

3. SALIENT FEATURES OF THE PROJECT

The project has indeed improved the landscape of Attappady and has assisted local people, especially the tribal to overcome poverty to a considerable extent. It has generated a massive people's movement for demand-driven development. The project has shifted development discourse from that of contractor-centered, inefficient administrative arrangement to people-centric, transparent and accountable implementation. It has led to a process of social transformation, in which the poorest of the poor enthusiastically participates. Since it is a process project, it needs to conclude by consolidating the outputs gained so far and by clearly defining strategies for project withdrawal, so that post-project Attappady continues to traverse the path of development charted out by the project.

— People's participation

Participatory development is being led by 313 PIs that include 3,573 Executive Members. Almost every third person in Attappady is associated with some PI of the project. People are involved right from planning to execution of activities..

— High women participation

56 percent of the representatives in Executive Committees of various PIs are women. Women actively participate in all activities, particularly in social corrective measures.

— High tribal participation

83 percent of tribals are represented in the Executive Committees of PIs. The 166 OVS ensure full participation of all tribal groups in the developmental activities.

— Good governance

Equitable and transparent implementation arrangements enable the benefits of the project reach the most deserving masses. Regular annual General Body meetings make the Executive Committees accountable to the beneficiaries. Democratic organisation of PIs and annual social audits enhance good governance.

— Watershed approach

The fact that development activities are based on total watershed conservation and development ensures better integration and judicious distribution of financial and human resources.

— Integrated approach

The various ecological and socio economic components of the project are implemented in an integrated manner through multi-disciplinary teams, responsible for taking spot decisions.

— Adaptive management

In the absence of suitable replicable models for eco-restoration, the experience of AHADS evolved through its own design is a constant source of inspiration. 'Doing through learning and learning through doing' are the guiding principles for adapting strategies and approaches in the project implementation.

— Empowering people as instrument of distributive justice

Through various out reach actions such as constant awareness programmes, trainings, exposure visits, environment literacy, dropout reduction, equitable distribution of benefits among beneficiaries etc., the project attempts to improve social capital, thereby creating new avenues for development planning and implementation in this backward region. The project takes special care of the marginalized and backward people so as to enhance their capacities and skills to regenerate environment and take development to their doorsteps.

4. PROJECT IMPACTS, CONSTRAINTS AND FUTURE

The eco-restoration project, through its concept, strategies and implementation activities, has brought about considerable ecological and socio – economic changes in Attappady. Since the programmes deal with holistic development of the region, there are tangible as well as intangible benefits from the project. It has to be recognized that the intangible benefits that relate to enhancing social capital of the marginalized people, such as the tribals, cannot be computed in monetary terms. Yet a large range of rejuvenation activities over the landscape and a desire to improve livelihoods are associated with the tangible benefits, accruing out of the effects of the project. Some of the achievements are briefly narrated below:

4.1 Ecological Impacts

— Greening of hills and valleys

Seven million plants, both in the State forestlands and private wastelands, have covered the otherwise degraded and fallow lands of Attappady due to the project implementation. In a recently concluded survey, it has been found that the survival rate of plants in the forest areas is about 70 percent and in the private wastelands is 62 percent. The growth of the planted stock has brought the greenery back to the landscape with significant positive future implications. A study by Kerala University on the changes in land use pattern between 2001 and 2005 in Attappady indicates positive impacts of greening efforts made by the Project.

— Rejuvenation of water streams

Afforestation and soil and water conservation activities, both in forests and private wastelands have resulted in rejuvenation of streams that have completely dried away decades ago. The Kodungarapallam river that used to flow only during the rainy seasons has been flowing throughout the last year. Similar story is emerging in case of Varagar, a tributary of river Bhavani. Other streams, such as Alamarapallam, Dhaliyarpallam, Uppungarapallam, Puliyapathi stream etc. have also been showing improved annual discharge levels of water. The attempts in the project to ‘make the water walk instead of run’ have greatly enhanced sub-surface water availability resulting in high discharge of water into the streams. These promising outcomes of soil and water conservation activities are a milestone in the development history of Attappady.

