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PARTNERSHIP FOR LAND USE SCIENCE (FOREST-PLUS) PROGRAM

A Report on Multifaceted Programs in the Forest-PLUS
Landscapes



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ACRONYMS AND ABBREVIATIONS

AIR	All India Radio
DFE	Directorate of Forest Education
DMS	Data Management System
EAFM	Ecosystem Approach to Forest Management
EDCs	Eco Development Committees
FRI	Forest Research Institute
FSI	Forest Survey of India
GCC	Global Climate Change
GHG	Greenhouse Gases
GIM	Green India Mission
GIS	Geographic Information System
GOI	Government of India
HPFD	Himachal Pradesh Forest Department
JFM	Joint Forest Management
JFMCs	Joint Forest Management Committees
KFD	Karnataka Forest Department
M&E	Monitoring and Evaluation
MPFD	Madhya Pradesh Forest Department
MPMFPF	Madhya Pradesh Minor Forest Produce Federation
MoEF&CC	Ministry of Environment, Forest, and Climate Change
NABARD	National Bank for Agriculture and Rural Development
NAPCC	National Action Plan on Climate Change
NTFP	Non-timber Forest Product
PCCF	Principal Chief Conservator of Forests
PRIs	Panchayati Raj Institutions
REDD	Reduced Emissions from Deforestation and Forest Degradation
SFD	State Forest Department
SFEWMD	Sikkim Forests, Environment & Wildlife Management Department
TTMs	Tools, techniques, methods
USAID	United States Agency for International Development
VFC	Village Forest Committee

I INTRODUCTION

I.1 BACKGROUND ON FOREST-PLUS

Forest-PLUS is a five-year USAID-funded activity that contributes to global climate change mitigation by reducing greenhouse gas (GHG) emissions from India's forested landscapes. Forest-PLUS did this by developing, and demonstrating through field deployment and testing, key REDD+ tools, techniques, and methods adapted to the Indian context. Forest-PLUS contributions to establishing REDD+ in India supports the Government of India's (GOI) National Action Plan on Climate Change (NAPCC), Green India Mission (GIM), and REDD+ Cell. In all its activities, Forest-PLUS works closely with the Ministry of Environment, Forests & Climate Change (MoEF&CC), State Forest Departments (SFDs), local governments, and appropriate non-governmental organizations (NGOs) to establish REDD+ in forest policies and forest management at national, state, and local levels. Forest-PLUS landscapes include the forest circles of Shivamogga in Karnataka, Hoshangabad in Madhya Pradesh, Rampur in Himachal Pradesh and the state of Sikkim.

Forest-PLUS has two components:

- I. Development of REDD+ tools, techniques, and methods developed by facilitating scientific exchange and technical cooperation between India and the United States.
- II. Deployment of REDD+ tools, techniques, and methods validated and demonstrated in pilot landscapes.

Component I and II activities were coordinated by adaptive interaction. In Component II, Forest-PLUS deployed the REDD+ tools, techniques, and methods it developed in Component I. Forest-PLUS then used this empirical field experience to update and improve REDD+ development for India.

Forest-PLUS helped India mitigate climate change by reducing deforestation and forest degradation through improved ecosystem management of forested landscapes. However, because India has 200 million people directly dependent on forest resources for their livelihoods and many more indirectly dependent on ecosystem services, Forest-PLUS gave equal weightage to tools, techniques, and methods that safeguard and enhance the biodiversity, environmental, livelihood, and social co-benefits of forest management.

The role of Forest-PLUS was to develop enabling conditions and provide technical assistance, but not provide implementation funding for REDD+. Establishing Forest-PLUS results that are independently financially sustainable was a key project concern and objective. In order to achieve this, Forest-PLUS worked towards establishing REDD+ in funded programs and working plans of the various ministries, departments, institutions, and agencies that manage India's forests, to demonstrate funding from REDD+ carbon markets, and to establish public-private partnerships (PPPs) that bring together public and private sectors to fund REDD+ based on a business incentive.

Forest-PLUS enhanced long-term REDD+ sustainability by developing public understanding and knowledge about climate change in general, the role of forest land use in contributing to climate change, the potential of improving forest management to mitigate GHG emissions, and REDD+ itself as a mechanism to gain carbon, biodiversity, environmental, and socio-economic co-benefits.

Finally, Forest-PLUS enabled REDD+ sustainability by developing REDD+ technical capacity in responsible forest management institutions including community-based organizations. It achieved this through community based multifaceted programs or landscape demonstration programs that focused on empowering local communities to manage their forests sustainably. The multifaceted programs included demonstration of Forest-PLUS developed/adapted tools, techniques and methods (TTMs) and hands-on

training that directly related to the TTMs. In all the four landscapes, Forest-PLUS focused on building the capacity of village level forest management institutions and community members on activities that helped reduce the pressure on natural forests and enhanced livelihoods.

The multifaceted programs were part of Forest-PLUS activity 1.3.2 under Task 3 of Component 1, which specifies:

“Develop tools, techniques, and methods to build the capacity of local communities to participate in an ecosystem approach to achieving REDD+ goals in Indian forest management”.

The deliverables and performance indicator that the multifaceted programs contributed to are:

Deliverable	Performance Indicator
Deliverable 20: “Four multi-faceted programs to build local capacity in forest management, enabling communities to take greater responsibilities over their forest and degradable lands”	Forest-PLUS Performance Indicator 8: “Number of multi-faceted programs designed and implemented to build local capacity in REDD+ and forest management as a result of USG assistance through Forest-PLUS”.
Deliverable 32: “Four REDD+ carbon projects (which may be local, jurisdictional, and/or nested jurisdictional as appropriate) designed with state forest departments that demonstrate selected Forest-PLUS TTMs in 20 villages across the four landscapes”.	

The ensuing sections, section 2 & 3, of this report detail the approach and the process Forest-PLUS devised to successfully design and implement the multifaceted programs in the four landscapes. The landscape-wise outputs and outcomes are elaborated in section 5 and the report ends with the key lessons learned.

2 THE APPROACH

The Forest-PLUS multifaceted/landscape demonstration programs applied Forest-PLUS developed approaches to enable rural Indian communities, particularly those directly dependent on forest resources, to participate in and receive benefits from REDD+ and Ecosystem Approach to Forest Management (EAFM). These programs included follow-up to Forest-PLUS technical trainings, local community communication/outreach programs, local interventions in livelihoods and EAFM for Joint Forest Management Committees (JFMCs), NTFP, silviculture, and grazing TTMs, and community-level carbon inventory. Each regional approach was differentiated, with the common objective being to connect Forest-PLUS to the most local stakeholders in their own language and circumstances. The programs were primarily designed and implemented by the Forest-PLUS regional teams to be responsive to local stakeholder interests, needs, and demands.

Empowering Local Communities to Manage Forests Sustainably

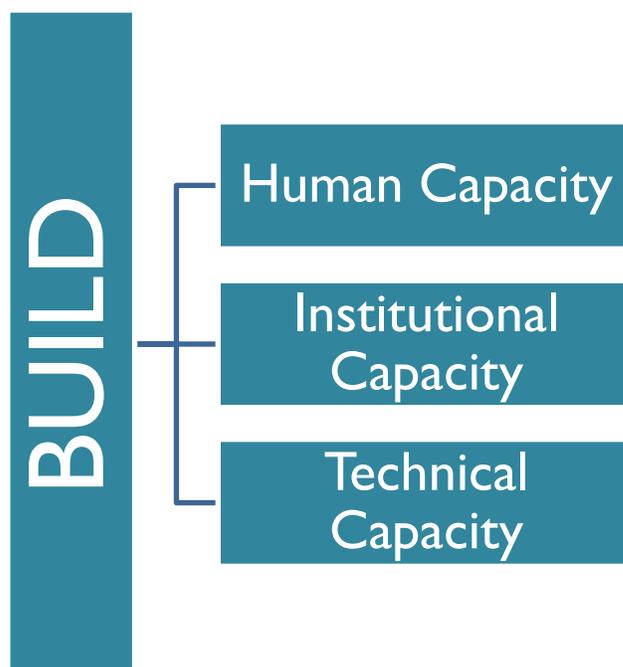


Figure 1: Multifaceted Program Approach

The goal of the multifaceted programs was to empower local communities, and as has been shown in the figure above, it was done on three fronts:

- **Human Capacity:** Human capacity was built through a series of training and communication programs that focused on making the community members aware of the various issues related to climate change and REDD+. These programs were organized at the village/cluster level, targeting primarily members from forest dependent households, with a special emphasis on

women. The training programs were designed and organized in close consultation with the State Forest Departments. The resource persons for these programs were drawn from the pool of State Forest Department (SFD) staff who had been trained earlier by Forest-PLUS, and the regional teams of Forest-PLUS.

