The background of the entire page is a photograph of a lush, green forest. In the center-left, a large tree trunk lies horizontally across the frame, its surface covered in thick, vibrant green moss. Behind it, more trees stand tall, their trunks dark and textured. Fern fronds are prominent in the lower right and upper left corners. The overall atmosphere is one of a healthy, undisturbed ecosystem.

ANNUAL
REPORT

2007
2008



FES

FOUNDATION FOR ECOLOGICAL SECURITY

Contents

OUR MISSION	1
OUR ORGANIZATION	2
OUR APPROACH	4
Ecological Restoration	6
Commons and Community Institutions	7
Rural Livelihoods	8
PROGRESS OVERVIEW	10
Learning Processes	14
Spatial Information for Conservation	17
Interaction on Policy	17
Leveraging Programmes for Conservation	18
PROJECT OVERVIEW	20
FORESTS AND TRIBAL LIVELIHOODS	22
Dahod, Gujarat	24
Udaipur, Rajasthan	26
Pratapgarh, Rajasthan	28
Mandla, Madhya Pradesh	30
Angul, Orissa	32
COMMONS AND RURAL LIVELIHOODS	34
Madanapalle, Andhra Pradesh	36
Chintamani, Karnataka	38
Bhilwara, Rajasthan	40
Agar, Madhya Pradesh	42
Anand, Gujarat	44
FINANCIAL STATEMENTS	46
ACKNOWLEDGEMENT	49

Our Mission

"As 'ecological security' is the foundation of sustainable and equitable development, the Foundation for Ecological Security (FES) is committed to strengthening, reviving or restoring, where necessary, the process of ecological succession and the conservation of land, forest and water resources in the country."

To this end FES:

WORKS towards the ecological restoration and conservation of land and water resources, in the uplands and other eco-fragile, degraded and marginalised zones of the country and to set in place the processes of co-ordinated human effort and governance to this end;

UNDERTAKES work, either directly or with and through a range of democratic village institutions, their federal bodies, and civil society organisations, (set up) through initiatives that are ecologically sustainable, socially and economically equitable;

ENSURES the ecological integrity of all efforts by working, as far as possible, with entire landscapes, and with all the interrelated communities within it, through a range of arrangements on their land and aquatic resources, whether Commons, Public or Private;

WORKS for and promotes stability of the ecosystems through the protection and restoration of biological diversity, including the diversity of species, age diversity, genetic variability as well as that of structural composition;

COLLABORATES with *Panchayati Raj* and other democratic village institutions, as well as appropriate civil society organisations, in their efforts to contribute towards the objectives of the Society, and to provide technical and financial assistance to them.



Our Organisation

Registered under the Societies Registration Act XXI 1860, the Foundation for Ecological Security was set up in 2001 to reinforce the massive and critical task of ecological restoration in the country.

The Foundation strives for a future that is based on a holistic understanding of the principles that govern the interrelationships of various life forms and natural systems. The central character of the efforts lie in intertwining principles of nature conservation and local self governance in order to accelerate efforts on ecological restoration and improve the living conditions of the poor.

Board of Governors

CHAIRMAN
Amrita Patel

MEMBERS
Duleep Matthai
Samar Singh
AN Yellappa Reddy
JC Daniel
Deepak Tikku
Mahendra Vyas

Representatives of
National Dairy Development Board (NDDB)
National Bank for Agriculture and
Rural Development (NABARD)

Jagdeesh Rao
(Ex-officio Member Secretary)



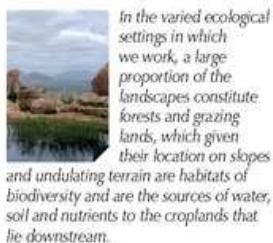
Indira Gandhi Paryawaran Puraskar

The Hon. President of India, Smt. Pratibha Patil conferring the Indira Gandhi Paryavaran Puraskar on Dr. Amrita Patel, Chairman, Foundation for Ecological Security (FES) in the presence of Ministers of State for Environment and Forests, Shri Namo Narayan Meena and Shri Sevugan Regupathy, at a ceremony held in Vigyan Bhawan, New Delhi.



Our Approach

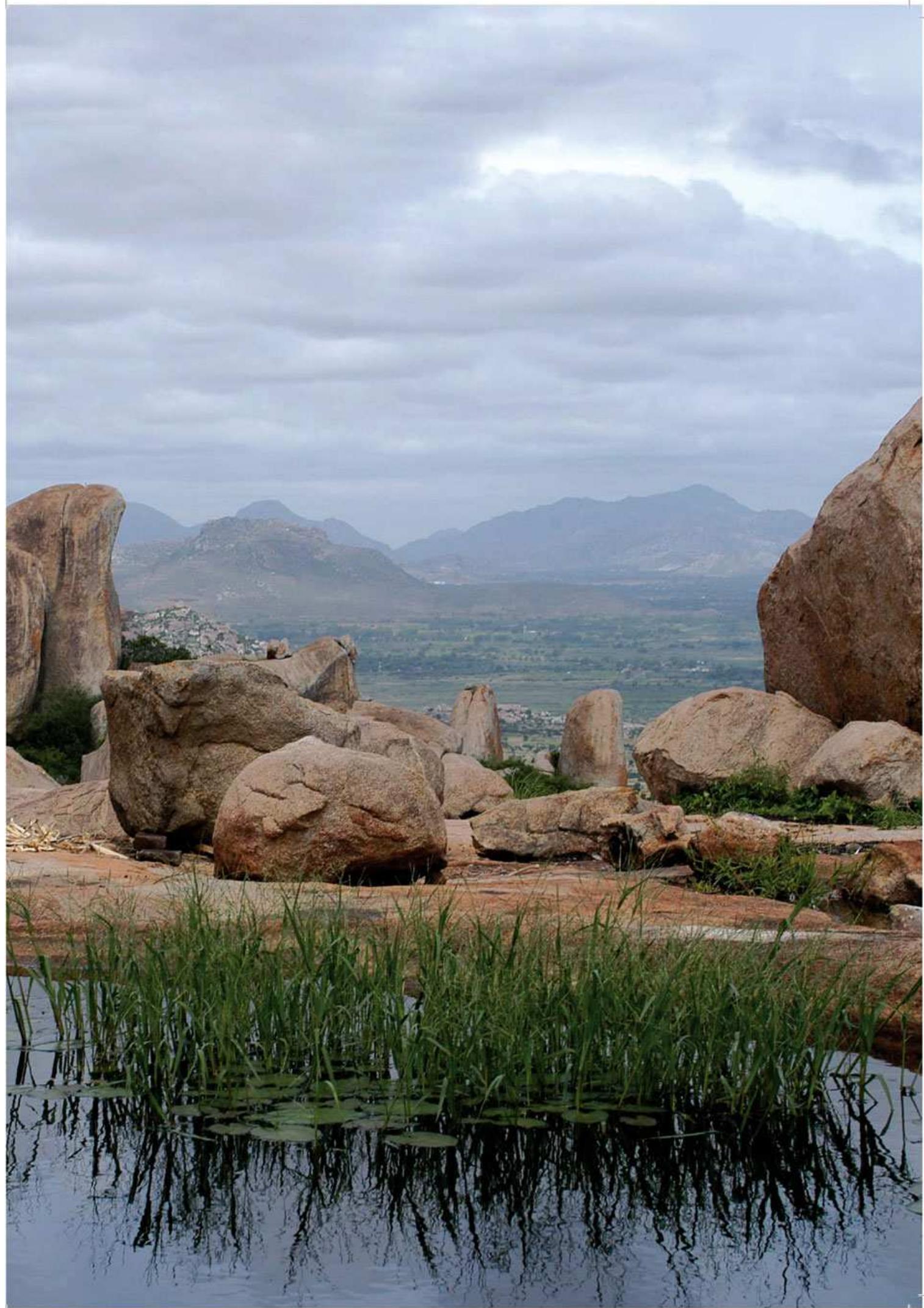
In a worldview that is dominated by economic thinking the role of FES lies in centrestaging an ecological agenda and reorienting development with a conservation and social justice perspective.



In the varied ecological settings in which we work, a large proportion of the landscapes constitute forests and grazing lands, which given their location on slopes and undulating terrain are habitats of biodiversity and are the sources of water, soil and nutrients to the croplands that lie downstream.

All life rests on ecological foundations, and the existence of human beings and other forms of life on earth stems from the interaction between biotic and abiotic elements. Unless forest ecosystems are maintained, for their genetic diversity, hydrological and nutrient recycling functions, in a protective and productive state, the future of agriculture and indeed our food security itself would be at stake. In such a scenario, the primary focus has to be in promoting the conservation of nature and sustainable management of natural resources, particularly the forests and water. By working with rural communities FES is trying to design and strengthen village institutions within the prevailing social, economic and political context. In doing so, our foremost challenge is to build consensus among different participants, arrive at a common vision, and forge a collective approach – a realisation of the overriding role that nature plays.

Since hydrological and nutrient flows, the spread of biodiversity, social relationships, customary usage patterns and political affiliations transgress village boundaries, FES works at a scale that is largely determined by biophysical considerations, such as river sub basins or catchment areas of tributaries. The aim is to strengthen hydrological regimes, biomass productivity and biodiversity of the area, by working with village communities and their conglomerates on large contiguous tracts of land. As such tracts comprise a mix of natural, managed and degraded forests interspersed with croplands, wetlands and riparian ecosystems, a wide array of strategies that aim at restoration, conservation and preservation are deployed within the broader patterns of prevailing land-use. We are assisting the village institutions and their federating bodies in determining the development plans for the area and by involving the concerned government departments, academicians, interested citizens and civil society organisations, we aim to synergise collective action for conservation and building local stewardship.





We work on all categories of land in a contiguous manner, irrespective of their administrative status or ownership, in reviving water, nutrient and energy flows across larger landscapes, providing enabling conditions for stable production systems and for more forms of life to thrive.

Ecological Restoration

While nature is resilient to normal range of stress and has inbuilt capacities to stabilise and rejuvenate, our efforts are largely centred on assisting natural regeneration by making most of the sub tropical climate and abundance of rootstock in each region. Community-based management measures aimed at regulating grazing, restricting forest fires, and invigorating hydrological cycles provide for an environment that ensures the regeneration of plant life and better expression of biodiversity. As part of our efforts we profile ecological and geo-hydrological aspects of a given area, and closely monitor the prevailing composition and introduce those plants that can catalyse a healthy succession of species as much as help plan activities to improve the soil and moisture regime. In our search for more enduring solutions to safeguard the forests and

other natural resources we also examine innovations in improving farmland productivity and measures to alleviate local poverty conditions, knowing well that deprivation and degradation are two sides of the same coin. With the enactment of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, it remains a challenge as to how we can encourage forest right holders to maintain forest cover on the lands to which they have been given titles such that these forests could continue to play critical ecological functions.

While efforts on the conservation of biomass are bearing fruit and are visible on vast stretches of land in all locations, we are gradually progressing towards identifying species that are critical to the area and are beginning to reappear, and gearing up the communities to make special efforts in protecting them and their habitats. On the other hand we are also stepping up dialogue within the



As we wonder if humankind is capable of gardening the processes of repair, we strive towards the prospect of at least improved natural surroundings, in a way sparing what still remains pristine.

rural communities to bring balance between the availability and usage of biomass and water resources and check incompatible landuse practices as well as bring discussion around equitable distribution of resources. We have initiated studies to inventorise the biological wealth of the Protected Areas in a few locations to highlight their significance and gradually progress towards integrating them in the larger landuse and natural resource management plans of the area.