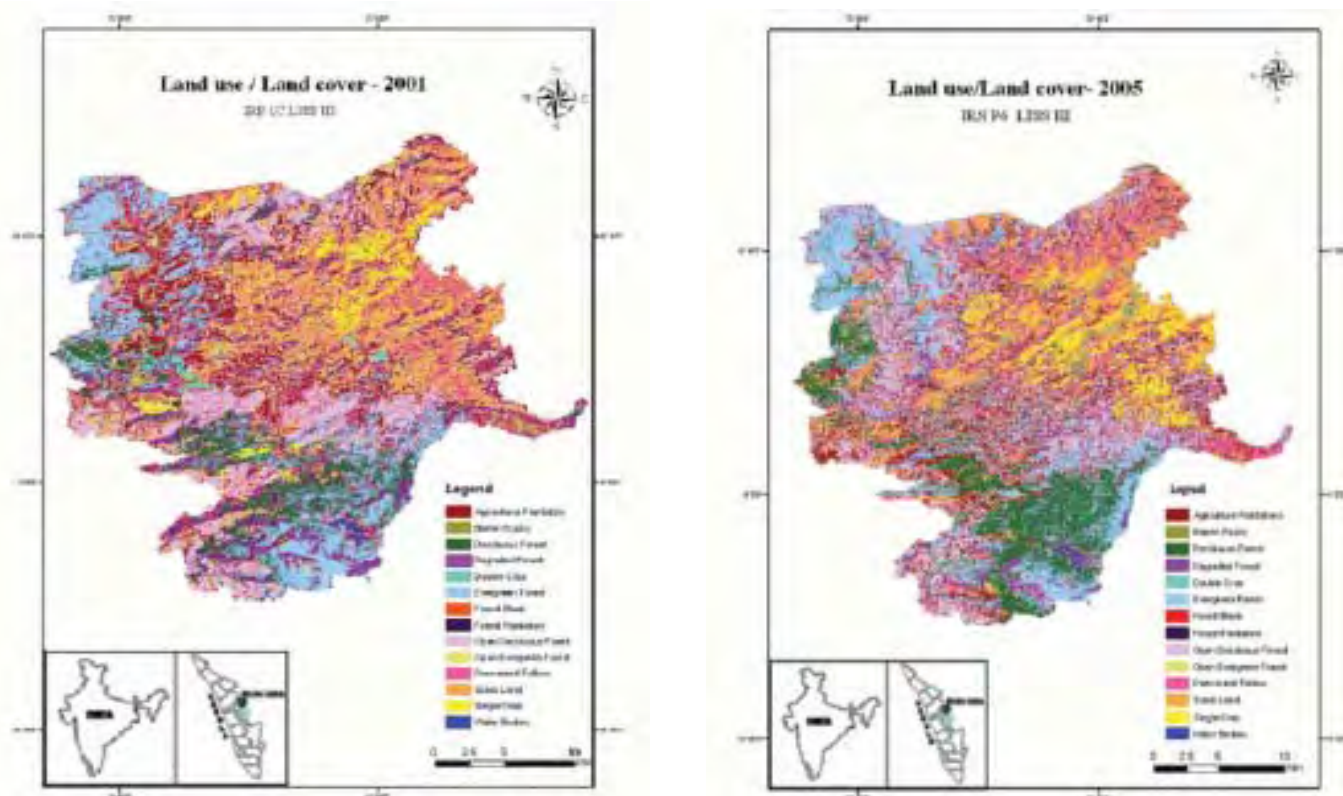
— Increase in ground water availability

Hundreds of thousands of trenches, pits, water retention and harvesting structures constructed over the project period have improved ground water availability. The dry wells of eastern Attappady have increased their water levels by 5 to 40 feet. In a study conducted by the Kerala University, it was reported that in previously reported dry and semi dry wells, the water availability has increased substantially from 7 to 37.8 cubic metres per day.

— Overcoming Drought

Attappady experienced a severe drought in the year 2002. Even as the drought adversely influenced the agrarian society and economy of Attappady, the employment opportunities generated through the project activities throughout Attappady helped the society to face the ordeal with ease.

Land use change from 2001 to 2005



Land use	Land use in 2001 (km ²)	Land use in 2005 (km ²)	Change in land use from 2001 – 2005 (km ²)	Percentage of change in land use from 2001-2005	Impact
A. Forest					
Evergreen Forest	117.00	124.73	7.73	1.03	Positive
Open Evergreen Forest	23.97	8.87	15.10	2.04	Negative
Deciduous Forest	80.85	85.20	4.35	0.58	Positive
Open Deciduous Forest	99.36	144.23	44.87	6.04	Positive
Degraded Forest	57.21	20.07	37.22	4.98	Positive
Forest Blank	0.09	0.27	0.18	0.02	Negative
Forest Plantation	8.36	17.95	9.59	1.28	Positive
B. Agricultural lands					
Single Crop	33.05	51.00	17.95	2.40	Positive
Double Crop	6.82	11.10	4.28	0.57	Positive
Agricultural Plantations	79.68	101.94	22.26	2.98	Positive
C. Degraded Lands					
Scrub land	132.85	107.73	25.12	3.36	Positive
Barren Rocky	0.75	2.71	1.96	0.26	Negative
Permanent Fallow	104.58	69.08	35.50	4.76	Positive

4.2 Social Impacts

— Just wages

When AHADS started project implementation, the daily wage rate prevailing in Attappady, especially in eastern Attappady, was as low as 30 to 50 rupees. AHADS has established and ensured a just wage rate of 80 to 120 rupees through the PIs. Efforts are being made to enhance the daily wage rate to Rs. 125 for both men and women in tune with the wages provided under Employment Guarantee Programme of the Panchayaths.

— Abolition of starvation deaths

Starvation deaths were reported from Vellakulam hamlet in the year 1999, before the field implementation of the project started. However, no such incidents are reported now, which is attributed to the availability of year long employment for the local people, especially the tribals due to the project activities.

— Malnutrition

Diseases related to malnutrition were prevalent in Attappady in the past. A health survey in 51 hamlets covering 2,051 families in the year 1999 had reported 437 cases of anemia. However reports from health care centers testify considerable reduction in such cases today.

— Employment

The project has so far generated more than 4.38 million mandays of employment. These opportunities, in an area known for poverty and unemployment, have favorably influenced the socio-economy of Attappady.

— Labour migration

The widespread tendency of the people of Attappady, mainly the tribal communities, to migrate to Kerala and Tamilnadu plains in search of employment has come down considerably since the advent of the project implementation.

— School dropouts

The dropout rate of children from different schools of Attappady has come down when compared with the previous years. A survey conducted on 14 lower primary schools in the year 1999 – 2000 reported 174 dropouts. However a survey in the educational year 2003-04 had reported only 120 dropouts. In the case of upper primary schools, the reported dropouts in the year 2003-04 from 6 schools were 65 against 107 in the year 1999-2000. In the case of high schools, there were 70 dropouts against 83 in the past. The decrease in school dropouts is attributed to the better socio-economic conditions emerging in the hamlets as a result of project implementation.

— Child labour

Child labour, a common phenomenon in Attappady in the past has drastically come down during the project implementation period, which can be related to the decreasing school dropouts, as more and more children are being sent to the schools.

— Farming crisis and suicide of farmers

The crisis in the farming sector has led some farmers to commit suicide at places like Wayanad, Idukki and Palakkad in Kerala. However widespread project activities have been instrumental in helping the people of Attappady to face the farming sector crisis with equanimity.

— Leadership development

More than 5000 people's representatives are leading 93 UAs, 166 OVSSs, 54 JFMCs, 111 TKSs and 198 IGA groups. The opportunities to officiate responsible positions in the PIs are in turn developing group and regional leadership among the local people. They are also exposed to administrative skills and finance management, which is being recognized by the three-tier Panchayths in the Government.