- **Institutional Capacity:** Forest-PLUS worked closely with village-level institutions, mainly the JFMCs and Eco-Development Committees (EDCs) for implementing all the field activities. In addition to the training programs, the institutional processes and mechanisms adopted for designing, planning and implementing activities contributed significantly in revitalizing these institutions in the landscapes.
- **Technical capacity:** Technical capacity was built through demonstration of the various TTMs that Forest-PLUS developed/adapted in the landscapes with full participation of the local communities to address the different drivers of forest degradation. The community members were provided hands-on training on these TTMs to multiply and replicate the initiatives.

The multifaceted programs were implemented in two phases. The first phase emphasized generating mass awareness on climate change and REDD+ through community level training programs and communication activities, and the second phase focused on strengthening institutional and technical capacity. In the second phase, Forest-PLUS chose clusters of villages where the multifaceted programs and action learning pilots were implemented in most of the same set of villages as the first. This was because the phases were complementary, and the second dependent on the first. It was also done to showcase the demonstration of Forest-PLUS TTMs through the institutional mechanisms facilitated by Forest-PLUS.

3 THE PROCESS

The process adopted by Forest-PLUS to roll out the multifaceted programs is illustrated below:

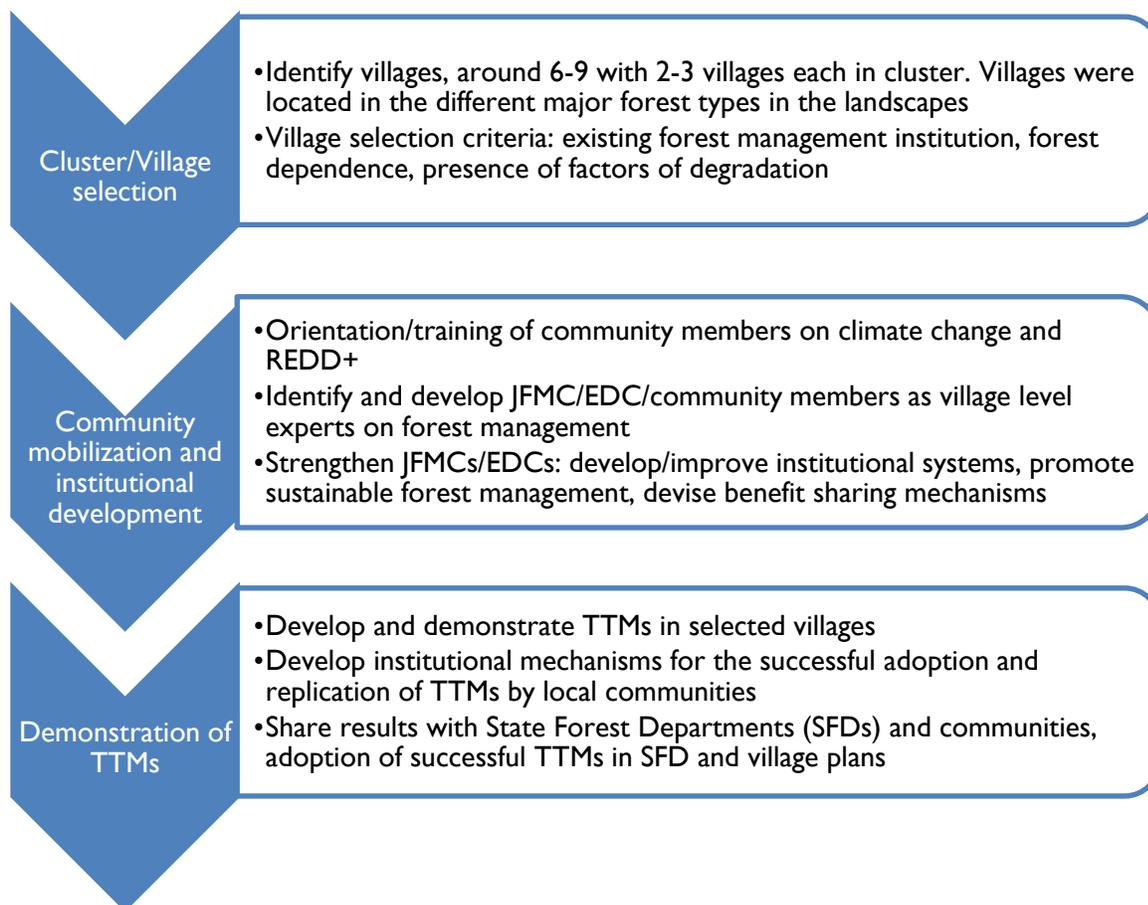


Figure 2: Multifaceted Program Process

The multifaceted programs were implemented in two distinct phases:

Phase I: The first phase was initiated with a series of awareness generation and orientation programs on climate change and REDD+ organized for the local communities in all four landscapes by Forest-PLUS regional teams. In this phase the focus was on laying a strong foundation and mobilizing and organizing the community on issues related to REDD+ that affect their daily lives. There was an emphasis on ensuring women and children’s participation in these programs. These programs were organized across the landscapes. The “cluster” approach emerged in the second phase of the multifaceted programs where the focus progressed from general awareness to institutional development and demonstration of TTM. The cluster-based strategy was adopted to demonstrate the potential of Forest-PLUS and the collective impact of different TTM on forests and forest-dependent communities.

Phase II: The second phase of the multifaceted programs began with the identification of 6-9 villages in clusters of 2-3 villages each covering the major forest types in three of Forest-PLUS’s landscapes: Shivamogga, Hoshangabad and Rampur. For Sikkim, Forest-PLUS adopted a different strategy as the

State's policy regime limited the kind of activities that could be undertaken. Sikkim has banned timber felling, NTFP collection and grazing in forests, which ruled out any intervention in these areas. Nonetheless, Forest-PLUS identified fuel wood as one of the drivers of degradation and chose to work through innovations to address the issue. Human-wildlife conflict was also identified as an important issue by Forest-PLUS and was addressed through an action learning pilot program, which has been reported on separately. In the other landscapes, the process adopted by Forest-PLUS as has been illustrated in figure 2 is further detailed below:

- *Identification, selection and profiling of villages* – Forest-PLUS regional teams in the landscapes identified and selected the clusters and villages in consultation with the SFD and the community members. The primary criteria for selecting the villages were that 1) the village should have an existing JFMC or an EDC, 2) there should be high forest dependence and 3) there should be presence of drivers of forest degradation. Once the villages were selected, the regional teams, with the help of local communities and organizations, developed the socio-economic profiles of the villages, which helped later in identification of households for piloting of TTMs.
- *Identification and selection of community members* - Community members with an active interest in program activities were identified and selected by the Forest-PLUS regional teams through a participatory process. The selected members were provided hands-on training on all facets and activities of Forest-PLUS, including the landscape specific TTMs. They were entrusted with the responsibility of supporting the demonstration of TTMs in their respective villages and clusters and documenting the whole process.
- *Strengthen JFMCs and EDCs* – Sustainable solutions work well when institutions are involved, and when dealing with a natural resource like forest it becomes essential to set up institutions and channel all efforts through them. All villages selected under the multifaceted program had an existing institution, either a JFMC or an EDC. While functional capacities varied, each institution had to demonstrate a strong interest in getting involved with Forest-PLUS. Forest-PLUS teams worked with the institutions through a gradual process that included training programs, exposure visits and close involvement in implementation of all village level activities, which revitalized them and made them equal partners in progress. Exposure visits deserve special mention here as they played a very important role in motivating and inspiring the JFMC and EDC members to take up activities in their villages.
- *Demonstration of TTMs* – The empowerment of local communities was achieved through a multipronged strategy combining capacity building of communities and demonstration of improved TTMs to improve silviculture, management of NTFPs, reduction of fuelwood and grazing pressure, measurement of carbon, and institutional development. The TTMs were developed to address the drivers of forest degradation negatively impacting the landscapes in general and the villages in particular.
- *Develop institutional mechanisms* – Forest-PLUS adopted a participatory and institutional approach for development and demonstration of TTMs that involved the JFMCs or EDCs at every stage. This started from problem identification and continued through discussing possible solutions, designing/selecting the best solution, working out the modalities, selecting households for the demonstration/pilot, developing usage and maintenance mechanisms, and developing benefit sharing mechanisms.
- *Share results with SFDs and communities* – Forest-PLUS worked in close collaboration with the SFDs in implementing the multifaceted programs and held several consultations with officials at all levels to design, develop and demonstrate TTMs. The process and outcomes of the demonstrations were constantly shared with the SFDs through meetings and Forest-PLUS also facilitated field visits of senior department officials to its field sites to show results on the ground. Forest-PLUS has documented the process of many TTMs in brochures, pamphlets, and posters, which are in local languages and have been distributed widely in the landscapes and beyond.