Commons and Community Institutions

While lands in the nature of common property are mistakenly designated as 'wastelands' implying that they could be diverted for other uses, local communities are known to have crafted institutions around these resources to manage and appropriate benefits effectively. The biophysical setting and the institutional arrangements together add form and

The larger movement towards decentralised governance of natural resources by vesting more powers with the *Panchayats* offers opportunities to strengthen collective action, promote democratisation of an unequal rural society and also challenge the privatisation of natural resources.



Improving the democratic behaviour of both traditional and emerging institutions so as to check their parochial and patriarchal interests and make them more inclusive and representative continues to be a challenge.

character to the functioning of common properties. With decentralisation and reforms in local governance beginning to vest custodial rights over resources in local institutions we energise modes of collective action and assist in a process of consensus building across village boundaries. Norms that are accepted in village life steer efforts aimed at appraising perspectives on conservation action, and also help evolve codes of collective behaviour and pursuit. Depending upon the legal status of the land and institutional options available, we assist the village communities in organising Tree Growers Cooperatives, Village Forest Communities, Watershed Development Committees and Grazing Land Committees. While village institutions and their federating bodies are able to manage their resources effectively, we are attempting to embed such ecologically mandated bodies within the overarching and constitutionally enshrined form

of *Panchayats*. This not only presents an opportunity to instill the *Panchayats* with a strong conservation ethic, but it also provides scope to improve the democratic and equitable functioning of the lowest tier of governance.

Rural Livelihoods

We attempt to locate forests and natural resources within the larger ecological, social and economic landscape, and facilitate village institutions in a manner that they are effectively able to manage land and water, commons in particular, so as to meet the basic needs of biomass and water for the poor. While a certain degree of favourable tenure arrangements makes it possible for local communities to protect habitats and benefit in terms of food, fodder, fibre and water, interventions on the farming systems directly help in



In economically deprived areas, efforts aimed at protecting forests are also being complemented with efforts to improve the farm based incomes of the local poor such that their poverty does not lead them to exploit the very forests that they are safeguarding.

building resilience and productivity even in times of scarcity or drought. In parallel our efforts are also aimed at evolving institutional arrangements that safeguard the entitlements of the poor.

As the benefits from regenerating resources tend to increase the need for merchandising, new challenges in terms of institutional innovation are being thrown up. On the other hand, market interventions seem to be making inroads into hitherto unexplored areas enticing subsistence

farming to open up to the market economy. In such a situation we are deliberating whether the form of institution suitable for conserving natural resources could play the dual role of merchandising or whether such a duality would end up subsuming its primary objective. Assuming that another set of institutions that cater to the merchandising needs are evolved, we are exploring mechanisms that would not dispossess the poor and instead insulate them from the uncertainties of markets. ■

New market opportunities that tend to treat common lands as 'wastelands' could serve the interests of ascending economic groups within the villages. However, they tend to 'commoditise' and 'privatise' the natural resources that were otherwise accessible to the poor, dispossessing them further.

We began in 1986 as a pilot initiative titled 'Tree Growers' Cooperatives Project' to evolve institutional designs on leased parcels of revenue 'wastelands' so as to meet the basic rural needs of firewood, fodder and small timber. The amendments in the *Panchayat Act* (1992) assigning the custodial powers to govern natural resources to the *Panchayats*, the introduction of Joint Forest Management arrangements and Watershed development programmes enabled our expansion to other forms of institutions and categories of land. We work with *Panchayats* and their Sub Committees, Village Forest Committees, *Gramya Jungle* Committees, with our focus always on democratising their character and making them more inclusive. We work in areas where there is preponderance of common and or public lands, and in areas characterised by poverty, presence of tribals, and where codes of community behaviour are still prevalent. By working on contiguous hill ranges and watercourses we bring 50 to 100 villages in each location under a conservation regime.

Over the years our activities have spread to 1402 village institutions in 26 districts of seven states. We are presently assisting village communities in protecting 96,933 hectares of revenue 'wastelands', degraded forest lands, and *Panchayat* grazing lands, and crafting rules and regulations in managing and governing the natural resources, common land and water bodies, in particular. We have executed agreements towards expanding our work to another 50,000 hectares in the next five years. With the opening of Regional Cells in the western, southern and eastern parts of the country, we aim to highlight the unique ecological characteristics of the region and influence region specific interventions.

State Level and District Level Coordination Committees headed by senior government officials, oversee the implementation of the programmes, assist in convergence of other programmes and also steer policies. We collaborate with credible organisations on issues concerning ecological well-being and social justice. We have highlighted issues concerning ecological security in the public by involving the press and film media, and organizing series of lectures. We are regularly invited to join working groups in the five-year plan formulation processes of the Government. We are also members of networks at national and international levels that contribute to policy formulation.

Progress Overview

Our strengths lie in restoring degraded landscapes, locating common lands in the larger farming systems, building community institutions for natural resource management at habitation and inter habitation levels and promoting ecologically suitable livelihood activities.



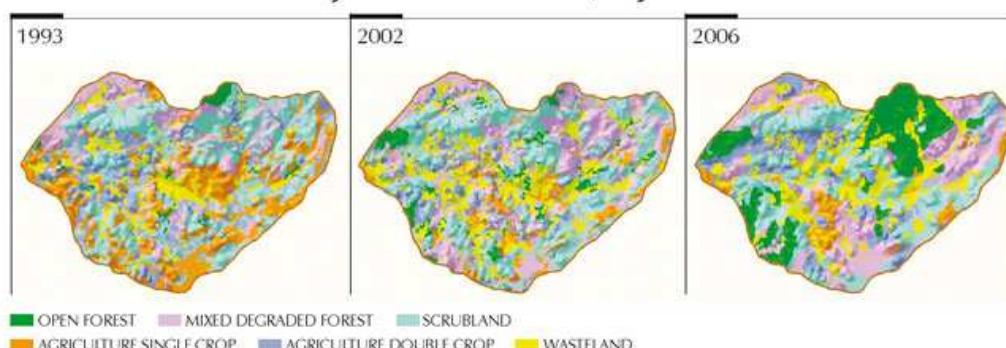
Working parallel on several processes, we seek to build our knowledge on the lay of the land and what lies beneath, its access and use, the complexities and dynamics of the ecosystems, all in an endeavour to strengthen collective action toward ecological restoration.



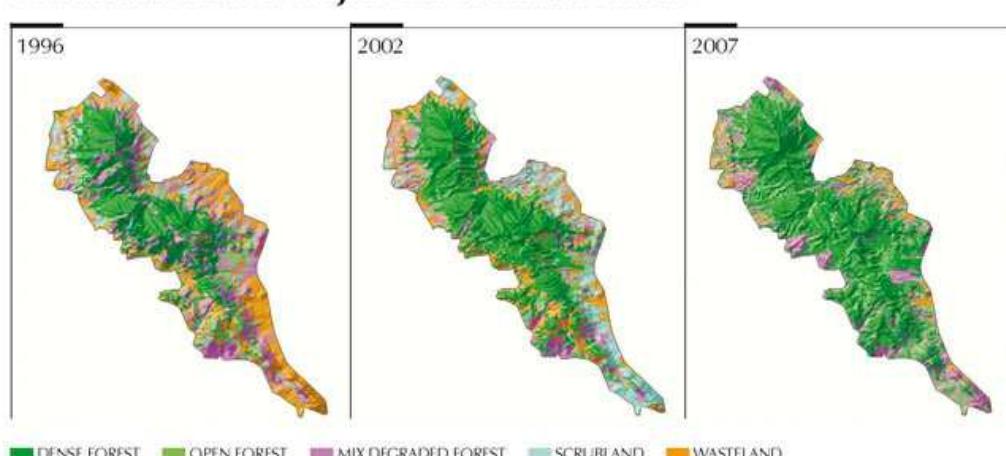
Change Detection Studies

While we remain aware of changes in biomass, biodiversity and water levels through accounts offered by local communities, we had undertaken a mapping exercise to validate aforesaid changes using Remote Sensing and Geographical Information System (GIS) so as to add analytical rigour.

Lilri Watershed in FES Project Area of Bhilwara, Rajasthan



Sadhukonda RF in FES Project Area of Andhra Pradesh



Ladwan Watershed in FES Project Area of Shajapur District, Madhya Pradesh



Using satellite imageries and ground toothing exercises we had earlier estimated the changes in biomass and biodiversity between 1996 and 2002. With five years having lapsed, we have undertaken the same exercise in the very same locations to map incremental changes over the period 2002 and 2007. The studies reveal positive results in terms of increased area under forest and scrub cover and decrease in 'waste' and barren lands. The studies also highlight the increase in area under double cropping as a result of improved moisture regimes. Village level discussions on the results of the study are strengthening the resolve of the local communities to continue protecting their resources.

Measures to Boost Eco-restoration

→ As of March 2008, 96,933 hectares of land was under collective management by community institutions. Soil and moisture conservation activities and plantation measures were undertaken on 38,487 hectares of land with 14,093 hectares of

land under natural regeneration.

- 11,171 hectares of revenue wastelands have been leased to community institutions. In addition, we are also assisting community institutions in the protection and improved management of 6,160 hectares of grazing lands, 8,383 hectares of *Van Panchayat* lands, 1,358 hectares of *Gramya Jungle* lands, and 15,095 hectares of forestland through Joint Forest Management arrangements.
- Studies being undertaken in the Satkosia Gorge Wildlife Sanctuary in Orissa and three other sanctuaries namely, Kumbhalgarh, Phulwari ki Naal and Sitamata Wildlife Sanctuary in Rajasthan have helped in assessing the status of biomass and biodiversity, as well as identifying previously unidentified species in the region. Studies were also initiated to assess nutrient dynamics in the forests and farming systems of South Rajasthan, the status of wetlands in the Important Bird Areas of Central Gujarat, a desk study to compile various scientific views on forest and water inter-linkages, and the phenomena of forest fragmentation in Satkosia Gorge Sanctuary, Orissa.
- In order to ensure the technical appropriateness of the soil and moisture conservation measures in the watershed development programmes being undertaken at a larger scale a comprehensive handbook that caters to regional specificities has been brought out to guide the staff members. By laying down clear-cut guidelines for the estimation of manpower and material requirements it is ensuring managerial accountability besides technical improvements.
- The Framework developed in the previous year to understand the impacts of biophysical measures and monitor the ecosystem health of watersheds has been further fine-tuned and an implementation plan was developed. Three watersheds of 5,000 hectares each have been selected in Rajasthan, Orissa and Andhra Pradesh. Critical parameters were prioritised and baseline information was collected during the year. By laying down mechanisms and protocols we are gearing towards periodically compiling the data so as to help articulate the impact of our work on ecological restoration across locations, and over long periods of time.

Developing Institutional Capacities

→ Community institutions include 548 Tree Growers' Cooperatives, 250 Village Forest Protection Committees, 53 Grazing Land Development Committees, 221 *Panchayati Raj* Institutions, 217 Village

Committees, 49 *Gramya Jungle* Committees, and 64 *Van Panchayats* taking the total number of village institutions associated with to 1,402.

