



**PAST AND ONGOING FOREST PROTECTION
AND LANDSCAPE RESTORATION INITIATIVES
IN INDIA**

Draft Report

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ANDAMAN AND NICOBAR ISLANDS

1. Intervention – Mixed plantation

Actors - Government

Area covered - 3197 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Andaman & Nicobar Islands from 2014 to 2017 covering 3197 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention - Agri-horti-forestry

Actors - Public Sector Undertaking, Local Communities

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Nicobar in Andaman and Nicobar Islands in 2015. The primary implementing agency is Ellon Hinengo Limited and the program covers approximately 7500 families. Coconut species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

ANDHRA PRADESH

1. Intervention – Mixed plantation

Actors - Government

Area covered - 567843 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Andhra Pradesh from 2014 to 2017 covering 567843 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention - Agri-horti-forestry

Actors - Local communities, Non-Government Organization, Corporate

Area covered - 6000 ha

Coffee plantations in the Araku valley support around 150 tribal communities. Naandi Foundation, a not-for-profit felt the need for restoring the area because of the low productivity of coffee and the loss of native flora in the region. Since 2001, agroforestry interventions and community participation started through sustained efforts of the Naandi Foundation, with funding from the Mahindra and Mahindra Foundation's Hariyali intervention (since 2010) and Livelihood Fund. The objective was to enhance productivity and improve livelihood opportunities. The primary intervention was agroforestry with fruit tree and coffee planting. The fruit trees served three purposes; 1) they provided shade to the coffee plants, 2) they added nutritional security to the plantations and, 3) they enhanced income. The intensive intervention improved local livelihoods and revived the coffee yield. Almost a decade later, Araku coffee has reached the international market. The local tribal communities have shifted from subsistence farming to profitable export-oriented agriculture. The key factors driving the success of this intervention include the community's participation throughout the entire process, from design to implementation, along with the tangible economic and livelihood benefits provided.

3. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organization, Local Communities

Area covered - 60 ha

Since 1992, around 60 ha of village commons in Mushtikovila village in the Anantpur district of Andhra Pradesh has been restored through assisted natural regeneration. The objective of this intervention was to restore the wastelands of the village. Gradually more villages joined in for restoration of the forests called the Kalpavalli. Forest Protection Committee, Kalpavalli Adavi Samakya, the not-for-profit Timbaktu Collective and local communities have played a major role in this intervention. In addition, socially disadvantaged members were also equally involved. The benefits derived by the local communities include new revenue from the sale of grasses. A business model has been built around the sale of date-palm fronds to basket- and mat-makers and as fees from the toddy tappers. The poorest section of the community is also benefitting from the sale of dates in the local market during the summer.

4. Intervention - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 250 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Nambulapulaka Kunta and Gandlapenta Mandal in Anantpur, district of Andhra Pradesh since 2015. The primary implementing agency is Foundation for Ecological Security (FES) and the program covers 250 ha. Mango and Amla tree species were used along with crops for livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel-wood, fodder and non-timber forest produce (NTFP).

5. Intervention - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Bukkapatnam Mandal in Anantpur, district of Andhra Pradesh since 2015. The primary implementing agency is International animal and Bird Welfare Society and the program covers 200 ha. Fruit tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

6. Intervention -Plantation

Actors - Forest Department

Area Covered - 534 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve the quality of forest cover on 5 million ha of forest/non-forest land, enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was initiated in Andhra Pradesh from 2015 to 2017 covering 534 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation. In the new role, MGNREGA funds are utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

7. Intervention - Mixed Plantation

Actors - Forest Department, Non-Government Organizations, Local Communities

Area covered - 520 ha

Around 520 ha of mangroves in Godavari and Krishna were restored through a mixed species plantation during 1997 and 2004. This plantation was undertaken with an objective to obtain a greater commitment for joint management of mangroves by the forest department with the local communities; to enhance the capacity of the local communities to manage mangrove resources; and to reduce the pressure on the mangroves by demonstrating viable economic alternatives for the local communities. India-Canada Environment Facility (ICEF), NGOs like: Sravanthi, Action in Godavari area, Sangamithra Service Society and Coastal Community Development Program in Krishna, village-level institutions and local communities were the major actors involved in the process. Women and tribal communities were equally involved in the process. The benefits received by local community include increased population of edible crabs, access to fodder, and improved livelihood opportunities.

8. Intervention - Mixed Plantation

Actors - Forest Department, Non-Government Organizations, Local Communities

Area covered - 520 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 60106 ha of Government land (JFMC land, panchayat and revenue wasteland) in Karnataka. Varied native species including *Pongamia pinnata*, *Thespesia populnea*, *Butea monosperma*, *Azadirachta indica*, *Hardwickia binata*, *Holoptelea integrifolia*, *Syzygium cumini*, and *Limonia acidissima* were planted.

9. Intervention - Mixed Plantation

Actor - Government

Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Andhra Pradesh, 50 hectares (ha) have been brought under CAMPA plantation since 2010.

10. Intervention - Mixed Plantation

Actor - Government

Area covered – 25 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement

of wildlife habitat. In Andhra Pradesh, 25 hectares (ha) have been brought under CAMPA plantation since 2009.

11. Intervention - Mixed Plantation

Actor - Government

Area covered – 3295 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDAs). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Andhra Pradesh from 2012 to 2017 onwards, covering 3295 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

12. Intervention – Mixed Plantation

Actor - Private

Area covered – 76163 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 76163 ha of degraded wasteland in Andhra Pradesh. Fast growing species *Eucalyptus*, *Casuarina* and subabul was planted.

13. Intervention - Mixed Plantation

Actor - Private

Area covered – 33635 ha

Since 2014, International Paper APPM Ltd undertook plantation for pulp in around 33635 ha of private land in Andhra Pradesh. The plantations included several fast-growing species *Casuarina equisetifolia*, *Eucalyptus* spp. and *Leucaena leucocephala*.

ARUNACHAL PRADESH

1. Intervention – Mixed plantation

Actors – Government

Area covered - 50 ha

Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Arunachal Pradesh from 2014 to 2017 covering 50 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 250 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Lower Dibang Valley in Arunachal Pradesh in 2015. The primary implementing agency is Essomi Foundation Trust and the program covers 250 ha. Orange and Pineapple fruit species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

3. Intervention - Plantation

Actors - Forest Department, Non-Government Organizations, Local Communities

Area covered – 100 ha

The Arunachal Pradesh State Forest Department initiated a monoculture plantation at Lower Subanshiri district of Arunachal Pradesh in 2014. During the year, 100 ha of land was planted using Bamboo species. This intervention aimed at diversifying income generation of local communities using Bamboo. Local communities and the Forest Department are the major actors involved in the intervention. Local communities are the primary beneficiary of the intervention.

4. Intervention - Plantation

Actors - Forest Department, Non-Government Organizations

Area covered – 4 ha

Nature Conservation Foundation and Arunachal Pradesh Forest Department joined hands to restore approximately 4 ha of land in the Pakke Tiger Reserve, and Papum reserve forest. The intervention that began in 2016 has so far planted 32 different species including *Polyalthia simiarum*, *Dysoxylum gotadhora*, *Chishocheton cumingianus*, *Chukrasia tabularis*, *Pterygota alata*, *Aglaia spectabilis*, *Artocarpus chaplasha*, *Prunus ceylanica*, *Bauhinia variegata*, and *Beilschmiedia assamica*.

5. Intervention - Plantation

Actors - Forest Department, Non-Government Organization

Area covered – 1 ha

Nature Conservation Foundation and Arunachal Pradesh Forest Department joined hands to restore around 1 ha of land in the Papum Reserve Forest, Arunachal Pradesh. The intervention began in 2016 and varied species including *Polyalthia simiarum*, *Dysoxylum gotadhora*, *Chishocheton cumingianus*, *Beilschmiedia assamica* and *Pterygota elata* have been planted.

6. Intervention - Plantation

Actors - Forest Department, Non-Government Organization

Area covered – 1 ha

Nature Conservation Foundation and Arunachal Pradesh Forest Department joined hands to restore approximately 1 ha of land in the Doimara Reserved Forest. The intervention that began in 2017 has so far planted 27 different species including *Polyalthia simiarum*, *Chukrasia tabularis*, *Pterygota alata*, *Aglaia spectabilis*, *Artocarpus chaplasha*, *Prunus ceylanica*, *Bauhinia variegata* and *Beilschmiedia assamica*.

7. Intervention - Plantation

Actors - Government

Area covered – 1013 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Arunachal Pradesh from 2012 to 2017 onwards, covering 1013 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

ASSAM

1. Intervention - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 160 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Rongjuli in Goalpara district of Assam in 2015. The primary implementing agency is Bosco Reach Out and the program covers 160 ha. Rubber species was used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP).

2. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organizations, Local Communities

Area covered - 670 ha

Since 2003, assisted natural regeneration of 670 ha of village commons has been implemented at Khawrakrai village in the Karbi-Anglang district of Assam. This intervention was implemented under the North Eastern Region Community Resource Management Project, with financial support from International Fund for Agricultural Development. The objective was to protect the water source of the village. The Natural Resource Management Group and the Village Council are the major actors involved in the intervention. Local women were equally involved. The benefits received by the local communities, who are the primary beneficiaries, include better water availability and improved forest cover.

3. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organizations, Local Communities

Area covered - 600 ha

Since 2001 assisted natural regeneration of 600 ha of village commons land at New Kubing village in North Cachar Hills district of Assam has been carried out by North Eastern Region Community Resource Management Project with financial support from International Fund for Agricultural Development. The objective was to protect water catchment areas near the village. The Natural Resource Management Group and the Village Council were the major actors involved in the intervention. Local women were equally involved in the intervention. The resulting benefits for the local communities, who are primary beneficiary of this intervention, include better water availability for kitchen gardens, improved terrace development and irrigation, access to potable water, availability of wild vegetables, fire wood and non-timber forest products, increased wildlife population in the forest. More investment under Joint Forest Management will sustain this intervention.

4. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organizations, Local Communities

Area covered - 50 ha

Since 1993 assisted natural regeneration of 50 ha of village commons land has been carried out at Shankarghola village in the Bongaigaon district of Assam. The objective was to protect the village forest from rampant felling. Shankarghola Ban Sanrakhan Samiti, Tinikonia Pahar Sanrakhan Samiti, Anchalic Samiti, the local community and the Forest Department were the major actors involved in the intervention. Women and tribal community were equally involved in the intervention. The benefits received by the local communities, who are the primary beneficiaries of this intervention, include the revival of hill forest, the year-round presence of water in the nearby stream, enhanced soil fertility, and the improved availability of firewood.

5. Intervention - Mixed Plantation

Actors - Local Communities

Area covered - 566 ha

In Jorhat district of Assam, an initiative of restoring parts of an island over River Brahmaputra was started single-handedly by Mr Jadav Payeng in the year 1978. Around 566 ha of village commons have been restored by planting and nurturing a mix of native tree species, with an objective to provide a green haven for the birds and wildlife. The key benefits from this intervention were an improved biodiversity in the forest, control in soil erosion and improved ecosystem.

6. Intervention – Mixed plantation

Actors - Government

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Assam from 2014 to 2017. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

7. Intervention - Mixed Plantation

Actors - Community-Based Organization, Non-Government Organization

Area covered - 9 ha

The non-government organizations, Balipara Foundation and Aaranyak initiated a mixed plantation intervention in Assam. The intervention began in 2005 and around 9 ha area was planted with native species like *Phoebe goalparensis*, *Mesua assamica*, *Garcinia pedunculata*, *Acorus calamus* among others. The JFMCs also played an active role in the process.

8. Intervention - Mixed Plantation

Actors - Community-Based Organization, Non-Government Organization

Area covered - 500 ha

The organizations, Balipara Foundation and Aaranyak implemented a mixed plantation intervention in Assam. The six-year long interventions began in 2016 and around 500ha area was covered with varied native species including *Magnolia champaca*, *Nyssa javanica*, *Phoebe goalparensis*, *Hydnocarpus kurzii*, *Shorea assamica* and *Altingia excelsa*. The local JFMCs also played an active role in the process.

9. Intervention - Plantation

Actors - Government

Area covered - 3675 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Assam from 2012 to 2017 onwards, covering 3675 ha. The benefits from this intervention include increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

BIHAR

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Chakai in Jamui district of Bihar in 2015. The primary implementing agency is Professional Assistance for Development Action and the program covers 400 ha. Mango and Guava tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP).

2. **Intervention** – Mixed plantation

Actors -Government

Area covered - 160171 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Bihar from 2014 to 2017 covering 160171 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. **Intervention** - Mixed Plantation

Actors - Non-Government Organizations, Community-based organizations, Local Communities

Plant Eco circle initiated a mixed plantation and awareness drive at Gaya district of Bihar in 2016. The objective was to educate the local community about environment, create livelihood opportunities in tree plantation, ensure planting and subsequent survival of tree species, and build opportunities of eco-tourism in the area. Plant eco circle, the NGO Jeevika, local communities and community-based organizations in the area are the major actors involved in the intervention. Entrepreneurial and livelihood opportunities for local communities have been linked with plantation with the help of NGO Jeevika.

4. **Intervention**- Mixed Plantation

Actors -Government

Area covered - 160171 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Bihar from 2012 to 2017 onwards, covering 15206 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

CHANDIGARH

1. **Intervention** – Mixed plantation

Actors - Government

Area covered - 424 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Chandigarh from 2014 to 2017 covering 424 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

CHHATTISGARH

1. **Intervention** – Mixed plantation

Actors - Government

Area covered - 232829 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Chhattisgarh from 2014 to 2017 covering 232829 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. **Intervention** -Plantation

Actors - Forest Department

Area Covered - 38526 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was initiated in Chhattisgarh between 2014-16 covering 38526 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

3. **Intervention** - Mixed Plantation

Actors - Local Communities

Area covered - 260 ha

In 1994, restoration and watershed conservation efforts were initiated at Chamanpur and Sarguja in Bilaspur district of Chhattisgarh. Mixed plantation over 235 ha of agricultural land and 25 ha forest land was carried out and the activities converged with the Rajiv Gandhi Watershed Mission. The objective was to increase water availability in the region and enhance agricultural and forest productivity. Villagers, including from the Kodaku, Korba and Gond tribes were champions who led the intervention. Local communities were the prime beneficiaries of the increased agricultural productivity, the opportunity to employ High Yielding Variety (HYV) of crops, and the increase to their income from improved water availability.

- 4. Intervention - Mixed Plantation**
Actors - Public Sector Undertaking
Area covered - 647 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Dipka in the Korba district of Chhattisgarh. It undertook reclamation of a section of the Dipka opencast mine. The reclamation project is spread across 647 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

- 5. Intervention - Mixed Plantation**
Actors - Public Sector Undertaking
Area covered - 1516 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Gevra in the Korba district of Chhattisgarh. It undertook reclamation of a section of the Gevra opencast mine. The reclamation project is spread across 1516 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

- 6. Intervention - Mixed Plantation**
Actors - Public Sector Undertaking
Area covered - 697 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Kusmunda in the Korba district of Chhattisgarh. It undertook reclamation of a section of the Kusmunda opencast mine. The reclamation project is spread across 697 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

- 7. Intervention - Mixed Plantation**
Actors - Public Sector Undertaking
Area covered - 480 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Manikpur in Bilaspur district of Chhattisgarh. It undertook reclamation of a section of the Manikpur opencast mine. The reclamation project is spread across 480 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

8. Intervention - Mixed Plantation
Actors - Public Sector Undertaking
Area covered - 322 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Surguja in the Korba district of Chhattisgarh. It took up reclamation of a section of the Dugga opencast mine. The reclamation project is spread across 322 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region

9. Intervention - Mixed Plantation
Actors - Public Sector Undertaking
Area covered - 1120 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Bishrampur in the Surguja district of Chhattisgarh. It undertook reclamation of a section of the Bishrampur opencast mine. The reclamation project is spread across 1120 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

10. Intervention - Mixed Plantation
Actors - Public Sector Undertaking
Area covered - 338 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Chirimiri in the Kotiya district of Chhattisgarh. It undertook reclamation of a section of the Chirimiri opencast mine. The reclamation project is spread across 338 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

11. Intervention - Mixed Plantation
Actors - Public Sector Undertaking
Area covered - 599 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Rajnagar in the Bastar district of Chhattisgarh. It undertook reclamation of a section of the Rajnagar Opencast mine. The reclamation project is spread across 599 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

12. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 647 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Dhanpuri in the Surguja district of Chhattisgarh. It undertook reclamation of a section of the Dhanpuri opencast mine. The reclamation project is spread across 647 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

13. Intervention - Mixed Plantation

Actors -Public Sector Undertaking

Area covered - 633 ha

South Eastern Coalfields Limited (SECL) operates coal mines at Jamuna in the Raigarh district of Chhattisgarh. It undertook reclamation of a section of the Jamuna opencast mine. The reclamation project is spread across 633 ha. The public sector undertaking, Coal India Limited, also the parent company of SECL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

14. Intervention - Mixed Plantation

Actor - Government

Area covered – 20 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Chhattisgarh, 20 hectares (ha) have been brought under CAMPA plantation since 2010.