4.3 Constraints and limitations

- The project implementation primarily depends on local skill and manpower. During the peak agricultural seasons, availability of adequate labour becomes a constraint for implementation of the project activities. As a result, the progress of the project is affected adversely.
- The project has a time slice upto the year 2010. Therefore, the insecure nature of employment makes experienced employees of AHADS to seek secured jobs elsewhere. The constant high out-turn of the staff adversely affects the progress of the project.
- The inadequate availability of raw materials in Attappady for civil constructions and the higher costs involved in transportation of materials to remote corners slows down the pace of the progress of the project.
- The works are executed by PIs on estimates prepared in accordance with the Government approved rates. The demand equation in terms of skilled man power and raw materials exceed local supply, resulting in constant increase in the cost of civil construction. Therefore, many PIs are experiencing losses in the construction works taken up by them, thus slowing down the pace of implementation.
- Interest groups related to production and consumption of illicit liquor and ganja act as formidable challenges to people, especially the women groups, and occasionally members of TKS are harassed in this process. Such incidents decelerate the social drive of the project.
- Inadequate co-ordination between the members of various PIs and political colours in the democratic process occasionally create conflicts, hamper smooth communication of project objectives and slow down the pace of implementation.
- Illiteracy and lack of experience in conflict resolution, especially among the Executive Committee members often slow down the outreach of project objectives.

4.4 Tasks ahead

The project has introduced a new and innovative system of resource governance that assists in the regeneration of degraded lands, while simultaneously providing employment opportunities to the local people. As the project has now reached its consolidation phase, the following actions are taken for achieving the objectives with which the project was designed:

- Inventories of the assets created have been completed and the assets created under the project are being transferred to the PIs with full arrangements for their maintenance and sharing of benefits between PIs and the beneficiaries.
- Arrangements have been made to integrate JFMCs into Van Samrakshana Samithi (VSS) constituted by Forest Department for final transfer of forestlands and their management to the Department. Protocols and manuals are being prepared for management and protection of the regenerated forests under the project and benefit sharing arrangements between the Forest Department and the JFMCs.
- The Enlite programme, dealing with environmental literacy among the tribals and literacy programmes to provide high school level certificates to the learners need to be dovetailed with the State Literacy Mission as part of continuing education programme of the Government, so as to achieve full benefits of the project intervention in the area of tribal literacy. This is being attempted.
- For consolidating grass-root level governance of resources, preparations have been made to federate DU wise PIs for their sustainability and linkage with three-tier Panchayaths and development grant donors for soliciting financial support and executing developmental programmes in their respective watersheds beyond the project period.

— The level of PIs in participatory management is being elevated through HRD programmes, so as to institute new mechanisms of resource governance such as community water management, community seed banks, skill labour pools etc. As part of financial sustainability of the PIs during post-project period, the idea of Community Development Fund (CDF) has been communicated to the PIs and avenues are being studied and institutionalized to allow PIs to generate their own funds.

— The Knowledge and experience gained by AHADS staff in organizing local communities in ecological and social regeneration and creation of procedures thereto, need to be harnessed for utilization beyond project area. This has been attempted by placing before the Government constituted Task Force necessary recommendations.

— The IGA programme under the project has been completely integrated with State wide poverty alleviation programme *Kudumbasree* and a corpus fund of Rs. 4 Crore has been created to support micro enterprises beyond the project period. Loans to the CDS institutions started.

— As part of the project objectives, the processes and methods developed in Attappady project are proposed to be replicated among the tribal communities of Wayand with suitable site specific modifications. The detailed project report for Wayanad is being submitted to the Government.

4.5 Project consolidation

Inventory of all assets created under the Project has been prepared and verified with the local communities, so as to initiate the process of smooth handing over of assets to communities. For forest land transfer, steps have been taken to integrate the Project JFMCs with participatory management programme of the Kerala Forest Department. Similarly, integration of IGA groups with the Kudumbashree has been completed. The spillover works in the field are being completed and process of final bill settlement has picked up pace. The institution of CDF has been given a shape and special team has been constituted to place on ground the CDF institution. Similarly, focus of HR activities is slowly shifting towards enhancing capacities of local communities to manage assets on their own and to establish external linkages for securing financial support from line agencies of the government and elsewhere. Government of Kerala constituted Task Force have prepared a report on the future of AHADS into an organization that could help the government in executing decentralized development planning and implementation. Government have also provided Rs. 17.50 crore for completion of spill over activities and the project completion period has been extended upto 31-12-2010.

5. AHADS - A MODEL OF GOOD GOVERNANCE

The implementation of the project has set in an innovative practice of transparent governance through People's Institutions. A new stratum of neighborhood leadership has emerged to assess, plan, implement and monitor developmental works for sustainable environment and secure livelihoods. AHADS, through implementation of this project has been able to demonstrate the synergy between environment and development and the implementation arrangements made to achieve this synergy qualify these practices to be one of the best practices in ecorestoration and social developmental works. However, the institutional capacities of the PIs and the resolve of local people for similar transparent working in future without conflict and discord, require further strengthening and refinement. In the event of the project winding up without completing this mission, the erstwhile inefficient and non-transparent system may re-emerge; this time maybe with greater vengeance to decelerate the progression towards good governance by the civil society of Attappady.

Therefore, a functional synergy needs to be build up among PIs constituted under the project, the three tier Panchayath institutions and the line agencies of the government, so that the public funds available at various sources for the development of Attappady are mobilized to facilitate informed community participation in the delivery of sustainable development. For this purpose, AHADS has to work still harder to enhance social capital of local community, especially the tribals and assist the civil society in accepting watershed based microplans as local area development plans. The strategy of implementation depending upon grass root, democratic and participatory mechanisms manifested in this project need to be made socially acceptable at all levels of administration.