- For strengthening the functioning of hamlet and inter-hamlet level governance institutions a total of 537 trainings and meetings were organised at regular intervals to discuss and debate over NRM related issues. In Karnataka and Rajasthan perspective plans of 87 habitations falling under 14 *Gram Panchayats* were prepared and incorporated into the *Panchayat* level plans. In the institutional design it is increasingly becoming clear that the *Panchayats* should be further devolved to the level of habitations and that they should have a mandatory committee to oversee the management of natural resources.
- As part of an innovative arrangement in the nature of Public-Private Partnerships (PPP) between the Government of Rajasthan and ITC-RDT, FES was designated as the implementing agency to implement watershed development programmes. ITC-RDT matched the sum sanctioned by the Government increasing the budgetary layout available to the *Panchayat*. By strengthening the functioning of the village institutions and *Panchayats* we hope that the village communities would articulate their interests and concerns in an effective manner.
- FES teams and community institutions in Madhya Pradesh, Orissa, Rajasthan, Gujarat, Karnataka and Andhra Pradesh continued to play a vital role in leveraging development funds from a number of government programmes and schemes. An amount no less than Rs. 45.18 million was leveraged during the year for improving water availability, soil-moisture conservation and productivity of marginalized lands.
- By attempting to bring out an Orissa State Atlas and six District level atlases we seek to provide vital information for decision making. The spatial information is not only expected to assist State level administrators and planners in framing policies that are conducive and encouraging to the efforts of local level institutions, but also guide institutions in themselves in devising local strategies that are alive to development trends and patterns.



With ecological well being and social justice as the basic tenets of our work we engage with rural communities in preparing perspective plans in which village communities envision their path towards a better village life, draw plans for conservation of nature and natural resources and equitable distribution of benefits.

Learning Processes

The varied geographical settings we work in, and the unique social, economic and ecological features of each area necessitate a culture of learning that builds on the local wisdom and its rationale and challenges it with contemporary understanding and science so as to add analytical rigour and relevance. In each area that we work we begin with the documentation of (a) the ecological profile, that helps us understand the present status of our resources and the succession trends that may result under certain type of management, (b) the geo-hydrological profile, that helps us to prioritise between surface storage or sub-surface recharge, based on the recharge potential of a given area, and (c) the socio-economic profile, that helps us to assess local needs, the present modes of

benefit sharing and devise institutional means that accord primacy to the interests of the marginalized sections.

Realising that most programmes on watershed development or ecological restoration do not systematically monitor progress on ecological parameters such as groundwater, biodiversity and biomass, and that the benefits accruing from the programmes are not fully quantified, we are establishing a framework specifically developed to monitor the health of ecosystems by benchmarking, periodic monitoring and validating changes. In Rajasthan, Andhra Pradesh and Orissa a 5,000 hectares watershed area has been selected and protocols have been developed for regular data collection and analysis as part of the monitoring exercise.

Studies – for informed decision making

We are conducting studies in the following areas to guide our efforts:

- To help initiate dialogue with local communities on the conservation and management of water we are monitoring ground water reserves. Stream gauges have been installed in select watersheds to monitor stream flows to calculate the real-time run-off and rainfall correlation.
- Scientific information for the commonly held notion that forests improve local precipitation, longer retention of moisture and regular supply of clean water downstream is being compiled.
- Inventorizing floral and faunal diversity, and understanding the threats faced by such resources in the sanctuaries of Kumbhalgarh, Phulwari ki Nal and Sita Mata in South Rajasthan so as to eventually draw up conservation action plans and involve the local communities as partners in conservation.
- In the Satkosia Gorge wildlife sanctuary in Orissa we have initiated an exercise to map vulnerability on account of anthropogenic pressures and understand the impacts of forest fragmentation on biodiversity so as to assist in the formulation of management plans for the conservation of such areas.
- In select watersheds of Rajasthan and Madhya Pradesh we are trying to quantify and highlight the critical support that commons provide for maintaining livestock, particularly that of poor livestock keepers. The processes and practices that go into improving such commons through institution building are also being documented.
- Assessing the soil nutrient dynamics in Dryland areas and flow of nutrients from forests/commons to agriculture fields. We also began assessing the physical, chemical and biotic status of three important wetland habitats of Anand District (Gujarat) with the Institute of Science and Technology for Advanced Studies and Research (ISTAR), Vidya Nagar.
- We studied the opportunities, benefits and shortcomings of the Carbon Sink Projects so as to assess how FES fits in the context of mitigating climate change through Carbon Sequestration proposals.

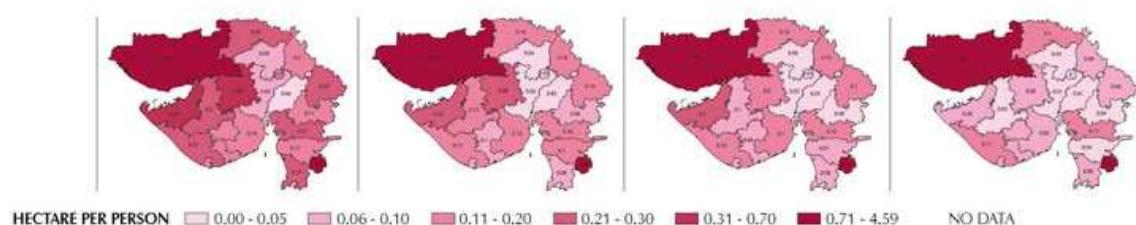
Collaborations – for a common cause

To inform conceptual design and practice as well as in furthering our mandate, we are collaborating with the following peer organizations and academic bodies:

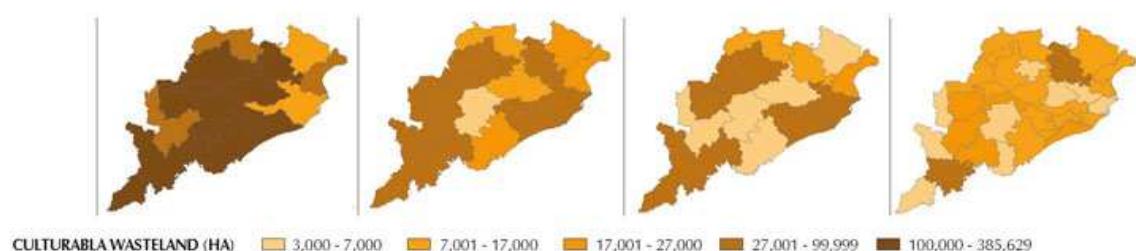
- With Clemson University on studies relating to geology and impact of water harvesting structures on hydrogeology in select project locations.
- With Washington University on measuring impacts of energy conservation measures on indoor and outdoor particle emissions and drawing implications for climate change related impacts, and on System Dynamics perspective to study Coupled Natural and Human systems (CNH).
- With the International Livestock Research Institute (ILRI) on an action research project titled 'Capacity to Innovate' for fodder enhancement in Bhilwara, Rajasthan.
- Along with Waldbau - Institut Freiburg der Albert-Ludwigs University Freiburg (WIF), Germany; Centre for International Forestry Research (CIFOR), Bogor and Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore on understanding fire ecology across different eco-regions of India.
- We are collaborating with the Ashoka Trust for Research in Ecology and the Environment (ATREE), WWF-India, Kalpvriksh, Samrakshan Trust, National Conservation Foundation (NCF) to create a forum to further the dialogue on conservation issues and the future of conservation in India.
- We are awarded Special Consultative Status membership at the United Nations Economic and Social Council (ECOSOC) and we represent accredited NGOs in South Asia at the Global Environment Facility.
- As Resource Support Organization for the National Bank for Agriculture and Rural Development (NABARD), we partner with Non Government Organizations in Chittoor and Anantapur districts in improving the implementation of watershed development programmes and helping bring a larger areas under a conservation regime.

Mapping Trends in Landuse and Rural Livelihoods

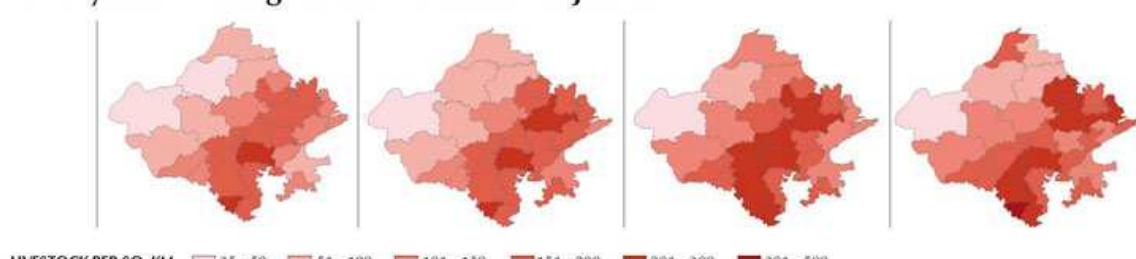
Per Capita Common Land Availability in Gujarat



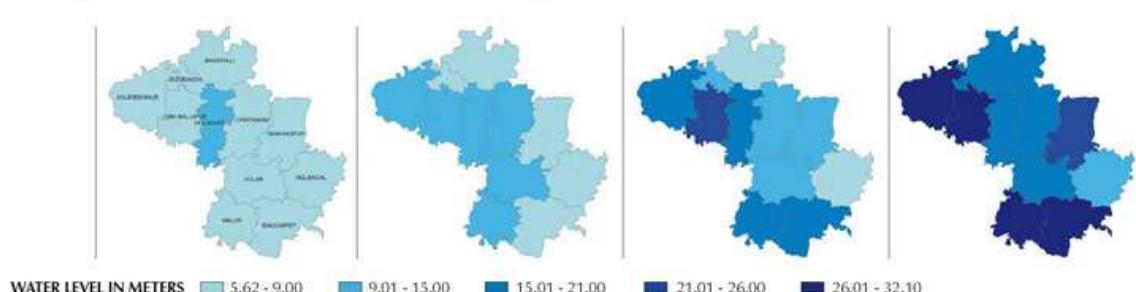
Culturable Wastelands in Orissa



Density and Percentage of Total Livestock in Rajasthan



Average Water Levels in Wells (metres below ground surface) from 1975-2005: Kolar District, Karnataka



Information on more than a hundred parameters over the last five decades ranging from demographic patterns, economic indices to change in forest cover, amount of fuelwood consumed, etc., have been collected and mapped for the three states of Gujarat, Rajasthan and Orissa, and the district of Kolar in Karnataka. Comparisons over five decades and across districts reveal interesting insights on changing intensity of land use, density of population both human and livestock, and several other key development parameters. Initiated with an intention of aiding State Level policy-making we have now also zoomed into *tehsil* level analysis within a district to help District Administrations in local planning.

Spatial Information for Conservation

Though rural communities have a sound mental map of their natural surroundings, an enhanced understanding of interrelated factors and at a scale that is larger than the immediate horizon, is essential for an improved management of ecosystems. We assist village communities and their federating bodies in applying the analysis gained from integrating spatial and non-spatial data through Remote Sensing and Geographical Information System (GIS) in better management of landscapes.

By accessing information from various reliable sources and analyzing them we are building location specific databases that could not only guide programme formulation but also assist policy planning. We have already developed time-series atlases for the states of Rajasthan and Gujarat by compiling information pertaining to development parameters such as demography, infrastructure, agriculture, livestock, fuel types, land categories, forest cover, wasteland, rainfall, etc. A similar effort is underway for the state of Orissa, with six additional atlases being developed at the District Level for Angul, Kalahandi, Keonjhar, Koraput, Rayagada and Sundargarh. We further aim to synthesize the information and make it available through a platform which could be accessed in an interactive mode. We also continue to prepare knowledge banks on issues of coastal salinity on the Gujarat coast and tribal livelihoods across the tribal dominated Central India.

