprise.
4. Pisciculture in South Chhindwara and Sidhi divisions. Expert visits arranged by project have played key role in initiating and making it a success. SHG are formed with JFMC promoting the SHG. Villagers have acquired skill and feel confident of having a good harvest. They were not deterred by damage to pond in floods, mobilised funds from local MLA to repair it with the help of FD and are back in business with enthusiasm. According to them there is ready market in nearby towns.
5. Sisal fibre extraction and making rope & decorative/utility articles with it at Gandhigram. Project has arranged for machines to extract fibre from sisal leaves. An expert NGO is helping them in making ropes and decorative/utility article from sisal fibre. The NGO also organises sale at various places. Men attend to fibre extraction and rope making while women make articles from fibre.

### *Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

6. Rag rope making at Kuvanbaadla Tamiya Range Chhindwara West, and Gandhigram Sidhi division. Generally men participate in this activity. The ropes made from rags are for local consumption mainly for tying cattle. These ropes are designed for tying cattle and sold at local Hats (weekly markets).
7. Lac cultivation at Jhaperi Sidhi Division. Villagers of Jhaperi village are cultivating lac on Palas (*Butea monosperma*) tree twigs. Lac producers have formed SHG. Villagers have amicably, though not equally, divided the Palas trees available on village waste land, which is full of Palas trees. This arrangement is based on nearness of wasteland area to their field/home. SHG includes both bamboo beneficiaries and others. Some Bamboo beneficiaries are cultivating lac in waste land. In addition bamboo beneficiary have started lac cultivation in degraded bamboo forests that is allotted to them.
8. Lantana furniture making at Kunwabadla Chhindwara West. Some villagers were sent to Dehradun to learn lantana furniture making. Other villagers are enthusiastic about it as they are happy to help trained persons and learn from them. However, it is beginning only as they have taken training only recently. Quality control and marketing are yet to be addressed.
9. Poultry farming is being introduced in Tavadhana Betul North. Small twin structures for two beneficiaries are getting erected at project cost. Beneficiaries shall also be provided two tranche of 25 chicks. Villagers are confident of rearing chicks. They say that there is sufficient marketing opportunity in nearby town. In some other villages too they are about to start this activity.
10. Bio-dynamic farming is a new way of organic farming. An expert in the discipline has trained local farmers in making Cow Pat Pit (CPP) and compost from it that is used as manure and pesticide. It restores soil health and soil texture. Farmers are enthusiastic and value benefits to agriculture that are in the form of good health of crop and savings as they are no longer required to use costly chemical fertilizers and pesticides. They are aware that it may not result in increased yields. But participants are happy at prospect of good soil health that may result in sustained agriculture yield with little dependence on costly chemical fertilizers and harmful chemical pesticides.
11. Animal husbandry comes to villagers naturally. In some villages encouraged by availability of fodder for stall feeding they have initiated care of milk bearing animals and marketing of milk products on their own initiative. Project is yet to take note of the initiative and contribute to it. Dairy development has multiple benefits. It increases earnings of villagers, reduces stress migration and contains grazing pressure on forest. Thus it is an important SME for achieving SLEM objectives. Scientific animal husbandry with stall feeding of improved cattle should be promoted with linkages to market.

### **Progress of consultancies for SME**

Three consulting organisations are working for identifying SME and developing business plans for different divisions.

- a) The Access consultants have gone through a detailed process of consulting villagers and officials and resource survey in three forest divisions of Betul district and Umaria forest division. They adopted the process of RIM (Resource, Institution, Market survey). They short listed options and further discussed with project officials and have come up with list on which they are developing business plans. They are developing SME on Mahuva, Bamboo, Paddy, Tuvar Dal, Corn, Dairy and Poultry. Access consultants propose to organize producer SHG who are to federate into Producer Company.
- b) The MP Vigyan Sabha is working in Chhindwara district. They also conducted detailed RIM survey and consultation with forest field functionaries and have identified SME for manufacture of incense sticks from bamboo, processing of fruits from forests, e.g., Mahuva, Jamun, Bel for manufacture of vinegar, jam, pickle, kismis and Ready-to-serve Drinks and Char (chironji) processing and marketing. They also discussed possibility of SME for making furniture from bamboo and lantana. They seem to be competent to provide training in processing and make the business plan operational as also assist in marketing. They are willing to put in place consulting arrangement for operational phase of the project wherein the MP Vigyan Sabha will provide technical supervision and marketing support on fee basis ensuring sustainability of village SME and their organisation. This organisation showed capacity to innovate and is willing to work with forest products, adding value and create additional employment in the villages in interior forest areas.
- c) The IIFM is working for Sidhi and Singaruli divisions. They have just started work and details could not be availed by the MTR team.

### **Analysis**

It was observed that villagers are craving for gainful employment opportunities. Women too are keen to contribute to family income. Old customs are giving way to need of modern days. Education of children is given primacy. Villagers use new found earnings to educate children and number of cattle is reduced to allow children go to school and not spend time grazing cattle. Near home employment is preferred to migration and nomadic life as agriculture improvement and children education are priority concerns. There is need for institutionalising SME effort to provide for sustained gainful employment. Inputs for quality control, financial management and marketing will be needed for some time to make the enterprise sustained. It is further needed to explore NTFP more intensely and find ways to add value. This will make local villagers value forest resource base. Emphasis on processing of agricultural produce by Access needs to be replaced by NTFP based enterprise. It is necessary that local community is consulted but consulting alone may not be sufficient. Consultants need to be innovative and

make suggestions to community as they are unlikely to be sufficiently aware of opportunities in processing of NTFP.