4 PROGRAM AREA

Forest-PLUS began the second phase of the multifaceted program, which is also referred to as the landscape demonstration program, with the selection of village clusters in the landscapes of Shivamogga, Hoshangabad and Rampur. The regional teams followed a consultative process involving the SFDs and the local communities in selecting villages in accordance with the criteria mentioned in the previous section. A total of 23 villages were selected covering eight ranges and seven forest divisions. Given below is a map of India showing the location of the landscapes.

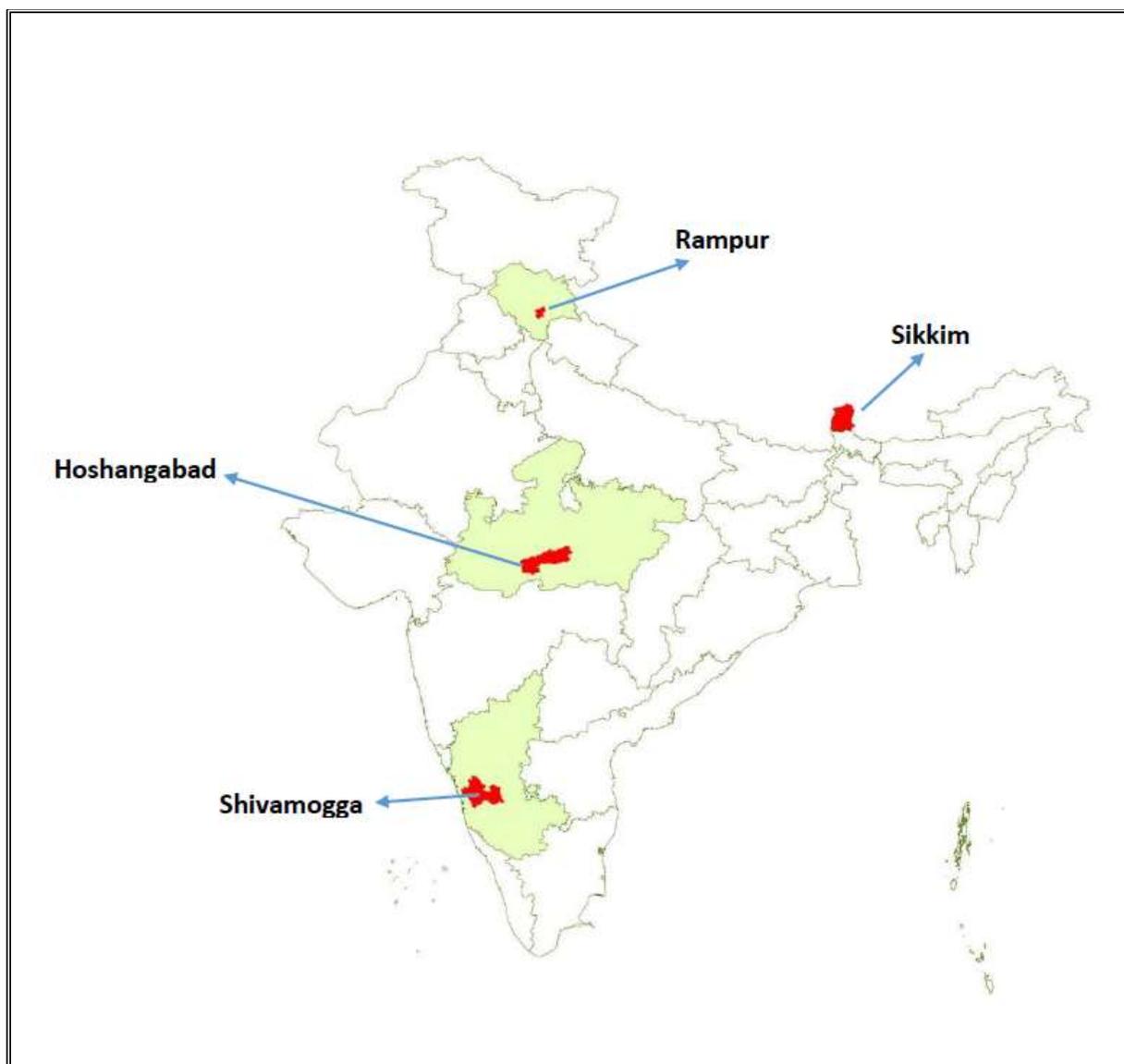


Figure 3: Forest-PLUS Landscapes

The list of the multifaceted program villages is given below.

Table 1: Multifaceted Program/Landscape Demonstration Program Villages

Landscape	Division	Range	Demonstration Villages
Shivamogga	Shivamogga	Mandagadde	Garaga
			Kikkeri
			Honasagadde
		Ayanur	Rechikoppa
			Ragihosalli
	Sagar	Nagara	Andagadoduru
Total	2	3	6
Hoshangabad	Harda	Temagaon	Kapasi
			Uskalli
			Jhinwani
			Barurghat
			Jogikhera
	Hoshangabad	Sukhtawa	Morpani
			Mandikoh
			Gomtipura
			Mariyarpura
Total	2	2	9
Rampur	Kotgarh	Kumarsain	Kanda
			Mogra
	Ani	Arsoo	Tharla
			Juwagi
			Sarahan
	Rampur	Nankhadi	Doi
			Lelan
			Jhinjnu
Total	3	3	8
Grand Total	7	8	23

5 LANDSCAPE ACTIVITIES

5.1 SHIVAMOGGA

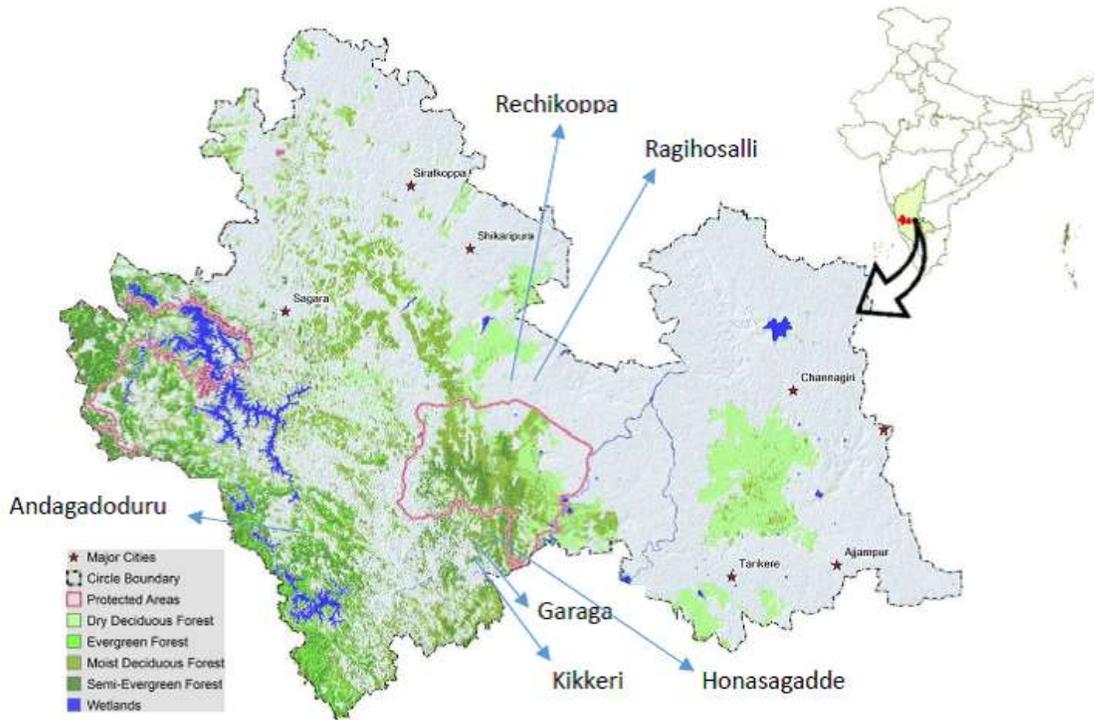


Figure 4: Shivamogga Multifaceted Program Villages

In Shivamogga, Forest-PLUS selected a total of six villages located in three clusters. The clusters represent the three distinct rainfall areas and forest types in the landscape as is shown below:

Forest Division	Forest Range	Cluster villages	Forest Type
Shivamogga	Mandagadde	Kikkeri, Garaga and Honasagadde	Tropical Moist Deciduous (medium rainfall)
Shivamogga	Ayanur	Ragihosalli and Rechikoppa	Tropical Dry Deciduous (low rainfall)
Sagar	Nagara	Andagadoduru	Evergreen and Semi-evergreen (High rainfall)

A baseline household census survey of cluster villages was carried out by Forest-PLUS through trained volunteers from the local community. The survey mapped the socio-economic status of households, dependency on/quantification of NTFPs, and changes in the status of major drivers of degradation including fuel wood consumption, usage of leaves, and livestock status. The baseline census survey covered 1,451 households from nine villages (3 villages from action learning pilots were included) in the three pilot clusters.