Interaction on Policy

Our efforts in influencing policy are always guided by the need to highlight the criticality of ecological security as the foundation of socio economic progress. We continue to bring to the fore the critical ecological functions performed by forests and the role they play in sustaining production systems such as agriculture and animal husbandry. As we believe that conservation action is best possible through the active participation of village communities, at least in areas inhabited by people, we also strive to influence policies that provide an enabling environment where local self-governance institutions can deliberate and determine the development agenda.

While the last year saw us participating actively in the working groups and sub committees that fed into the



Spatial information could enhance understanding the lay of the land and foresee results of proposed conservation measures. Discussion on forests and streams often raise issues that transcend from single to several villages, calling for collective action at regional level.

eleventh five year planning process, we continue to play an active role in reflecting on the operationalisation of the National Rural Employment Guarantee Act and the Forest Rights Act. By being part of a larger consortium of organizations at the national level we shared experiences, raised concerns and attempted to find ways ahead in the unfolding of the two Acts on the ground. Considering the immense value of Common Property Resources in maintaining the viability of farming systems, sustenance of animal husbandry and increase in forest cover, we have undertaken exercises in quantifying and valuing the benefits and documenting the good practices in building robust mechanisms. In order to dispel the commonly held notion of 'wastelands' we are also joining hands with other organisations to increase the visibility of common lands.

We continue to bring out regular newsletters in five languages covering various policies and programmes



With perceptible increase in the availability of public funds and openness on the part of the administration to partner with credible organisations, we commit ourselves to improve the functioning of Panchayats and increase public expenditure towards ecological restoration.

We continue to be associated with credible organisations and forums in both learning from and contributing to the ongoing discussion concerning conservation of nature and natural resources and decentralisation of governance. We bring out regular rural newsletters that are circulated amongst Panchayats, village institutions and government functionaries.

that are circulated to village communities, *Panchayats* and government functionaries. In order to disseminate information on conservation science and practice we collaborate with Ashoka Trust for Research on Ecology and Environment (ATREE) in bringing out a newsletter titled Current Conservation. We aid the circulation of web-based material, titled Forest Case Update that deals with the implications of Supreme Court rulings on forest related issues. We also support the newsletter - Protected Area Update, which seeks to link protected area managers, NGOs and individuals involved in conservation efforts.

Leveraging Programmes for Conservation

With the enactment of the National Rural Employment Guarantee Act there is a palpable increase in the availability of public funds at the District Level for village level activities. The

Current Conservation

Forest Case Update

Protected Area Update

administration is also supportive of the involvement of credible development agencies in activities ranging from facilitation of perspective planning exercises to assisting field implementation. Our interest in proactively participating in these programmes stems from two important needs, firstly to channel public expenditure towards ecological restoration and secondly to make the village institutions and *Panchayats* determine their development agenda and take up the responsibility for local level planning and implementation.

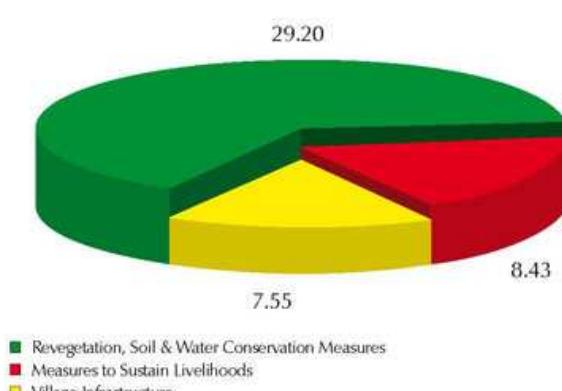
We have been asked by the District Administration of Chittoor (Andhra Pradesh), Chikaballapur (Karnataka), Mandla (Madhya Pradesh), Udaipur and Bhilwara (Rajasthan), Anand and Panchmahal (Gujarat) to assist the *Panchayats* in preparing perspective plans. In Chittoor (Andhra Pradesh), Udaipur (Rajasthan) and Mandla (Madhya Pradesh), we were asked to assist the *Panchayats* in planning and implementation of the activities planned. Besides assistance under employment guarantee schemes we are being invited to undertake activities in tank rehabilitation, energy conservation measures, etc. In a rather unique arrangement of what is being called Public Private Partnership, the Government of



In rural livelihood systems, which are predominantly based upon agriculture, animal husbandry and forests, infrastructure must first be understood as soil, water, nutrient, biomass and biodiversity as they are critical for the viability of farming systems.

Funds Leveraged from Government Programmes (2007-08)

(Rs. in Million)



Of the Rs. 45 million raised from various government programmes during year, no less than Rs 27.97 million was from the National Rural Employment Guarantee Scheme. Besides applying such critical resources to restoring our ecological infrastructure we also see this as much an opportunity to strengthen the local governance infrastructure. ■

Rajasthan and ITC Ltd entered into an agreement to co-finance watershed development programmes with FES being the project implementing agency.

As leveraging government funds is becoming strategically important for furthering the cause of ecological restoration and improved decentralized governance we shall hone our expertise in conducting perspective planning exercises and training *Panchayats* on the management of natural resources. In addition, we plan to build a strong team of rural volunteers drawn from villages in every location to build their capacity to undertake measures on ecological restoration as well as act as stewards for their area. Secondly, we are exploring the idea of initiating local resource centres that have information on biomass, energy and water availability and consumption so that the local leadership can take action based on reliable information. ■

Working in contiguity with about 100 villages in each location, our efforts are centred on improving the local stewardship of natural resources. Results over the years have been encouraging with the restored lands providing immediate benefits such as fodder and firewood and ecological services such as improvement in the availability of ground and surface water. The institutional arrangements evolved for the governance of common lands at the village level are spreading to other spheres of village life and are also growing into inter-village forums.

In our long-term pursuit of building local stewardship for the conservation of natural surroundings, we locate well-defined projects that would add character to our interventions as well as expand our area of work. While each location would be guided by specific strategies the broad organisational level strategic areas are:

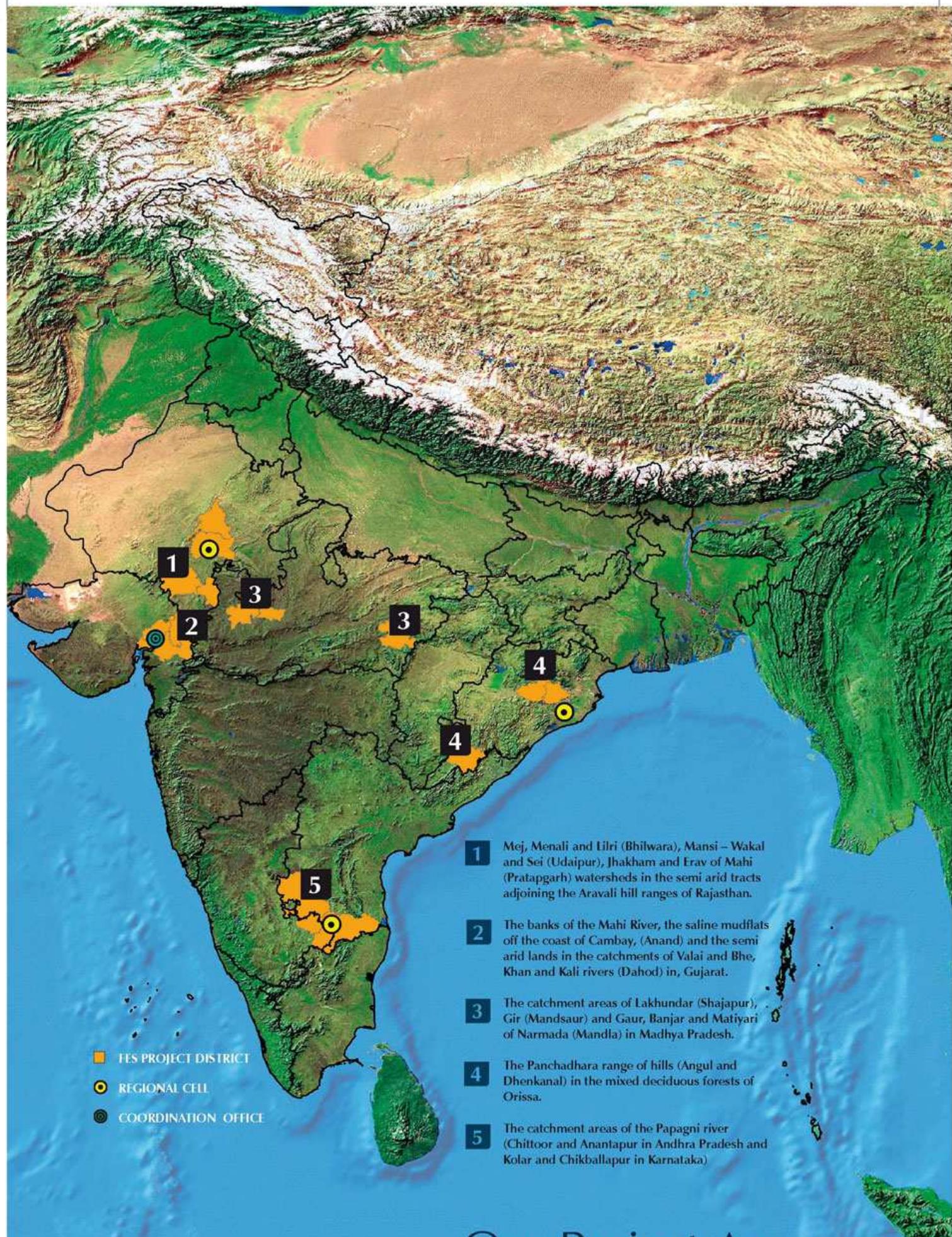
- Surfacing the criticality of forests and other common lands and locating its inter-linkages with the associated production systems, thereby highlighting the value of forests and the necessity for conservation action.
- Setting out pilot level land use planning in different ecological, economic and social settings and addressing the biomass and water scarcities.
- Strengthening platforms for discussion at a village and inter-village level and by including government functionaries, academia and larger civil society to engage in issues concerning the conservation and judicious use of their natural surroundings.
- Establishing institutional design principles and mechanisms that provide spaces for the poor. Developing linkages between village level institutions and the umbrella institution of *Panchayats* and integration of natural resource management plans of *Panchayats*.
- Generating ecologically sound and economically rewarding livelihood options to improve incomes of economically vulnerable sections of the community.
- Evolving conservation plans for Protected Areas where communities are seen as partners in conservation.
- Assessing the impacts of climate change on various natural and production systems and weaving in mitigation and adaptation measures in ongoing practices.

Project Overview

By shaping projects that are nested in long term processes we strive towards a future where local communities determine and move towards desirable landuse choices based on principles of conservation and social justice. We work on contiguous patches of land, which provides both an opportunity to act comprehensively at a scale that conservation action demands, and evolve inter-village level institutional arrangements that cater to the diverse interests of the local communities.



By choosing to work in areas that have large stretches of public land customarily held as commons, and in areas adjacent to reserve forests, we strive to provide additional habitats for a variety of life forms and improve ecological services to the dependent local communities.