AGRICULTURE DEVELOPMENT



6. PRIVATE WASTELAND DEVELOPMENT

Agronomic conservation activities focus on bringing the wastelands under cultivation to sustain the income of poor land holders. Suitable land use practices depending upon the land capability classifications to meet the food, fuel and fodder requirements of the households are designed and implemented with the participation of the beneficiaries.

Agriculture Development

- Organic farming and medicinal plantation promoted in 54.2 ha. and 15.8 ha of land respectively
- Innovative farming practices like mushroom production, vermicomposting, coir-pith composting promoted
- 1554 ha of fallow land brought under cultivation by facilitating ploughing prior to summer showers
- 1,35,492 kg of seeds of groundnut, maize, blackgram, redgram, cotton and cowpea have been distributed
- National Seeds Corporation (NSC) directly procured the seeds of groundnut, blackgram etc. for their national requirement.
- Traditional field crops promoted on 664 ha of private land
- 17.6 ha paddy cultivated and 28,350 kg produced
- Cultivation of rubber plantation initiated on 139 ha land

Agroforestry and Agricultural development

- Agroforestry plantations over 5347 ha
- 4.11 million seedlings raised by the PIs for the agro-forestry development works



REPLICABLE MODEL OF WASTELAND AGROFORESTRY



2004



2009

Photographs showing change of Agro-forestry at Kolappadika

Agro-forestry in private wasteland

Agro-forestry aims to utilise spatial and temporal options within the farmland to enhance yield and sustained income for longer duration by mixing forestry species with agriculture crops. It also reduces thrust to forestry sector for fuel wood, small timber, fodder, green leaf manure and support stakes. By implementing agro-forestry packages according to land capability classification improved soil and water regime of the targeted area.

Table 2: Private land development - Agroforestry plantations

SI No	Year	Treated area (ha)	No of plants(no)	Casualty replacement (no)	Total number of seedlings produced
1	2001-02	332.84	79384	15800	256518
2	2002-03	823.42	379132	100419	545512
3	2003-04	999.09	594000	223156	598894
4	2004-05	648.30	391748	18275	978314
5	2005-06	701.23	333560	478471	433427
6	2006-07	793.49	400895	65582	530335
7	2007-08	640.90	349941	93829	387000
8	2008-10	408.00	-	-	380003
Total		5347.27	2528660	995532	41,10,033



Integrated farming

Aims to augment the farm income by utilising farm based by-products. To control grazing and fire wood collection bio-gas plants are promoted, which addresses global warming in a most environment friendly way.

Promotion of biogas

- Aimed at utilizing organic manure, which would otherwise move out of Attappady
- Time saving, smoke free and faster cooking
- Controlling grazing, firewood collection and to promote integrated farming practices
- 478 Units of biogas plant constructed so far

Promotion of vegetable cultivation

- Aimed at encouraging vegetable cultivation in the backyards of users
- Pandals with bamboo poles and interlinking ropes support climbers like bittergourd, snakegourd, cowpea etc
- 10 basin units promoted depending on family size and available land
- 891 Homestead benefited and 71,257 kg Vegetable harvested.

Promotion of livestock

- 374 rabbit units distributed to tribal households as an additional income source for tribal women
- Aimed at production of 2.5 kg of meat per family per week
- Fodder cultivation promoted in 50.22 ha



Cowpea harvesting in Thazhemulli

REPLICABLE MODEL OF TRIBAL LAND FARMING



Photographs showing change of tribal land agriculture at Mulli

Tribal land agriculture through participatory micro irrigation

The improvement in ground water and surface water regime has resulted in gradual increase in agricultural area in the dry regions of Attappady over the past couple of years. Towards bringing back barren and rainfed tribal lands under agriculture, minor irrigation development works designed in a participatory way to benefit the tribal land holders are implemented. Minor irrigation works consist of developing rejuvenated water resources like streamlets or open wells, collecting water in reservoirs and distributing the water to individual land holders. Summer ploughing to recharge the fallows followed by promotion of field crops have yielded impressive results in tribal economy.

Table 3. Organic farming and Medicinal plant gardens

Sl No.	Year	Organic farming (ha)	Medicinal plant gardens (ha)
1	2002-2003	1.80	3.80
2	2003-2004	0	3.20
3	2004-2005	7.10	4.60
4	2005-2006	0	4.20
5	2006-2007	4.30	0
6	2007-2008	5.00	0
7	2008-2010	35.60	0
Total		53.8	15.8

Table 4 : Private land development

Sl.No.	Budget Head	Unit	Physical Achievement
1.	Private land Development	Ha	8,118
2.	Development of Minor irrigation	Ha	800
3.	Private Drainage Line Treatment	Km	361
4.	Private Land use plan (1st)	Ha	4905
5.	Private Land use plan (2 nd)	Ha	4441
6.	Private Land use plan (3rd)	Ha	4600
7.	Private Land use plan (4 th)	Ha	3405
8.	Private Land use plan (5 th)	Ha	3434
9.	Promotion of field crops	Ha	2084

Integrated farming

Promotion of sericulture

- Joint venture of AHADS and Central Silk Board
- Project implemented over 72.6 ha so far
- 201 beneficiaries covered of which about 47% farmers belong to SC/ST category. 54.62 MT cocoon produced



Table 5 : Promotion of Sericulture

Sl.No	Activity	Unit	*2005-06	2006-07	2007-08	2008-09	2009-10	Total
1	Area treated	Ha	18.90	22.80	13.40	15.50	2.00	72.60
2	Saplings planted	Nos	257985	260790	167500	193750	25000	905025
3	Rearing shed Established	Nos	18	19	20	16	22	95
4	Supply of DFLs	Nos	11180	22685	20445	23125	18193	96448
5	Silk worm cocoon production	Mt	6.83	10.73	10.92	13320.51	12654.65	54629.34

**2004-05 included in 2005-06
Project implemented since November 2004*



SOIL AND WATER CONSERVATION



7. SOIL AND WATER CONSERVATION

Soil and water conservation activities are intended to arrest soil erosion and safe disposal of runoff. Ridge to valley conservation measures like gully plugs, percolation ponds, contour trenching and bunding facilitate *insitu* conservation of both soil and moisture. Promotion of summer ploughing in barren lands prior to the showers enable harvesting of rainwater that enhances soil moisture.