The vision of the multifaceted program in Shivamogga developed through a consultative process led by the regional team was “To empower village communities and their institutions with knowledge, skills and practices on improved forest management, including NTFPs and carbon measurement and reporting, in collaboration with state forest department and other stakeholders”. The objectives of the program were to build institutional, human and technical capacity of the selected village communities as is illustrated below:

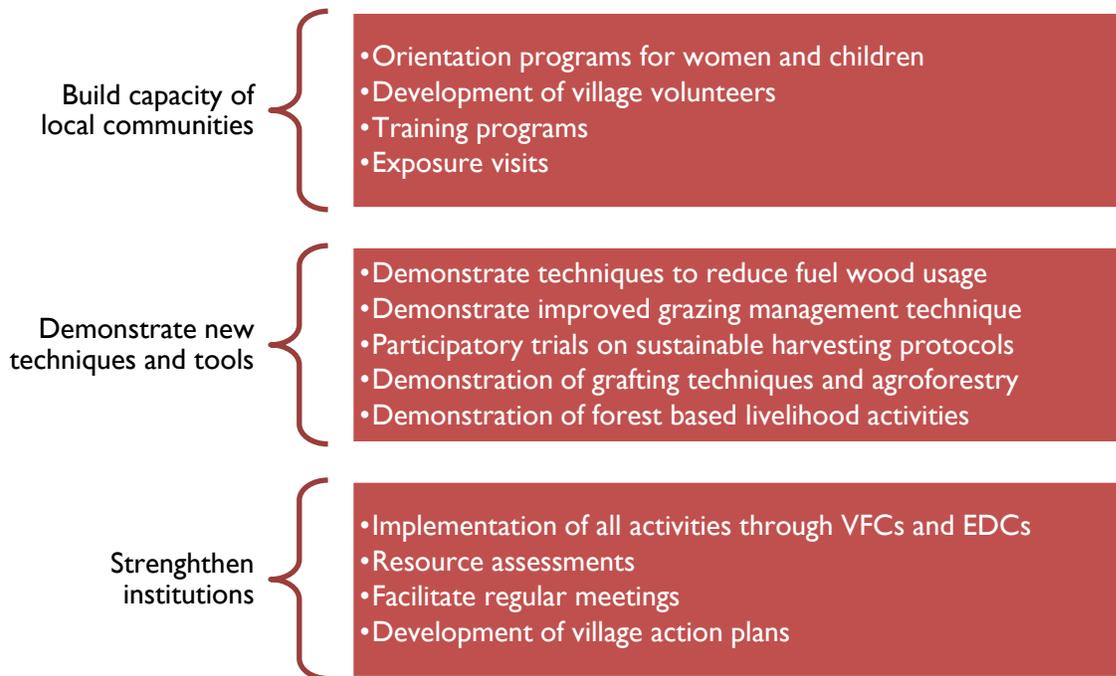


Figure 5: Shivamogga Program Objectives

Forest-PLUS worked on developing different tools, techniques and methods (TTMs) for forest landscape restoration, forest carbon measurement mechanisms and institutional governance through the process of adaptive management based on field based studies and consultations at different levels with different stakeholders. The capacity of local communities was built up through training programs and communication and outreach campaigns on the issues of climate change and forest management. Special emphasis was laid on orienting the VFC members and key opinion leaders in the village, which helped in demonstration and acceptance of techniques to address different drivers of degradation.

The Shivamogga landscape program was able to achieve the following results on community capacity building, institutional strengthening and addressing the drivers of degradation:

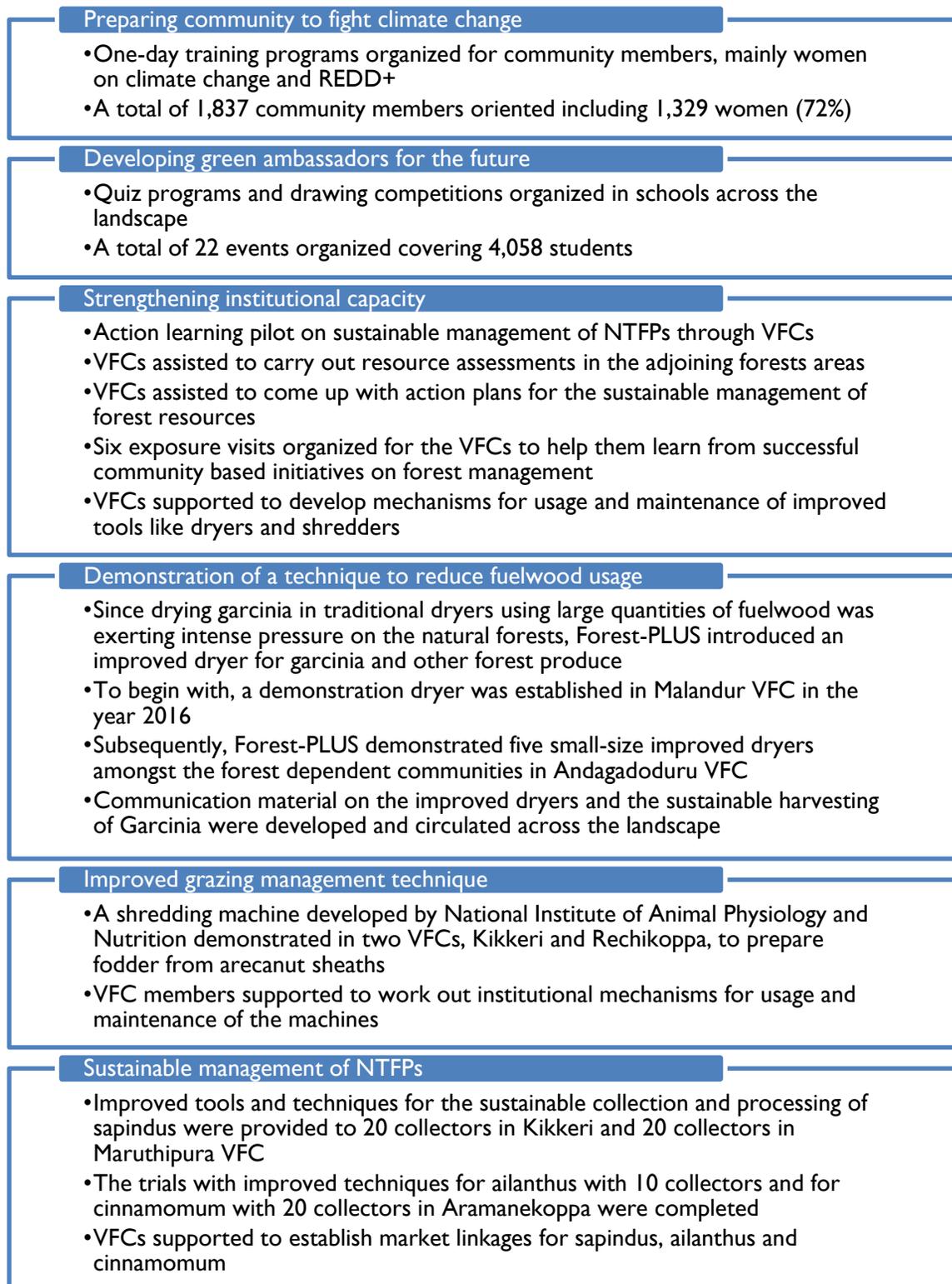
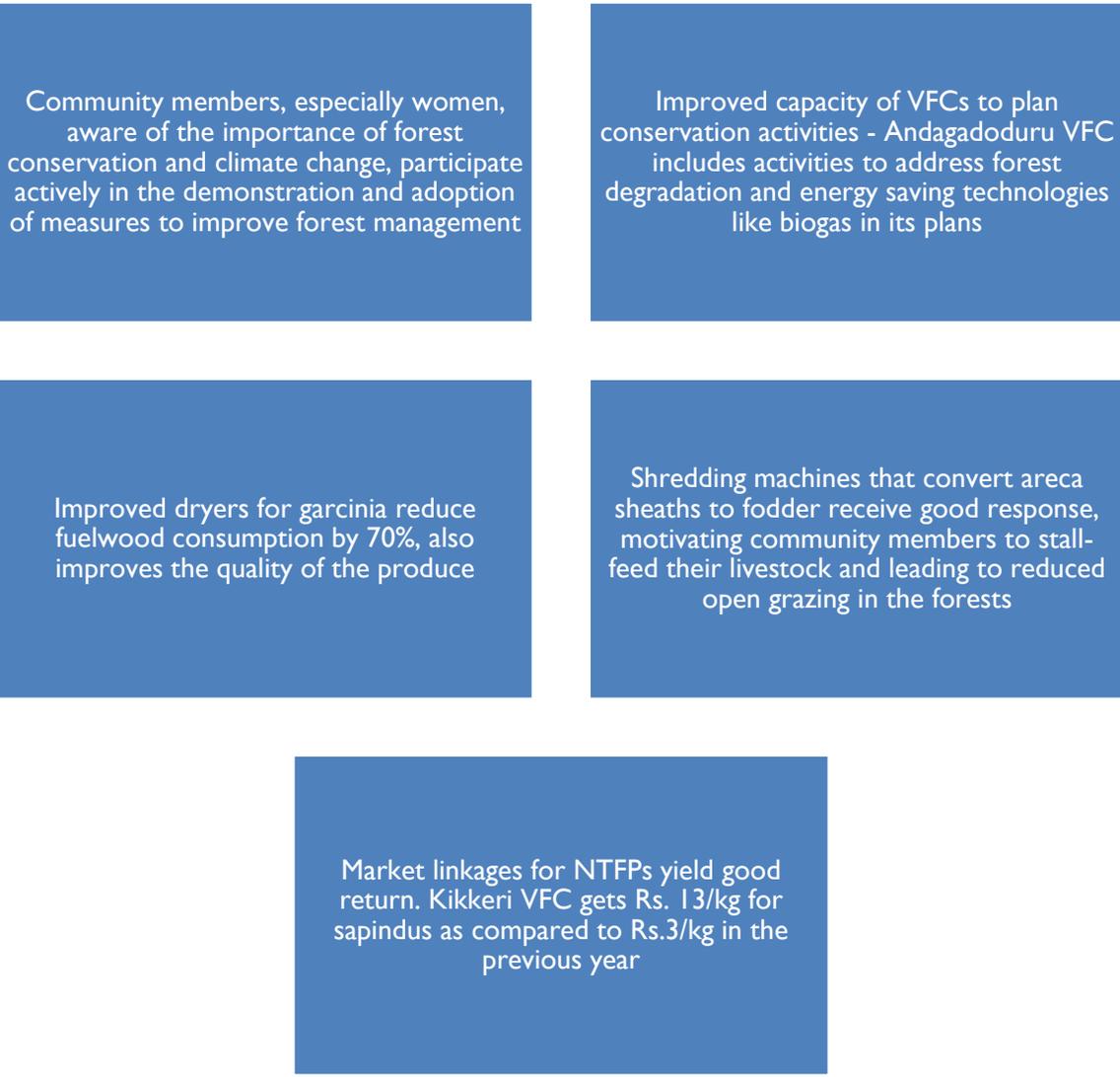