Overall SME promotion approach at landscape level is bearing fruits and is of significance to achieve SLEM objectives. Need is to pursue it vigorously over a period of time and address the operational issues and make the business enterprise self-sufficient. This will need carefully planned exit strategy after handholding period.

### **A3.5: Soil and Water Conservation**

The project provided for conservation works over 3000 ha in the four identified micro/milli watersheds. Activities included integrated soil and water conservation measures such as rouble/earthen check dams, percolation tanks, small farm ponds, etc. It emphasised need for improving water use practices at village level and formation of Water User Groups (WUG) through JFMCs for efficient use of water. It also proposed large number of small measures on farmlands to conserve water. The project targeted rejuvenation and renovation of existing community based watershed structures. It envisaged that watershed works would lead to increased availability of water for irrigation causing revival of farmlands that are lying fallow or unused due to lack of irrigation.

MTR team saw watershed conservation measures largely small loose rouble bunds, locally called check dams, on nallahs in forests. At one place community pond was strengthened and deepened. This pond is used for pisciculture. The small check dams made in forest area have effectively conserved soil. There is collection of soil that would otherwise get washed, leading to formation of beds in which regeneration was observed.

A significant observation in many villages by the inhabitants themselves is that there is improved availability of water for irrigation. They assign it to the check dams in forest area though there is no conclusive prove. It could be due to three reasons:

- a) Check dams;
- b) Improved vegetation in the catchment due to effective RDBF works; or
- c) Due to good rainfall in past few years.

May be all the three reasons in part have contributed to increased availability of water. Villagers are increasingly using irrigation. Some of the fallow and single cropped farm lands are brought to double cropping. This has led to increased earnings and has set in the cycle of progressive development. Villagers are seen practicing pisciculture and forming SHG for same with support of JFMC.

It may be observed that there is significant improvement in agriculture and that is due mainly to increased availability of water for irrigation. In one village three farmers informed that they are using sprinklers for efficient use of water. Though MTR team did not meet any

formal Water User Group the villagers informed that they are amicably sharing the water resource amongst the farmers having agriculture land in vicinity of the source of water. However, there is larger scope and need for watershed conservation measures. Project has provision to cover 3000 ha area with soil and water conservation measures in the identified 4 micro watersheds while the RDBF works cover 14,500 ha in same micro watershed units. The large upland in the watershed need to be effectively treated to extend the benefits of watershed works to larger population of farmers.

### **A3.6: Home Garden**

Project included an output to promote home garden. The emphasis intended in the project is on tree and bamboo species that are:

- a) Useful for meeting household energy needs;
- b) Have medicinal value for traditional remedies and support to the village medicine men; and
- c) Can help meet household nutritional requirements.

It is envisaged that this will reduce ecosystem degradation pressures, as well as help reverse the process of micro-ecological and micro-climatic degradation through community-driven in-situ conservation of native species and their revival. It targets landless and poor tribal families. Home gardens are to cover 600 ha of homesteads and establishment of a Home Garden Farming Fund.

MTR team visited home gardens at Tamiya Betul North, Borpani Chhindwara South, Khajuria Sidhi and Gunguti Umaria. Forest department has provided seedlings to the participants and technical inputs. Villages encouraged by improved water availability have taken to vegetable cultivation in homesteads in some villages together with tree planting. Nearness to town is catalyst to cultivation of vegetables as produce can be readily sold there profitably. Villagers show preference for fruit tree seedling Aonla, Mango, Guava, lime and bamboo. However, planting and tending of medicinal plants with the exception of Aonla was not seen. There is demand for more seedlings of tree species, Tavadhana, Betul North, Khajuria, Badkadol, Khataalwad., Jhapri, Dhanor of Sidhi and Gunguti of Umaria. The observations regarding Home Gardens can be summarised as:

- People have taken to homestead garden.
- Preference for fruit seedling of Aonla, Mango, Guava, lime and bamboo seen.
- Farmers have taken advantage of increased water availability and promoted vegetable cultivation for self-use as also for nearby town market- Tavadhana, Betul North, Borpani Chhindwara South.
- There is high acceptability of seedlings for homestead. Farmers demanded seedlings – Tavadhana Betul N, Khajuria Sidhi, Gunguti Umaria
- There is increase in availability of nutritious food specially fruits at household level.
- Vegetable marketing has contributed to increase in family income and so well being.

*Annex 3: Analysis by Pradeep Khanna (Demo Sub-Components)*

- Effort at promoting medicinal plants are lacking
- Linkage between practitioners of traditional medicine and common villagers to avail supplies from homestead not attempted.