Soil and water conservation on private wastelands

- 6728.68 ha private wasteland has been treated with soil and water conservation works
- Drainage line treatment completed in 357.93 km. length
- Minor Irrigations works covered over an area of 764.15 ha.

Summer ploughing

- Summer ploughing promoted in 1554 ha



REPLICABLE MODEL OF SOIL AND WATER CONSERVATION



2002



2009

Photographs showing change of River Kodungarappallam

Participatory soil and water conservation

Comprehensive soil and water conservation programmes along with greening barren hillocks puts emphasis on a watershed based integrated developments of land, water and plant resources to meet basic needs of peoples on a sustainable manner. Ridge to valley treatment of catchments with afforestation, soil conservation and *In situ* water harvesting enable the high velocity runoff to slow down, and percolate to the subterranean layers of the land to replenish the ground water. There is marked improvement in the ground water availability due to project interventions.

Table 6 : Soil and water conservation on private wastelands

Sl No	Structural Conservation	Unit	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
1	Bench Terrace	m	562	10	871	310	361.33	625	0	0	0	2739.33
2	Contour Bund	m	8599.3	13701	74092	76916.7	135194.6	38699.9	32424	4242	2054	385923.5
3	Check Dam	no	327	530	713	755	808	1002	298	177	11	4561
4	Drains	m	1463	6844	27597.6	9116.6	4113.35	197.5	0	0	0	49332.05
5	Fencing	m	670.7	0	0	0	0	0	0	5283	0	5953.7
6	Half Moon Terrace	no	0	10571	0	14021	85782	58837	48830	3382	1122	222545
7	Retaining wall	m	5960.2	2218.5	3336.95	1812.5	2554.3	2760.35	1274	2100	192	22208.8
8	Trenches	no	242061	799685	202248	188469	238619	127191	115536	14968	680	1929457
9	Earthen dam	m ³	0	0	6	2645	7516	19799.1	1400	0	0	31366.1

AFFORESTATION AND

BIOMASS CONSERVATION



8. AFFORESTATION AND BIOMASS CONSERVATION

The forestry interventions have been taken up in the degraded State Forestlands of Attappady block under the jurisdiction of Forest Ranges of Mannarkkad Forest Division. For implementation of the forestry activities in a participatory manner, 54 Joint Forest Management Committees (JFMC) have been constituted. Afforestation and conservation of existing biomass through Joint Forest Management Committees are the measures practiced in the forestlands, in addition to promotion of *insitu* moisture conservation through contour trenches and check dams. Forest patches with less than 40% canopy cover are earmarked for new plantation. Afforestation with locally suitable tree species at a spacing of 3m x 3m in 0.5m x 0.5m x 0.5m sized contour staggered pits with adequate weeding, heavy mulching, soil working etc. is taken up. In case of patches of existing biomass with a canopy cover of over 40% having the potential of natural regeneration, conservation by protecting against tree felling, grazing animals and wildfire with the service of JFM watchers and erecting barbed-wire fencing are taken up.

Afforestation and forest protection works in State forestlands

- Forest regeneration works completed on 11,837.91 ha of forestland (includes 3,776.25 ha of forest plantation and 8,061.66 ha of natural regeneration)
- 226 kilometre (km) forest fencing completed.
- 782.31 km fire protection line maintained.
- Soil and water conservation works completed on 9300 ha of forestland (6.60 lakhs staggered trenches, 8013 gully plugs, 279 km DLT works)
- Avenue plantation completed on 33-kilometre road length.
- 4.08 million seedlings raised by the PIs for the afforestation works.
- 3700 units of energy conservation devices and alternate energy systems have been popularized.



REPLICABLE MODEL OF FOREST LAND REGENERATION



Photographs showing change of Sambarkode forest area

Participatory regeneration and conservation of State forestlands

Forest regeneration works aim at greening degraded forestlands based on the watershed principle of ridge to valley conservation. Forest dependents in the treatment area are implementing the afforestation and biomass conservation programmes, including soil and moisture conservation works and nursery raising. The organizations working in forest areas are known as Joint Forest Management Committees (JFMC). Site identification, demarcation, species selection for planting, microplanning, estimation, implementation, monitoring and evaluation of works are jointly done by the JFMCs. Forest protection, wildfire management, anti ganja, anti arrack raids are jointly conducted with the Kerala Forest Department.

Table 7 : Afforestation and Biomass conservation

SI No	Year	Biomass conservation Area (ha)	Afforestation Area (ha)	Seedlings planted (nos)	Casualty replacement (nos)	Production of seedlings (nos)
1	2000-01	-	69.21	72,785	-	-
2	2001-02	-	226.50	1,70,874	15,750	4,76,460
3	2002-03	792.20	573.67	4,25,047	51,074	7,38,198
4	2003-04	1,347.81	750.89	4,38,705	78,796	4,57,813
5	2004-05	1,334.30	703.78	3,44,482	1,91,656	5,41,944
6	2005-06	941.70	522.26	3,99,500	2,15,252	5,43,245
7	2006-07	1,033.29	501.65	3,04,000	2,90,000	6,20,000
8	2007-08	1774.36	428.29	2,72,630	279560	4,50,000
9	2008-09	838.00	-	-	2,35,207	2,56,428
10	2009-10	-	-	-	1,25,900	-
Total		8,061.66	3,776.25	24,28,023	14,57,195	40,84,088