Figure 6: Shivamogga Program Outputs

The major outcomes of the Shivamogga program include the enhanced knowledge of the community members on climate change and REDD+, the improved capacity of community institutions and the reduction of biotic pressure on forests.

Figure 7: Shivamogga - Major Outcomes





Training program on climate change for community members



Improved dryers for garcinia



Shredding machine for converting areca sheaths into fodder



Rill method of tapping ailanthus resin



VFC exposure visit to Sirsi



VFC consultation on NTFP management

Figure 8: Glimpses from Shivamogga



5.2 RAMPUR

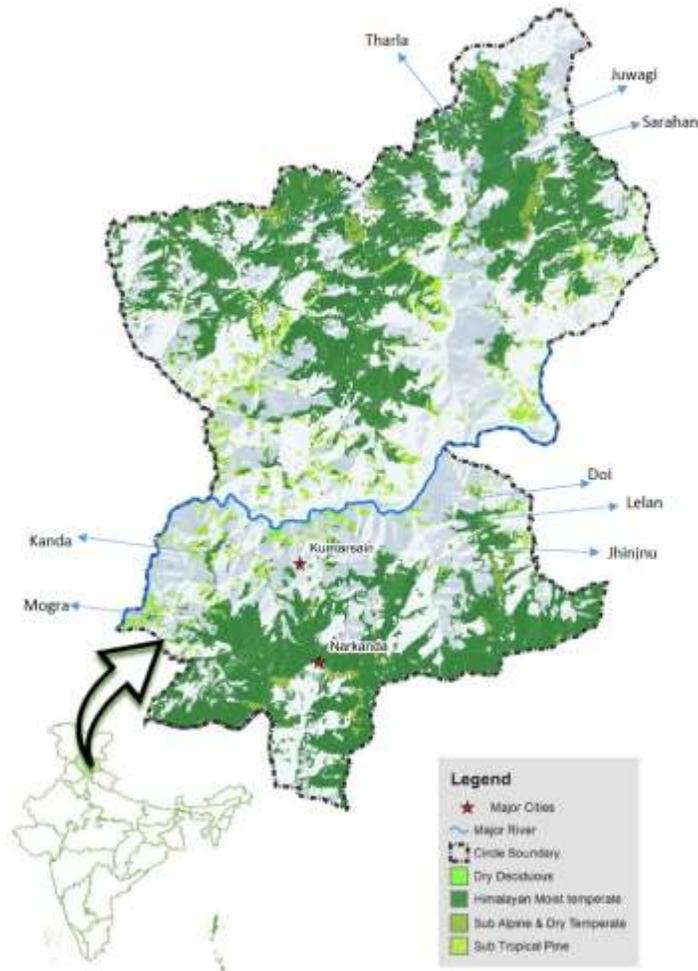


Figure 9: Rampur Multifaceted Program Villages

In Rampur, Forest-PLUS selected a total of eight villages located in three clusters. Their location can be seen in the map and the description is given below in the table:

Forest Division	Forest Range	Cluster villages	Forest Type
Rampur	Nankhadi	Doi, Lelan, Jhinjnu	Himalayan Most Temperate
Kotgarh	Kumarsain	Kanda, Mogra	Himalayan sub-tropical pine forests
Ani	Arsoo	Sarahan, Juwagi, Tharla	Himalayan Moist Temperate

The clusters, as can be seen from the table, are in the same forest type, Himalayan moist temperate, but are at different altitudes in the landscape. Sarahan cluster is located above 2000 meters while Kanda and Doi clusters are located between 1200-1500 meters. A detailed socio-economic profile of the selected

villages was developed by Forest-PLUS through a baseline survey to decide upon the intervention activities. Out of the eight villages selected, intensive activities were planned in five villages while selective interventions were planned in the remaining.

The vision of the multifaceted program in Rampur was that “By 2017, the landscape would be able to present climate change technology demonstrations, tools and techniques ready to be adopted by the Forest Department, local governance institutions, stakeholders (government and private) and local communities. Pilot village sites and selected forestry institutions initiated during this period would become role models for the entire Himachal Pradesh on climate change adaptation technologies and methods”. The Forest-PLUS vision for Rampur landscape was planned to be achieved through an integrated process of awareness generation, research, development, testing and demonstration of technologies. Strengthening of community-based institutions would lead to greater involvement of local communities in ecosystem management and forest protection and reduced carbon emission. Awareness on global climate change was expected to motivate communities to adopt improved tools and technologies to reduce biotic pressure on existing forest resources. The objectives of the program were to build institutional, human and technical capacity of the selected village communities.