15. Intervention - Mixed Plantation

Actor - Government

Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Chhattisgarh, 50 hectares (ha) have been brought under CAMPA plantation since 2010.

16. Intervention - Mixed Plantation

Actor - Government

Area covered – 25050 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Chhattisgarh from 2012 to 2017 onwards, covering 25050 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

DADRA AND NAGAR HAVELI

1. **Intervention** – Mixed plantation

Actors - Government

Area covered - 435 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Dadra and Nagar Haveli from 2014 to 2017 covering 435 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

DAMAN AND DIU

1. **Intervention** – Mixed plantation

Actors - Government

Area covered – 125 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Daman and Diu from 2014 to 2017 covering 125 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

GOA

1. **Intervention** – Mixed plantation

Actors - Government

Area covered - 382 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Goa from 2014 to 2017 covering 382 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

GUJARAT

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Chikhli in Navsari district of Gujarat in 2015. The primary implementing agency is Cohesion Foundation and the program covers 200 ha. Mango and sapota species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP).

2. **Intervention** - Mixed Plantation

Actors - Forest Department, Community-Based Organization, Local Communities

Area covered - 105 ha

Since 1988, a mixed plantation over 105 ha of forest area has been implemented at Gamtalao village in the Surat district of Gujarat. The objective of this plantation drive was rehabilitation of degraded forest land. The major actors involved include local communities, Van Samrakshan Samiti and forest department. With this plantation, villagers could access fodder within their own village, minimizing travel time. The Chowdhury tribe in the village are the primary beneficiary of this intervention.

3. **Intervention** - Assisted Natural Regeneration

Actors - Non-Government Organization, Local Communities

Area covered - 122 ha

Since 1986, assisted natural regeneration has been practiced at Sabarkantha, Gujarat in over 122 ha of land with the objective of restoring local forests. Jhanjharmata Vruksh Utpadan Sahkari Mandli Ltd implemented the intervention along with an NGO, Viksat, and the Dungri Garasia community. Equity in resource sharing was important to the villagers. Women felt constrained accessing fuel wood and grass for their daily needs. Therefore, the co-operative society took measures to address this concern. It also ensured women and poor families had a part in decision making processes and benefit sharing in the future as well. The intervention converged with objectives of the Joint Forest Management program. The benefits of natural regeneration were increased fuel wood and fodder supply, increased income from the collection and sale of NTFP, reduced soil erosion, increase in ground water recharge, increase in humus and soil fertility and standing biomass. The primary beneficiaries were the local communities.

4. Intervention - Mixed Plantation

Actors - Non- Government Organization, Local Communities

Area covered - 8345 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 8345 ha of Government land (*panchayat* and revenue wasteland). Varied native species including *Acacia nilotica*, *Azadirachta indica*, *Annona squamosa*, *Pithecellobium dulce*, *Pongamia pinnata*, *Limonia acidissima*, *Ailanthus excelsa*, *Dendrocalamus strictus*, *Terminalia bellirica*, *Holoptelea integrifolia*, *Tectona grandis*, *Madhuca longifolia*, and *Cassia fistula* were planted. Local communities also played an active role.

5. Intervention - Mixed Plantation

Actors - Forest Department, Other Line Departments, Local Communities

Area covered - 215 ha

A mixed plantation over 215 ha of land was carried out at Banni grassland of Bhirandiyara and Dhordo villages in Kutch district of Gujarat. The 13-year intervention began in 1995 with the objective to return degraded areas to former levels of productivity, improve ecological integrity, and strengthen the local pastoral economy. Gujarat Institute of Desert Ecology, Vivekananda Research and Training Institute, Environment Department of the Government of Gujarat, Gujarat State Forest Department, Gujarat Ecology Commission, and local communities played an active role in the intervention. The benefits received by the local communities include increased grass cover, higher productivity in the restored site, economic vitality, improved opportunities for local livelihood, and decreased infestation of *Prosopis* sp.

6. Intervention - Assisted Natural Regeneration

Actors - Non-Government Organization, Local Communities

Area covered - 125 ha

Since 1983, 125 ha of reserved forest area has been conserved in the Kawant, Naswadi, Pavijetpur and Chhota Udaipur regions of Gujarat's Vadodara district. This intervention was spread across 93 villages with predominantly tribal populations. The driving force behind this intervention was increased pressure on the local community's forest resources, such as fuel wood and fodder. Although the Forest Department started a plantation drive in the region in the 1970's, trees were regularly felled to create revenue for the department. Observant of this, the villagers took matters into their own hands. They understood plantations alone wouldn't solve their problem, so they charted out rules for resource use and limited grazing in the forest. Upon the initiation of the Joint Forest Management program in 1992, attempts were made to institutionalize conservation efforts within the program but they failed because of faulty implementation. A social worker, Mr. Parikh, who was instrumental in getting other villagers on board, and an NGO Arch Vahini worked on improving the livelihoods of the local community. Increased sightings of wildlife, availability of cattle fodder, minor forest products, and fuel wood are the benefits enjoyed by the local communities as a result of their conservation efforts.

7. Intervention – Mixed plantation

Actors - Government

Area covered - 518261 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Gujarat from 2014 to 2017 covering 518261 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

8. Intervention: Mangrove plantation

Actors - Non- Government Organization

Area covered - 1 ha

During 2014-2016, Gujarat Ecology Society with support from the initiative, 'Mangroves for the Future' restored around 1 ha of Government land in the Jambusar intertidal area, Bharuch, Gujarat. The mangrove species *Avicennia marina* was planted.

9. Intervention – Mixed plantation

Actors - Non- Government Organization

Area covered - 3 ha

Since 2015, Gujarat Ecology Society is working towards restoration of spoilt mine dumps of the Panandhro Lignite mines, Gujarat. Almost 3 ha of land was planted with varied species including *Azadirachta indica* (Neem), *Holoptelea integrifolia* (Karanj).

10. Intervention - Mixed Plantation

Actors - Government

Area covered - 20569 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Gujarat from 2012 to 2017 onwards, covering 20569 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

11. Intervention- Mixed Plantation

Actors - NGO

Area covered - 15 ha

Sahjeevan, a not-for-profit organisation initiated a mixed plantation effort in a 15 ha Protected Forest in Moti Dadhar Banni *Panchayat*, Bhuj, Kutch, Gujarat. The plantation which took place

during 2017 included various native species like *Prosopis juliflora*, *Cressa cretica*, *Aeluropus lagopoides* and *Suaeda nudiflora*.

12. Intervention- Mixed Plantation

Actors - NGO

Area covered - 15 ha

Sahjeevan, a not-for-profit organisation initiated a mixed plantation effort in a 15 ha Protected Forest in Hajipir Banni *Panchayat*, Bhuj, Kutch, Gujarat. The plantation which took place during 2017 included various native species like *Prosopis juliflora*, *Salvadora persica*, *Capparis decidua*, *Cressa cretica*, *Tamarix aphylla* and *Aeluropus lagopoides*.

13. Intervention- Mixed Plantation

Actors - NGO

Area covered - 10 ha

Sahjeevan, a not-for-profit organisation initiated a mixed plantation effort in a 10 ha *Panchayat* land (grazing land) in Nani Virani, Kutch, Gujarat. The plantation which took place during 2016-2017 included various native tree and grass species like *Acacia nilotica*, *Acacia senegal*, *Acacia leucophloea*, *Prosopis cineraria*, *Salvadora oleoides*, *Salvadora persica*, *Zizyphus mauritiana*, *Balanites aegyptiaca*, *Euphorbia caducifolia*, and *Premna resinosa*.

14. Intervention- Mixed Plantation

Actors - NGO

Area covered - 3 ha

Sahjeevan, a not-for-profit organisation initiated a mixed plantation effort in a 3 ha *Panchayat* land (grazing land) in Dhareshi, Kutch, Gujarat. The plantation which took place during 2016-2017 included various native tree and grass species like *Acacia nilotica*, *Acacia senegal*, *Acacia leucophloea*, *Prosopis cineraria*, *Salvadora oleoides*, *Salvadora persica*, *Zizyphus mauritiana*, *Balanites aegyptiaca*, *Euphorbia caducifolia* and *Premna resinosa*.

HARYANA

1. Intervention – Mixed plantation

Actors - Government

Area covered - 79952 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Haryana from 2014 to 2017 covering 79952 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention- Mixed Plantation

Actors - Government

Area covered - 79952 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Haryana from 2012 to 2017 onwards, covering 9404 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

3. Intervention- Plantation

Actors - Private

Area covered - 1080 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 1080ha of degraded farmland in Haryana. Fast growing timber species Eucalyptus and Poplar was planted.

HIMACHAL PRADESH

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 40 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Jhandutta in Bilaspur district of Himachal Pradesh in 2015. The primary implementing agency is Manav Vikas Sansthan and the program covers 40 ha. Mango and lime species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP).

2. **Intervention** - Assisted Natural Regeneration

Actors - Local Communities

Area covered - 5 ha

Community-led assisted natural regeneration was taken up in 5 ha of forest area in Kamla village in the Chamba district of Himachal Pradesh. Community-led natural regeneration began in 1983. In 1999, the Joint Forest Management (JFM) program was launched in the village. Initially, villagers were part of the intervention but they opted out once they realized they were not part of the micro plan designed by the Forest Department. This micro plan went against the wishes of the villagers. Himalaya Bachao Samiti, Gram Utthan Sabha and local tribal communities were the major actors involved in the intervention after opting out of JFM. The resulting benefits for local communities were increase in tree and shrub diversity, increase in bird population, provisioning of fodder and prevention of soil erosion.

3. **Intervention** - Assisted Natural Regeneration

Actors - International Organization, Forest Department, Local Communities

Himachal Pradesh Forest Department initiated assisted natural regeneration of forest area in Shimla, Himachal Pradesh from 2015 to 2017. With funding support from USAID; Himachal Pradesh Forest Department and Forest-PLUS carried out this intervention. The objective was restoring oak habitat using direct seeding technique. USAID, Himachal Pradesh Forest Department, Joint Forest Management Committees, and local community were the major actors involved in the intervention. Women and tribal communities were equally involved in the intervention.

4. Intervention - Assisted Natural Regeneration

Actors - Local Communities

Area covered - 10 ha

Since 1991, assisted natural regeneration in 10 ha of forest area has been carried out by residents of Rajain village in the Chamba district of Himachal Pradesh. The objective of this intervention was to restore fodder availability for livestock. The villagers formed the Himalaya Bachao Samiti and the Van Sudhar Sabha to lead the intervention. Although women were part of the decision-making body, called the Gram Sabha, they were not allowed to be part of executive committee of the Van Sudhar Sabha. Despite efforts by the community, the relationship between the community and Forest Department was largely hostile. The villagers wanted recognition of their village as a 'Village Forest' under the Indian Forest Act, 1927. But the lack of legal support under the forest law prevented the village from getting that status. This intervention resulted in increased fodder production, reduction in soil erosion, increase in vegetation cover, and increased bird diversity.

5. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 40 ha

Since 1960, the local community of Chitkul village in Kinnaur district of Himachal Pradesh protected 40 ha of forests from illegal logging. The traditional Village Council and the local community led this intervention. Socially disadvantaged members of the community were equally involved in the intervention. Key benefits that emerged from this intervention include improved availability of fuel wood, local empowerment, and greater equity within the village. The village also generates revenue from the sale of the forest products, which has been used for village development. The area was declared a wildlife sanctuary in 1991. However, after this designation some community rights, like timber allotment for house construction, were denied. Access to fuel wood, fodder, grazing, timber, medicinal plants and biomass, however, has continued.

6. Intervention - Assisted Natural Regeneration

Actors - Local Communities, Community-Based Organization

Area covered - 35 ha

Since 1993, community conservation of forest and existing resources has been an ongoing intervention over 35 ha of land at Thalli village in the Mandi district of Himachal Pradesh. The objective of the intervention was protection of existing resources and forest for improved fodder availability for local communities. Mahila Mandal, a women's organisation, Gram Sabha and the local community spearheaded the intervention. Mahila Mandal ensured no grazing occurred in the forest area. Efforts were made for convergence with the Joint Forest Management (JFM) intervention, but it failed when the villagers disputed the make-up of the JFM committee. This committee and the JFM then became a non-participatory process. Protection of the forest has ensured that fodder scarcity doesn't occur for the local communities, making them primary beneficiary of the intervention.

7. Intervention - Assisted Natural Regeneration

Actors - Local Communities, Community-Based Organization

Area covered - 200 ha

Since 1995, assisted natural regeneration has restored 200 ha of forest area near Shanag village in the Kullu district of Himachal Pradesh. The objective was to restore degraded forests and protect it from illegal felling. The Village Committee and the Village Panchayat were the major actors involved in the project. However, socially disadvantaged members of the community were not involved in this intervention. The benefits received by the local communities, which are the primary beneficiary, include increased access to forest resources.

- 8. Intervention - Assisted Natural Regeneration**
Actors - Local Communities, Community-Based Organization
Area covered - 70 ha

Since 1992, assisted natural regeneration of 70 ha of forest area has been carried out at Nanj village in the Mandi district of Himachal Pradesh. The objective was to increase the availability of fodder and improve soil fertility in the forest. Mahila Mandal Dal and local communities were the major actors involved in the intervention. However, socially disadvantaged members were not involved in this intervention. The benefit received by the local communities is the increased availability of fodder.

- 9. Intervention - Mixed Plantation**
Actor - Government

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Himachal Pradesh, 01 hectare (ha) have been brought under CAMPA plantation since 2014.

- 10. Intervention - Plantation**
Actor - Government
Area covered - 2 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Himachal Pradesh, 02 hectare (ha) have been brought under CAMPA plantation since 2013.

- 11. Intervention - Plantation**
Actor - Government
Area covered - 1900 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Himachal Pradesh from 2012 to 2017 onwards, covering 1900 ha. The benefits from this intervention will be increased forest cover,

enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

12. Intervention - Plantation

Actors - Private

Area covered - 3 ha

During 2011-2016, the cement manufacturing industry ACC limited took up a plantation in around 2 ha private land in Himachal Pradesh with an objective to restore the top soil after the mining operations. The company also involved in harvesting of water in the mining pits.

JAMMU AND KASHMIR

- 1. Intervention** - Assisted Natural Regeneration
Actors - Local Communities, Community-Based Organization
Area covered - 40 ha

Starting in 1990, assisted natural regeneration was practiced for a decade over 40 ha of forest area at Baramulla, Jammu and Kashmir. The objective of the intervention was to protect the forest area that was also the catchment of a stream that was increasingly prone to flash floods, resulting in crop loss. Women, tribal communities and youth played a crucial role in the intervention. The local communities benefitted from this intervention as the forest regenerated quickly because of strict protection for ten years. This helped the catchment area retain excess water and control flash floods.

- 2. Intervention** – Mixed plantation
Actors - Government
Area covered - 23833 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Jammu & Kashmir from 2014 to 2017 covering 23833 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

- 3. Intervention**- Plantation
Actors - Government
Area covered - 6064 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Jammu and Kashmir from 2012 to 2017 onwards, covering 6064 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

JHARKHAND

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Chainpur in Gumla district of Jharkhand in 2015. The primary implementing agency is Gramin Vikas Trust and the program covers 400 ha. Mango and guava species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP).