## **Annex 4: Additional Information on Other RDBF Models and Programs**

In Annex 4, we provide additional information on two existing MPFD bamboo forest rehabilitation models or programs that co-exist with the SLEM project's own individual use model. We also provide information on a previous MPFD program carried out in 2000 and 2001 that by design was intended to carry out a model strikingly similar to the individual use bamboo rehab model of the SLEM Project. The purpose of reviewing the two currently existing models is so that they can be compared and contrasted to the project's model. This may provide insights useful in comparing both costs and structures of the models. The two other currently existing models are: (1) the "standard model" used by the MPFD for bamboo rehabilitation, which is being carried out on substantial scale in MP. The second is (2) the National Bamboo Mission model, being carried out in MP currently on fairly limited scale. The past program, (3) MPFD's "Sustained Employment through RDBF", while similar to SLEM's individual use bamboo rehab model, was not successful, apparently because funding was cut off. The non-continuation of funding implies the program was not supported by management of the MPFD.

### **A4.1 Standard Model for Bamboo Rehab in MP**

According to the MPFD, under their standard model for bamboo rehabilitation, payment is made to workers who carry out bamboo rehabilitation based on job rates and the Working Plan prescription. Some division-level forest officials told us that the Working Plan, allocation per hectare is benchmarked at Rs 3,000 per ha to pay workers for this work. Yet, they indicated that this amount was not enough to cover rehabilitation of the full area targeted. At the state level, it was emphasized to us that there is no scheme under which Rs 3,000 per ha is paid per work. Instead, workers are paid based on job rates. Other officials explained to us job rates have now been transitioned from a per ha basis to vary by clumps per ha and average size of clumps. Under the MP FD's current scheme, rehab is treated as an isolated labor activity that involves soil preparation and clearing of crooked culms. This work, however, does not include forest protection.

Also, the harvesting, when due, is to be undertaken as a separate activity. There is no specific link between the laborers doing rehab and those doing harvesting. It is likely that in both cases (both rehab work and harvesting), the laborer is from the same village, but not necessarily the same person. The laborer chosen for harvesting receives a special benefit: not only does this worker receive the job rate, the worker is also entitled to 100 percent of profits from the bamboo harvest.

Under the standard model, forest protection is a separate activity from both rehab and harvesting. Protection is the responsibility of the associated JFMC as a group. Sometimes the

#### *Annex 4: Additional Information on Other RDBF Models and Programs*

JFMC may be compensated on an annual per ha rate for protection work. These amounts are provided by the Development Wing of the MPFD to the JFMCs. They are provided for protection of areas entrusted to the JFMCs and the amounts are not specific to the protection of bamboo forests.

The total area rehabilitated each year under this model is based on the annual operations under the MPFD working plan. These areas vary from forest division to forest division. We were not provided with data on the total area, but anecdotal conversations imply that the total area rehabilitated per year according to this model is probably substantially more than the annual area rehabilitated during the SLEM project's four years of rehabilitation work.

Clearly, the standard model of the MPFD for bamboo rehab is very different than the SLEM project's model. In terms of structure, the standard model separates the three key activities of (1) rehab work (handled by a worker receiving the job rate), (2) forest protection (handled by the JFMC which may receive some compensation for forest protection, not specific to bamboo areas), and (3) harvesting (handled by a worker receiving the job rate, who is also entitled to 100 percent of profits), while the SLEM project's model integrates these three tasks so that they are handled by one family. (Note: Protection is generally handled jointly by the group of individual families involved in the rehab and harvesting and often extends beyond the bamboo area.)

It is difficult to provide a firm cost comparison of the standard model and the project's individual use model. It has already been indicated that the Rs3,000 per ha for rehab only is really not enough to cover job rate costs. Also, this amount does not include protection or the job rate for harvesting. If we use a standard rate for protection of Rs500 per ha (mentioned in some of our interviews) and combine it with the very conservative Rs 3,000 per ha for rehab, then over four years of rehab and five year of protection, the cost of rehab and protection might be Rs5,500/ha as compared to Rs8,400 per ha for the project's model. (The latter is computed by taking the monthly wage of Rs3,500, multiplying by four years or 48 months and dividing by the total area handled by each family, 20 ha, to get Rs per ha.) Yet, the project's model provides for ongoing protection rather than only five years of protection used in our estimates for the standard model.

#### **A4.2 National Bamboo Mission Model for Bamboo Rehab in MP**

The MP Bamboo Mission, under the National Bamboo Mission, is implementing a higher paying scheme in which initially a total of Rs16,000 per ha was to be paid out over two years for rehabilitation. The amount has recently be raised to Rs20,000 per ha paid out over two years. Presently, the target area is small (much smaller than the annual area rehabilitated under the SLEM project), but is expected to increase with funds that are likely to flow from the National Bamboo Mission in ensuing years. The scheme also allocates Rs500 per ha per year to be paid for five years for protection. Thus, total expenditure per ha is Rs18,500 per ha (including five years of protection) at the previous rate and Rs22,500 per ha (including five

*Annex 4: Additional Information on Other RDBF Models and Programs*

years protection) at the new rate. Clearly these amounts are much more than the Rs8,400 per ha paid under the project model. Also, the project model “buys” ongoing protection work, while the Bamboo Mission model “buys” only five years of protection. The Bamboo Mission model does not propose to provide any link between rehab and harvesting/profit sharing. As with the standard model, harvesting will be carried out individually and the individual chosen for this job will get both the job rate and 100 percent of profits from the harvest.