Our Project Areas

Forests and Tribal Livelihoods

We believe that restoring the health of ecosystems and the services they provide combined with efforts to strengthen on and off farm incomes can both safeguard forests as well as reduce poverty, unwavering by the debate that measures aimed at poverty alleviation would lead to conservation or the other way around.



Respect for the role of Nature and the cultures it has created must become the basis not just of sustainability, but also of justice and equity, because it conserves the diversity of livelihoods and the means of sustaining these livelihoods.

We work in areas that have a significant human presence and where we believe conservation of forests and other natural resources is critical for the survival of the tribal poor and the viability of their farming systems. By locating forests and natural resources within the larger ecological, social and economic landscape, we assist tribal communities in determining conservation action where efforts on ecological restoration, social mobilization and poverty alleviation are multitudinal strategies aimed at ecological well being, decentralised governance and improved livelihoods.

Immaterial of the category of ownership of land – public, private or common – we aim to influence land use decisions towards an improved forest cover for their role in maintaining the ecological health of the area. Simultaneously we attempt to improve the forest cover and the economic condition of tribal populations, by strengthening the inter-linkages between forest-water-agriculture. In addition, by improving economic opportunities from farm and off-farm incomes through a farming system approach, we believe it is possible to improve both the ecological and economic potential of an area.

Within the larger ambit of their customary norms of local governance, tribal communities are found to have evolved rules that recognise rights and access to forests, forest produce and other commonly held natural resources. Depending upon usufructs, such customary rights transgress administrative borders. Whereas the institutions promoted under JFM arrangements are crafted on a relatively recent understanding of settlements and boundaries, we work towards overlaying such institutional templates on the traditional community institutions and their use boundaries. In areas that are designated under Schedule V where the *Panchayati Raj* (Extension to Scheduled Areas) Act (PESA) is applicable, we attempt to strengthen linkages between JFM arrangements and the institutional provisions under PESA. With the enactment of the Scheduled Tribes and other Forest Dwellers (Recognition of Forest Rights) Act, 2006, we are encouraging village communities to submit claims for the recognition of the land under protection as their community forest. We are also conceiving arrangements that can encourage forest right holders to maintain forest cover on the lands to which they have been given titles.



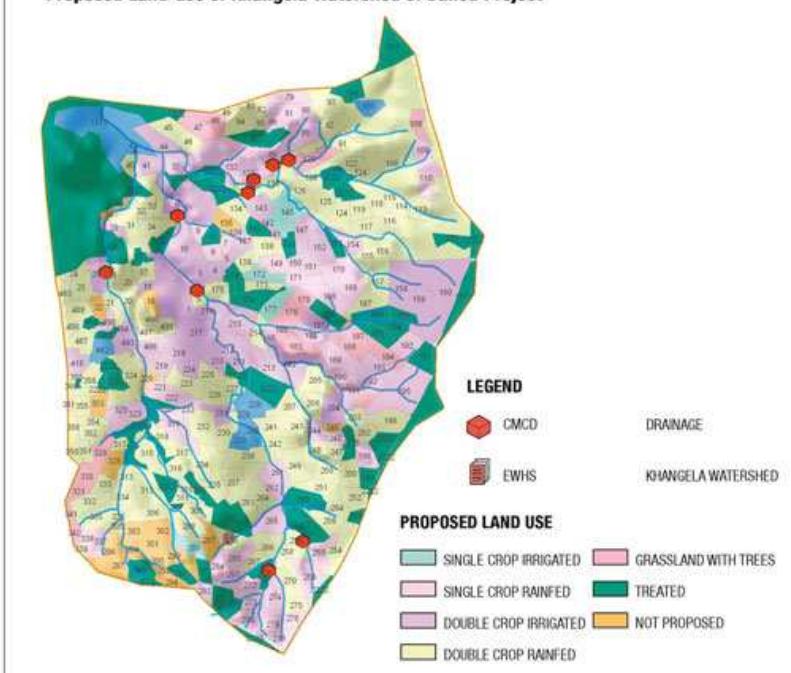
DAHOD GUJARAT

FACT FILE

Project Districts	Panchmahals and Dahod
Forest Types	Tropical Dry Deciduous
River Basin	Valai, Bhe, Kali and Khan
Percentage of Common Lands, Including Forest	25%
Percentage of People Living Below Poverty Line	59%
Percentage of Scheduled Cast/Tribes	91%
Village Institutions Associated With	76
Area Under Protection	6,682 hectares
Total Households of Project Villages	13,646



Proposed Land-use of Khangela Watershed of Dahod Project



The map above presents the changes that are likely in the landuse in about 1300 ha of land in Khangela village. An intensive survey featuring every parcel of land and mapped using GPS helped in designing the soil and water conservation measures and estimating the area that might benefit from such measures. In four years the area under double cropping with irrigation is estimated to increase from 77 ha. to 205 ha. and the rainfed cropping area from 42 to 493 ha..

The project area of Dahod is spread over the Valai and Bhe basins of Panchmahal district and the Khan and Kali river basins of Dahod district in the western part of Gujarat that adjoins Madhya Pradesh and Maharashtra. The topography is characterized by low hills that were once heavily forested, but presently lie severely degraded. Considering the significant population of tribals, the region is designated as a Schedule V area, with about 80% of the population living below the poverty line and cultivating small and marginal land holdings.

Working in the region since 1998, we are associated with 76 habitations that protect about 6,682 hectares of forests and common lands. Degrading natural resources, erratic rainfall, low farm output and lack of local livelihood opportunities result in widespread migration to nearby as well as far away cities as construction labourers. In an area where there are ambitious plans being charted out to boost tribal livelihoods through integration with markets, our efforts are aimed at improving the ecological stability of the



2008

We do understand that the lay of the land determines the social arrangements for protecting the local forests. In Sarad village each household protects the land that falls adjacent to their house and also appropriates the forest produce that grows in that area. However when it comes to protecting that land from trespassers the entire village comes together to negotiate with the neighbouring villages.

region so as improve the viability of the farming systems and thereby subsistence livelihoods. Considering the high level of poverty and the extreme deprivation in the area we also work towards improving the living conditions of the poor so that their poverty does not undermine conservation efforts.

Our efforts over the last few years have succeeded in obtaining permissions to support interventions on forestlands through Joint Forest Management arrangements. Enhanced interaction between the formal Village Forest Committees and informal village institutions have enabled the communities to devise mechanisms to check illicit felling of trees and regulate grazing. Efforts of protection and management are gaining acceptance in the region with more villages expressing a desire to join in the efforts aimed at strengthening a collective forum

to protect the entire range of about 6,000 hectares of forest land in Santrampur block.

In order to develop better stewardship of the area that could guide their trajectory of future development, we have initiated a programme to train rural youth. In discussion with other NGOs in the area we are also evolving a local platform of development players in the region, which also includes representatives of government. Drawing on these two strategies we aim to effectively channelise public funds available under the employment guarantee programme to improve the natural surroundings of the area, as well as weigh the opportunity of declaring community forests under the Forest Rights Act against the benefits that are to accrue under the Joint Forest Management arrangements. ■

UPDATE 2007-2008

■ Revegetation measures were carried out on 211 hectares of land across five villages. A total of 55,000 saplings and 450 kgs of diverse tree species were used for revegetation of forestlands and common land.

■ 39 habitations have started protecting about 750 hectares of forestland this year. Federation level meetings tabled various issues such as protection of forestlands, regulation of grazing and methods of partaking in government schemes.

■ Perspective plans for villages were prepared so as to assist the Panchayats in channeling funds routed through NREGS towards improving soil and water regimes and vegetation of forestlands and common lands.

■ With the objective of building stewardship for the area, a four-month training programme was conducted for about 50 tribal youth under the Rural Youth Programme.

■ Secondary data on various demographic and ecological parameters was collected to document the Ecological Profile of the area. To add finer aspects to the profile, details such as occurrence and abundance of ground feeding birds, reptiles and hares, are being collected as these are good indicators of the recovery of forest ecosystems.

■ The District Collector, Panchmahals constituted a District Level Coordination Committee with FES as the member secretary so as to enable better integration of natural resource management activities implemented by the district administration and FES.

■ In a perception study undertaken to assess the improvement in water regime on agriculture lands that fall adjacent to forest lands under protection, results indicate that of the 26 wells farmers noticed an increased availability of water for an additional two months in 17 wells providing critical support for irrigation.

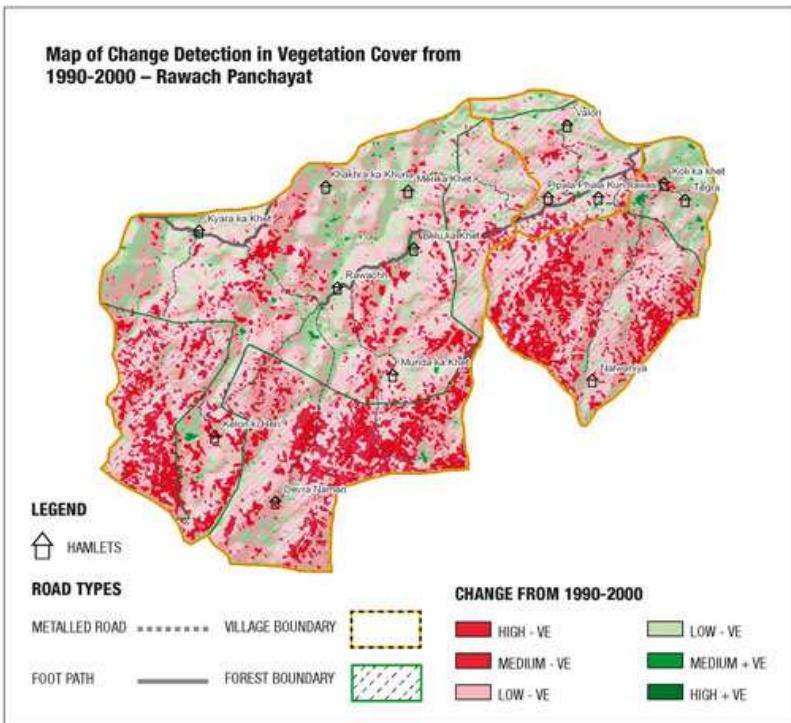
UDAIPUR RAJASTHAN

FACT FILE

Project Districts	Udaipur
Forest Types	Tropical Dry Deciduous,
River Basin	Mansi, Wakal and Sei
Percentage of Common Lands, Including Forest	67%
Percentage of People Living Below Poverty Line	65%
Percentage of Scheduled Cast/Tribes	72%
Village Institutions Associated With	201
Area Under Protection	5,465 hectares
Total Households of Project Villages	11,755