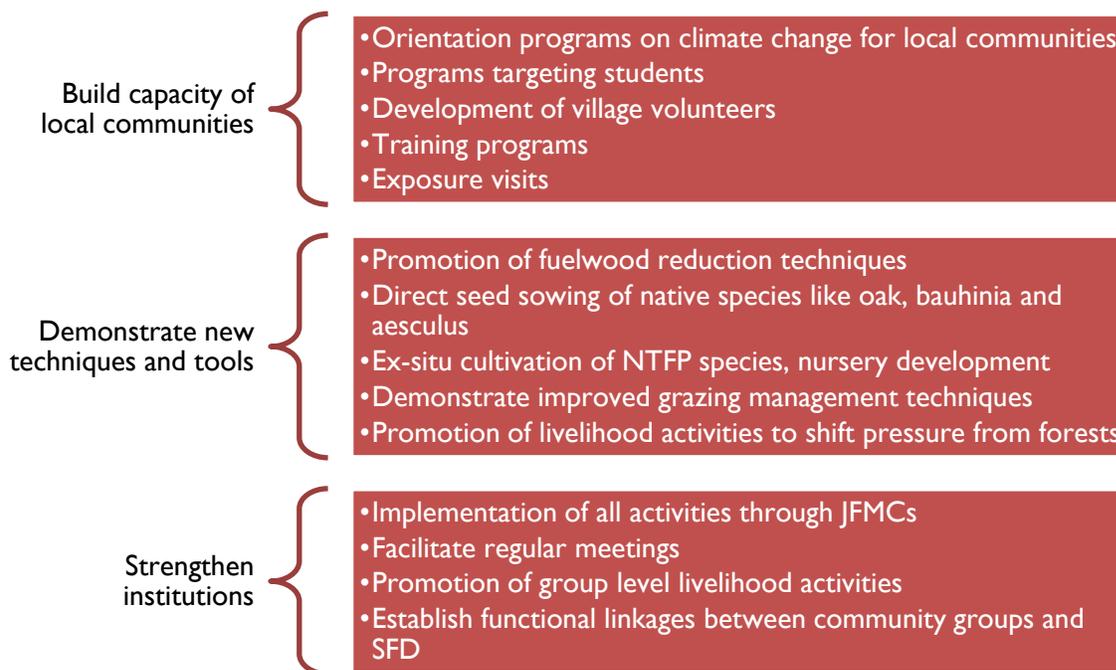


Figure 10: Rampur Program Objectives

Forest-PLUS in Rampur focused on a community-based ecosystem approach to forest management and developed a number of techniques, tools and methods to improve the way forests are managed. TTMs were developed to improve silviculture, NTFP management, reduce the pressure of grazing and fuelwood on the forest and address the issue of forest fire.

The Rampur landscape program was able to achieve the following results on community empowerment, institutional strengthening and addressing the drivers of degradation:

Orienting local community on REDD+

- Orientation programs on climate change organized for community members covering more than 300 persons with 60% women participation
- Special emphasis on reaching out to children, more than 5,800 students covered through events in 26 schools
- Forest-PLUS stall put up in the Children Science Congress events in 2014 and 2015, taking the REDD+ messages to schools across Himachal Pradesh

Strengthening institutional capacity

- Action learning pilot program undertaken to strengthen JFMCs
- JFMCs involved closely in implementation of all demonstration activities
- Institutional mechanisms developed for managing silviculture, grazing and NTFP TTMs, benefit sharing and usage and maintenance of tools
- Exposure visits organized for community members to successful JFMCs within and outside the landscape to enable cross-learning
- A community-based producer company formed to take up livelihood earning activities like mushroom cultivation

Promotion of native species through direct seeding

- Direct sowing of seeds of oak, bauhinia and aesculus piloted successfully in more than 23 acres spread across three divisions in different geoclimatic conditions
- JFMC members involved in acorn collection, grading and seeding

Demonstration of improved grazing management techniques

- Silvipastoral system demonstrated in Doi JFMC in a patch of six hectares, fodder species like salix, bauhinia and grewia planted
- JFMC members developed an institutional mechanism for protecting the area through social fencing
- Maize silage making demonstrated successfully in Sarahan, Doi and Kanda JFMCs to improve the availability of fodder

Sustainable management of NTFPs

- A NTFP nursery demonstrated in Sarahan village. Seedlings of *Paris polyphylla*, *Picrorhiza kurroa* (Karoo), *Aconitum heterophyllum*, *Taxus* (Himalayan Yew) and a few other species raised using different techniques.
- JFMC members trained on sustainable management of NTFPs
- Institutional arrangements developed for value addition and marketing
- Alternative livelihood activities like mushroom cultivation promoted to compensate the loss of income from forests

Harnessing Solar Energy to reduce fuelwood usage

- Low-cost solar water and space heating systems demonstrated in 115 households in six villages
- 18 local artisans trained on fabrication, repair and maintenance of the systems

Figure 11: Rampur Program Outputs

The major outcomes of the Rampur program are enhanced knowledge of the community members on climate change and REDD+, the improved capacity of community institutions and the improved management of forests.

Figure 12: Rampur - Major Outcomes





Climate change training program for women



Outreach event for students



Ex-situ cultivation of NTFP species



Solar water heater



Maize silage making in progress



Direct sowing of oak seeds

Figure 13: Glimpses from Rampur



5.3 HOSHANGABAD

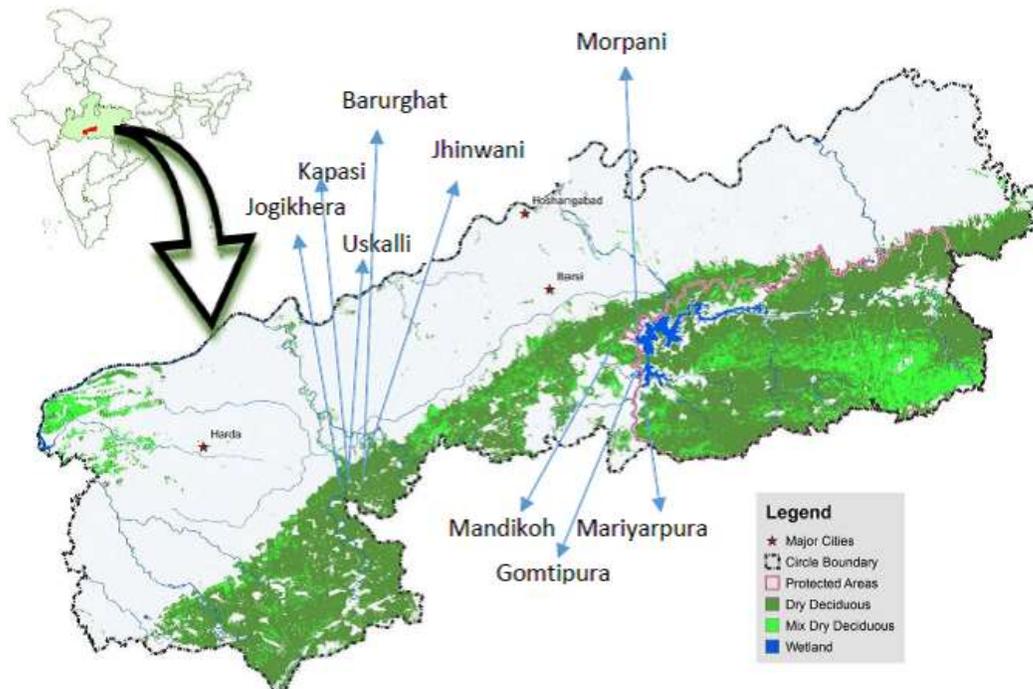


Figure 14: Hoshangabad Multifaceted Program Villages

In Hoshangabad landscape, Forest-PLUS selected a total of nine villages in two clusters. The villages were selected in consultation with the state forest department for the demonstration of different sustainable forest management techniques and to prepare communities for the implementation of REDD+ with improved forest management practices. The criteria for the selection of the pilot villages included representation of mixed and teak forests, presence of village institutions, prevalence of agroforestry and private forests, and availability of NTFPs. The two clusters are:

Forest Division	Forest Range	Cluster villages	Forest Type
Hoshangabad	Sukhtawa	Morpani, Mandikoh, Gomtipura, Mariyarpura	Tropical Dry Deciduous
Harida	Temagaon	Kapasi, Barurghat, Uskali, Jhinwani, Jogikhera	Tropical Dry Deciduous

A detailed baseline survey of households within the cluster villages was carried out covering the socio-economic status, livelihood status of households, drivers of degradation, fuel wood consumption practices, and agroforestry preferences. The survey covered 840 households in the two clusters.

The vision of the multifaceted program in Hoshangabad was “To empower village communities with the knowledge, skills and practices on improved forest management, and carbon measurement and reporting methods, through strengthened village institutions in collaboration with state forest department and

other stakeholders”. Forest-PLUS worked on developing the institutional, human and technical capacity of the two selected clusters in the landscape as is illustrated below:

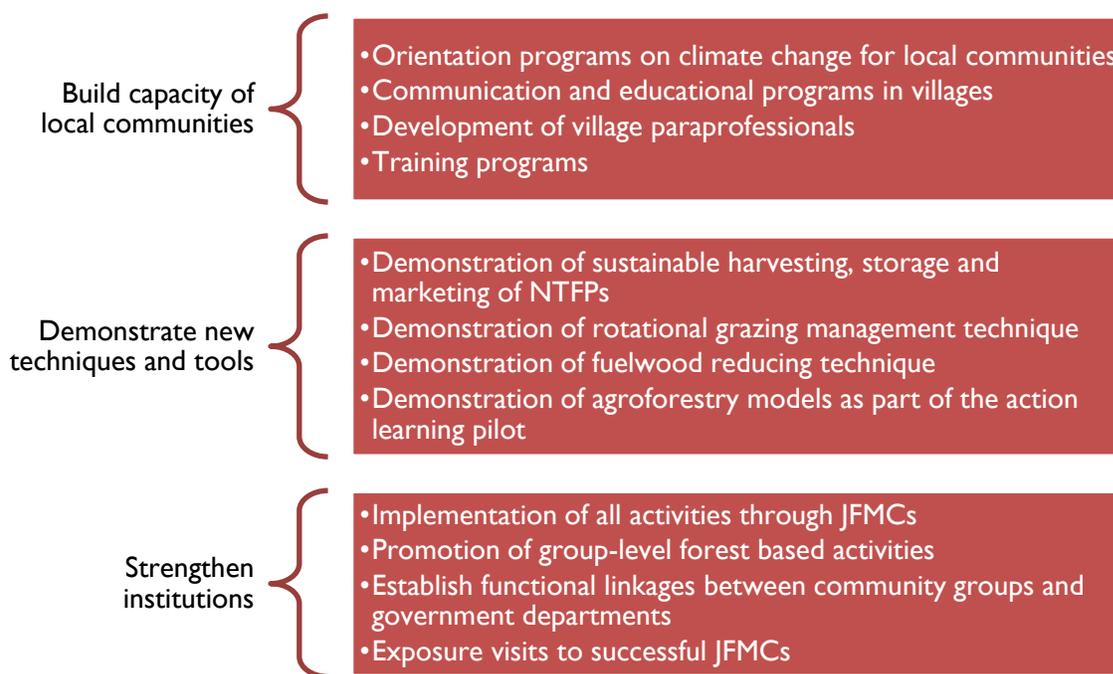


Figure 15: Hoshangabad Program Objectives

In Hoshangabad, Forest-PLUS worked with local communities whose interaction with the forests is very close and whose dependence on the forests is also high. The situation called for intense work on NTFPs and Forest-PLUS intervened in all aspects of NTFP management, starting from collection and moving to harvesting, storage, value addition, processing and marketing. Parts of the landscape have a high prevalence of agroforestry practices and presence of private forests, which has a strong bearing on the management of natural forests. This again called for special interventions in agroforestry and Forest-PLUS designed and implemented an action learning pilot in the cluster villages, which was largely implemented in the same clusters.

Forest-PLUS improved the understanding of the local communities of the drivers of degradation and developed their capacities to explore solutions and strategies to address those drivers. Village-based point persons were identified and trained with the improved knowledge, skills and practices of different approaches required to address the issues of climate change, forest degradation and deforestation, and carbon measurement through capacity building initiatives. The knowledge, skills and practices of different approaches on improved forest management include issues of grazing, NTFP, agroforestry, and energy efficiency measures. Forest-PLUS also focused on convergence with programs of other agencies operational in the landscape, including NGOs and government departments and agencies.

The Hoshangabad landscape program empowered communities, strengthened institutions and addressed the drivers of degradation in the area.

Orienting local community on REDD+

- Orientation programs on climate change organized for community members at cluster level, covering 1,172 persons with 34% women participation
- Communication campaign on climate change and sustainable forest management organized as part of JFMC conventions
- Forest-PLUS participated in local and state-level events to communicate messages on climate change to a large audience
- Development of paraprofessionals in the clusters on sustainable forest management and REDD+

Strengthening institutional capacity

- JFMCs and PRIs involved closely in implementation of demonstration activities
- Institutional mechanisms developed for managing and maintaining NTFP and grazing techniques and tools, and benefit sharing
- Exposure visits organized for JFMCs to successful JFMCs within the state to enable cross-learning
- NTFP Cooperative formed with representatives from the four villages of Morpani cluster to sustainably manage NTFPs

Sustainable management of NTFPs

- Cluster level consultations on NTFPs organized with collectors, traders and JFMCs
- Exposure visit of NTFP collectors organized to Chicholi (Betul) and Chhindwara
- JFMC members trained on sustainable management of NTFPs
- Institutional arrangements developed for value addition and marketing
- Plantation of NTFP species on private land as part of agroforestry pilot
- Demonstration of techniques to sustainably harvest, store and market mahua. 15,000 sq mt of green net and 20 air-tight storage containers supported through the NTFP cooperative

Demonstration of improved grazing management technique

- Demonstration of an improved grazing management technique, a combination of silvopasture model and rotational grazing, initiated with Morpani JFMC
- Two forest patches of 25 ha each closed for grazing for the first year i.e. 2017 - 18 with the approval of SFD. Seeding of native fodder species planned in the second year, patches to be opened for grazing in the third year
- JFMC members developed an institutional mechanism for protecting the patches through social fencing

Demonstration of improved cookstoves to reduce fuelwood usage

- Improved cookstoves demonstrated in 90 households in Morpani cluster
- Around 120 community members trained on making the cookstove using locally available raw material.

Figure 16: Hoshangabad Program Outputs



Outreach event on REDD+ for community members



Training program on climate change for community members



Mahua collection using safety nets



Demonstration of a sustainable technique to harvest NTFPs



Improved cookstove



JFMC members exposure visit

Figure 17: Glimpses from Hoshangabad

The Hoshangabad program enhanced knowledge of community members on climate change and REDD+, improved capacity of community institutions and improved management of NTFPs and grazing.

Figure 18: Hoshangabad - Major Outcomes





5.4 SIKKIM

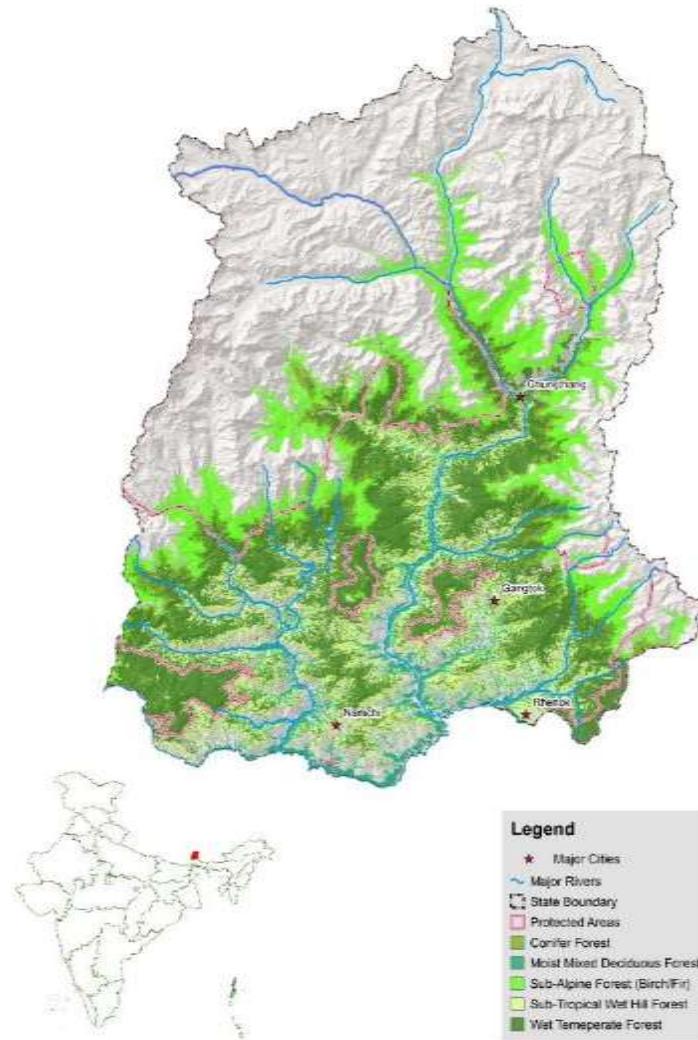


Figure 19: Sikkim Landscape Map

In Sikkim, Forest-PLUS adopted a different approach and strategy as compared to the other landscapes. The first phase of the multifaceted program began in Sikkim similarly to other landscapes. Community members needed to be oriented on climate change and REDD+ and Forest-PLUS, through its consultations with Sikkim Forest Department, community members and other stakeholders identified fuelwood as an issue affecting the forests of Sikkim. Pangolakha range of East Sikkim division was chosen as the target area for the program. The forest of the area was under pressure due to the intensive, localized collection of firewood and fodder from the forests adjoining the human settlements. To check this practice, the Government of Sikkim in 1998 imposed a ban on grazing and green felling from reserved forest areas, plantation areas, and near perennial water sources.