2. **Intervention** – Mixed plantation

Actors - Government

Area covered - 30025 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Jharkhand from 2014 to 2017 covering 30025 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 226 ha

Central Coalfields Limited (CCL) operates coal mines at Ashok in the Chatra district of Jharkhand. It undertook reclamation of a section of the Ashok opencast mine. The reclamation project is spread across 226 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

4. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 602 ha

Central Coalfields Limited operates coal mines at Piparwar in the Chatra district of Jharkhand. It undertook reclamation of a section of the Piparwar opencast mine. The reclamation project is spread across 602 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

5. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 273 ha

Central Coalfields Limited (CCL) operates coal mines at KD Hesalong in the Ranchi district of Jharkhand. It undertook reclamation of a section of the KD Hesalong opencast mine. The reclamation project is spread across 273 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

6. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 151 ha

Central Coalfields Limited (CCL) operates coal mines at Parej East in the Ramgarh district of Jharkhand. It undertook reclamation of a section of the Parej East opencast mine. The reclamation project is spread across 151 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

7. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 918 ha

Central Coalfields Limited (CCL) operates coal mines at Rajrappa in the Ramgarh district of Jharkhand. It undertook reclamation of a section of the Rajrappa opencast mine. The reclamation project is spread across 918 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

8. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 397 ha

Bharat Coking Coal Limited (BCCL) operates coal mines at Block-II in the Dhanbad district of Jharkhand. It undertook reclamation of a section of the Block II opencast mine. The reclamation project is spread across 397 ha. The public sector undertaking, Coal India Limited, also the parent company of BCCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

9. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 226 ha

Bharat Coking Coal Limited (BCCL) operates coal mines at Muraidih in the Dhanbad district of Jharkhand. It undertook reclamation of a section of the Muraidih opencast mine. The reclamation project is spread across 226 ha. The public sector undertaking, Coal India Limited, also the parent company of BCCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

10. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 226 ha

Eastern Coalfields Limited (ECL) operates coal mines at Rajmahal in the Godda district of Jharkhand. It undertook reclamation of a section of the Rajmahal opencast mine. The reclamation project is spread across 549 ha. The funding support for this intervention is from the Public sector

undertaking Coal India Limited which is the parent company of ECL. The objective of this reclamation intervention is to restore mined area back to original landscape and to protect the environment and conserve biodiversity in doing so.

11. Intervention – Mixed Plantation

Actor - Government

Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Jharkhand, 50 hectares (ha) have been brought under CAMPA plantation since 2014.

12. Intervention – Plantation

Actor - Government

Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Jharkhand, 50 hectares (ha) have been brought under CAMPA plantation since 2010.

13. Intervention – Plantation

Actor - Government

Area covered – 4900 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Jharkhand from 2012 to 2017 onwards, covering 4900 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

14. Intervention – Plantation

Actor – Private, Local Communities

Area covered – 100 ha

With the support from Tata Steel Rural Development Society, Village *Samitis*, Self-help groups and local community, Tata Steel Limited has been involved in restoration of approximately 100 ha of mining land in Jharkhand. Major species planted included *Arjun*, *Shisum*, *Neem*, *Acacia* and *Chakundi*.

15. Intervention – Plantation

Actor - Private

Area covered – 50 ha

With the support from Tata Steel Rural Development Society, Village *Samitis*, Self-help groups and local community, Tata Steel Limited has been involved in restoration of approximately 50 ha of mining land in Jharkhand. Major species planted included *Sisam*, *Karanj*, *Kadamb*, *Gamahar*, *Lagastromia*, *Alostromia*, *Ficus*, *Arjun* and *Gulmohar*.

KARNATAKA

1. **Intervention** – Mixed plantation

Actors - Government

Area covered - 1833350 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Karnataka from 2014 to 2017 covering 1833350 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. **Intervention** - Assisted Natural Regeneration

Actors - Local Communities

Area covered - 10 ha

Since 1988, assisted natural regeneration has been carried out in 10 ha of forest area at Dodabail in the Uttara Kannada district of Karnataka. The intervention began in the form of a protest against the plantation of Australian Acacia by the Forest Department. Later, the process continued with the objective of protecting the local forest to ensure fodder availability. The intervention arose out of community involvement. The local communities, who are the primary beneficiaries, now have access to sufficient fodder and dried leaves to meet their needs.

3. **Intervention** -Plantation

Actors - Forest Department

Area Covered - 1520 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. In Karnataka, intervention under the GIM was initiated from 2015 to 2017 covering 1520 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

4. Intervention - Mixed Plantation

Actors - Local Communities, Private Sector Organization

A mixed plantation drive using native species was initiated by Black Baza Coffee at B R Hills of Chamarajanagara district in Karnataka. The objective was to enable coffee producers to grow coffee without disturbing the forest environment much and as a result protect biodiversity on their coffee farms. Coffee growers, and Black Baza Coffee were the major actors involved in the intervention. This intervention saw equal participation from women and local tribal population. A value chain has been built to facilitate income generation. This intervention proves cultivation of coffee for economic benefit and local biodiversity can go hand in hand.

5. Intervention - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 241 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Sringeri in Karnataka in 2015. The primary implementing agency is Vikasana and the program covers 241 ha. Coffee, clove, and cardamom were used with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

6. Intervention - Mixed Plantation

Actors - Local Communities, Non-Government Organization

Area covered - 400 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 17158 ha of Government land (JFMC land, *panchayat* and revenue wasteland) in Karnataka. Varied native species including *Pongamia pinnata*, *Syzygium cumini*, *Wrightia tinctoria*, *Azadirachta indica*, *Dendrocalamus strictus*, *Hardwickia binata*, *Terminalia arjuna*, *Thespesia populnea*. and *Butea monosperma* were planted. Local communities also played an active role.

7. Intervention - Plantation

Actor - Government

Area covered – 25 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Karnataka, 25 hectares (ha) have been brought under CAMPA plantation since 2012.

8. Intervention - Mixed Plantation

Actor - Government

Area covered – 36 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Karnataka, 36 hectares (ha) have been brought under CAMPA plantation since 2010.

9. Intervention - Plantation

Actor - Government

Area covered – 18080 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Karnataka from 2012 to 2017 onwards, covering 18080 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

10. Intervention - Plantation

Actor - Private

Area covered – 122 ha

During 2011-2016, the cement manufacturing industry ACC limited took up a plantation in around 122 ha private land in Karnataka with an objective to restore the top soil after the mining operations. The company also involved in harvesting of water in the mining pits.

11. Intervention - Plantation

Actor - Private

Area covered – 9581 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 9581ha of degraded farmland in Karnataka. Fast growing species Eucalyptus, Casuarina and Subabul was planted.

12. Intervention - Plantation

Actor - Private

Area covered – 545 ha

Since 2011, ITC Limited has been involved in restoration of 545 ha of village pastures and common lands in Karnataka. Major species that were planted and which came up due to in-situ rootstock regeneration include *Acacia amara*, *Artocarpus heterophyllus*,

Artocarpushirsitus, *Acacia indica*, *Acacia nilotica*, *Albizzia odoratissima*, *Ficus religiosa*, and *Azadiracta indica*.

13. Intervention - Plantation

Actor - Private

Area covered – 30 ha

During 2012 and 2013, JSW group of companies was involved in restoration of around 30 ha of privately owned forest in Karnataka. *Pongamia pinnata*, *Prunus dulcis* and *Azadirachta indica* were the major species planted.

14. Intervention - Plantation

Actor - Private

Area covered – 27 ha

During 2014 nd 2016, JSW group of companies was involved in restoration of around 27 ha of privately owned forest in Karnataka. *Tamarindus indicus*, *Pongamia pinnata*, *Azardirachta indica* and *Psidium guajava* were the major species planted.

15. Intervention - Plantation

Actor - Private

Area covered – 174 ha

Since 2015, JSW group of companies was involved in restoration of around 174 ha of Government owned forest land in Karnataka. The major species planted during the programme include *Ficus infectoria*, *Artocarpus heterophyllus*, *Terminalia arjuna*, *Cordia dichotoma*, *Ficus religiosa*, *Ficus glomerata*, *Syzygium cumini*, *Terminalia catapa*, *Madhuca longifolia*, *Melia dubia*, *Tamarindus indicus*, *Ficus bengalensis*, *Derris indica*, *Azardirachta indica*, *Psidium guajava*, *Artocarpus hirsutus*, *Hopeparivflora*, *Moringa oleifera*, and *Neolamarckia cadamba*.

16. Intervention - Plantation

Actor - Private

Area covered – 80 ha

Since 2017, JSW group of companies was involved in restoration of around 80 ha of forest (includes both private and forest land) in Karnataka. The major species planted during the programme include *Wrightia tinctoria*, *Carissa spinerum*, *Acacia leucophloea*, *Ziziphus oenoplia*, *Ficus benghalensis*, *Ficus religiosa*, *Acacia catechu*, *Azadirachta indica*, *Morinda tinctoria*, *Asparagus racemosus*, *Tamarindus indicus*, *Capparithorrida*, *Butea monosperma*, *Prosopis cineraria*, *Cassia fistula*, *Albiziaamara*, *Terminalia arjuna*, *Phoenix sylvestris*, *Holoptelea integrifolia*, *Aegle marmelos*, *Soymida febrifuga* and *Gyrocarpus americanus*.

KERALA

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Devikulam in Idukki district of Kerala in 2015. The primary implementing agency is Highrange Development Society and the program covers 166 ha. Coffee, *Ragi* and vegetable were used with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. **Intervention** - Plantation

Actors - Forest Department

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. In Kerala, intervention under the GIM was initiated during 2015 and 2017. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

3. **Intervention** - Assisted Natural Regeneration

Actors - Local Communities

Area covered - 647 ha

The Kerala Government formed Travancore Devaswom Board to manage sacred groves in the state. The aim of the board was to convert the area in and around the groves into a tourist spot. Villagers in and around Iringole opposed the idea of a tourist spot around the groves. Since then, villagers have played a vital role in protection of the sacred grove in Iringole. The objective is to protect the sanctity of the sacred grove. They take care of resource governance and manage resource sharing. They believe non-observance of sacred rites could cause the wrath of the grove's patron deity. Villagers are the primary beneficiary, as the grove ensures sustainable use of existing resources such as fodder, fuel food, and groundwater. These efforts have resulted in stabilized micro-climate and constant presence of groundwater in the wells of areas in and around the grove.

4. Intervention - Assisted Natural Regeneration

Actors - Local Communities

Area covered - 2.8 ha

Protection of the 2.8 ha Aravanchal kavu (sacred grove) in Kannoor district of Kerala was initiated in 1970 with the objective of protecting the existing resources and village commons. The local community respected the grove out of fear of the deity. The villagers formed a committee, called Aravanchal Shri Bhagavati Kavu Committee, for better management of the grove. The committee received support from the Forest Department in some activities like building a water tank inside the grove, but the task hasn't been finished due to lack of sufficient funds. The committee plans to plant fruit trees to ensure availability of food for the monkeys that live in the grove. Overall, as a result of the villagers' efforts, water availability has improved in the Aruvanchal stream near the grove.

5. Intervention - Agri-horti-forestry

Actors - Forest Department, Community Based Organization, Local Communities

Area covered - 11000 ha

An agri-horti-forestry intervention was undertaken across 11000 ha of village commons on a watershed basis at Attappady in Palakkad district of Kerala during 1997-2010. The main objectives of the intervention include ecological restoration of degraded wastelands of Attappady and development of replicable models of participatory eco-restoration, so as to prevent further degradation and promote a sustainable model of livelihood for the local people in harmony with the resource base. Attappady Hills Area Development Society (AHADS), User Associations (UAs) representing the total population of each micro-watershed, Local Action Group (LAG), Ooru Vikasana Samiti (OVS), Joint Forest Management Committees (JFMCs) and local communities were the major actors involved in the intervention. The funding was sourced from Japanese Bank for International Co-operation (JBIC). Women and tribal communities were equally involved in the process. The benefits received by the local communities, who are the primary beneficiary, include revegetation of hills and valleys, and rejuvenation of water resources.

6. Intervention - Plantation

Actors - Government

Area covered - 3509 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Kerala from 2012 to 2017 onwards, covering 3509 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

7. Intervention - Plantation

Actors - Private, Non-Government Organization

Area covered - 7.5 ha

Since 2016, Apollo Tyres Limited and Wildlife Trust of India has been involved in the restoration of a 7.5 ha of a mangrove patch in Kannur, Kerala. The species planted include *Rhizophora mucronata*, *Rhizophora apiculata*, *Bruguiera cylindrica*, *Kandelia candel* and *Avicennia*

officinalis. The effort is expected to restore degraded mangrove patch and improve the existing mangrove flora in the area.

8. Intervention - Plantation

Actors – Government

Area covered – 48755 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes under TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social charter. Point 3 and 5 of the 20 points; focus on support to farmers and food security whereas point no. 16 and 17 are forest and natural resource specific. Under TPP, interventions were implemented in Kerala from 2014 to 2017 covering 48755 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performance is compared across all Indian states.

LAKSHADWEEP

1. **Intervention** – Mixed plantation

Actors - Government

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Lakshadweep from 2014 to 2017. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

MADHYA PRADESH

1. **Intervention** - Agri-horti-forestry

Actors - Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered - 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Patti in Barwani district of Madhya Pradesh in 2015. The primary implementing agency is Society for Promotion of Eco-friendly Sustainable Development and the program covers 400 ha. Mango and *Aonla* tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. **Intervention** – Mixed plantation

Actors – Government

Area covered - 15493 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Madhya Pradesh from 2014 to 2017 covering 15493 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Northern Coalfields Limited (NCL) operates coal mines at Amlohri in Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Amlohri opencast mine. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

4. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Area covered – 1401 ha

Northern Coalfields Limited (NCL) operates coal mines at Nigahi in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Nigahi opencast mine. The reclamation project is spread across 1401 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

5. **Intervention** - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 1642 ha

Northern Coalfields Limited (NCL) operates coal mines at Jayant in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Jayant opencast mine. The reclamation project is spread across 1642 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

6. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 867 ha

Northern Coalfields Limited (NCL) operates coal mines at Dudhichua in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Dudhichua opencast mine. The reclamation project is spread across 867 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

7. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 836 ha

Northern Coalfields Limited (NCL) operates coal mines at Khadia in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Khadia opencast mine. The reclamation project is spread across 836 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

8. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 620 ha

Northern Coalfields Limited (NCL) operates coal mines at Jhingurdah in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Jhingurdah opencast mine. The reclamation project is spread across 620 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

9. Intervention - Mixed Plantation

Actors - Public Sector Undertaking

Area covered - 290 ha

Northern Coalfields Limited (NCL) operates coal mines at Block-B in the Singrauli district of Madhya Pradesh. It undertook reclamation of a section of the Block-B opencast mine. The reclamation project is spread across 290 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

10. Intervention - Assisted Natural Regeneration

Actors - Local Community, Non-Government Organization, Rural Department

Local community led assisted natural regeneration of forest area is being carried out at Kanhari Kalan in the Mandla district of Madhya Pradesh. The driving force for the local community is to protect the community's belief in a holy stone. Siddha Baba Manch Van Suraksha Samiti, Madhya Pradesh Rural Livelihood Program, and Foundation for Ecological Security are the major actors involved in the intervention. Women and tribal communities are equally involved in the process. The benefits received by the local communities include reduced soil erosion, and availability of non-timber forest produce.

11. Intervention - Assisted Natural Regeneration

Actors - Forest Department, Community-Based Organization, Local Communities

Since, 1985, a community led assisted natural regeneration of forest area was carried out at Madumar in the Tikamgarh district of Madhya Pradesh. Lack of forest-based livelihoods due to indiscriminate exploitation of the forest for wooden logs, was the driving factor for this intervention. Therefore, the objective of this intervention is to restore the availability of fodder, fuelwood, and non-timber forest produce (NTFP's). Village Forest Protection Committee, Forest Department, and local communities are the major actors involved in this intervention. The benefits received by local communities, include availability of biomass, replenishment of the ground water table, reduction in soil erosion, and enhanced income generation from the sale of NTFPs.

12. Intervention - Assisted Natural Regeneration

Actors - Local Communities, Community-Based Organization

The community in Olani, Indore, Madhya Pradesh ascribe forest protection as a way of living and have a rich history of conservation efforts. The villagers have been practicing assisted natural regeneration of the forest area. Species like *Tectona grandis* (Sagwan), *Terminalia arjuna* and *Boswellia serrata* have been regenerated. The Village Forest Protection Committee, and local communities played a major role with active support from the Forest Department. The benefits received by the local communities include increased forest cover, and ample availability of non-timber forest produce.

13. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organization, Forest Department, Local Communities

Since the 1960s, an assisted natural regeneration intervention of forest area has been carried out at Talpipariya village in Chindwara district of Madhya Pradesh with the objective to restore the degraded forest of the village. The Gram Van Samiti, Forest Department, and local communities have played a major role in the intervention. The Gram Van Samiti worked along with the Joint Forest Management Committee in this intervention after 1993. The benefits received include reduced incidents of fire, reduced felling of wood, and improved biodiversity. Local communities are primary beneficiary of the intervention. A monitoring mechanism also exists for intervention.

14. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Assisted natural regeneration of forest area was carried out at Potalpani village in Seoni district of Madhya Pradesh with the objective to restore the dwindling natural resource of the village. Van Suraksha Samiti, the forest department, and local communities were the major actors involved in the intervention. Local communities collaborated with Joint Forest Management Committee for this intervention. The benefits received include reduced incidents of forest fire, and improved biodiversity in the forest. A monitoring mechanism exists in the intervention.

15. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organization, Forest Department, Local Communities

Since 1987, mixed plantation of forest area was carried out at Pipalkhunta village in Jhabua district of Madhya Pradesh with the objective to restore forest cover in the village. Gram Vrikch Sahakarita Samiti, the forest department, and local communities are major actors involved in the project. Women and tribal communities were equally involved in the intervention. Both, Madhya Pradesh Agro-energy conservation scheme and Joint Forest Management Program facilitated this intervention. The benefits received by the local communities include improved livelihood opportunities, and reduced migration to other area by the villagers. A monitoring mechanism is in place for this intervention.

16. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organization, Forest Department, Local Communities

Since mid-1960s, assisted natural regeneration of forest area was carried out at Ladhatola village in Mandla district of Madhya Pradesh with the objective to restore degraded forest in the region. Forest Department and local communities were the major actors involved in the project. The benefits received include reduced incidents of soil erosion, and reduced deforestation. Local communities are primary beneficiary of the intervention. A monitoring mechanism also exists for the regenerated forest area.

17. Intervention - Agro-forestry

Actors - Community-Based Organization, Forest Department, District Administration,

Area covered - 370 ha

In Harda district of Madhya Pradesh, a community-based agroforestry intervention began in 2015 wherein bamboo and teak were grown on boundaries of farms spread over 370 ha of land. The objective was to reduce flood like situation, soil erosion, and increase the productivity of these farms. Several stakeholders including the farmers' network in the area, civil society, district administration, forest department, local volunteers/van doots (forest messengers) worked collectively to implement this intervention. Funding was received from CSR units of a few companies through an agency called Grow-Trees which helped facilitate the intervention by providing for the saplings. Forestry based funds from the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was also used. The key benefits from this intervention are improved soil fertility, water availability, and better livelihood opportunities for local communities. Involvement of local communities in restoration, afforestation and other activities were valuable in bringing about major changes in surrounding forest landscapes as well.

18. Intervention - Assisted Natural Regeneration

Actors - Community-Based Organization, State Line Departments, Local Communities

A decade long intervention spread over five districts of Madhya Pradesh started in 2005. The objective was reducing deforestation and overgrazing, increase timber, fuel wood, non-timber forest produce (NTFP), and fodder. Overall, the intervention aims contribution towards global land degradation, biodiversity, and climate change goals. Local communities, NGOs, local community-based organizations, state departments of agriculture, animal husbandry, tribal affairs, and minor forest products have played crucial roles in the implementation of these intervention. The key outcomes from this intervention include changes in state policy, and capacity development at district level, field demonstrations of the integration of seven different livelihood interventions to achieve SLEM, and community-based monitoring of the results of the SLEM demonstrations. Local communities are the primary beneficiary of this intervention.

19. Intervention - Mixed Plantation

Actors - Private Sector

Area covered - 1150 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 1150 ha of degraded wasteland in Madhya Pradesh. Fast growing species Eucalyptus, Casuarina and Subabul was planted.

20. Intervention - Mixed Plantation

Actors - Local Communities, Non-Government Organization, Community-Based Organization

Area covered - 18010 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 18010 ha of Government land (JFMC land, *panchayat* and revenue wasteland) in Madhya Pradesh. Varied native species including *Tectona grandis*, *Terminalia arjuna*, *Dendrocalamus strictus*, *Flacourtia indica*, *Madhuca longifolia*, *Artocarpus heterophyllus*, *Terminalia bellerica*, *Gmelina arborea*, *Albizia lebbek*, *Terminalia chebula*, *Terminalia tomentosa*, and *Semecarpus anacardium* were planted.

21. Intervention - Plantation

Actors - Government

Area covered - 24772 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in from Madhya Pradesh 2012 to 2017 onwards, covering 24772 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

22. Intervention - Plantation

Actors - Private

Area covered - 1150 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 1150 ha of degraded wasteland in Madhya Pradesh. Fast growing species *Eucalyptus*, *Casuarina* and *Subabul* was planted.

MAHARASHTRA

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 360 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Mawal in Pune district of Maharashtra in 2015. The primary implementing agency is Jankidevi Bajaj *Gram Vikas Sanstha* and the program covers 360 ha. Mango and *Amla* tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed plantation

Actors – Government

Area covered - 184599 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Maharashtra from 2014 to 2017 covering 184599 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. Intervention – Assisted Natural Regeneration

Actors –Local Communities

Area covered – 18 ha

A 600-year-old grove exists at Mangoan in the Pune district of Maharashtra. Assisted natural regeneration was practiced across 18 ha of forest area in this grove. The objective was to protect the traditionally revered sacred grove. It was a community-led intervention. The benefits received by the community include the increased availability of non-timber forest products for local consumption and the protection of old trees. This intervention reiterates that preserving spiritual and cultural sites goes hand-in-hand with conservation.

4. Intervention – Mixed Plantation

Actors –Local Communities

Area covered – 27255 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 27255 ha of Government land (JFMC land, panchayat and revenue wasteland) in Maharashtra. Varied native species including *Acacia catechu*, *Tamarindus indica*, *Aegle marmelos*, *Pongamia Pinnata*, *Azadirachta indica*, *Dendrocalamus strictus*, *Albizia lebbeck*, *Annona squamosa*, *Cassia fistula*, and *Ficus glomerata* were planted

5. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department

Area covered – 50 ha

Since 1993, assisted natural regeneration of 50 ha of forest area has been carried out at Baripada village in the Dhule district of Maharashtra. The objective was to protect forests from illegal felling. Vanvasi Kalyan Ashram, the Forest Department, the Forest Protection Committee, and the Joint Forest Management Committee were the major organizations involved. The Forest Protection Committee took an active part during the initial years of the intervention. It was replaced by the Joint Forest Management Committee. Local women were equally involved in the intervention. The benefits received by the local communities from this intervention include reduced water run-off, as well as increased fuel wood and water availability.

6. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Area covered – 142 ha

Since 1990, assisted natural regeneration of 142 ha of forest area has been carried out at Belgata village in the Chandrapur district of Maharashtra. The objective was to restore degraded forests to support the needs of the future generations. Van Sangharakshak Samiti, Mahila Gat, Gram Sabha, and Bhajan Gat were the major actors involved. Socially disadvantaged members of the village were equally involved in the intervention. The joint forest management committee also worked for protection of the forest. The benefits of this intervention include increased water table, improved availability of fodder, and more fuel wood for the local communities, who were the primary beneficiary of the intervention.

7. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 1900 ha

Since 1987, assisted natural regeneration of 1900 ha of forest area has been carried out at Mendha Lekha in the Gadchiroli district of Maharashtra. The objective was to protect forests surrounding the village in order to secure residents' livelihoods. Gram Sabha, Mahila Manda Dal, Van Suraksha Samiti Abhyas Gats and the Forest Department played a major role in this intervention. Socially disadvantaged members of the village were equally involved in the intervention. The Joint Forest Management program facilitated this intervention. Villagers became part of the Joint Forest Management Committee and worked together with the Forest Department to facilitate conservation. The benefits received by the local communities include improved availability of fuel wood, fodder, and non-timber forest products, as well as a share from the periodic harvest of bamboo, which they receive from the Forest Department.

8. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Area covered – 240 ha

Since 1956, assisted natural regeneration of 240 ha of forest area has been carried out at Lakhapur village in the Chandrapur district of Maharashtra. The objective was to protect local forests. Gram Sabha and Gram Swarajya Jungle Sahakari Sanstha have played a major role in this intervention. Socially disadvantaged members of the local community were equally involved in the intervention. The benefits received by the local communities from this intervention include increased soil fertility, a rising water table level, reduced soil erosion, reduced forest fires, and increased availability of fuel wood, fodder, and non-timber forest products. As a result, local communities are the primary beneficiary of this intervention.

9. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Since 1980, assisted natural regeneration of forest area has been carried out at Saigata village in the Chandrapur district of Maharashtra. The objective was to regenerate the forest, which would provide fuel wood and fodder. Krushak Charcha Mandal, Van Suraksha Samiti (VSS), Gram Sabha and the Forest Department were the major actors involved in the intervention. The Joint Forest

Management program facilitated the intervention through the formation of community-based organizations such as VSS. The benefits received by the local communities include fewer forest fires, a higher water table, and improved availability of fuel wood and fodder for the local communities, who are primary beneficiary of this intervention.

10. Intervention – Mixed Plantation

Actors – Community-Based Organization, Local Communities

Area covered – 23 ha

Since 1993, a mixed plantation drive over 23 ha of village commons land has been carried out at Chorati village in the Chandrapur district of Maharashtra. Several local organizations like the Adarsha Gram Nirman Samiti, Mahila Bachat Gats, Gram Sabha, Gaon Ganrajya Samiti were the major actors involved in the intervention. Socially disadvantaged members of the local communities were equally involved in the intervention. The central scheme, called the Adarsh Gaon Yojana, facilitated this intervention. The benefits received from this project include resource generation for agriculture, new livelihood opportunities, and increased availability of fodder. As a result, local communities are a primary beneficiary of the intervention. The intervention has succeeded because the villagers have united for restoration and held a sense of ownership for the conserved forest.

11. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 1486 ha

Since 1996, an ongoing mixed plantation drive over 1486 ha of commons land has been carried out at Botha village of Buldhana district in Maharashtra. The objective was to restore the wastelands of the village. The Gram Sabha, Gram Panchayat, Forest Protection Committee of the village and the Forest Department were the major actors involved in this intervention. Socially disadvantaged groups were equally involved in the intervention. Joint Forest Management funds facilitated this intervention. Benefits gained from this intervention include revenue generation from sale of forest products like Anjan leaves. Local communities are the primary beneficiary of this intervention. A business model has been built around this intervention through the sale of Anjan leaves.

12. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 976 ha

Since 1991, a mixed plantation drive across 976 ha of forest area has been carried out at Hiware Bazar in Ahmednagar district of Maharashtra. The objective was to restore forests and prevent drought in future. Yeshwant Krishi Gram Panlot Sanstha, local communities, and Gram Sabha were the major actors involved in this intervention. Socially disadvantaged members of the community were equally involved in the intervention. The benefit received by the local communities is an improved water table. Harnessing the collective wisdom of the community and the community's self-discipline have been key factors in sustaining this intervention.

13. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 612 ha

Western Coalfields (WCL) operates coal mines at Sasti in Chandrapur district of Maharashtra. Its goal was to restore 612 ha of the Sasti Opencast (OC) mine. The funding support is from the Public sector undertaking Coal India Limited which is the parent company of Western Coalfields. The objective of this reclamation intervention is to restore the mined area back to its original health and, in conjunction, protect the environment and conserve biodiversity.

14. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 538 ha

Western Coalfields (WCL) operates coal mines at Padmapur in the Chandrapur district of Maharashtra. It took up reclamation of the Padmapur Opencast (OC) mine, spread across 538 ha. The funding support is from the public sector organization Coal India Limited, which is the parent company of Western Coalfields. The objective of this reclamation intervention is to restore the mined area back to its original health and, in conjunction, to protect the environment and conserve biodiversity.

15. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 681 ha

Western Coalfields (WCL) operates coal mines at Durgapur in the Chandrapur district of Maharashtra. It took up reclamation of Durgapur Opencast (OC) mine, spread across 681 ha. The funding support for this intervention is from the Public sector organization Coal India Limited which is the parent company of Western Coalfields. The objective of this reclamation intervention is to restore the mined area back to its original health and, in conjunction, to protect the environment and conserve biodiversity.

16. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 393 ha

Western Coalfields Limited (WCL) operates coal mines at Mugoli in the Yavatmal district of Maharashtra. It undertook reclamation of a section of the Mugoli opencast mine, spread across 393 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

17. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 775 ha

Western Coalfields Limited (WCL) operates coal mines at Umrer in the Nagpur district of Maharashtra. It undertook reclamation of a section of the Umrer opencast mine. The reclamation project is spread across 775 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

18. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 514 ha

Western Coalfields Limited (WCL) operates coal mines at Ukni in Yavatmal district of Maharashtra. It undertook reclamation of a section of the Ukni opencast mine. The reclamation project is spread across 514 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

19. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 519 ha

Western Coalfields Limited (WCL) operates coal mines at Niljai in the Yavatmal district of Maharashtra. It undertook reclamation of a section of the Niljai opencast mine. The reclamation project is spread across 519 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

20. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 691 ha

Western Coalfields Limited (WCL) operates coal mines at New Majri in the Chandrapur district of Maharashtra. It undertook reclamation of a section of the Majri opencast mine. The reclamation project is spread across 691 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

21. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 330 ha

Western Coalfields Limited (WCL) operates coal mines at Pimpalgaon in the Nasik district of Maharashtra. It undertook reclamation of a section of the Sasti opencast mine. The reclamation project is spread across 330 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

22. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 521 ha

Western Coalfields Limited (WCL) operates coal mines at Ghugus in the Chandrapur district of Maharashtra. It undertook reclamation of a section of the Ghugus opencast mine. The reclamation project is spread across 521 ha. The public sector undertaking, Coal India Limited, also the parent company of WCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

23. Intervention – Mixed Plantation

Actors – Local Communities, Forest Department

Area covered – 990 ha

A community-led mixed plantation drive was carried out in Amravati district of Maharashtra in 2012. The intervention was spread over 990 ha of village commons land. Local communities, Gram Sabhas of the four villages, and the forest department were the major actors involved in the intervention. For four years, the community offered Shramdan, but eventually forestry funds of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was used for soil and conservation work in the villages. The benefit received by the local communities, include increased availability of fodder for livestock and an improved livelihood. The villages have received various awards and recognition for their conservation efforts. Community Forest Resources Rights have provided year-round employment for the villagers and sale of custard apple has provided remuneration to many villagers.

24. Intervention – Mixed Plantation

Actors – Private Sector, Local Communities

Area covered – 400 ha

TATA Power carried out a mixed plantation drive at Lonavala, Pune district of Maharashtra in 2012. The intervention spread over 400 ha of private land had an objective of increasing the forest cover to 33% of the site. This plantation was initiated also to compensate for the portions of the forest inundated due to TATA Power's Valvan Dam making resources scarcer for local communities. Local communities have worked together with TATA Power in this intervention. Since the intervention, increase in native vegetation cover, soil fertility, groundwater, and biodiversity have been reported. Local communities are the primary beneficiary of this intervention.

25. Intervention - Mixed Plantation

Actor - Government

Area covered – 25 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Maharashtra, 25 hectares (ha) have been brought under CAMPA plantation since 2009.

26. Intervention - Mixed Plantation

Actor - Government

Area covered – 22 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Maharashtra, 22 hectares (ha) have been brought under CAMPA plantation since 2011.

27. Intervention - Plantation

Actor - Government

Area covered – 24056 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Maharashtra from 2012 to 2017 onwards, covering 24056 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

28. Intervention - Plantation

Actor - Government

Area covered – 24056 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Maharashtra from 2012 to 2017 onwards, covering 24056 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

29. Intervention - Plantation

Actor - Private

Area covered – 150 ha

During 2011-2016, the cement manufacturing industry ACC limited took up a plantation in around 150 ha private land in Maharashtra with an objective to restore the top soil after the mining operations. The company also involved in harvesting of water in the mining pits.

30. Intervention - Plantation

Actor - Private

Area covered – 480 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 480ha of degraded farmland in Maharashtra. Fast growing species Eucalyptus, Casuarina and Subabul was planted.

31. Intervention - Plantation

Actor - Private

Area covered – 437 ha

Since 2013, ITC Limited has been involved in restoration of 437 ha of village pastures and common lands in Maharashtra. Major species that were planted and which also came up due to in-situ rootstock regeneration include *Actinodaphneangustifolia*, *Bauhinia racemosa*, *Brideliaretusa*, *Butea monosperma*, *Acacia catechu*, *Acacia leucopholoea* and *Ziziphus mauritiana*.

32. Intervention - Plantation

Actor - Private

Area covered – 20 ha

JSW group of companies has been restoring a 20 ha plot of mangrove area since 2016 in Maharashtra. This 3 year programme which has been undertaken in a Government land selected native mangrove species like *Sonneratia apetala*, *Avicennia marina* and *Avicennia officinalis* for plantation.

33. Intervention - Plantation

Actor - Private

Area covered – 25 ha

During the years 2011-2017, JSW group of companies was involved in restoration of forest areas in around 25 ha of private land. Major species planted during the programme included *Casuarina equisetifolia*, *Bambusa arundinacea*, *Samanea saman*, *Delonix regia*, *Prunus amygdalus*, *Tectona grandis*, *Ficus*, *Neolamarkia cadamba*, *Mimusops elengi*, *Acacia mangium*, *Anacardium occidentale*, *Saraca asoka*, *Pongamia pinnata*, *Garcinia indica*, *Mohagani*, *Tabebuia avellana*, *Lagerstroemia speciosa*, *Sonchafa spathodia*, *Emblia officinalis* and *Azadirachta indica*.