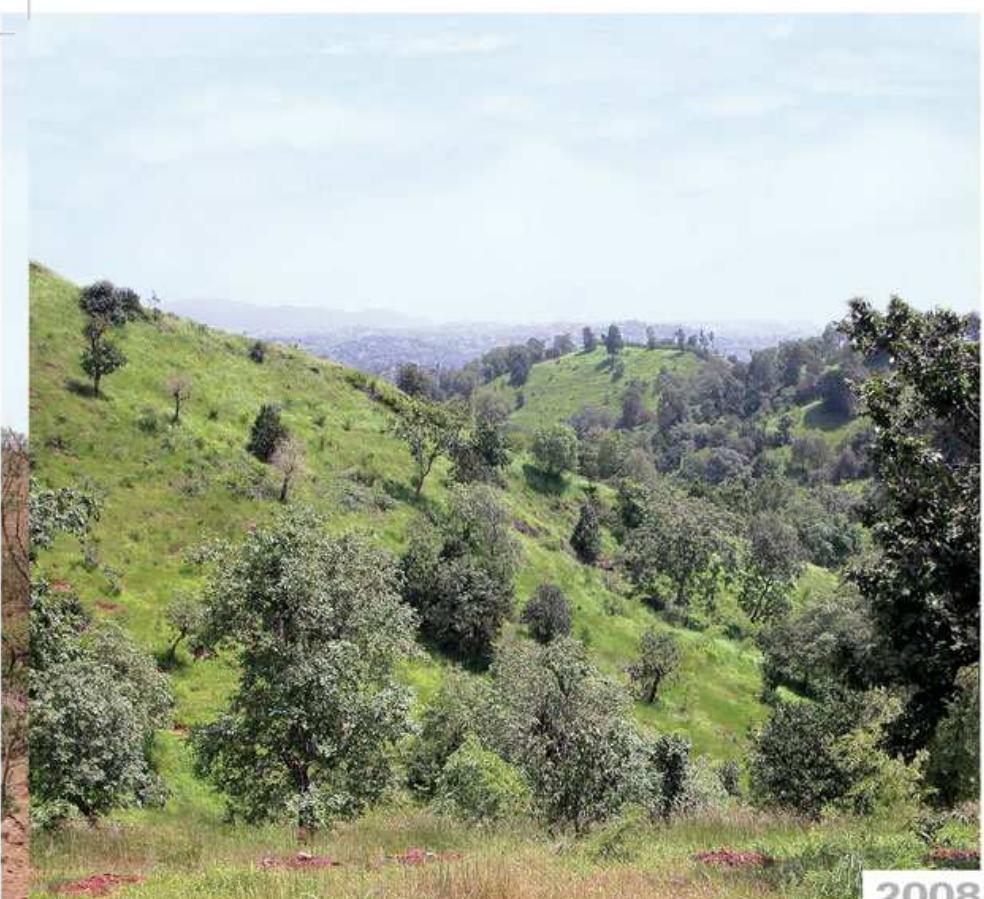
Map of Change Detection in Vegetation Cover from 1990-2000 – Rawach Panchayat



An atlas of Rawach Panchayat in Udaipur has been prepared covering various thematic areas including common lands, reserve forest, streams, roads, habitations, etc. The change in vegetation status has been studied using Landsat imageries of 1972, 1990 and 2000. The predominant red colour in the above map indicates the high level of degradation of forest cover that happened between 1990 and 2000. FES began engaging the communities to protect the land in 2003.

The catchment of river Sabarmati and three of its major tributaries – Mansi, Wakal and Sei – spread across the two blocks of Jhadol and Gogunda of Udaipur district constitute the area of our operations. The area displays a mix of Saharan, Ethiopian, Peninsular, Oriental and even Malayan elements of flora and fauna. Tribal communities form about 90% of the population, undertaking subsistence agriculture in the valleys. Where proximity to the Protected Areas of Kumbhalgarh Wildlife Sanctuary and Phulwari-ki Nal Sanctuary sets the immediacy of our conservation efforts in the region, eco-restoration of the Aravallis is equally critical to arrest the spread of the desert from Western Rajasthan to the more fertile eastern regions of the state.

Initiated in 1999, our work presently spans 201 village institutions spread across 11 Panchayats and has succeeded in bringing 5,465 hectares, mostly forestlands, under community protection. With the twin objectives of improving natural resource management and local self-governance, we continue to strengthen



2008

A British journalist interviewing the farmers from Karch and its neighbouring settlements told them of the new six lane roads that she saw on the way driving from Udaipur and asked if they saw this as development. The tribals instantly replied that people could live without roads and that they saw soils and water as far more important and that if they did not produce the food and milk how could the cities survive.

existing village level institutions as also the *Panchayati Raj* Institutions (PRIs) to recover the forest cover. Ensuring the active involvement of traditional users (*hakdars*) in the Village Forest Committees has not only helped prevent conflicts, but has also contributed to the success of our efforts in the regeneration of degraded forest areas, soil and water conservation and recharge, improving farm productivity and exploring avenues of sustainable livelihood patterns.

Interactions at habitation level, village and inter village level across gender and age have helped construct a strong local constituency for conservation. By involving multiple stakeholders in the process these institutions have gradually emerged into robust platforms to influence decision-making. The larger federations are recognized as neutral grounds for

discussing issues across *Panchayats* and also as forces for networking with Government departments making it possible to envision a landscape level conservation effort around the wildlife sanctuaries with the active partnership of local communities and government departments.

We seek to organize new institutions and strengthen older ones with long-term plans that envision a gradual expansion to villages/*Panchayats* adjacent to the Kumbhalgarh Wildlife and the Phulwari Ki Nal Sanctuary. As importantly, we commit ourselves to setting examples in effective implementation of the NREGA by developing common lands and forestlands through the funds available, integrating *Panchayats* through the processes involved and getting regular social audits conducted. ■

UPDATE 2007-2008

- Soil and moisture conservation measures were undertaken in over 430 hectares and revegetation measures on 244 hectares of common lands, including forestlands. In addition to seeding of local species, about 90,000 saplings were planted, with most saplings raised in local nurseries.
- Perspective plans were developed in eight *Panchayats* with prime focus on conserving natural resources, especially adjacent forestlands, which were discussed extensively in *Gram Sabhas* and ratified accordingly. The proposed activities were, by and large, integrated in the NREGS at the *Panchayat* level.
- A major focus during the year was on strengthening *Panchayats* for better local self-governance, particularly of natural resources. More than 10 training programs were conducted for community representatives and *Panchayat* members on issues such as NREGS, Right to Information, and *Panchayats* and roles and responsibilities of elected representatives.
- After preparing the ecological profiles and preparing perspective plans, information centers were set up in two *Panchayats* to work as local hubs as well as platforms for critical thinking and dialogue amongst the communities. In one of the *Panchayats*, a 3-dimensional model of the watershed was developed to facilitate discussion.
- A team of 40 villagers from different local level organizations supported by Rajiv Gandhi Foundation's (RGF) initiatives in Ajmer and Dausa visited Gogunda project area to understand the process of perspective planning and the scope for the village institutions in working with their *Panchayats* so as to meet different development needs.
- The studies initiated in Kumbalgarh, Phulwari Ki Nal and Sitamata sanctuaries to inventory biodiversity of the area and develop conservation plans are under progress with field surveys completed for three seasons. Six species of birds, three of reptiles, two of amphibians and one of mammal species which have not been recorded earlier in this area have been sighted.

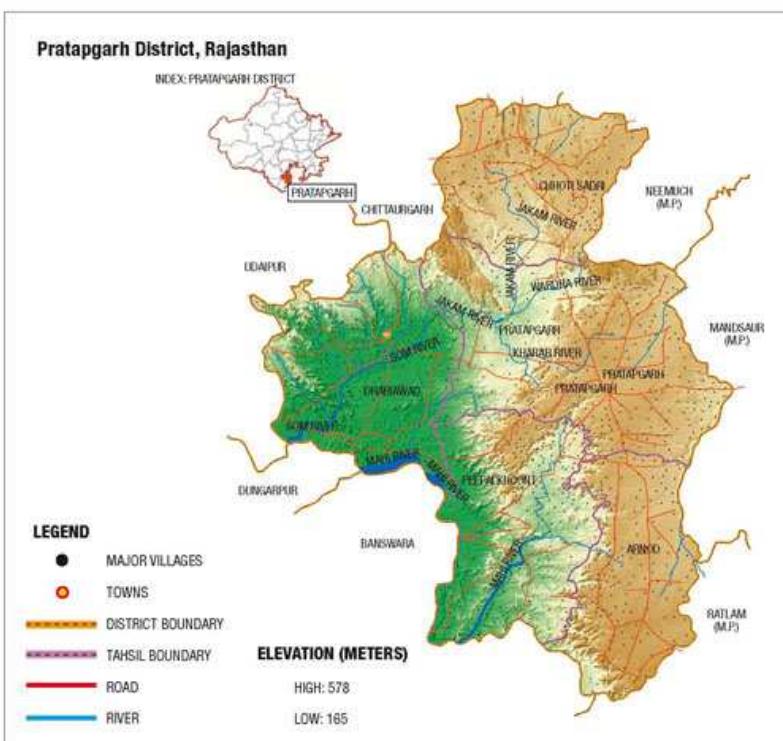
PRATAPGARH RAJASTHAN

FACT FILE

Project Districts	Pratapgarh and Mandsaur
Forest Types	Tropical Dry Deciduous,
River Basin	Jhakham, Erav of Mahi; Siwna and Gir of Chambal
Percentage of Common Lands, Including Forest	60%
Percentage of People Living Below Poverty Line	53%
Percentage of Scheduled Cast/Tribes	64%
Village Institutions Associated With	54
Area Under Protection	1,454 hectares
Total Households of Project Villages	5,300



2005



The formation of the new district of Pratapgarh in April 2007 by carving out parts of Chittaurgarh, Udaipur and Banswara districts of Rajasthan provided us an opportunity to offer our services to the District Administration. Since we had the village level database of all the three districts and a facility to prepare maps, FES could respond quickly and provide the District Administration with a map that could be used for their planning exercises.

We work in the catchments of the Siwana and Gir tributaries of River Chambal and the Jhakham and Erav tributaries of River Mahi, which form a part of the Central Highlands where the Aravalli mountain ranges and the Malwa plateau intersect. Sitamata Wildlife Sanctuary that lies in the western part of the district is the northern-most distribution limit of many species, including teak. Grazing lands and forest lands form an important part of the landscape, with forests lying typically on the slopes of the hills and agriculture being undertaken in valleys and on tablelands. About 80% of the people in the area are tribal communities and about 53% of the population lives Below the Poverty Line.

Initiated in 2005, we are engaged in restoring degraded grazing and forestlands. In a short span of time we have succeeded in bringing 1,454 hectares under community protection through village level institutions and by reviving traditional protection measures locally called *Ora*. We implement soil and water conservation measures with a long-term



2008

Dindorkheda, a typical village where it seems that mainstream developmental activities have not yet made inroads, the recently constructed water bodies seem to change almost everything. Besides availability of water for livestock and wildlife and saving the two kilometer walk for the women to fetch water, the men proudly told a group of visitors organized by Centre for Science and Environment (CSE) that the village gave up brewing liquor as they could now take a second crop.

view of maintaining nutrient and hydrological cycles of the ecosystem. As measures to conserve soil, water and nutrients begin to show tangible results on animal husbandry and agriculture, adjacent village communities are joining in the efforts to conserve common and forestlands, apart from designing water sharing arrangements within and between villages.

With stark changes in agricultural patterns, and the cultivation of several indigenous varieties of millets giving way to soyabean, scarcity of food grain for local consumption and shortage of forage are becoming issues of concern. On our part, we continue to engage with local communities to develop mechanisms for the judicious use of resources, especially water, which also determines the choice of right crops.

In close interaction with academia, government departments, scientists and civil society organizations we are popularizing mixed cropping farming systems that are not only cost-effective, but are also resilient to changes in weather and market conditions.