Forest-PLUS implemented the multifaceted program in the following areas of East Sikkim:

- 1) Regu GPU
 - a) Jalkharka, b) Bimbirang, c) Jaker ward, d) Sisney, e) Dokshin villages
- 2) Dalapchand GPU
 - a) Mamkhin, b) Katerbotey, c) Sadhu gaon, d) Mandin gaon, e) Daragaon, f) Sawa ward.
- 3) Rangli Changeylakha GPU
 - a) Upper Rengli, b) Lower Rengli, c) Chunbhatti, d) Deoling, e) Middle Rengli.
- 4) Premlakha- Subaney dara GPU
 - a) Subaneydara, b) Signowbas, c) Maney sisney, d) Agamluk, e) Premlankha
- 5) Chujachen GPU
 - a) Sungdung, b) Posakey, c) Lok lungchuk, d) Markang, e) Rew Lakha

The objectives of the program were:

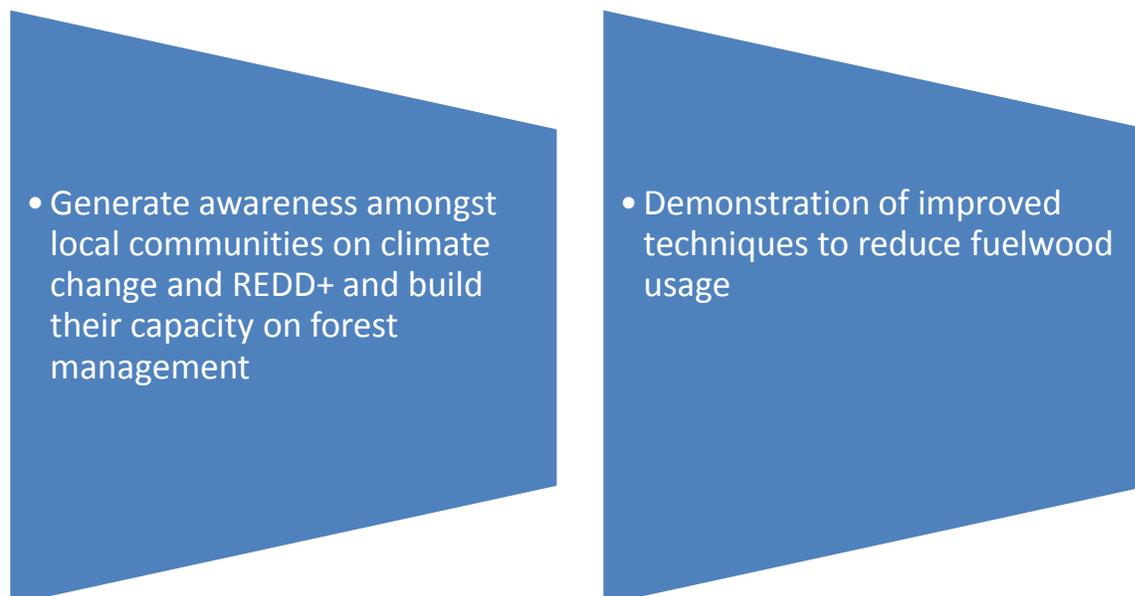


Figure 20: Sikkim Program Objectives

Forest-PLUS focused on raising awareness on REDD+ and climate change amongst the community members in Sikkim through orientation programs, using local events and festivals to reach out to a large audience.

Bio-briquettes were promoted by Forest-PLUS as a safe and healthy alternative to fuelwood and they developed as a major activity in Sikkim. A number of training programs were organized to demonstrate the technique, which also included development of master trainers. The State Forest Department was on board from the beginning, and seeing the potential of the idea NABARD came forward to support the initiative. Another initiative to reduce fuelwood usage was the introduction of improved dryers for large cardamom, a major cash crop of Sikkim.

Orienting local community on climate change and REDD+

- Orientation programs organized across the selected Gram Panchayat Unit at the cluster level covering a total of 1,170 community members including 45% women members
- Forest-PLUS participated in local events to spread mass awareness on climate change and REDD+

Training and demonstration of bio-briquettes

- 34 members from 5 Gram Panchayats developed as master trainers on bio-briquetting
- A series of village level trainings and demonstration programs organized on bio-briquette making covering more than 1900 community members with 60% women participation
- NABARD supported the initiative, 15 training events were organized covering 30 Women Self Help Groups

Demonstration of improved wood combustor for large cardamom

- Since large cardamom, an important cash crop of Sikkim, requires large quantities of fuelwood for its drying Forest-PLUS introduced an improved wood combustor for drying of large cardamom and demonstrated two units in Dalapchand and Changeylakha villages in East Sikkim

Demonstration of beekeeping (apiculture)

- Training program organized for 34 community members from 5 GPUs of East Sikkim. Trainees provided with apiaries for demonstration of beekeeping in their respective villages

Figure 21: Sikkim Program Outputs



Outreach event for students



Climate change training program for women



Bio-briquette making in progress



Bio-briquettes



Improved dryer for large cardamom



Training on apiculture for community members

Figure 22: Glimpses from Sikkim

The major outcomes of the Sikkim program are the enhanced knowledge of the community members on climate change and REDD+, the improved capacity of community institutions, and the reduction of fuelwood pressure on forests.

Figure 23: Sikkim - Major Outcomes





6 CONCLUSION AND KEY LESSONS LEARNED

Forest-PLUS, through its multifaceted programs, empowered forest-dependent communities to manage their forests sustainably. The community members were able to understand the impact of their individual and collective action on climate change and how they, by the virtue of being in the midst or adjacent to forests can contribute positively to mitigating climate change.

Working with communities had its own set of challenges. Forest-PLUS is a technical cooperation project where there were no immediate tangible benefits for the community. Interventions were designed strategically and Forest-PLUS started walking down the path of mobilizing and organizing the community slowly. The regional teams allocated adequate time to orient the communities in the landscapes on climate change and REDD+. The efforts yielded good results, confirmed through the outcome assessments conducted in the landscapes. The community members displayed a perceptible increase in their knowledge and understanding of the issues related to climate change and REDD+.

Phase I of the multifaceted program succeeded in laying a foundation for moving into the second phase where the focus graduated to building technical skills, strengthening institutions and demonstration of Forest-PLUS developed/adapted techniques, tools and methods. All the villages that were selected for the multifaceted program had an existing JFMC or EDC. Forest-PLUS worked closely with these institutions and all demonstration activities were implemented through them.

The dependence of community on the forests is mainly for three things – fuelwood, fodder and non-timber forest products. The tools and techniques developed and adapted by Forest-PLUS in the landscapes addressed the issues tied to these three dependencies. Communities learned and readily accepted techniques to reduce their fuelwood usage in all the landscapes, be it for water heating, cooking or drying forest and agricultural produce. Community members in the landscapes of Shivamogga, Rampur and Hoshangabad recognized the degradation caused by open and unregulated grazing in the forests and actively participated in the demonstration of techniques to improve fodder availability for stall-feeding and experiment with rotational grazing. The community members adopted NTFP management techniques, as NTFPs constitute an important part of a forest dependent household's annual income. Alternative livelihood activities like mushroom cultivation and apiculture were also taken up by community members to compensate for the loss of income from forest. These tools and techniques equipped the community members with the wherewithal to manage their forests sustainably.

The institutional processes and the mechanisms developed and followed in the multifaceted program helped in revitalizing the forest management institutions, the JFMCS and the EDCs in the villages. They collaborated in the process, shouldered responsibilities and led from the front. They started engaging actively with the SFDs and other government departments and that engagement has opened up possibilities of mobilization of resources from different schemes and programs of the government.

With improved technical skills and knowledge, a positive attitude, required institutional mechanisms in place and the likelihood of getting financial resources and technical assistance from government departments, the empowered communities in the landscapes have started their journey towards a greener future.

The key lessons learned from the Forest-PLUS multi-faceted programs are outlined below. The lessons focus on the community empowerment process, collaboration between state forest departments and communities, participation of JFMCs and EDCs in sustainable forest management, the importance of a holistic approach to address the drivers of degradation, the recognition of the changing priorities of the rural communities and the provision of resources and technical assistance to the village institutions to sustainably manage their forests.

Figure 24: Key Lessons

Empowerment is a slow and gradual process where adequate time should be allocated towards building the capacity of the community members, enabling them to understand the causality of the issues and the need for the project interventions

Empowerment of communities should involve entrusting them with financial responsibilities and decision-making

Forest department and community should work hand in hand and collaborate closely where department delegates major responsibilities to the community institutions for managing the forest in their villages' vicinity

Sustainable management of forests requires a holistic intervention in all areas of community interaction with forest. Leaving out any of those areas disrupts the whole process and reduces impact

Existing village institutions should be strengthened instead of creating a multitude of project specific institutions

The socio-economic scenario in rural areas and the human-forest dynamics have evolved over the years. Community dependence on forests is not what it used to be, and so strategically designed interventions can significantly reduce the biotic pressure on forests

Sustainable management of forests requires a regular infusion of resources as well. Village institutions should establish functional linkages with government agencies for leveraging resources from different schemes and programs.

Strengthening of community institutions is not a one-off activity; it is a continuous process of engaging and addressing the changing drivers and institutional dynamics



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