### **A4.3 Comparison of Standard Model and Bamboo Mission Model to SLEM’s Bamboo Rehab Model**

Exhibit A4-1 below provide a cost comparison of the MP SLEM Project’s bamboo rehab model to that of MPFD’s standard model and that of the Bamboo Mission as implemented in MP. A similar exhibit was included in Section 6 of the main text. A few points are in order. As mentioned, the standard model’s Rs3,000/ha is said not to really cover the job rate. Further, we have heard that the state is moving to a per clump payment system, which based on the number of clumps per ha and the average size of the clumps. Further, in this model, protection is not strictly adhered to. Usually, protection is handled separately and covers more than just bamboo forest. Here, we have used a figure of Rs 500/ha/year for protection as a means of extending the comparison.

**Exhibit A4-1: Cost Comparison of Bamboo Rehabilitation Models**  
(similar to Exhibit 6-2 in main text)

<b>Model</b>	<b>Area covered</b>	<b>Cost per ha in 2013 Rs</b>	<b>Protected area</b>
1. Project “use rights” model	14,500 ha total	(Rs 3500/mo x 12 mo/yr x 4 years) / 20 ha = Rs 8,400/ha	2 to 4 ha protected per rehab ha invested; ongoing protection
2. Standard MP model under plan*	Several times SLEM project’s bamboo area	Rs 3,000/ha Rehab + Rs 500/ha protection/year x 5 years = Rs 5,500/ha	1 ha protected per 1 ha protection invested; protection for 5 yrs after rehab
3. MP Bamboo Mission model	1,000 ha/year, expected to rise	Rs 16,000/ha rehab + Rs 500/ha protection/year x 5 yrs = Rs 18,500/ha**	1 ha protected per 1 ha protection invested; protection for 5 yrs after rehab

\*Currently, MP FD shifting from per ha to per clump payment system under its standard model

\*\*Recently, the Bamboo Mission has raised the compensation for rehab to Rs 20,000/ ha, thus raising the total to Rs 22,500 per ha.

#### **A4.4 “Sustained Employment through RDBF” – An Earlier Program with Similarities to MP SLEM’s Bamboo Rehab Model**

The “Sustained Employment through RDBF” program, carried out in 2000 and 2001 by the MPFD shares some strong similarities with the design of MP SLEM’s bamboo rehab work. Unfortunately this program was not sustained. While we were unable to obtain many details on the reason for the program’s failure, the main explanation given is that funds were not sustained. This probably means that the program did not have the support of MPFD management, as generally funds are not cut off for ongoing programs, except in cases of extreme shortages of funding.

The MTR team was able to obtain a document in Hindi on this program. Key features of the program indicated in this document are given below:

Objectives:

1. To improve bamboo forests with high technology
2. To provide continuous employment to at least one member of each of the landless and below poverty line families living in the selected areas
3. To make available additional employment to scheduled tribe (or tribal) families in need of same in the selected villages

The scheme is based on the JFM program and is to be executed with participation of the JFMC. Degraded bamboo areas are to be selected from JFM areas only. If there is no JFM in the village associated with a selected degraded bamboo area, then first a VLO (JFMC) is to be constituted and next the program to be initiated. PRA is emphasized for participation and listing of villagers from four categories: landless labor, small and marginal farmers, artisans, and big farmers. PRA also aims to identify families that are in need of continuous employment.

The scheme of the program called for rehab of 40,000 ha in four years with participation of 6,000 members called beneficiaries. Thus, the program’s scale is almost three times as large as that of the SLEM Project in terms of degraded bamboo area and there were to be over eight times the number of beneficiary families involved as were involved in the SLEM Project. The program was to provide for the cleaning of bamboos and for soil work. The participants were to be responsible for upkeep and protection of the bamboo clumps they cleaned for following three years. Every participant was to be allocated six to ten ha of degraded bamboo area that would have approximately 2,000 clumps.

In the initial years, the scheme was to be implemented by the MPFD and thereafter by the village JFMC. The participants were to be paid as per their work. It was estimated that each participant would get Rs15,000 per year (Rs1,250 per month) for four years.

#### *Annex 4: Additional Information on Other RDBF Models and Programs*

On benefit sharing, program documentation mentions that in the fifth year, the bamboo will be harvested and 30 percent of the profit will be made available to the JFMC. The document also mentions benefits to participants. It indicates Rs15,000 per year for four years in labor payments and, from the fifth year, 2,000 clumps will be harvested, each yielding four to six culms valued at Rs8 to Rs10, thus giving earnings of Rs16,000 from the sale of 2,000 culms per year. (The math here may need some further confirmation or elaboration. Yet, this text may imply that the benefit shall flow to individual through the JFMC.)

The program document also has components of human resource development via SMEs and JFMC management. It further emphasizes linking families to employment created in forest improvement.

One stakeholder points out that failure of the scheme is reflected in the reduction over the past 15 or so years of MP's bamboo forest area to one half its previous size and the doubling of degraded bamboo areas. As mentioned in the main text, the mystery of this previous program, targeted on a very large scale, should be solved post-MTR. It seems the SLEM bamboo rehab model is a descendant of this program and understanding what went wrong the first time around and ensuring that it does not happen again is critical to ensuring that GEF funds are leveraged through replication of the model. Stakeholders who are asked to replicate the model may also wish to understand this history and may need to be convinced about why the SLEM model will succeed when this previous program failed.