Even though local communities express a genuine desire to participate in the conservation and management of their resources, we find it crucial to strengthen local level capacities at the habitation and inter habitation level considering the inequalities between tribal and non-tribal villages. Eventually it is hoped that these habitations would arrive at arrangements that are mutually beneficial and together articulate the development agenda for the region through their *Panchayats*. ■

UPDATE 2007-2008

- About 201 hectares of common land was treated through various soil and moisture conservation measures that included contour trenching, loose boulder check dams and gully plugs. A total of 22,395 saplings were planted on 201 hectares of common land. Rules and regulations were evolved at community level for protection of common lands and water sharing for life-saving irrigation.
- Community-initiated management of pasturelands has led to a good survival rate of saplings and a good production of grass biomass. Around 581 quintals of dry fodder was harvested from 80 hectares of common land in three villages, ensuring the farmers of about two months of fodder availability in the critical dry season.
- Village communities have initiated protection and conservation of forest resource in around 938 hectares of forest and common lands. A total of 10 new institutions were organized encompassing five *Panchayats* and 19 habitations during the year.
- A sum of Rs. 2.85 million was leveraged through NREGS by linking the Perspective Plans prepared by village institutions with the NREGS plan of the *Panchayat*. In addition, the *Gram Panchayat* of Kerwas passed a resolution in the *Panchayat* meeting, recognizing seven village institutions acting as Vigilance Committees to monitor the ongoing NREGS activities.
- Four workshops involving community members from across the project area were held for sharing their experiences and deliberating on issues concerning ground and surface water management, sustainable agriculture practices, forest-water-agriculture linkages, etc.
- *Hariyali Amavasya* was celebrated with a view to spread awareness regarding the conservation and importance of natural resources. Stakeholders from the community, *Panchayats*, ITC e-choupals, Forest Department and village institutions were invited to discuss developmental issues of the region and possible ways of converging their interventions for the overall development of the area.

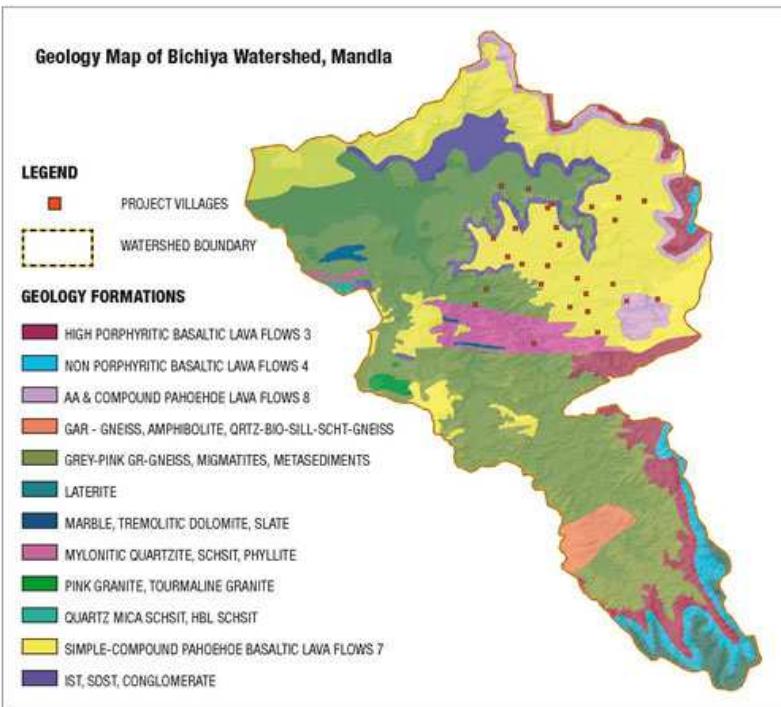
MANDLA MADHYA PRADESH

FACT FILE

Project Districts	Mandla
Forest Types	Tropical Thorn Forest
River Basin	Gaur, Banjar and Matiyari of Narmada
Percentage of Common Lands, Including Forest	69.3%
Percentage of People Living Below Poverty Line	60%
Percentage of Scheduled Cast/Tribes	66%
Village Institutions Associated With	52
Area Under Protection	530 hectares
Total Households of Project Villages	5,875



Geology Map of Bichiya Watershed, Mandla



FES conducts geo-hydrology studies to assist in planning the soil and water conservation activities in its project areas. This includes a detailed lithology mapping through field methods and also geo-physical survey using resistivity meters for understanding the hydro-geological situation of the area. The map of the Bichiya watershed in Mandla district is shown above. Due to high rainfall (1600 mm), good thickness of unconfined aquifer and less extraction, the water availability is good and in some areas water table is as high as 2 to 10 feet.

We work in the Niwas and Bichiya tehsils of Mandla District, which form a part of the Satpura hill ranges, and lie in the catchments of river Narmada and its tributaries. Known more for the Kanha National Park and Tiger Reserve, the district has about 60% of its land under forest category, with tribals constituting about 57% of the total population. Initiated in 2006, our efforts here are focused on understanding issues concerning conservation and tribal livelihoods in the peripheral villages of Kanha National Park and the adjacent biodiversity rich regions, and evolving appropriate community based plans for the conservation of forests.

While on the one hand we are exploring opportunities of working with the existing Village Forest Committees (VFCs) in discussion with the forest department, on the other we are assisting village *Panchayats* and *Gram Sabhas* — the fourth tier as per the Madhya Pradesh *Panchayati*



Apart from agriculture, collection of Non Timber Forest Produce (NTFP) plays an important role in the local livelihood economy. As many as one million leaf collectors are registered in the district where the Beedi leaf collection is worth Rs 70 million annually. Collection of other NTFP (amla, bel, chironji) is more exploitative as in a short span of fruiting time and in a highly competitive environment, villagers cut the branches instead of picking the fruit resulting in a drastic decrease in tree population.

Raj Act — in the implementation of NREGA. Functioning as a Support Group we assist 15 Panchayats covering 52 villages in identifying habitation level issues, preparing perspective plans, and identifying *Rozgar Sevaks*. By training Panchayat members and *Rozgar Sevaks* in various aspects such as watershed management, biodiversity conservation, soil and water harvesting measures, provisions of NREGA and book-keeping, we are aiming to decentralize planning processes, and devolve the overall adjudication of natural resources to lower levels of self governance.

With low food productivity, high dependence on wages, increased sale of fuel wood and high incidence of migration, being some of the critical

issues, we are also working at improving the livelihoods of the poor through farm based interventions like improving agricultural practices and promoting homestead gardens. With the introduction of energy efficient devices such as smokeless chullahs and biogas units we are confident of reducing pressure on the forests for woody biomass. In the coming years we propose to actively integrate the functioning of the Gram Sabhas and the Village Forest Committees so that there is a coordinated approach in improving the natural resources. In the villages surrounding Kanha National Park such an effort would help partner the local communities in the conservation of the extended corridors of the national park. ■

UPDATE 2007-2008

- We have prepared a four-year watershed development plan covering 19 villages in Niwas and Bichiya Clusters for approval under the National Rural Employment Guarantee Scheme. Based on the plan, soil and moisture conservation measures, excavations of farm ponds and field bunding measures have been initiated in 75 hectares across 13 villages.
- Over the last year, we have prepared a geo-hydrological and ecological profile of the area that highlights essential features of the 'Satpura-Maikhal' landscape, in order to assist designing sound interventions for reviving degraded forests and grasslands.
- We are working with village level Gram Sabhas and Panchayats for the effective implementation of NREGA. Apart from providing information on the details of NREGA, discussions relating to the continued maintenance of water harvesting structures created under the programme have been initiated.
- In order to build a group of skilled youth in the villages for better implementation of NREGA seven training programmes were conducted for the *Rozgar Sevaks* along with day-to-day field support.
- Baseline studies were undertaken to understand the livelihoods of the Baiga tribal community vis a vis their income and expenditure patterns, migration patterns and role of forests in food security.
- Efforts are being made to understand the issues related to conservation and tribal livelihoods in the periphery villages of the Kanha National Park. We began discussions with the Forest Department to explore the scope of working with the existing Village Forest Committees to protect the forestlands.

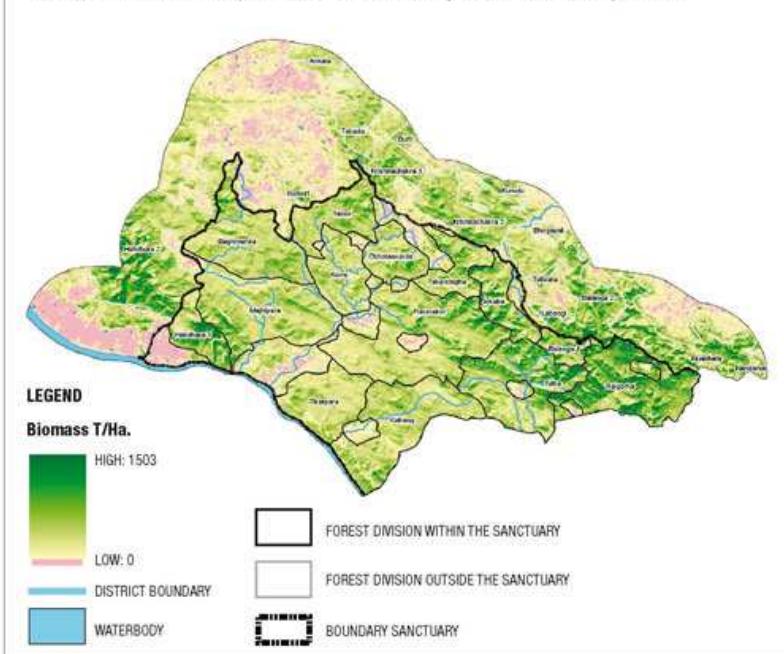
ANGUL ORISSA

FACT FILE

Project Districts	Angul and Dhenkanal
Forest Types	Tropical Thorn Forest and Tropical Semi Evergreen Forest
River Basin	Mahanadi and Brahmini
Percentage of Common Lands, Including Forest	50.5%
Percentage of People Living Below Poverty Line	61%
Percentage of Scheduled Cast/Tribes	29%
Village Institutions Associated With	173
Area Under Protection	16,346 hectares
Total Households of Project Villages	12,372



Biomass and Biodiversity Studies in Satkosia Gorge Wildlife Sanctuary, Orissa



Biomass and biodiversity assessment was carried out in Satkosia Gorge Wildlife Sanctuary in 2005 using vegetation index (NDVI) method. The average phytomass per hectare of the study area is 276.638 tonnes. The highest average of phytomass in microhabitat was found along stream banks (343 T/ha.) and foot hills and valleys are least dense areas with an average of 242 T/ha. In the limited 89 sample plots surveyed, 179 floral species were found. The sanctuary has high biodiversity with Shannon Wiener Index of 3.48.

The project area comprises the districts of Angul and Dhenkanal of Central Orissa, a confluence zone between the Eastern Ghats and the Deccan Plateau. Undulating in terrain, the area is densely forested in several areas and features several small streams and rivulets that find their way into the Mahanadi and Brahmini. Interspersed with pockets of tribal population, the region is otherwise characterized by heterogeneous castes. Recently the area is witnessing rapid industrialization as a result of which we see a contrasting rural life that is still very dependent on rainfed farming and forest produce, and an urban sprawl with high income levels.