34. Intervention - Plantation

Actor - Private

Area covered – 8.25 ha

During the years 2010-2012 and 2014-2017, JSW group of companies was involved in restoration of mangrove areas of around 8.25 ha. Under this programme that was conducted on Government land, major mangrove species like *Rhizophora mucronata*, *Ceriops tagal*, *Avicennia marina*, *Avicennia officinalis*, *Aegiceras corniculatum* were planted.

35. Intervention - Plantation

Actor – Private, Non-Government Organization

Area covered – 0.8 ha

During 2014, Tata Motors joined hands with BAIF-MITTRA to restore a .8 ha of common land in Vinval village, Palghar district, Maharashtra. The village *panchayat* and the community also played a major role in this plantation effort. Major species planted included teak, bamboo, *Gliricidia*, kashid, casia, subabul, mango, and cashew.

36. Intervention - Plantation

Actor - Private

Area covered – 41 ha

During 2011-2012, Tata Motors with the support from various other agencies restored a 41 ha land (including community land, military land and community owned land). Major species planted during the programme included *Azadirachta indica*, *Pongamia glabra*, *Peltophorum ferruginum*, *Svetenia mahogany*, *Polyalthia longifolia*, *Pendula*, *Bauhinia purpurea*, *Greiveliarobusta*, *Melia azadirachta*, *Millingtonia hortensis*, *Alstonia scholaris*, *Ficus benjamina*, *Filicium decipiens*, *Spathodia campanulata*, *Saraca indica*, *Michelia champaka* (seedling) and *Plumeria alba*.

37. Intervention - Plantation

Actor - Private

Area covered – 20 ha

Since 2014 Tata Motors has been undertaking a plantation activity in a 20 ha land within Bansilal Ramnath Agarwal Charitable Trust, Pune, Maharashtra. Major species planted during the programme included Bamboo, Neem, Behda, Tamalpatra, Narkya, Gulmohar, Mohangani and Kokam.

38. Intervention - Plantation

Actor – Private, Non- Government Organization

Area covered – 6.25 ha

Tata Motors joined hands with Tree Public Foundation to undertake a plantation activity in a 6.25 ha area in Pune, Maharashtra. This activity took place in a Government Military land during the years 2014 and 2017. Major species planted included *Neem*, *Gulmohar*, *Mohangani*, *Neelmohar*, *Shankasur* (*Cassia Fistula Biflora*) and Raintree.

MANIPUR

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 80 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Chandel in Manipur in 2015. The primary implementing agency is Diocesan Social Service Society and the program covers 80 ha. Litchi, Lemon and Banana species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed plantation

Actors – Government

Area covered - 19131 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Manipur from 2014 to 2017 covering 19131 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization

Area covered – 400 ha

Since 2004, assisted natural regeneration of 400 ha of forest area has begun at Upper Ngatan in the Senapati district of Manipur. The implementing agency behind this intervention was the North East Region Community Resource Management Project (NERCORMP) with funding support from International Fund for Agricultural Development (IFAD). The objective was to stop the misuse of forest resources. Natural Resource Management Group, Reserve Forest Management Committee, Senapati District Community Resource Management Society, NERCORMP, and IFAD were the major actors involved in the intervention. The benefits received by the local communities include improved availability of non-timber forest products like honey, mushrooms, medicinal plants, and dead wood. More cane and rattan saplings were also available to sell.

4. Intervention – Plantation

Actors – Forest Department

Area Covered – 17596 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. In Manipur, intervention under the GIM was conducted during 2015 and 2017 covering 17596 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role,

MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

5. Intervention – Assisted Natural Regeneration

Actors – Local Communities

Area covered – 300 ha

Since 1990, assisted natural regeneration of 300 ha of village commons land has been carried out at Khambi village in the Ukhrul district of Manipur. The objective was to reduce forest degradation and recharge dried-up water sources. Local communities and village authorities were the major actors in this intervention. The benefits received by local communities include the revival of the village water source.

6. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities, International Organization

Since 2001, assisted natural regeneration of village commons land has been carried out at Mapum village in Ukhrul district of Manipur. The implementing agency behind this intervention was North East Region Community Resource Management Project (NERCORMP) with funding support from International Fund for Agricultural Development (IFAD) with the objective of providing for fuel wood and water in the village. Natural Resource Management Group, Self-Help Groups, Village Council, NERCORMP, IFAD, and local communities were the major actors in this intervention. In addition, socially disadvantaged members of the village were involved in the intervention. Benefits received by the local communities include changes in social, human, financial, physical, and natural capitals of the communities as a result of the restoration intervention.

7. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities, International Organization

Area covered – 143 ha

Since 2000, assisted natural regeneration of 143 ha of village commons land has been carried out at Ngainga village in Ukhrul district of Manipur. Ukhrul District Community Resource Management Society was the implementing agency of this intervention with financial support from the International Fund for Agricultural Development (IFAD). The objective was to increase the water supply and the provision of fuel wood. Natural Resource Management Group, Ukhrul District Community Resource Management Society, self-help groups, and local communities were the major actors involved in the intervention. Additionally, socially disadvantaged members of the village were equally involved in the intervention. Benefits received by the local communities include improved water availability, as well as the presence of wild edible plants.

8. Intervention – Plantation

Actors – Government

Area covered – 12585 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Manipur from 2012 to 2017 onwards, covering 12585 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region.

Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

MEGHALAYA

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Ribhoi in Umting district of Meghalaya in 2015. The primary implementing agency is Bosco Reach Out and the program covers 200 ha. Orange and Arecanut tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed Plantation

Actors – Local Communities, Non-Government Organization

Area covered – 105 ha

During 2009-2012, Wildlife Trust of India initiated a restoration effort in a community owned Village Reserve Forest in Garo Hills, with support from the Garo Hills Autonomous District Council, World Land Trust and IUCN. The 105-ha area was planted with various native species including *Toona ciliata*, *Caryeya arborea*, *Cassia fistula*, *Dillenia pentagyna*, *Duabanga sonneratioides*, *Dellinia indica*, *Embllica officinalis*, *Eugenia sp.*, *Gmelina arborea*, *Mangifera indica*, *Melia azedarch*, *Michelia champaka*, *Oroxylum indicum*, *Schima walichii*, *Sterculia villosa*, *Terminalia bellerica*, *Terminelia chebula*, *Arthocarpus heterophyllus*, *Tamerindus indica* and *Bauhinia species*. The monitoring and protection of the restoration area has been continued till date.

3. Intervention – Mixed plantation

Actors – Government

Area covered - 5177 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Meghalaya from 2014 to 2017 covering 5177 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

4. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities, International Organization

Area covered – 2000 ha

In 2014, community driven forest landscape restoration was initiated in the Khasi Hills of Meghalaya. This ongoing intervention employs assisted natural regeneration across 2000 ha of the village common land with the objective to prevent and restore community forests from encroachments and clearing for agriculture. WeForest, Ka Synjuk Ki Hima Arliang Wah Umiam Mawphlang Welfare Society (KSKHAWUMWS), self-help groups, and local communities were the major actors involved in the intervention. Local women were equally involved in the process. FAO's Forest and Water Program facilitated this intervention. The benefits received by the local

communities, include better provision of ecosystem services, and improved livelihood opportunities.

5. Intervention – Assisted Natural Regeneration

Actors – Local Communities, Forest Department, Soil & Water Conservation Department, Non-Government Organization

Area covered – 50 ha

A mixed plantation and awareness drive at Nongstoin, Jaidoh, and neighboring villages in West Khasi hills district of Meghalaya began in 2017. Community nursery and afforestation program was adopted over 50 ha spread in ten villages. The aim was to produce more than 25000 saplings in each village, which would include 15000 fruit trees species to be used by the local communities. The overall objective was empowering the village communities in management of their natural resources and diversifying their livelihood opportunities. Organic Majuli, state soil & water conservation department, state forest department, and local communities were the major actors involved in the project. Forest funds from the Mahatma Gandhi Rural Employment Guarantee Act (MGNREGA) were used for this intervention.

6. Intervention – Plantation

Actors –Government

Area covered – 7851 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Meghalaya from 2012 to 2017 onwards, covering 7851ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

MIZORAM

1. **Intervention** – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Mamit, Mizoram in 2015. The primary implementing agency is All Mizoram Farmers Union and the program covers 200 ha. Rubber and Orange species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. **Intervention** – Mixed plantation

Actors – Government

Area covered - 4020 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Mizoram from 2014 to 2017 covering 4020 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. **Intervention** – Plantation

Actors – Forest Department

Area Covered – 19643 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was carried out in Mizoram from 2015 to 2017 covering 19643 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

4. **Intervention** – Mixed Plantation

Actors – Forest Department, Local Communities

Area covered – 1070 ha

The Mizoram State Forest Department initiated a mixed plantation at Lower Aizwal in Mizoram in 2017. During the year, 1070 ha of land was planted using multiple species. This intervention aimed at enhancing the quality of forest cover and ecosystem services; facilitate ecosystem restoration; and increase tree cover in urban and peri-urban areas. Local communities and the forest department played an important role in the intervention. Local communities are the primary beneficiary of the intervention with increased access to natural resources.

5. Intervention – Plantation

Actors – Government

Area covered – 12140 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Mizoram from 2012 to 2017 onwards, covering 12140 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation is undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

NAGALAND

1. **Intervention** – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 220 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Peren in Jalukie district of Nagaland in 2015. The primary implementing agency is Rongmei Baptist Association and the program covers 220 ha. Orange and Banana species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. **Intervention**- Mixed Plantation

Actors – Government

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Nagaland from 2014 to 2017. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. **Intervention** – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Area covered – 500 ha

Since 2005, the forests surrounding Luzophuhu village in Phek district of Nagaland were revived through assisted natural regeneration of 500 ha of village commons land. The objective was the preservation of the village's water source. The Village Council and Youth Club, as well as the Chakesang Public Organization, were the major actors involved. Local women were equally involved. The benefits for the local communities include regeneration of forests in the protected area earlier under Jhum cultivation, protection of water sources and improved biodiversity.

4. **Intervention** – Assisted Natural Regeneration

Actors – Community-Based Organization, Non-Government Organization, Local Communities

Area covered – 2000 ha

Since 1998, assisted natural regeneration of village commons has occurred over 2000 ha at Khonoma village in the Kohima district of Nagaland. The objective of the intervention was to protect the Blyth's Tragopan, the state bird and also to reduce hunting and felling in the forest. The Khonoma Nature Conservation and Tragopan Society led the intervention with support from several organizations such as Centre for Environment Education, Aaranyak and Equations, as well as local communities. Socially disadvantaged members of the community were actively engaged in the intervention as well. The benefits received by the local communities include water security in the village, improved biodiversity in the region, and the emergence of the village as an eco-tourism spot. This intervention proves that conservation and ecotourism can co-exist, provided that clear norms and robust institutions exist.

5. Intervention – Assisted Natural Regeneration

Actors – Forest Department, Community-Based Organization

Area covered – 1000 ha

Forests in Sendenyu village in Kohima, Nagaland were revived through assisted natural regeneration of 1000 ha of private land. The objective was to conserve and protect the rich wildlife heritage of the village, maintain ecological balance, and check the population decline of wild animals. The village council and the Forest Department were the major actors involved in the intervention. The village council was a strong local force and helped in the continued conservation of the forest near the village. Women were equally involved in the intervention. The benefits received by the local communities include restored forests, increased bird and sambar populations.

6. Intervention – Assisted Natural Regeneration

Actors – Forest Department, Community-Based Organization

Area covered – 1600 ha

Since the 1990s, 1600 ha of forest within the common land of Toufema village in the Kohima district of Nagaland were revived through assisted natural regeneration. The objective of natural regeneration was to improve water security, reduce rampant felling of trees and hunting of animals in the forest. The Village Council, the Joint Forest Survey Committee, and the Forest Department were the major actors involved in this intervention. Women were equally involved in the intervention. The regenerated forest has increased foot traffic through the village, leading to a tourist boom. The intervention created an additional livelihood option for the local community.

7. Intervention – Plantation

Actors – Government

Area covered – 14910 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Nagaland from 2012 to 2017 onwards, covering 14910 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

NEW DELHI

1. **Intervention** – Mixed plantation

Actors – Government

Area covered - 2966 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Delhi from 2014 to 2017 covering 2966 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

ODISHA

1. Intervention – Mixed plantation

Actors – Government

Area covered - 576644 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Odisha from 2014 to 2017 covering 576644 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention – Plantation

Actors – Forest Department

Area Covered – 4272 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was initiated in Odisha from 2015 to 2017 covering 4272 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

3. Intervention – Mixed Plantation

Actors – Community-Based Organization, Non-Government Organization

Area covered – 2 ha

This community afforestation intervention was initiated in 2014 in the Koraput district of Odisha. Mixed plantation areas were created on 2.02 ha of village commons land. The objective was to improve communities' access to fuel wood and Non-Timber Forest Products (NTFP). Panchabati Grama Unnayan Samiti, a local organization, anchored the intervention. It was facilitated by M S Swaminathan Research Foundation (MSSRF) and saw the active participation of local communities, especially youth. The forest department provided seedlings for planting. Key benefits include increased availability of fuel wood and NTFP.

4. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Komna in Nuapada district of Odisha in 2015. The primary implementing agency is Council for Professional Social Workers and the program covers 400 ha. Mango and Cashew Nut species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

5. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization

Area covered – 60 ha

Since 1940, restoration of 60 ha of forest area through assisted natural regeneration has been carried out by local community at Gadabanikilo village in the Nayagarh district of Odisha. The driving force of this intervention was a crisis period when there was no fuel wood available in the village. The village created a forest protection committee and led this intervention in order to make the village self-sufficient in fuel wood. However, women were not allowed to be members of the committee. The benefits received by the local communities include increased availability of fuel wood, meeting the village requirement.

6. Intervention – Assisted Natural Regeneration

Actors – Forest Department, Community-Based Organization, Local Communities

Area covered – 300 ha

Since 1985, assisted natural regeneration of 300 ha of forest area has been carried out at Samantsinharpur village in the Nayagarh district of Odisha. The goal was the restoration of degraded forests. In particular, the State government's plan to build rubber plantations on the forest lands triggered community action. They aim was to protect their rights and restore their forests. The Village Committee, Ranbijuli Jungle Surakshya Samiti, Ranbijuli Van Samrakshyan Samiti, local communities, and the Forest Department were the major actors involved in the intervention. The organization Vasundhara also played a crucial role in the intervention. Socially disadvantaged members of the community were equally involved in the intervention. Benefits realized include improved availability of fuel wood and other non-timber forest products. As a result, local communities are the primary beneficiary of this intervention.

7. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 267 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Ananta in Angul district of Odisha. It undertook reclamation of a section of the Ananta opencast mine. The reclamation project is spread across 267 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

8. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 348 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Balram in the Angul district of Odisha. It undertook reclamation of a section of the Balram opencast mine. The reclamation project is spread across 348 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

9. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 221 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Lingraj in the Angul district of Odisha. It undertook reclamation of a section of the Lingraj opencast mine. The reclamation project is spread across 221 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

10. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 442 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Bharatpur in the Angul district of Odisha. It undertook reclamation of a section of the Bharatpur opencast mine. The reclamation project is spread across 442 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

11. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 145 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Bhubaneswari in the Angul district of Odisha. It undertook reclamation of a section of the Bhubaneswari opencast mine. The reclamation project is spread across 145 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

12. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 306 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Jagannath in the Angul district of Odisha. It undertook reclamation of a section of the Jagannath opencast mine. The reclamation project is spread across 306 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

13. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 155 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Hingula in the Angul district of Odisha. It undertook reclamation of a section of the Hingula opencast mine. The reclamation project is spread across 155 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

14. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 304 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Belpahar in Jharsuguda district of Odisha. It undertook reclamation of a section of the Belpahar Opencast mine. The reclamation project is spread across 304 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

15. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 402 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Lakhanpur in Jharsuguda district of Odisha. It undertook reclamation of a section of the Lakhanpur opencast mine. The reclamation project is spread across 402 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

16. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 322 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Samleshwari in Jharsuguda district of Odisha. It undertook reclamation of a section of the Samleshwari opencast mine. The reclamation project is spread across 322 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

17. Intervention – Mixed Plantation

Actors – Public Sector Undertaking

Area covered – 151 ha

Mahanadi Coalfields Limited (MCL) operates coal mines at Lajkura in the Jharsuguda district of Odisha. It undertook reclamation of a section of the Lajkura opencast mine. The reclamation project is spread across 151 ha. The public sector undertaking, Coal India Limited, also the parent company of MCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

18. Intervention – Assisted Natural Regeneration

Actors – Public Sector Undertaking

Area covered – 100000 ha

Assisted natural regeneration was carried out on 100000 ha of land along the Chilika lake in Puri, Khurda and Ganjam district of Odisha. The objective was to restore the ecological balance of the lake, and to provide continued livelihood to the people in the villages surrounding the lake. The Chilika Development Authority (CDA), National Institute of Oceanography, Goa, and Central Water and Power Research Station, Pune and local communities were the major actors involved in the intervention. Women and tribal communities were equally involved in the process. The benefits from this intervention include controlled salinity, fishery productivity, auto recruitment of fish, prawn and crab, decline in weed infestation, depth of channel, changes in local community income, and improved stakeholder awareness. A better linkage has been established between CDA and fisher community following implementation this intervention. Local communities are primary beneficiaries of the intervention.

19. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Since early 1970s, assisted natural regeneration of forest area was carried out at Belposi and Mathuramandali village in Kendujhar district of Odisha with the objective to restore degraded forest area; increase access of fuel wood, timber, and fodder for the local community. Van Suaraksha Samiti, community-based organizations like, school committee; self-help groups, forest department, and local communities are the major actors involved in the project. Local communities are the primary beneficiary of the intervention with increased access to fodder, fuel wood and timber.

20. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 77000 ha

In Athamalik village of Angul district, Odisha around 77000 ha of forest area was restored using assisted natural regeneration. Village Forest Protection Committee, Gram Sabha, Forest Department, and local communities have played an active role in this community-led intervention. Local communities are deriving benefits such as reduced incidents of forest fire, increased availability of fodder, and fuel wood. A monitoring plan involving local community exists in the village.

21. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Area covered – 18.07 ha

Assisted natural regeneration of 18.07 ha of forest area was carried out at Baghamunda village in Puri district of Odisha during the 2000s. Restoration of the forest for shelter to fishermen during cyclones, high wind blows and torrential rains was the driving factor behind this intervention. Kianasi Paryatana Vikas Parisada, village committee, and local communities were actively involved in the intervention. Local communities are primary beneficiary of this intervention.

22. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

With the objective of restoring forest, and preventing over-exploitation of natural resources at Daleiguda village in Koraput district, Odisha, a restoration intervention using assisted natural regeneration technique was carried out. Village committee, Bana Durga Jungle Committee, self-help groups, and local communities are the major actors involved in the intervention. The benefits received by local communities include reduced incidents of forest fires and availability of fuel wood and fodder. A monitoring plan involving local community exists in the village.

23. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Since 1982, assisted natural regeneration of forest area have been carried out at Dasmauja village in Nayagarh district of Odisha. Maa Maninag Jungle Parishad, Anchalika Jana Kalyan Committee, and local communities are the major actors involved in the intervention. The benefits from this intervention include availability of forest resources like fuel wood, bamboo, and non-timber forest produce; check on mining activities in the protected area; reduced soil erosion and siltation; increased soil fertility, moisture content and optimum regulation of rainfall and temperature in the region. Local communities are the primary beneficiary of the intervention. A monitoring plan involving local community exists in the village.

24. Intervention – Assisted Natural Regeneration

Actors – Forest Department, Local Communities

Area covered – 291 ha

Community-led assisted natural regeneration of 291 ha of mangroves was carried out at Dhamara village in Bhadrak district of Odisha. Eco-Development committee and local communities are the major actors involved in the intervention. The intervention is spread across revenue land. Improved biodiversity is the key benefit from this intervention.

25. Intervention – Assisted Natural Regeneration

Actors – Non-Government Organization, Community-Based Organization, Local Communities

Community-led assisted natural regeneration of forest area was carried out at Balangir, Odisha in 1980. The aim was restoration of degraded forest, and to increase availability of forest resources for the local community. Village general body, Gadiyajur jungle suraksha samiti, village-level self-help groups, NGO Vasundhara were the major actors involved in this intervention. Regeneration of the forest has resulted in increased availability of non-timber forest produce and fuel wood for

personal use as well as for sale. Local communities are the primary beneficiary of this intervention.

26. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

A community led forest protection started in 1970-71 at Jhargaon village in Jharsuguda district of Odisha with an objective of protecting existing forest resources and livelihood opportunities of the community which depended on the forest. An executive committee led the intervention initially and it was later taken over by the Van Suraksha Samiti (VSS). Joint Forest Management activities facilitated the local effort to protect the forest by helping them form a VSS. The benefits received by the local community include enhanced biodiversity owing to continued protection and livelihood opportunities.

27. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 1600 ha

A group of ten villages initiated assisted natural regeneration in the Rupabalia reserve forest in the Dhenkanal district of Odisha. Scarcity of forest products was the major driving force for this intervention, which was spread across 900 ha of reserved forest and 700 ha of khesra (not demarcated as protected forest, under the revenue department). Each village has a forest protection committee which works in convergence with the joint forest management committee. The benefits of protection include regeneration of forests, improved availability of fuel wood, and increased non-timber forest products for the local communities.

28. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 360 ha

Efforts to restore the degraded forests of Bingiri Hill in Puri, Odisha started in 1970. The social forestry efforts were carried out over 360 ha. The objective was to restore degraded forests and to provide better livelihood opportunities for communities in eight villages. Briksha O Jeevar Bondhu Parishad, the Village Councils of each village, local communities, and the National Social Service were the major actors in this intervention. Socially disadvantaged members of the local communities were equally involved in the intervention. The benefits received by the local communities include increased availability of fodder, fuel wood, and non-timber forest products. The local communities are the primary beneficiary of the intervention. Presence of strong pro-restoration leadership in the village community has helped sustain the restoration intervention.

29. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 2810 ha

The Odisha State Forest Department initiated a mixed plantation over coastal areas in 10 districts of Odisha in 2006. The intervention spread over 2810 ha received funding from the Japanese International Cooperation Agency (JICA). State Forest and Environment Department, Van Samrakshan Samitis, village self-help groups, and local communities were the major actors involved in the project.

30. Intervention – Mixed Plantation

Actor - Government

Area covered – 40 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and

funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Odisha, 40 hectares (ha) have been brought under CAMPA plantation since 2011.

31. Intervention – Mixed Plantation

Actor - Government

Area covered – 100 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Odisha, 100 hectares (ha) have been brought under CAMPA plantation since 2015.

32. Intervention – Assisted Natural Regeneration

Actor – Non- Government Organization

Area covered – 53228 ha

Foundation for Ecological Security conducted a mixed plantation intervention in 53228 ha of Government land (JFMC land, panchayat and revenue wasteland) in Odisha. Varied native species including *Dendrocalamus strictus*, *Semecarpus anacardium*, *Emblia officinalis*, *Pongamia pinnata*, *Mangifera indica*, *Bixa orellana*, *Tamarindus indica*, *Artocarpus heterophyllus*, and *Annona squamosa* were planted.

33. Intervention – Plantation

Actor – Government

Area covered – 22660 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Odisha from 2012 to 2017 onwards, covering 22660 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

34. Intervention – Plantation

Actor – Private

Area covered – 87 ha

During 2011-2016, the cement manufacturing industry ACC limited took up a plantation in around 87 ha private land in Odisha with an objective to restore the top soil after the mining operations. The company was also involved in harvesting of water in the mining pits.

35. Intervention – Plantation

Actor –Private

Area covered – 351 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 351 ha of degraded farmland in Odisha. Fast growing species Eucalyptus, Casuarina and Subabul was planted.

36. Intervention – Plantation

Actor –Private

Area covered – 8500 ha

Since 2014, J K Paper Mills undertook plantation of fast growing species of Eucalyptus (*Eucalyptus camaldulensis*; *Eucalyptus deglupta* Blume; *Eucalyptus spp*; *Eucalyptus urophylla*) in around 8500 ha of private land in Odisha.

PUDUCHERRY

1. **Intervention** – Mixed plantation

Actors – Government

Area covered – 217 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Puducherry from 2014 to 2017 covering 217 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. **Intervention** – Mixed Plantation

Actors – Local Communities

Area covered – 28.3 ha

Yorit and Aviram Rozin took up an intervention to revive degraded land near Puducherry in 2005. A mixed plantation development was pursued on 28.3 ha of private land, which is now open to public as Sadhana forest. The objective was to protect endangered plant species and support surrounding rural villages through improved aquifers and water recharge. Further, Sadhana forest attracts many tourists, particularly youth from around the world who gain a practical environmental education during their stay. Various individuals and donor agencies provided funding for this intervention. Apart from the Rozins, major actors involved in the project were volunteers and local communities. The benefits realized include lifting the local water table by 20 feet, reforestation of indigenous tropical dry evergreen forest and rainwater harvesting. The present system of trenches and earth dams store over 50,000 cubic m of rainwater. Local communities and youth are the primary beneficiaries of this intervention.

PUNJAB

1. **Intervention** – Mixed plantation

Actors – Government

Area covered - 10728 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Punjab from 2014 to 2017 covering 10728 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. **Intervention** – Plantation

Actors – Forest Department

Area Covered – 2990 ha

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was carried in Punjab from 2015 to 2017 covering 2990 ha. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

3. **Intervention** – Plantation

Actors – Government

Area Covered – 2990 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Punjab from 2012 to 2017 onwards, covering 568 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

RAJASTHAN

1. Intervention – Mixed Plantation

Actors – Local Communities, Non-Government Organization

Area covered – 122958 ha

During the years 2011 to 2017, Foundation for Ecological Security initiated a massive restoration intervention in 122958 ha of land in Rajasthan. Varied native species including *Acacia catechu*, *Acacia nilotica*, *Acacia leucophloea*, *Acacia senegal*, *Albizia lebbeck*, *Pongamia pinnata*, *Emblia officinalis*, *Azadirachta indica*, *Holoptelea integrifolia*, *Annona squamosa*, *Gmelina arborea*, *Manilkara hexandra*, *Dendrocalamus strictus*, *Madhuca longifolia*, *Aegle Marmelos*, *Terminalia bellirica*, and *Butea monosperma* were planted. Local communities also played an active role.

2. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Dungarpur, Rajasthan in 2015. The primary implementing agency is Rajasthan *Bal Kalyan Samiti* and the program covers 400 ha. *Aonla* species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

3. Intervention – Mixed plantation

Actors – Government

Area covered - 183949 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Rajasthan from 2014 to 2017 covering 183949 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

4. Intervention – Assisted Natural Regeneration

Actors – Non-Government Organization, Forest Department, Political Party, Local Communities

Area covered – 500 ha

Since 1985, assisted natural regeneration of 500 ha of forest area has been carried out at Suali village in Udaipur district of Rajasthan. The objective was to halt illicit felling in the forest and prevent forest fires. The Communist Party of India, Seva Mandir (a local non-governmental organization), the Forest Protection Committee and the Forest Department were the major actors involved in this intervention. The benefits received by local communities include the regeneration of dominant species, reduction in soil erosion, and increased forest floor biomass.

5. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 66 ha

Since 1984, assisted natural regeneration has been carried out in 66 ha of forest area at Patari dang in the Karauli district of Rajasthan. The objective was to reduce forest degradation caused by illicit felling, grazing pressures, and illegal mining. Van Suraksha Samiti, Mahila Mangal Dal and local communities were the major actors involved in this intervention. The project drew support from the Joint Forest Management Program, as it facilitated the formation of the two community-based organizations. The Forest Department gave funding to the villagers under this scheme. The benefits received by the local communities include easy availability of resources such as fodder, fuel wood, and leaf litter for mulching, and increased water level in the wells.

6. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Local Communities

Since 1985, assisted natural regeneration of village commons has been carried out at Kishori village in Alwar district of Rajasthan land with the objective of enhancing the village's water resources. Tarun Bhagat Sangh Aravari Sansad, a group formed by around 70 villages for preserving and protecting the entire stretch of the Aravari River, played a major role in this intervention. Socially disadvantaged members of the local community played an equally important role in this intervention. The benefits received by the local communities from this intervention include reduced soil erosion and a surplus of water. The intervention helped lift the water table from 200 feet to 20 feet.

7. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 375 ha

Since 1988, assisted natural regeneration of 375 ha of forest area has been carried out at Ledhor kala in the Karauli district of Rajasthan with the objective of increasing the availability of fuel wood and timber. Mahila Mangal Dal, Van Suraksha Samiti, the local community, and the Forest Department were the major actors involved in this intervention. Socially disadvantaged members of the community were equally involved in the intervention. The Forest Department carried out plantation drives under the Sanza Van Pariyojana (social forestry scheme). The benefits received from this intervention include increased availability of fuel wood, fodder, and water for the local communities, who are the primary beneficiary.

8. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization, Non-Government Organization

Since 1986, assisted natural regeneration of forest area has been carried out at Bhaonta-Kolyala village in the Alwar district of Rajasthan. The objective was to restore water sources in the village. The Gram Sabha and NGO-Tarun Bhagat Sangh were the major actors involved in this intervention. Only youth were involved among the socially disadvantaged members of the community. The benefits received by the local community include availability of water all around the year, increased soil fertility and fodder availability, and decreased out migration. The local communities are the primary beneficiary of this intervention. The intervention has been sustained because the local community understands the crucial linkage between forests, agriculture, pastoralism, and livelihood opportunities.

9. Intervention – Plantation

Actors – Private Sector

Area covered – 145 ha

During 2011-2016, the cement manufacturing industry ACC limited took up a plantation in around 145 ha private land in Rajasthan with an objective to restore the top soil after the mining operations. The company also involved in harvesting of water in the mining pits.

10. Intervention – Assisted Natural Regeneration

Actors – Non-Government Organization, Local Communities
Area covered – 3000 ha

Assisted natural regeneration of around 3000 ha of land over a period of 42 years from 1966 to 2008 was carried out at Baran in Rajasthan. This intervention has received funding from multiple agencies such as Interchurch Organization for Development Co-operation (ICCO–The Netherlands), Evangelischer Entwicklungsdienst (EED – Germany), Canada India Village Aid (CIVA). The objective was to promote agriculture and livestock in the region, reduce deforestation and fragmentation, empower local institutions, and strengthen human capabilities and livelihood opportunities. Seva Mandir, and local communities were the major actors in the intervention. Women were equally involved in the process. The benefits include restored ecosystem, enhanced natural resource, increased agricultural productivity and better livelihood opportunities for the local communities who are the primary beneficiaries of the intervention.

11. Intervention – Assisted Natural Regeneration

Actor - Government
Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Rajasthan, 50 hectares (ha) have been brought under CAMPA plantation since 2015.

12. Intervention - Assisted Natural Regeneration

Actor - Government
Area covered – 50 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Rajasthan, 50 hectares (ha) have been brought under CAMPA plantation since 2014.

13. Intervention - Plantation

Actor - Government
Area covered – 6250 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Rajasthan from 2012 to 2017 onwards, covering 6250 ha. The benefits from this intervention will be increased forest cover,

enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

14. Intervention - Plantation

Actor - Private

Area covered – 2421 ha

Since 2008, ITC Limited has been involved in restoration of 2421 ha of village pastures and common lands in Rajasthan. Common species that were planted and which also came up due to in-situ rootstock regeneration include *Acacia leucophloea*, *Azadirachta indica*, *Butea monosperma*, *Acacia leucophloea*, *Azadirachta indica*, *Butea monosperma*, *Fagonia indica*, *Ziziphus nummularia*, and *Leptadenia pyrotechnica*.

SIKKIM

1. Intervention – Mixed plantation

Actors – Government

Area covered - 5785 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Sikkim from 2014 to 2017 covering 5785 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 227 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at North district in Sikkim in 2015. The primary implementing agency is *Krishi Vigyan Kendra* and the program covers 227 ha. Mandarin, Orange and Guava fruit tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

3. Intervention – Plantation

Actors – Government

Area covered – 6231 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Sikkim from 2012 to 2017 onwards, covering 6231 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

TAMIL NADU

1. **Intervention** – Mixed plantation

Actors – Government

Area covered - 143304 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Tamil Nadu from 2014 to 2017 covering 143304 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. **Intervention** – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 400 ha

Irula Tribe Women's Welfare Society (ITWWS) initiated a mixed plantation intervention in 400 ha of village commons land in the Chengulpet district, Tamil Nadu. The intervention began in 1986. The objective was to document and enhance skills of Irula women through eco-development interventions centered on indigenous knowledge of forests and medicinal plants. ITWWS's work was supported by government and non-government funds, including the National Wetlands Development Board and Ministry of Tribal Affairs. A defining feature of this intervention was the leadership role played by women in both design and implementation. The benefits included rehabilitation of village commons, increased availability of fodder and improved livelihood opportunities for women of Irula tribe. The intervention produced three key business types: nursery development, eco-tourism, and herbal centers.