## **Annex 5: Further Details on Project SMEs**

### ***Elaboration on Parts of Section 7.5 in Main Text***

This annex provides elaboration on a number of sub-sections within Section 7.5 of the MTR report's main text, which covers project SMEs. Most often, the text below provides additional details from field visits or interviews. These items may provide the reader with a more detailed understanding of the basis of some of our SME-related conclusions in the main text. It may also provide additional insights for those interested in some of the particular types of SMEs pursued by the project.

#### **A5.1: More Details on SME Role in Reducing Cutting of Fuel Wood for Sale by Residents of Non-RDBF Villages**

The Sidhi DFO explained the importance of providing SME opportunities to women in non-RDBF villages as a means of reducing illicit cutting in the forest. As such, he provided additional rationale for extending SME work beyond project areas. In Sidhi, we were told that much illicit cutting in the forest is carried out by women, who are cutting fuel wood for sale (also known as "head loading"). According to the rationale, when these women have alternative livelihood options, they will stop cutting timber in the forest for sale.

During our interviews in Gandhigram, we investigated this issue. Stakeholders from Gandhigram Village confirmed that collecting and selling of fuel wood had been common practice before the incense making was introduced and that the selling of fuel wood had been drastically reduced now that women are involved in incense making. We also asked groups of women from two other villages involved in the incense making, who had come to Gandhigram for our site visit, but they told us that people in their village had not been involved in collection of fuel wood for sale before or after introduction of the incense stick making. In the case of Gandhigram Village, women told us that the sale of fuel wood only took place during festival times and perhaps brought in additional income of Rs 2,000 to 3,000 per year per involved person. Now with the incense making opportunity, additional income is Rs 2,000 to 3,000 per month, much more attractive than "head loading." Before, according to interviewees, about half (50 percent) of the village's 250 households were participating in "head loading" and now perhaps only 20 households (or eight percent) are continuing to sell fuel wood. In the village, with a total of 250 households, about 200 to 300 women are involved in either the incense making or sisal fiber work.

#### **A5.2: Additional Findings from the Field Related to Rope Making**

When we discussed income benefits with one West Chhindwara villager involved in rope making, we learned these are limited mainly due to time constraints. (He is also a bamboo

### *Annex 5: Further Details on Project SMEs*

rehab beneficiary.) He mentioned that his gross revenue from cloth rope making is about Rs 100 per week or Rs 400 per month. Of the Rs 100 per week, 20 must be submitted to purchase materials, so that net income is Rs 80 per week or Rs 320 per month. The time input is 2 to 3 hours at a time, but does not take place daily.

We visited a site where a group of men from Bodalkachar Village in Jhirpa Range (West Chhindwara) had come to display their rope making work. All members of the group are also bamboo beneficiaries. Noticing that there were no women involved, we asked one beneficiary about this. He noted that he was not able to put much time into rope making and agreed that they could train women in their village to do this.

#### **A5.3: Discussion of Lac Economics during Site Visit in Madwas Range, Sidhi Divison**

In terms of economics, we learned from our Sidhi site visit that the current price of lac is Rs 200 Rs per kg, but that the villagers have been told by the Forest Department the price may reach Rs 500 per kg. About 1.5 kg of lac is produced per tree per season. Villagers can also harvest brood lac branches from some trees. The brood lac is worth Rs 110 per kg. The MTR team did not get full clarity on the number of trees per involved household in the village visited – the figure understood was 50 to 500 trees each, though it seems the real figure may be closer to ten to twenty in terms of what a household may be able to achieve during the limited harvesting period. Lac in the village is mainly cultivated on “revenue” land (uncultivated wasteland) that is near the village and that has a large number of Palas trees. The number of assigned trees per household varies depending on the distribution of Palas trees near the participating villager’s home or farmland. Some villagers also have Palas trees on their farmland to which they have introduced lac. And, some bamboo beneficiaries have introduced lac in their assigned forest areas. The steps in the lac production process include: pruning (one person can prune about ten trees per day); attaching the graft (one person can handle ten trees per day); spraying insecticide (one person can handle six to seven trees per day; the women handle this part; insecticide costs Rs 6,000 per kg and you need ten grams per tree per season); and harvesting (1.5 to 2 kg can be harvested per person per day and 50 kg per person per day of “brood lac”). Because of the lack of experience to date, lack of clarity on the number of trees per person, and lack of clarity on the “brood lac” harvest, we will not offer an estimate of income here. Involved villagers did not have their own estimates, but do have a positive view of the potential. An indicator of this is that before the introduction of lac cultivation, the participants out-migrated for work. Now, only two to three of the 15 or so involved still out-migrate.

#### **A5.4: Additional Details on Findings Related to Silk Spinning from Field Visits to West Betul and West Chhindwara**

As mentioned in the main text, we visited one site in West Betul that has an active silk spinning workshop supported by the project and also talked with a few women who at the time had just begun training for silk spinning in West Chhindwara (also supported by the project). With regard to the West Betul silk spinning site (Gawasen Village), originally, the opportunity was presented to ten persons from Gawasen Village and ten from another village, Khokrakhera, but the ten from Khokrakhera quit, as it was inconvenient for them to be that far from their families and household work. Now, all twenty women are from Gawasen Village. One worker, when asked, did tell us that the process tends to hurt her fingers. As mentioned in the main text, however, women are very enthusiastic about this opportunity as it offers substantial enhancement to incomes.