Table 8 : Avenue plantation and the other Government land plantations

SI No	Year	Location	ha	km
1	2002-03	Mukkali, Chinnapparambu, Kallamala, Thottapura area road side plantation		12.00
2	2003-04	Kadampara, Varagampady, Anakkatty, Vattulaky OLH, Mattathukkad, Thekkumukkiyoor		14.10
	2003-04	Goat farm at Kottathara	2.40	
3	2004-05	Chavadiyoor, Palliyara area avenue planting works		4.00
4	2005-06	Kadampara area		3.00
5	2008-09	MRS school, Mukkali	5.00	
Total			7.40	33.10

Table 9 : Energy saving and alternate energy measures

SI No	Name of work	Year	No.
1	Energy conservation measures - smoke less chula	2002-03	1798
2	Energy conservation measures - hot box	2002-03	1809
3	Improved chula / solar light/ lantern	2005-06	59
4	Solar light	2006-07	22
5	Improved chula	2008-09	13

Table 10 : Details of implementation of forestry components by JFMCs

SI No	Work details	Unit	Total
1	Afforestation	ha	3,776.25
2	Biomass conservation	ha	8,061.66
3	Avenue planting	km	33.10
4	Barbed wire fencing	km	225.80
5	Nursery	Seedlings	40,84,088
6	Structural Conservation	km	279.06

WATER RESOURCE DEVELOPMENT



Earthen dam in Vattulucky

9. WATER RESOURCE DEVELOPMENT

Water resource development activities addresses surface water, sub-surface water and ground water resources. Checkdams and percolation dams aim to control stream flow to retain water for more duration. Systems for aquifer recharge, subsurface dyke etc. help subsurface flow to recharge ground water. Protection of springs, open wells, rain water harvesting, gravity irrigation systems, irrigation channels etc. planned and executed to provide water for domestic and agriculture purposes. Activities are undertaken with the objectives for protection of existing water resources and to ensure water availability on a sustained manner.

Water resource development works

- 1,846 structures including gravity irrigation systems, wells, tanks, spring protection works and ground water recharge systems have been completed
- A soil and water-testing laboratory has been instituted
- 9 meteorological observatories established



Cattle quenching thirst in a stream

REPLICABLE MODEL OF WATER RESOURCE DEVELOPMENT



Photographs showing change of Ranganathapuram Drainage Line

Participatory water resource development

Participatory semi-arid region water resource development activities are undertaken with the objectives of protection of existing water resources and to enhance recharge of aquifers in order to ensure water availability on a sustained manner. Base flow diversion systems, percolation ponds, rainwater harvesting systems, spring protection, check dams, ground water recharging systems, aquifer recharging systems, subsurface dyke, gravity irrigation systems etc. are the major structural works undertaken in the project by various PIs.

Table 11 : Water resource development activities – achievements

Sl. No	Activities	Unit	Achievements							Total
			2000-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	
Development of water sources										
1	Base flow diversion system	no.	0	2	0	0	1	0	0	3
2	Open well	no.	12	6	25	8	10	0	0	61
3	Ponds	no.	1	5	3	3	10	0	11	33
4	Rain water harvesting system	no.	6	8	17	10	22	20	0	83
5	Spring protection	no.	6	2	5	3	6	2	0	24
6	Check Dams	no.	6	16	23	12	24	22	4	107
Ground water recharging systems										
1	Ground water recharging ponds	no.	596	299	301	81	0	0	0	1277
2	System for acquifer recharging	no.	1	0	0	35	23	1	0	60
3	Subsurface dyke	no.	2	0	0	0	0	0	0	2
Irrigation systems										
1	Gravity irrigation system	no.	8	11	5	1	1	4	1	31
2	Irrigation channel	m	59	0	0	500	400		0	959
		ha.	13	0	0	0	20		0	33
3	Lift irrigation system	no.	10	8	4	3	1	4	0	30
		ha	52	30	10	0	4		0	96
4	Mobile irrigation system	no.	3	1	0	56			0	60
		ha	35	10	0	0			0	45
5	Tanks	no.	19	17	24	14	4	17	0	95