3. **Intervention** – Assisted Natural Regeneration

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 116 ha

Longwood Shola Forest in Coimbatore, Tamil Nadu, has benefitted from assisted natural regeneration of 116 ha of forest area since the 1980's. The objective was to protect the Shola forest from illegal and rampant felling. The Longwood Shola Watchdog Committee (LSWC), the Forest Department and the local community are the major actors. The benefits of the intervention include spontaneous regeneration of native species in the open and degraded areas within the shola, and improved availability of drinking water. Local communities are primary beneficiary of the intervention.

4. **Intervention** – Assisted Natural Regeneration

Actors – Non-Government Organization, Local Communities

Area covered – 2200 ha

A major part of Auroville township falls in Villupuram district of Tamil Nadu. It has some parts in Union Territory of Puducherry. The township has witnessed 2200 ha of mixed plantation since 1968. The objective is to restore the tropical dry evergreen forest in and around the Auroville township. The Point Foundation, Tamil Fund, and local settlers are major actors involved in the intervention. The benefits received by the local settlers include a better forest cover, and improved biodiversity in the region.

5. **Intervention** – Assisted Natural Regeneration

Actors – Non-Government Organization, Corporate Sector, Local Communities

Area covered – 300 ha

Annamalai Rainforest Restoration Program was initiated at Annamalai Hill Range in Coimbatore district of Tamil Nadu in 2000 with the objective to improve forest cover and natural resource management in the forest. Under the project 300 ha of forest area was selected for assisted natural regeneration. The project which was implemented by Nature Conservation Foundation received funding support from various sources like Tata Group, Parry Agro, United Planters Association of Southern India (UPASI), Hindustan Lever Ltd, Tea Estates India Ltd and Bombay Burmah Trading Corporation Ltd. Nature Conservation Foundation also actively conducts a regular monitoring of the project.

6. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 400 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Kolli hills in Namakkal district of Tamil Nadu in 2015. The primary implementing agency is M. S. Swaminathan Research Foundation and the program covers 400 ha. Mango fruit tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

7. Intervention – Mixed Plantation

Actors – Community-Based Organization, Non-Government Organization, Private Sector, Local Communities

Area covered – 20 ha

A community-based mangrove restoration was started in Palk Bay across Pudukottai and Thanjavur districts of Tamil Nadu. This five-year intervention that began in 2000, used multiple tree species over 20 ha with an objective to restore and manage patchy mangroves of the Palk Bay and create awareness among the fisher folk community about the importance of protecting the Palk Bay region and its endangered species. OMCAR foundation, Lighthouse Foundation, Deepwave, Dr. Schmidt AG & Co., and local communities are major actors involved in the project. Women and tribal community were equally involved in the process. The benefits received by the local communities include enhanced economic vitality, improved local livelihood, and ecological balance in the region.

8. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 180000 ha

The Tamil Nadu State Forest Department initiated a mixed plantation over coastal areas in 800 villages in Tamil Nadu in 2005. The intervention spread over 180000 ha received funding from the Japanese International Cooperation Agency (JICA). State Forest and Environment Department, Van Samrakshan Samitis, village self-help groups, and local communities were the major actors involved in the project.

9. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 100 ha

Since 1989, efforts to restore 100 ha of forest through mixed plantations were undertaken across Vatakkanal in the Dindigul district of Tamil Nadu. The objective was to reduce degradation of Shola forest. Vattakanal Organisation for Youth and Environment, the Forest Department, and local communities were the major actors involved in the intervention. The benefits received by the local communities, who were primary beneficiary of this intervention, include improved water security and biodiversity conservation.

10. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization, Local Communities
Area covered – 0.3 ha

Keystone Foundation with support from the local panchayat and citizen's forum restored a 0.3 ha area through mixed plantation. The intervention began in 2006 and is continuing. Major species planted were Montane Shola type including *Syzygium* sp., *Vernonia* sp. and *Ligustrum* sp.

11. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community-based Organization, Local Communities
Area covered – 0.5 ha

Keystone Foundation with support from the local panchayat and citizen's forum initiated a mixed plantation in a 0.1 ha area in the year 2015 and added another 0.4 ha in the subsequent year. Major species planted were Montane Shola type including *Syzygium* sp., *Vernonia* sp. and *Ligustrum* sp.

12. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization
Area covered – 104 ha

Nature Conservation Foundation has initiated the restoration of a 104-ha private land in Tamil Nadu. The effort that started in 2008 has so far planted around 60 different species of native plants.

13. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization
Area covered – 30 ha

Nature Conservation Foundation took up restoration of a 30-ha private land during 2005-2008 in Iyerpadi, Coimbatore in Tamil Nadu. Around 60 different native species were planted in the area which was a remnant of a ropeway structure.

14. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization
Area covered – 100 ha

Nature Conservation Foundation took up restoration of a 100-ha private land during 2004-2010 in Iyerpadi, Coimbatore, Tamil Nadu. Around 62 different native species were planted in the area.

15. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization
Area covered – 5 ha

Nature Conservation Foundation took up restoration of a 5-ha private land during 2004-2008 in Stanmore Forest Fragment, Annamalai hills, Tamil Nadu. Around 52 different native species were planted in the area.

16. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization

Area covered – 19 ha

Nature Conservation Foundation took up restoration of a 19-ha private land during 2001-2006 in Injipara Forest Fragment, Annamalai hills, Tamil Nadu. Around 59 different native species were planted in the area.

17. Intervention – Mixed Plantation

Actors – Non-Government Organization, Community based Organization

Area covered – 11 ha

Nature Conservation Foundation took up restoration of a 11-ha private land during 2010 in Varattuparai Forest Fragment, Coimbatore, Tamil Nadu. Around 41 different native species were planted in the area.

18. Intervention – Plantation

Actors –Government

Area covered –6669 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Tamil Nadu from 2012 to 2017 onwards, covering 6669 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

19. Intervention – Plantation

Actors –Private

Area covered –74 ha

During 2011-2016, the cement company ACC limited took up a plantation in 74 ha private land in Tamil Nadu with an objective to restore the top soil after the mining operations. The company also involved in harvesting of water in the mining pits.

20. Intervention – Plantation

Actors –Private

Area covered –231 ha

During 2014-2017, Apollo Tyres Limited initiated an agroforestry intervention in about 231ha of unused farm land in the Tiruvannamalai district, Tamil Nadu. Another 100 ha has been covered in this intervention in the current year (2018). The main objective of this intervention was to improve soil quality in the unused farm lands. A mix of timber and fruit-bearing tree species including Teak, Malabar Neem, Rosewood, White Sandalwood, Red Sandalwood, Mango, Lemon and Jackfruit were planted. The major benefits from this effort were the improvement in biodiversity and availability of fodder for livestock, besides conservation of soil.

TELANGANA

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Narnoor in Adilabad district in Telangana in 2015. The primary implementing agency is Mahita and the program covers 200 ha. Mango and *Amla* tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed plantation

Actors – Government

Area covered - 443505 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Telangana from 2014 to 2017 covering 443505 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 500 ha

Behroonguda in the Adilabad district of Telangana has benefited from a mixed species plantation project on over 500 ha. The objective for this community-led action was to provision timber and fuel wood for the village and to tie the health and well-being of forests with the wealth of the village. The intervention started in 1990. A Village Forest Protection Committee was formed to spearhead the plantation drive with funds from the Forest Department. The villagers are primarily of the Gond and Naikpod tribes. Women have been an integral part of the process. The improved biological diversity in the region, along with improved soil and moisture conservation, have enhanced non-timber forest products like Mahua flowers. The villagers have been the primary beneficiaries of the intervention: Livelihoods have improved for local communities. Seasonal migration to other areas for work has declined, showing that local communities are now more self-sufficient.

4. Intervention – Plantation

Actors – Non-Government Organization, Forest Department, Local Communities

In the year 2013, Society for Sampurna Grama Swaraj (SSGS) initiated social forestry interventions at Bhadradi in the Kothagudem district of Telangana. Village common land was afforested with the objective of reviving local forests. The local communities are primary beneficiaries of this intervention with improved access to natural resources in the village.

5. Intervention – Assisted Natural Regeneration

Actors – Non-Government Organization, Community-Based Organization, Forest Department

Area covered – 24 ha

Since 1994, assisted natural regeneration of 24 ha of revenue land has been carried out at Mantoor village in the Medak district of Telangana. The objective was to restore forests in the hills and support local livelihood. The Van Suraksha Samiti (VSS) formed in the village, the not-for-profit Carpad and the NGO network on Joint Forest Management were the major actors involved in the intervention. However, socially disadvantaged members of the community were not involved in this intervention. The Joint Forest Management program facilitated this intervention by forming the VSS. The benefits received by the local communities, who are primary beneficiary of the intervention include enhanced livelihood opportunities and improved fodder availability.

6. Intervention – Assisted Natural Regeneration

Actor - Government

Area covered – 20 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Telangana, 20 hectares (ha) have been brought under CAMPA plantation since 2010.

7. Intervention - Mixed Plantation

Actor - Government

Area covered – 32 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Telangana, 32 hectares (ha) have been brought under CAMPA plantation since 2010.

8. Intervention - Plantation

Actor - Government

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Telangana from 2012 to 2017. The

benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

9. Intervention - Plantation

Actor - Government

Area – 42235 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 42235 ha of degraded wasteland in Telengana. Fast growing species Eucalyptus, Casuarina and Subabul was planted.

TRIPURA

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 68 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at West Tripura district in Tripura in 2015. The primary implementing agency is Voluntary Health Association of Tripura and the program covers 68 ha. Paddy, Mango and Guava species were used with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention - Agri-horti-forestry

Actors – International Organization, Community-Based Organization

Area covered - 8956 ha

Indo German Development Cooperation- Participatory Natural Resource Management in North Tripura and Dhalai districts of Tripura was implemented by Tripura State Government from 2009 to 2017 covering 8956 ha of private land. Agri-horti-forestry intervention was adopted with funding support from KfW, Germany and Government of Tripura with the objective of enhancing livelihood opportunities for rural people such as tribal shifting cultivators, and improvement in the environmental conditions of the region. Village Development Planning and Implementation Committee, KfW and village Self-help groups played an important role. Swarnjayanti Gram Swarojgar Yojana, Mahatma Gandhi National Rural Employment Guarantee Act and other Government programmes were converged. Three market linkages were developed

1. to capitalize on the large demand for fish throughout the state, many of the SHGs have been given training on Fishery. The local cooperatives have been linked with all such SHGs at their respective places for buying the products from the SHGs/villagers;
2. Tripura Bamboo Mission (TBM) has been linked with all bamboo-based SHGs and their activities to the appropriate market-channels;
3. Medicinal Plants Board of Tripura (MPBT) has been tied-up with for undertaking all activities related to plantation and commercialization of medicinal plants and products. Local community are primary beneficiary of this intervention.

3. Intervention – Mixed plantation

Actors – Government

Area covered - 23600 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Tripura from 2014 to 2017 covering 23600 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

4. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 13000 ha

Since 1987, a mixed plantation drive over 13000 ha of forest area has been carried out in the Melghar region, West Tripura, Tripura. The driving force behind this intervention was rampant forest degradation and an acute shortage of fuel wood, fodder, and water. Acharya Jagdish Chandra Bose Briksha Mitra Sangha (AJCBMS), Nehru Yuva Kendra, the Forest Protection and Regeneration Committee, the Forest Department, and local communities were the major actors involved in this intervention. Socially disadvantaged members of the community were equally involved. The benefits received from this intervention for the local communities include increased availability and quality of forest products and a higher water table.

5. Intervention – Plantation

Actors – Government

Area covered – 14931 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Tripura from 2012 to 2017 onwards, covering 14931 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

6. Intervention - Plantation

Actors – Forest Department

Area covered - 700 ha

Tripura Forest Development and Plantation Corporation Limited has undertaken a plantation intervention in around 7000 ha of Government Land in Tripura. The five year intervention started in 2015 included *Hevea brasiliensis* and *Bambusa* spp.

UTTAR PRADESH

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Mehroni in Lalitpur district of Uttar Pradesh in 2015. The primary implementing agency is Awadesh Sewa Samiti and the program covers 200 ha. *Aonla*, Guava, lemon and other forestry tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed Plantation

Actors – Community-Based Organization, Forest Department, Local Communities

Area covered – 178 ha

With an objective to protect forest land from encroachment by other agencies, a restoration initiative was started over 178 ha of forest area in Gursikram forests in the Aligarh district of Uttar Pradesh. Bhu Mukti Jan Sangharsh Samiti, the Forest Department, and local communities were the major actor involved in assisted natural regeneration of the forests. Besides reducing the encroachment activities, the benefits received by the local communities include increased availability of fodder for livestock and biodiversity conservation.

3. Intervention – Mixed plantation

Actors – Government

Area covered - 270286 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Uttar Pradesh from 2014 to 2017 covering 270286 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

4. Intervention – Mixed Plantation

Actors – Public-Sector Undertaking

Area covered – 898 ha

Northern Coalfields Limited (NCL) operates coal mines at Bina in the Sonbhadra district of Uttar Pradesh. It undertook reclamation of a section of the Bina opencast mine. The reclamation project is spread across 898 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

5. Intervention – Mixed Plantation

Actors – Public-Sector Undertaking

Area covered – 733 ha

Northern Coalfields Limited (NCL) operates coal mines at Kakri in the Sonebhadra district of Uttar Pradesh. It undertook reclamation of a section of the Kakri opencast mine. The reclamation project is spread across 733 ha. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

6. **Intervention** – Agroforestry

Actors – Non-Government Organization, Government Organization

Area covered – 4000 ha

Over 4000 ha of land has been afforested boundary trees in farm land. This intervention began in two villages of Western Allahabad in Uttar Pradesh in 1996 with the objective of afforesting the area, and increasing livelihood opportunities for the local community. International Network for Bamboo and Rattan (INBAR), NGO Utthan and Indian Council of Forestry Research and Education (ICFRE) were the major actors involved in the intervention. Primarily, ICFRE was involved in the beginning of the intervention. Improvement in soil health, increase in groundwater levels, and diversification of livelihood options which has also resulted in reduced migration from the village.

7. **Intervention** – Mixed Plantation

Actors – Public-Sector Undertaking

Northern Coalfields Limited (NCL) operates coal mines at Krishnashila in the Sonebhadra district of Uttar Pradesh. It undertook up reclamation of a section of Krishnashila Opencast mine. The public sector undertaking, Coal India Limited, also the parent company of NCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

8. **Intervention** – Mixed Plantation

Actors – Government Organization, International Organization

Area covered – 320 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken a plantation activity during 2012-2014 in several villages of Varanasi district, Uttar Pradesh. The intervention covered around 320 ha and included varied species like *Azadirachta indica*, *Tectona grandis*, *Haplophragma adenophyllum*, *Tamarindus indica*, *Terminalia arjuna*, *Terminalia belerica*, *Embillica officinalis*, *Eucalyptus spp.* (*Eucalyptus Hybrid*), *Acacia catechu*, *Acacia auriculiformis*, *Cassia siamea*, *Bombax ceiba* and *Acacia mangium*.

9. **Intervention** – Mixed Plantation

Actors – Government Organization, International Organization

Area covered – 506 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken a plantation activity during 2012-2014 in several villages of Allahabad district, Uttar Pradesh. The intervention covered around 506 ha and included varied species like *Embillica officinalis*, *Tectona grandis*, *Acacia auriculiformis*, *Acacia mangium*, *Terminalia arjuna*, *Haplophragma adenophyllum*, *Madhuca indica*, *Holoptelea integrifolia*, *Dalbergia sissoo*, *Albizia lebbek*, *Cassia siamea*, *Azadirachta indica*, *Annona squamosa* and *Tamarindus indica*.

10. Intervention – Mixed Plantation

Actors – Government Organization, International Organization

Are covered – 287 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken a plantation activity during 2012-2013 in several villages of Chitrakoot district, Uttar Pradesh. The 287 ha area covered varied species including *Embilica officinalis*, *Tectona grandis*, *Acacia auriculiformis*, *Acacia mangium*, *Terminalia arjuna*, *Haplophragma adenophyllum*, *Madhuca indica*, *Holoptelea integrifolia*, *Dalbergia sissoo*, *Albizia lebbeck*, *Cassia siamea*, *Azadirachta indica*, *Annona squamosa* and *Tamarindus indica*.