In the Tamia area of West Chhindwara, where training for silk spinning had only just begun, we met a recently arrived master trainer and two of her first trainees in the area. The two trainees are wives of bamboo beneficiaries. The two used to out-migrate for work. One benefit of the silk reeling they mentioned is that they will be able to stay in the village. The master trainer planned to stay for about a week. One positive benefit is that the forest area around the trainees' village has the appropriate vegetation for introducing silk cocoons, so they won't have to buy them. This is the case all across Jhirpa Range. The MTR team also had the opportunity to meet a sericulture expert, who explained the situation.

#### **A5.5: Additional Information from Site Visits to Incense Stick SMEs**

As mentioned in the main text, the MTR team visited two central locations for incense stick making in Sidhi Division: Gandhigram Village and Koludih Village. Both locations have workshops with machines. At both sites, women from nearby villages doing incense work in their homes also came to the central processing villages to be available to talk with us during our site visits.

In both locales, bamboo from the project's RDBF areas is being sold at a low price for use as raw material. We were told in Sidhi that currently the culms are sold at Rs 12 each (the "nistar," or subsidized price) and raised in value through the stick processing to Rs 25 in value. Yet, we were also told that Rs 5 per kg is deducted for raw material costs from payments of Rs 25 per kg for the sticks (unless the woman supplies her own bamboo). Further, another Rs 5 is deducted for deposit in the fund of the self-help group, so that the women get Rs 15 per kg. Culms may weigh about 5 kg each, so the aforementioned deduction of Rs 5 per kg suggests a price of Rs 25 per culm. This inconsistency further highlights the need to be clear on prices and whether market or subsidized prices will be used. This case suggests either that there is some confusion or that a third party is keeping about 13 Rs per culm.

### *Annex 5: Further Details on Project SMEs*

In Gandhigram, we visited two workshops. The first was quite noisy and a little difficult to breathe in due to the dust. Machines were used to cut the bamboo into 14 inch sticks, after which there were then a number of other processing steps. Gandhigram is producing round sticks, which are eventually sold to East Asia via traders in India. Around Gandhigram there are 25 different villages involved with perhaps 70 to 100 women from each village carrying out home production. Some of these part-time workers told us they are just getting started and work only one to two hours per day on the incense sticks. Involvement appears to be open to all who are interested.

In Koludih, we also visited a workshop where the sticks were being made by machine and where several other steps in the process were also handled. About 25 villages in the Koludih area are also involved in incense stick production. It was explained to us that a separate account is kept for every individual. Koludih Village itself, which has about 700 families, has 330 women involved in making incense sticks. One young woman we met had a father who was not well. The three sisters got involved in making the sticks. The young woman is making Rs 3,000 to 4,000 per month and was able to go back to school (9<sup>th</sup> grade) after having dropped out earlier. In another case, we spoke with a male bamboo beneficiary who told us that three women in his family (his wife and two daughters-in-law) are involved in the incense stick making.

#### **A5.6: More Details on other Types of SMEs Encountered in Field Visits**

This section contains additional details of other types of SMEs encountered in field visits, elaborating on the brief introduction on these provided in the main text.

Sisal Fiber Products: In Gandhigram Village, Sidhi Division, we met an expert from an NGO that was teaching the men and women how to produce sisal fiber products (based on fibers from sisal plant in the forest). She shared with us a brochure from the MP Rural Livelihood Project sponsored by the Panchayat and Rural Development Department of MP, which had supported such work in other villages between 2008 and 2011. She explained that the women in Gandhigram, Sidhi, will be trained for three months. After that, she believes they can expect to supplement their income with Rs 1500 to 3000 per month through part-time work on sisal products. The NGO provides designs for products, checks on quality, and arranges for sale. This example shows that, while the livelihoods work of the project is not necessarily innovative, it is bringing successful ideas together. If the project can focus these efforts, ensuring their integration with conservation objectives, the value or “the what’s new” will be much greater.

Chilak Broom: We found two project divisions promoting chilak broom SMEs: East Chhindwara and Umaria, both very poor areas. East Chhindwara beneficiaries are already producing brooms from the chilak plant. They were doing this before the project, but efforts

### *Annex 5: Further Details on Project SMEs*

have been scaled up with the project. The people take the brooms to the local market where they sell to traders who take the product elsewhere for distribution. In a project RDBF village in Umaria, we met a good number of wives of bamboo beneficiaries who are being trained in making chilak brooms. Indeed, we learned that the wives of all 12 beneficiary families of the visited village are being trained in broom making and that 35 women total are being trained. The raw material is available in the forest. The women told us they are not yet selling the brooms as they are in training, but do not find the process too difficult and like it because they can do it from home.

Bamboo: Aside from the incense sticks, we did not find any other project SMEs utilizing bamboo, perhaps understandably so, as harvesting has not begun. At the same time, there seems to be some feeling that it may be too difficult for local people to learn the skills that specialized bamboo artisans, such as the Basod, have.