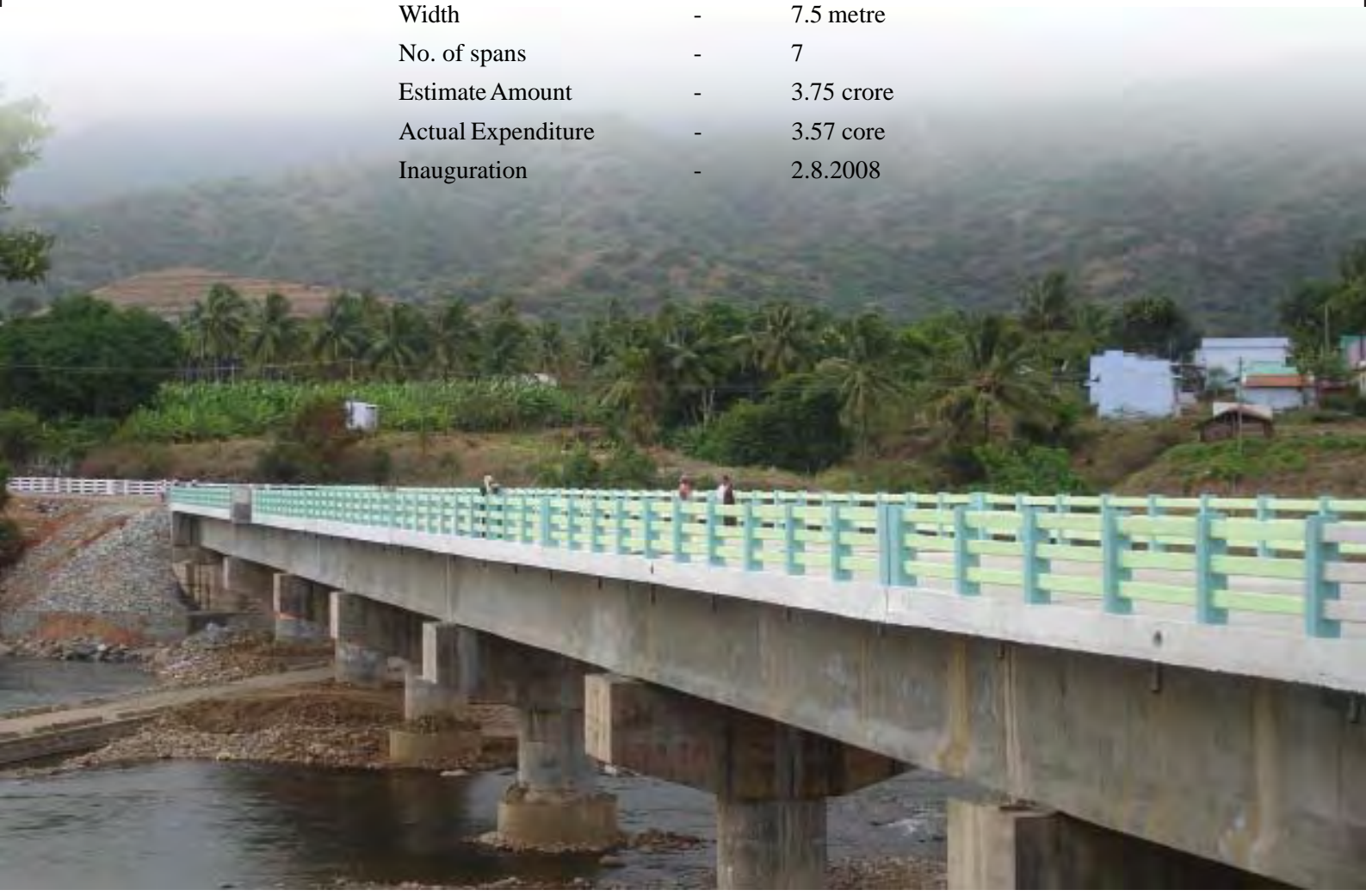
9.1 Infrastructure Development

Chavadiyoor Bridge



The Bhavani river divides Agali Grama Panchayath from Pudur Grama Panchayath. During rainy seasons, the river comes in flood. Prior to the implementation of the project, Pudur remained cut off from the main land during rainy season, causing immense hardships to the people. As part of the social commitment, a bridge at Chavadiyoor connecting Agali and Pudur Grama panchayaths across Bhavani river was constructed under the project. Overcoming initial implementation difficulties the bridge was completed in the year 2008.

Length	-	135 metre
Width	-	7.5 metre
No. of spans	-	7
Estimate Amount	-	3.75 crore
Actual Expenditure	-	3.57 core
Inauguration	-	2.8.2008



Community Resource Centre

In order to create public space for meetings, cultural activities, training classes etc. Community resource centres were constructed at following tribal hamlets.

Table 12 : List of CRC at tribal hamlets

Sl.No.	Name of OVS	MWS	Sl.No.	Name of OVS	MWS
1	Palakayur	1/6	43	Chindaki II nd Site	6/20
2	Chalayur	1/6	44	Chindaki Ooru'	6/21
3	Nayanampetty	2/2	45	Kollamkadu	5/14
4	Mele Chootra	4/7	46	Dhanyam	5/3
5	Thazhe Chootra	4/7	47	Pottikkal	5/15
6	Venthapatty	1/7	48	Mettuvazhy	10/2
7	NattakkalChudapetti	1/3	49	Kathirampathy	10/2
8	Thachampady	4/2	50	Nallasinga	10/6
9	Thazhe Mully	1/2	51	Vadake Kadampara	10/6
10	MeleChundapety	1/4	52	Theke Kadampara	10/6
11	Ummathampady	4/3	53	Chavadiyur – Pudur	10/6
12	Karathoor	1/6	54	Chavadiyur	10/5
13	Mele Moolakombu	4/2	55	Gonjiyur	10/7
14	Vannanthara	8/4	56	Varagamapady	10/7
15	Choriyanur	8/5	57	Sholayur	10/8
16	Jellippara	9/1	58	Kottamala	10/9
17	Daivakundu	9/2	59	Chittur	10/10
18	Dhonigundu	9/2	60	Vayalyur	11/2
19	Thezhe Goolikkadavu	9/4	61	Singampara	12/8
20	Koodapetty	8/5	62	Koothadichala	11/2
21	Nakkupathy Pirivu	9/4	63	Kozhikoodam	11/3
22	Bodichala	8/4	64	Thekumukkiyur	13/12
23	Karayur	8/7	65	Vattalucky OLH	13/10
24	Naikkarpady	8/1	66	Moolagangal	13/2
25	Kallakkara	8/5	67	Vellakulam	13/3
26	Agali	9/4	68	Dasannur	13/9
27	Moolakkada	8/6	69	Guddayur	9/3
28	Kottamedu	3/2	70	Vechapathy	13/4
29	Dhundoor	9/2	71	Marappalam	13/7
30	Thazhe Sambarcode	10/4	72	Karara	10/1
31	Narasimukku	3/2	73	Uriyanchala	13/7
32	Thazhe Kallamala	14/8	74	Kulukoor	13/8
33	Karuvvara farm	7/3	75	Thoova	13/6
34	Padavayal	5/10	76	Keeripathy	13/7
35	Cheerakadavu	5/6	77	Kuchimedu	
36	Adiyakandiyur	5/12	78	Nakkupathy	9/3
37	Veettiyoor	5/10	79	Ommala	9/1
38	Anakkal	5/13	80	Manthimala	9/3
39	Dhodugatty	5/1	81	Mavunkundu	9/1
40	Paloor	5/2	82	Cholakkadu	14/5
41	Mukkaliyur	14/5	83	Thazhe moolakombu	4/2
42	Parappanthara	5/8	84	Anakkatty	13/9

UA offices

For proper functioning of UAs, office buildings were constructed at the following places. These buildings are also used as collection and marketing centres for farm produces.