11. Intervention – Mixed Plantation

Actors – Government Organization, International Organization

Are covered – 950 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken several plantation activities during 2012-2014 in Sonbhadra district, Uttar Pradesh. Almost 950 ha of private lands were covered by the intervention and varied species including *Azadirachta indica*, *Butea monosperma*, *Dalbergia sissoo*, *Tectona grandis*, *Embilica officinalis*, *Prunus persica*, *Aegle marmelos*, *Ziziphus jujuba*, *Pterocarpus marsupium*, *Bahunia variegata*, *Ficus religiosa*, *Terminalia bellerica*, *Holoptelea integrifolia*, *Pongamia pinnata*, *Acacia nilotica*, *Acacia catechu*, *Tamarindus indica*, *Syzygium cumini*, *Delonix regia*, *Albizia lebbeck*, *Cordia allamanda* and *Terminalia arjuna* were planted.

12. Intervention – Mixed Plantation

Actors – Government Organization, International Organization

Are covered – 265 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken a plantation activity during 2012-2014 in several villages of Mahoba district, Uttar Pradesh. The 265 ha area covered varied species including *Azadirachta indica*, *Butea monosperma*, *Dalbergia sissoo*, *Tectona grandis*, *Embilica officinalis*, *Prunus persica*, *Aegle marmelos*, *Ziziphus jujuba*, *Pterocarpus marsupium*, *Bahunia variegata*, *Ficus religiosa*, *Terminalia bellerica*, *Holoptelea integrifolia*, *Pongamia pinnata*, *Acacia nilotica*, *Acacia catechu*, *Tamarindus indica*, *Syzygium cumini*, *Delonix regia*, *Albizia lebbeck*, *Cordia allamanda*, and *Terminalia arjuna*.

13. Intervention – Mixed Plantation

Actors – Government Organization, International Organization

Are covered – 268 ha

With the support from Uttar Pradesh Forest Department and the local JFMCs, JICA has undertaken a plantation activity during 2012-2015 in several villages of Jhansi district, Uttar Pradesh. The 268 ha area covered varied species including *Acacia auriculiformis*, *Acacia catechu*, *Acacia nilotica*, *Aegle marmelos*, *Ailanthus excelsa*, *Albizia lebbeck*, *Annona squamosa*, *Azadirachta indica*, *Butea monosperma*, *Cassia siamea*, *Dalbergia sissoo*, *Embilica officinalis*, *Holoptelea integrifolia*, *Madhuca indica*, *Moringa oleifera*, *Pongamia pinnata*, *Prosopis juliflora*, *Tamarindus indica*, *Tectona grandis*, *Terminalia arjuna*, *Terminalia bellerica*, and *Ziziphus mauritiana*.

14. Intervention – Plantation

Actors – Government

Are covered – 19158 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Uttar Pradesh from 2012 to 2017 onwards, covering 19158 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

15. Intervention – Plantation

Actors – Government

Are covered – 404100 ha

The Uttar Pradesh Forest Corporation has undertaken a massive plantation intervention in 13 different sites covering around 404100 ha of Government Land. The five year intervention started in 2015 included planting of several species like *Acacia catechu* var. *sundra* Duthie; *Acacia nilotica* (L.) Delile; *Aegle marmelos* (L.) Correa; *Albizia lebbeck* (L.) Benth.; *Albizia procera* Benth.; *Alstonia scholaris* (L.) R.Br.; *Bombax ceiba* L; *Buchanania* spp.; *Cassia fistula* L.; *Cordia dichotoma* J.G.Forst.; *Dalbergia sissoo*; *Ehretia laevis* Roxb.; *Eucalyptus* spp; *Ficus* spp.; *Haldina cordifolia* (Roxb.) Ridsdale;

UTTARAKHAND

1. Intervention – Mixed plantation

Actors – Government

Area covered - 52093 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in Uttarakhand from 2014 to 2017 covering 52093 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

2. Intervention – Plantation

Actors – Forest Department

The National Mission for Green India (GIM) is one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC). The objectives of this mission are to improve quality of forest cover at 5 million ha of forest/non-forest land and enhance forest cover over 5 million ha, improve ecosystem services, and increase forest-based livelihood opportunities for local communities by 2020. With this agenda, GIM was constituted in 2010. Intervention under the GIM was initiated in Uttarakhand from 2015 to 2017. GIM was merged with MGNREGA in 2015 in order to expedite implementation of GIM. In the new role, MGNREGA fund is utilized for pre-planting, weeding, mulching, and other plant operations. Key benefits from GIM include improved livelihood opportunities for local communities and enhanced natural resources in the region.

3. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 543 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Chakrata in Dehradun district of Uttarakhand in 2015. The primary implementing agency is *Sri Nanda Devi Mahila Lok Vikas Samiti* and the program covers 543 ha. Apple, Pear and Pomegranate fruit species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

4. Intervention – Assisted Natural Regeneration

Actors – Local Community

Area covered – 30 ha

Assisted natural regeneration was practiced by village communities at Simalgaon in the Bageshwar district (Kumaon region) of Uttarakhand. 30 ha of village commons were covered under this initiative. Villages of Kumaon region have a long tradition of conservation. In their lath panchayat method, the lathi, a ceremonial stick, goes from family to family. The stick-bearing family is responsible for land restoration. The benefits of this intervention include increased biomass and the availability of oak timber for the local communities. During this intervention, local communities have tried to interest the local youth in forest protection.

5. Intervention – Assisted Natural Regeneration

Actors – Public-Sector Undertaking

Area covered – 385 ha

In Thapaliya-Mehrugaon, Nainital, Uttarakhand assisted natural regeneration has been carried out over 385 ha of village commons with the objective of restoring degraded forest. Van Panchayat, Van Suraksha Samiti, and the NGO-Chirag were the major actors involved in the intervention. In addition, socially disadvantaged people were also involved in the intervention. The benefits include increased water availability and improved soil quality in the region. Local communities are the primary beneficiary of the intervention.

6. Intervention – Assisted Natural Regeneration

Actors – Community-Based Organization

Since 1950, assisted natural regeneration of forest area has been carried out at Dakhyatgaon village in the Nainital district of Uttarakhand. The objective was to re-establish an earlier existing system of sustainable resource use in order to yield fodder, firewood, catchment protection, medicines, wild edibles, fibers, etc. Van Suraksha Samiti and Mahila Mangal Dal were the major actors involved in the intervention. Socially disadvantaged members of the village community were involved. The benefits include a regenerated forest, increased forest products, and improved water availability in the village.

7. Intervention – Assisted Natural Regeneration

Actors – Community- Based Organization

Since 1986, assisted natural regeneration of village commons has been carried out at Holta village in Tehri, Uttarakhand. The objective was to restore water sources of the village and to ensure the availability of firewood and fodder for the community. The Forest Protection Committee is the major actor involved in the intervention, with participation from socially marginalized groups. The benefits received by the local communities include sufficient biomass for household needs and the restoration of three of the village's natural water sources. Small amounts of timber for making agricultural tools like sickles were also available from the forest.

8. Intervention – Mixed Plantation

Actors – Local Community

Area covered – 30 ha

Since 1990, a mixed plantation of over 30 ha of village commons has been carried out at Nagchaund village in the Tehri district of Uttarakhand. The objective was to restore fragmented forest and the water sources of the village. Local community, women and the tribal community were the major actors involved in the intervention. The Forest Department provided funds from the Jawahar Rozgar Yojana scheme for this intervention. The benefits received by the local communities include restored forest, ensured availability of fodder and fuel wood, and restored water sources in the village.

9. Intervention – Assisted Natural Regeneration

Actors – Local Communities, Community-Based Organization

Area covered – 235 ha

In the Pithoragarh district of Uttarakhand, assisted natural regeneration was carried out in around 235 ha of village commons, a part of the Lohathal sacred grove. The five-year intervention began in 1993. The objective of this intervention was to reduce pressures on the forest. The villagers offered the forest to a local Goddess for five years with hopes of reviving it naturally through her blessing. Van Panchayat and local communities inclusive of socially disadvantaged members of the village were the major actors involved. The benefits received by the local communities include increased fuel wood, timber, fodder, and water resources.

10. Intervention – Mixed Plantation

Actors – Forest Department, Government Institutions

A mixed plantation drive was carried out in Laldhang and Jhirna villages around Jim Corbett National Park in Uttarakhand. The objective was to reduce the Lantana infestation through restoration of native species, and biodiversity conservation. Centre for Environmental Management of Degraded Ecosystems, University of Delhi; Centre of Excellence Programme of Ministry of Environment and Forests, Government of India; and Uttarakhand Forest Department were the major actors involved in the intervention. The key outcomes include improved vegetation cover in the area and improved habitat for wildlife such as tiger, sambhar and chital. A monitoring mechanism involving local communities exists in this intervention.

11. Intervention - Mixed Plantation

Actor - Government

Area covered - 5 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Uttarakhand, 5 hectares (ha) have been brought under CAMPA plantation since 2015.

12. Intervention – Mixed Plantation

Actor - Government

Area covered – 320 ha

Under the Forest (Conservation) Act 1980, whenever forest lands are diverted for non-forestry activities, an equivalent non-forest land has to be identified for compensatory afforestation, and funds for raising the compensatory afforestation are to be imposed. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) at both central and state level came into force in 2016 to ensure expeditious utilization of these funds. The rules for utilization of Compensatory Afforestation Funds specify that 80% of the amount will be used by states for plantation and other green projects. These include plantations, assisted natural regeneration, forest fire prevention, pest and disease control, soil and moisture conservation and improvement of wildlife habitat. In Uttarakhand, 320 hectares (ha) have been brought under CAMPA plantation since 2011.

13. Intervention – Plantation

Actor - Government

Area covered – 7202 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in Uttarakhand from 2012 to 2017 onwards, covering 7202 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

14. Intervention – Plantation

Actor - Government

Area covered – 7202 ha

During 2011 and 2017, ITC Limited was involved in a plantation intervention in 1149ha of degraded farmland in Uttarakhand. Fast growing timber species Eucalyptus and Poplar was planted.

WEST BENGAL

1. Intervention – Agri-horti-forestry

Actors – Local Communities, Non-Government Organization, Public Sector Undertaking

Area covered – 200 ha

Wadi is a tree-based farming system wherein fruit trees suitable to an area or a combination of fruit trees with forestry species is adopted on a farm. Two or more species are planted on a farm to avoid biological and marketing risks. The wadi model is one of the integrated tribal development initiatives by The National Bank for Agriculture and Rural Development (NABARD) which has been implemented in various parts of the country. The model has been implemented at Khatra in Bankura district of West Bengal in 2015. The primary implementing agency is *Nari Bikas Sangha* and the program covers 200 ha. Mango and Cashew nut tree species were used along with crops with the objective of improving livelihood opportunity for tribal communities, diversifying income streams and improving access to fuel wood, fodder and non-timber forest produce (NTFP). Local tribal communities and NABARD are the major actors involved.

2. Intervention – Mixed plantation

Actors – Government

Area covered - 25744 ha

The Twenty Point Program (TPP) was initially formulated in 1975, and was restructured for the fourth time in 2006. The restructured programs and schemes Under the TPP cover a broad range of topics and are in harmony with priorities contained in the National Common Minimum Program, the Millennium Development Goals of the United Nations and SAARC Social Charter. In TPP, point nos. 3 and 5 focus on support to farmers and food security and point nos. 16 and 17 are forest and natural resource specific. Under the TPP, interventions were implemented in West Bengal from 2014 to 2017 covering 25744 ha. The benefits of this program include improved natural resource management and enhanced livelihood opportunities for local communities. The interventions are monitored every month and performances are compared across Indian states.

3. Intervention – Mixed Plantation

Actors – Community- Based Organization, Forest Department, Local Communities

Area covered – 450 ha

A 450-ha mixed plantation drive was initiated at Chingra in Midnapore district of West Bengal in 1983. The objective was the revitalization of surrounding forest to provide fuel wood to communities and to provide 50% of products for diversifying livelihoods. The Chingra Forest Protection Committee, the forest department, and local communities worked together in this intervention. Local communities, including the Munda tribe, were equally involved in the intervention. The benefits of the plantation drive were rehabilitation of surrounding forests, provisioning of fuel wood, and resource rights for communities.

4. Intervention – Agro-horti-forestry

Actors – Private Sector, Local Community

Area covered – 399 ha

An agro-horti-forestry intervention is ongoing at Makaibari tea estate in Darjeeling, West Bengal. Spread over 399 ha of private land, this intervention is spearheaded by the Joint Body Committee of Makaibari Tea Estate and the local community. Women and the tribal community are equally involved. Forest cover has increased as a result of prolonged efforts. As a result, the occurrence of landslides and soil erosion has reduced. Biodiversity has also improved and integration of cash crop production and natural ecosystem restoration has resulted in a unique co-existence for

humans, animals and their use of natural resources. A successful business model has been built around this intervention, as the tea of Makaibari estate is high in quality.

5. Intervention – Mixed Plantation

Actors – Public-Sector Undertaking

Area covered – 528 ha

Eastern Coalfields Limited (ECL) operates coal mines at Sonapur Bazar in the Paschim Bardhaman district of West Bengal. It undertook reclamation of a section of the Sonapur Bazar opencast mine. The reclamation project is spread across 528 ha. The public sector undertaking, Coal India Limited, also the parent company of CCL funded the reclamation. The intervention aimed to restore the mined area back to its original landscape and protect the environment and conserve biodiversity in the region.

6. Intervention – Plantation

Actors – Government

Area covered – 22095 ha

The National Afforestation Program (NAP) was envisaged under the 10th five-year plan, 2002-2007 and continues to be a flagship scheme of National Afforestation and Eco-development Board (NAEB). It was set up with the objective of increasing forest cover in India from 23% to 33%. To achieve this target, NAP provides capacity building to Forest Development Agencies (FDA's). The objectives under NAP extend to capacity building at grassroots level, soil and moisture conservation, monitoring and evaluation mechanism, and involvement of local communities in forest resource management. Interventions under this scheme were initiated in West Bengal from 2012 to 2017 onwards, covering 220952 ha. The benefits from this intervention will be increased forest cover, enhanced flow of ecosystem services, particularly, higher carbon sequestration in the region. Monitoring and evaluation are undertaken by both State and Central Governments and random monitoring is carried out by Forest Survey of India.

7. Intervention – Mixed Plantation

Actors – NGO

Area covered – 20 ha

During the year 2011-2014, WWF-India initiated a restoration intervention in Phoobsering Tea Garden Land, Darjeeling, West Bengal. The 20 ha area was planted with varied species including *Castanopsis indica* (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp* (Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.

8. Intervention – Mixed Plantation

Actors – NGO

Area covered – 2 ha

During the year 2011-2014, WWF-India initiated a restoration intervention in Tonglu, Darjeeling, West Bengal. The 2 ha area was planted with varied species including *Castanopsis indica* (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp*

(Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.

9. Intervention – Mixed Plantation

Actors – NGO

Area covered – 10 ha

During the year 2011-2014, WWF-India initiated a restoration intervention in Nagari Farm Tea Garden Land, Darjeeling, West Bengal. The 10 ha area was planted with varied species including *Castanopsis indica* (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termenelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp* (Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.

10. Intervention – Mixed Plantation

Actors – NGO

Area covered – 10 ha

During the year 2015-2016, WWF-India initiated a restoration intervention in Lebong Cantonment Area, Darjeeling, West Bengal. The 10 ha land was planted with varied species including *Castanopsis indica* (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termenelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp* (Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.

11. Intervention – Mixed Plantation

Actors – NGO

Area covered – 15 ha

During the year 2013-2015, WWF-India initiated a restoration intervention in Chatakpur, Darjeeling, West Bengal. The 15 ha land was planted with varied species including *Castanopsis indica* (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termenelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp* (Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.

12. Intervention – Mixed Plantation

Actors – NGO

Area covered – 25 ha

During the year 2013-2015, WWF-India initiated a restoration intervention in Nayabusti and Lanka valley, Darjeeling, West Bengal. The 25 ha land was planted with varied species including

Castonopsis indica (Katus), *Syzygium tetragonum* (Kafal), *Alnus nepalensis* (Utish), *Eriobotrya petiolata* (Maya), *Magnolia sp* (Champ), *Termenelia myriocarpa* (Panisaj), *Prunus ceracoides* (Paiyoun), *Symingtonia populnea* (Pipli), *Syzygium operculutam* (Kyamuna), *Juglans regia* (Okhar), *Machilus sp* (Kawlow), *Rhododendron arboreum* (Guras), *Cinnamomum obtusifolium* (Sinkawlo), *Daphniphyllum himalayense* (Hill Chandan), *Spondias axillaris* (Lapsi) and Oak.