From both the MP PCCF and the APCCF leading the Bamboo Mission effort within the MP Forest Department, we sensed great enthusiasm for bamboo products. We learned that need for bamboo treatment centers may be an issue, as untreated bamboo may last three to five years compared to 40 to 50 years with treatment. It was suggested to us that a focus on manufacture of bamboo-based products may enhance sustainability of project initiatives by keeping the focus on bamboo. While a single village will not be large enough to support a bamboo treatment center, a process suggested was: (1) harvesting by beneficiaries, (2) sending to a nearby center for treatment and then (3) shipment back to the village for smaller scale processing/artisanship.

Tailoring: Tailoring was sometimes mentioned by women in project villages as an area of interest, though we also found that men sometimes learn this skill. One female beneficiary in South Chhindwara suggested a tailoring center as a new type of SME; and female beneficiaries in Sidhi also mentioned tailoring. In East Chhindwara, the project has played a role in enhancing tailoring skills. In Umaria, two bamboo beneficiaries have purchased sewing machines with their monthly payments and the project has arranged training. (In this case, it is men who will be operating the machines.)

Other Ideas: A number of other SME-related ideas came up in the course of discussions. Some from RDBF villages expressed an interest in dairy and one of us (PK) suggested this area as a promising one that can be scaled up. Dairy could leverage the fodder aspect of the project, which facilitates stall feeding. Others, however, suggested experience in tribal villages to date with dairy cows has not been positive. In Singrauli, the distance between knots on the bamboo is too close for incense, so ice cream spoons were introduced instead. Villagers in RDBF areas expressed an interest in SMEs that leverage forest products. In South Betul, there was discussion with villagers of the need to be able to sell forest products at the right price and to cut out the middle man. One villager mentioned that for the NTFP Mahua the middle man only gives them one-fifth of the eventual sale price. The South Betul DFO is suggesting a method to store Mahua for two to three months, so that villagers are not so vulnerable to the low prices offered by middle men; and the Mahua can be sold when the

## *Annex 5: Further Details on Project SMEs*

price is high. Villagers are concerned about the storage process, because Mahua will be ruined if it gets damp. A female in North Betul mentioned the idea of making plates from NTFP leaves. Other ideas mentioned are dried fruit (mentioned by a DFO) and a computer center for those that have graduated from high school (mentioned by women in Sidhi).

### **A5.7: Further Detail from Discussions with the Two SME Consultancies**

Further details based on our discussions with Access and Vigyan Sabha, the two consulting firms retained to support project SME development, are given below. Along with other topics, the content relates our understanding of the consulting firms' plans in terms of spread of villages to be covered by their proposed SMEs and concentration (or lack of it) in terms of number of villagers in RDBF project villages that might be involved in those SMEs. These discussions may thus be of interest to readers who wish to further understand the basis of our concern that the proposed SME work may not be focused enough in terms of achieving the project's targeted conservation results.

Discussion with Access: Access signed its SME contract with the project in May 2012 and submitted its reports and business plans in August 2013. Fieldwork, they explained, was intensive. Also, they could not start until after the monsoon season. Access has experience with SME development and pointed to some success stories in Rajasthan.

Targeted coverage of their work is much broader than the project RDBF villages alone. Taking a cluster approach, for example, in North Betul Access covered four clusters of villages, each with five or six villages. Thus, while only two villages in North Betul are project RDBF villages, Access' SME work is covering over 20 villages. It was suggested that a group of involved persons will contain 15 to 20 JFMC members per cluster, which might work out to only three or four persons per village. This seems limited if we are trying to have an especially strong impact in RDBF villages. Access will support the development of an SME in just one cluster per division. At one point in the discussion, Access raised the idea of setting up a production company that could handle direct trading. The suggested scale was perhaps 2,000 families from 200 villages. This information, if understood correctly, also seems not really the right fit for what the project is trying to do: achieve conservation results in targeted areas in conjunction with the project's other subcomponents. Generally, concerns are strong that this SME model is trying to do good things throughout a large area, but perhaps not focusing on project bamboo rehab villages alone and as a result having only a very small handful of persons involved from each project bamboo rehab village.

The MTR team had the opportunity to look through a large stack of documents prepared by Access, some of the most interesting of which were the resource, market, and institutional (RIM) assessments for various products. In their value chain analysis, Access looked at the village level, middle man level, and regional market. Some of the training manuals (e.g. poultry raising) appeared very general. In response to queries on why NTFPs did not receive

### *Annex 5: Further Details on Project SMEs*

stronger focus in all divisions, it was explained that the NTFP resource is limited in some areas and thus these did not win out in the comparative analysis.

Discussion with MP Vigyan Sabha: MP Vigyan Sabha (MPVS) was asked to cover 20 JFMCs per division and there was some adjustment to the list of JFMCs early in the work. The next change that was made upon request of the project was to consolidate plans across products for the processing of NTFPs. That is, instead of separate business plans for honey, aonla, etc., they were asked to prepare one “processing” business plan. The firm had been asked to cover bio-resources, including forest resources, animal husbandry, and agriculture, so they discussed resources with local people and DFOs and met with traders to estimate prices. The project in the end asked them to focus only on forest resource based plans to start with. They are currently focusing on an initial subset of eleven plans (four for each of East and West Chhindwara and three for South Chhindwara).