UA office Cheerakadavu



UA office Olavankara

Table 13 : List of UA offices

Sl. No.	Name of UA	MWS	Sl. No.	Name of UA	MWS
1	Palliyara	10/2	12	Sambarkode	10/4
2	Narasimukku	3/2	13	Kadampara	10/6
3	Jellippara	9/1	14	Mattathukadu	13/11
4	Dhonigundu	9/2	15	Veetikkundu	8/6
5	Cheerakkadavu	5/6	16	Kolappadika	5/1
6	Vanikkad	5/7	17	Pattimalam	3/1
7	Pudur	4/2	18	Nattakkal Chundapetty	1/3
8	Kookampalayam	5/12	19	Sholayoor	10/8
9	Agali	9/4	20	Olavankara	4/7
10	Renganathapuram	2/3	21	Kalkkandi	4/6
11	Anagadha	10/1			

Infrastructure facilities for health and education in Attappady

- 40-bedded hospital building was constructed for Community Health Centre (CHC), Agali
- Kavundikkal Govt. Ayurveda Hospital
- Lab equipments worth Rs. 50.5 lakhs provided to Kottathara Tribal speciality hospital, Anakkatty PHC, Agali CHC Government hospitals
- Laboratory equipments worth Rs.6.25 lakhs provided to Government Tribal Schools. (Higher Secondary school, Sholayoor and Lower Primary School Agali.)
- Additional facilities for school building was provided in Government Vocational Higher Secondary School, Pudur, Higher Secondary schools Sholayoor and Agali
- Construction of Mundanpara, Pottikkal Homeo-clinic and Medical office quarters completed.
- Laboratory, drinking water and equipment facilities at Agali, Pudur and Sholayoor Primary Health Centers provided.
- Drinking water facilities at Anakkatty PHC, Kottathara Tribal speciality hospital

Table 14 : Infrastructure for healthcare in Attappady

Name of Work	Contract Amount	Progress upto March 2010
Ayurvedic dispensary, Kavundikkal	795,000	100
Medical Officers Quarters, Mundampara	725,000	100
Community Health Centre, Agali	4,000,000	99
Medical officers Quarters, Pettikkal	620,000	100



ITI Mattathukkadu

Table 15 : Infrastructure for education in Attappady

Name of the work	Contract Amount	Progress upto March 2010
Infrastructure development to LP School, Karara	525,000	100
Higher Secondary School, upgradation of class rooms, Sholayoor	2,570,000	100
Govt. L.P School Staff hostel, Karara	420,000	100
Govt. Vocational Higher Secondary School, Agali - Lab and Library	650,000	100
Govt. Vocational Higher Secondary School, Pudur - Lab and Library	915,000	100
Tribal Hostel for Girls, Sholayoor	2,560,000	85
Govt. UP School at Thazhemully	3,105,000	95
Kottathara tribal hostel for girls	3,240,000	70
Govt. Tribal High School Staff Hostel, Sholayoor	1,350,000	95
ITI building , Mattathukkad	4,929,251	100
Staff quarters at Thazhe Mully	1,187,000	95
Class room and office room GTUPS at Mattathukkad	1,673,000	100



AGALI DRINKING WATER SCHEME

Safe drinking water is a long felt need of inhabitants of Attappady. The river Siruvani has become polluted in the downstreams from where the drinking water is provided. Due to heavy pollution a number of water born diseases were noted in Attappady. Therefore, to address multiple health issues and to provide safe drinking water from river Siruvani the ' Agali drinking water scheme' was implemented under the project. It aims to supply potable water to one third of population in Agali Gramma Panchayath, covering 2500 house holds in which 1200 tribal families would be benefited. The scheme is to bring clean water from the upstream of river Siruvani, 16 km away from Agali through gravity and would distribute the same after necessary treatment. The cost of the project is Rs. 8 crore. The scheme is being implemented by various User Associations, Joint forest management committee and Ooru Vikasana samithi with the technical supervision from Socio Economic Unit Foundation (SEUF). A participatory Steering Committee is formed for the monitoring and control of the scheme. The technical matters are directed and monitored by a Technical Committee. For distribution of drinking water to the beneficiaries and to maintain it in future, Agali Grama Panchayath has been made responsible by the Government. The scheme is likely to become operational by June - July 2010.

Estimate Amount	:	Rs. 8 crore
Facilitating Agency	:	Socio-economic unit foundation (SEUF)
Implementing Agencies	:	14 UAs, 1 OVS, 1 JFMC
Work started	:	January 15, 2009
Beneficiaries	:	2700 families

Infrastructure development



New block in CHC - Agali

A 40 bedded building was added to the existing community health centre, Agali at a cost of Rs. 45 lakh. Access road, medical store building, watchman cabin are also provided.



Pipe Bridge - Karuvara

On a seasonal flooding tributary this simple structure has helped the Muduga tribals of Karuvara. The cost of construction is Rs. 11 lakh.



Rope way - Kadukumanna

An indigenously designed structure by local people, the rope way helps in transportation of construction materials in the far flung Kurumba tribal settlement of Kadukumanna.



Stage - Agali

One of the largest public facility in Palakkad district, the stage was constructed at a cost of Rs.11.50 lakh for the Agali Grama Panchayath.



Kattakkad - Puliwara road

The cash crop rich areas of Kurvanpady, Thumbapara MWS have been supported in their transport infrastructure. It is a collaborative project with Agali Grama Panchayath.



Taikulasangam building - Bhoothivazhy

A symbol of tribal women empowerment, an office building for TKS is under construction at a cost of Rs. 10 lakh at Bhoothivazhy.

Infrastructure development



Agali CRC



Pudur CRC



Choottara CRC



Ummathampady CRC



Agali High Shool Lab



Medical store, Agali