MPVS, like Access, appears to be planning to take the approach of encompassing a cluster of villages for each SME. They indicated to us that there may be seven to eight villages in a cluster. In the discussion, we attempted to determine how many persons from a typical bamboo beneficiary village might be involved in the SME, but it was difficult to get clarity on this. As the discussion progressed, a distinction was made between the “nodal” village of the cluster, which may have processing facilities and perhaps 15 to 20 persons involved. Yet, we were told that the nodal village is unlikely to be the same as the RDBF village, which may be relatively remote. We were also told that for NTFP based enterprises, all families in a village could benefit from the collection aspect, but that a self-help group of eight to ten persons from a village may be involved in “primary processing.” All in all, the impression is that this strategy (similar to Access’ strategy) may not be well enough linked to the project’s aim of a multi-pronged approach to conservation in a certain physical area. It is true that for enterprises involving NTFP collection, there may be a benefit across the full population of a project RDBF village. Yet, not many persons from the project’s bamboo rehab villages will be involved in processing. In other cases, such as for the bamboo based SME business plan, there will not even be this collection aspect spread across the full village. For such enterprises, the plan will also be to have six to seven villages involved together, each with small groups (eight to ten persons) for primary processing. Then, full processing will be held in a nodal village, which will not necessarily be the same as the RDBF village.

MPVS confirmed that forest product enterprises require a lot of upfront funding, thus making them difficult to start up. According to their estimates, the rough breakdown of uses of start-up funding is: 40 percent equipment, 20 percent management and 35 to 40 percent raw materials purchase. MPVS expressed strong confidence that the project will be successful as they (MPVS) have successfully launched such enterprises elsewhere. The main challenge is start-up funding, which in this case will be taken care of by the project.

## **Annex 6: Rough Comparison of UNDP and PMU-Provided Expenditure Totals by Outcome**

As indicated in Section 10 of the main text, we conducted a rough comparison of UNDP and PMU-provided expenditure totals by outcome. Exhibit A6.1 below provides the results of that comparison. For each outcome, it was our intention to show how the PMU-provided activity-based expenditure data in total compares to the totals given by UNDP-provided data (provided in USD) to determine whether there are any missing expenditures not being considered. Yet, data provided by the PMU is based on rupees spent over the lifetime of the project (2010 to 2013 to date) converted into dollars at October 2013 exchange rates. Given the great rise in rupee to dollar exchange rates over the time period, this will clearly lead to inaccurate results. We requested PMU expenditure data broken down by year, so that closer approximations of actual dollar amounts could be achieved by using annual average exchange rates, but did not receive this data. As such, using 2013 conversion rates only, amounts spent earlier in the project will be undervalued in dollars, so that dollar totals for each outcome will be understated in PMU-provided data.

As a result, we have decided to provide a wide USD range for PMU-provided outcome expenditure totals using a 2010 conversion rate for the high end of the range and a 2013 conversion rate for the low end of the range. While the ranges for each outcome are thus quite large, they are useful in showing when a very obvious gap exists between the UNDP data and the PMU data. As mentioned in the main text, despite such generous ranges, the gaps are still quite large for both Outcome 3 and Outcome 1. While we are providing these USD ranges for the purpose of triangulation and tracking down missing expenditures, we recommend that readers in their review of the PMU-reported data take care to refer to the INR figures in Section 10 of the main report as the true amounts spent. Section 10 provides possible explanations for these gaps including: (a) PMU reporting under Outcome 1 some of the items reported by UNDP under Outcome 3; (b) direct expenditures by UNDP on corporate communications (that are not included in PMU expenditure reporting); and, possibly, (c) overlooking of other expenditures by the PMU in its activity-wise expenditure reporting.

***Annex 6: Rough Comparison of UNDP and PMU-Provided Expenditure Totals by Outcome***

**Exhibit A6.1 Comparison of UNDP and PMU-Provided Outcome Expenditure Totals for GEF Funds**

Note: PMU used a single exchange rate (Oct. 2013) to convert rupees to dollars. We were not able to obtain annualized data, which might have allowed use of average annual exchange rates to improve estimates. Thus, we use a wide range (facilitated by applying both 2010 and 2013 exchange rates) for the purpose of determining whether there are any major gaps between UNDP and PMU provided expenditure data. We find that the gaps in Outcomes 1 and 3 persist despite the generous ranges.

UNDP data is until Dec. 17, 2013. PMU data is until Dec. 31, 2013.

<b>Component</b>	<b>UNDP CDRs</b>	<b>PMU data (range based on 2013 and 2010 exchange rates)</b>	<b>Gap in dollars (UNDP-PMU)</b>	<b>Gap as % of UNDP CDR figure</b>
Outcome 1	\$113,655	\$167,201 - \$236,494	-\$53,546 to -\$123,082	-47 to -108%
Outcome 2	\$3,546,040	\$2,979,806 - \$4,214,719	roughly in range	-----
Outcome 3	\$144,678	\$1,418 - \$2,006	\$143,260 to \$142,672	+99%
Management	\$321,466	\$290,416 - \$410,772	roughly in range	-----