Initiated in 1987, the project is presently associated with 173 community institutions that protect and govern nearly 16,346 hectares of common lands. We continue to support village institutions in their efforts to protect *Gramya* jungles and other forests. Our work on restoration



2008

Intervention on the uplands has resulted in an improved soil moisture regime and availability of water for irrigation which together have resulted in an increased area under cultivation. In a survey capturing the perception of local benefits, it was revealed that protection of 1,574 hectares of forests has apparently improved 3,300 hectares of downstream agricultural land in 30 villages.

and protection efforts in the uplands have helped highlight the crucial interlinkages between the forests, water and the farming systems. In the Athamallik and Charmallik region, mechanisms to regulate open grazing helped farmers benefit by increased area under crop production, which has found wider acceptance in neighbouring villages that have now begun developing rules in discussion with their village bodies and *Panchayats*. By establishing institutional arrangements for conservation we have established the grounds for highlighting the significance of commons for private production systems.

By undertaking biodiversity assessment studies in the Satkosia Wildlife Sanctuary, we assist the Wildlife division in preparing habitat improvement plans and improving

community livelihoods. Similar efforts are also made in the adjoining villages in the Athamallik region as it forms an extended corridor of the Satkosia Wildlife Sanctuary. Plans have been drawn to scale up efforts on forest conservation and improving livelihoods by expanding the area of operation to encompass a watershed area of 7,500 hectares, involving 33 habitations. In addition, federating bodies of villages continue to meet and discuss landscape issues such as forest fires, regulation of open-grazing and man-animal conflicts. Such forums are also being used to invite civil society organizations and government agencies to discuss issues concerning forest conservation as well as improving the performance of government programmes. ■

UPDATE 2007-2008

■ Soil and water conservation and land development activities were taken up on 398 hectares. Nurseries for 43,455 seedlings of 45 endemic species were raised in seven decentralized nurseries to enrich 155 hectares across 13 villages.

- A ten-module programme for training Rural Volunteers was conducted over 10 months. 59 volunteers, who were interested in taking a lead in the development of their respective villages, were trained during the year on the dimensions of natural resource management, leadership, government programmes, etc.
- An assessment of the impact of regulation of open grazing in six villages has shown a saving of nearly 70% biomass from forests that in the absence of a regulatory mechanism would have resulted in the harvesting for fencing material. Moreover, such measures helped bring an additional 15.78 acres under summer crops yielding an additional income of Rs. 160,000 to 249 families.
- A study was undertaken to assess the status of endemic flora inside the sanctuary particularly in the areas where forests were fragmented. In another related assessment, the ecological stress due to anthropogenic pressures and habitat alterations were mapped.
- By accessing data at block, district and state level from various sources through various agencies we are in the process of bringing out an Orissa State Atlas and six District Level atlases. By overlaying various interrelated parameters over a period of a few decades we wish to highlight the major development trends in these backward districts and at the State level.
- A workshop on 'Conservation and Livelihoods' was organized to share experiences on partnering with local communities in the conservation of Protected Areas. The importance of integrating local and departmental initiatives in conservation action within a larger landscape approach was highlighted.
- In its 12th year of publication the quarterly newsletter *Sabuja Barla* was used to disseminate information on issues such as NREGA provisions, Right to Information Act, etc.

Commons and Rural Livelihoods

Working on common lands, mistakenly called 'wastelands' provides a unique opportunity to act through a singular platform on the issues of poverty alleviation and improving ecological health. Commons also provide the physical, social and political space to interface with issues concerning equality and fairness.

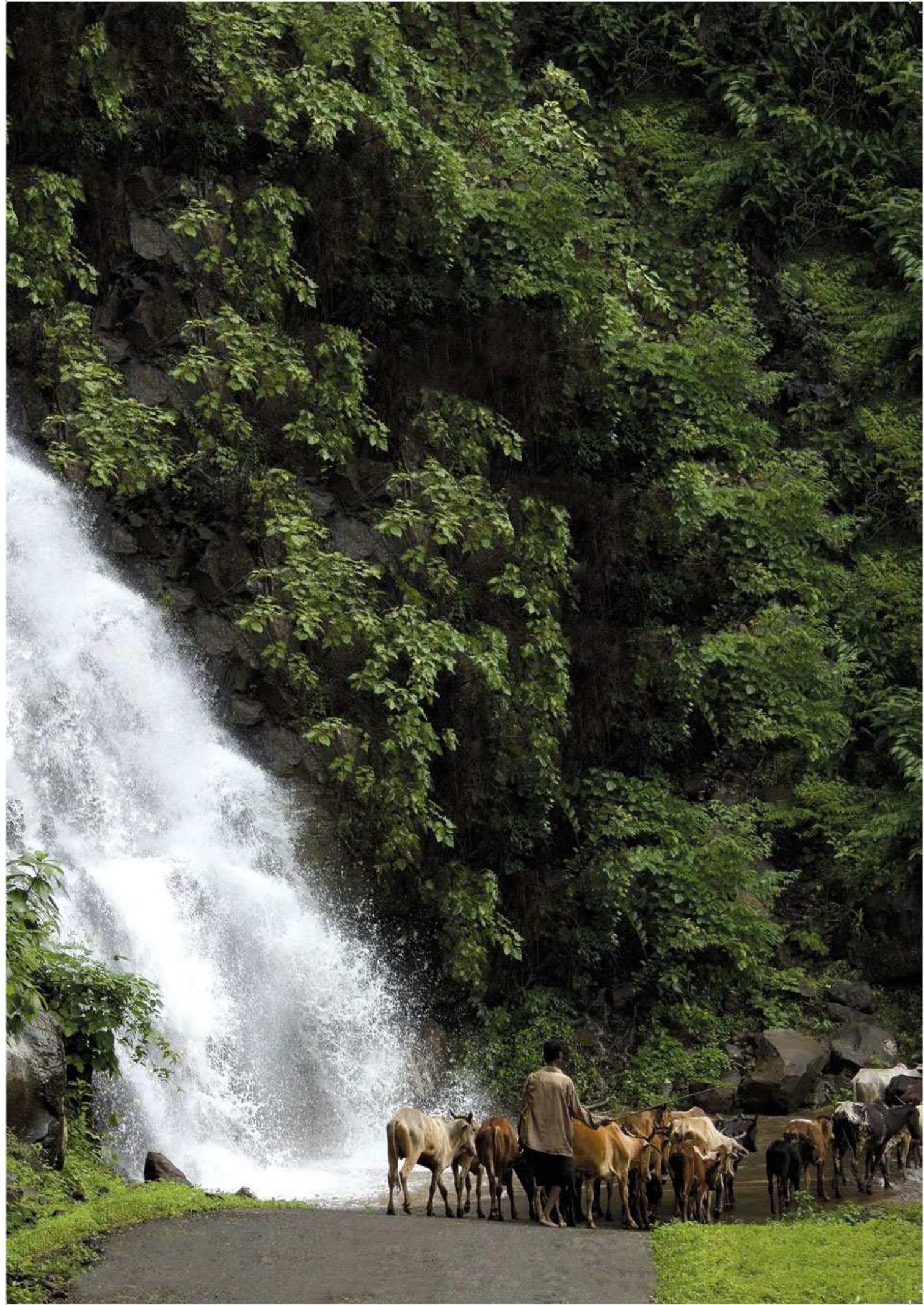


Besides benefiting directly from the improved availability and access in terms of fodder and firewood, or palpably sensing equality in terms of low or no pricing of such produce, the restoration of forests and grazing lands as commons is akin to land redistribution to the poor.

Though popularly treated as 'wastelands' that need to be put to productive use, it is estimated that village commons in India contribute no less than US \$ 5 billion annually to the incomes of the poor households. Knowing that a great majority of the poor in the semi-arid regions continue to remain dependent upon the commons, our work is focused on arranging for the lease of revenue wastelands to village institutions, strengthening the institutional mechanisms for more equitable governance and simultaneously assisting the regeneration of revenue wastelands, grazing land, and improving the availability of both surface and subsurface water. The physical setting also offers space to revive the local institutional mechanisms that both energize collective action and check undesirable individual behavior.

Often disregarded, common lands are also rich repositories of biodiversity and add resilience to farming systems by augmenting water and nutrient flows. Common lands are perceived as a vital link in hydrological processes that impact localized precipitation, surface runoff and groundwater recharge. Since commons adjoining protected areas not only shift the pressure off the core area, but also ensure continuity of natural or semi-natural habitat for core area species, we accord primacy to the restoration of such lands. This has not only resulted in an increase in biomass and water availability and thereby an improvement in the agriculture and livestock production systems, but also an improvement in the overall status of natural resources which is known to provide a long-term economic route out of poverty.

In fostering collective action for the restoration for common lands and water in particular, we begin by building on existing practices and reviving institutions of collective action at the habitation level. For not only do local codes spell traditions of interaction and regulation, but also symbolise the onus of governance. Issues concerning conservation of natural resources form the backdrop of discussions on inclusion of all residents particularly the poor and women as equal partners, their rights and responsibilities, mechanisms for consensus building and rules for appropriation and provision. As we work with institutions in contiguity, we are seeing them come together based on natural affiliations and evolving into larger institutional arrangements cutting across habitations.



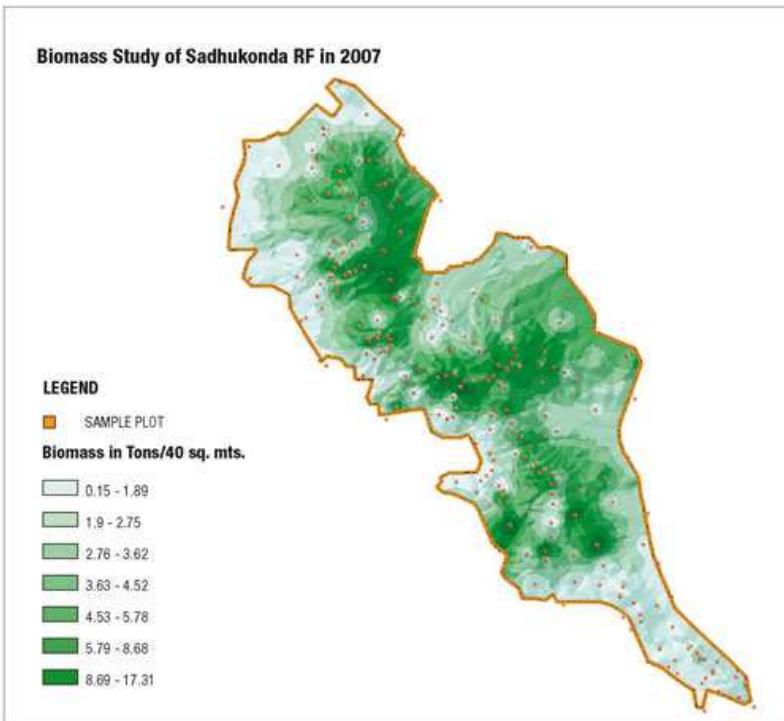
MADANAPALLE ANDHRA PRADESH

FACT FILE

Project Districts	Chittoor and Anantapur
Forest Types	Tropical Thorn Forest
River Basin	Papagni
Percentage of Common Lands, Including Forest	57%
Percentage of People Living Below Poverty Line	58%
Village Institutions Associated With	234
Area Under Protection	14,421 hectares
Total Households of Project Villages	11,174



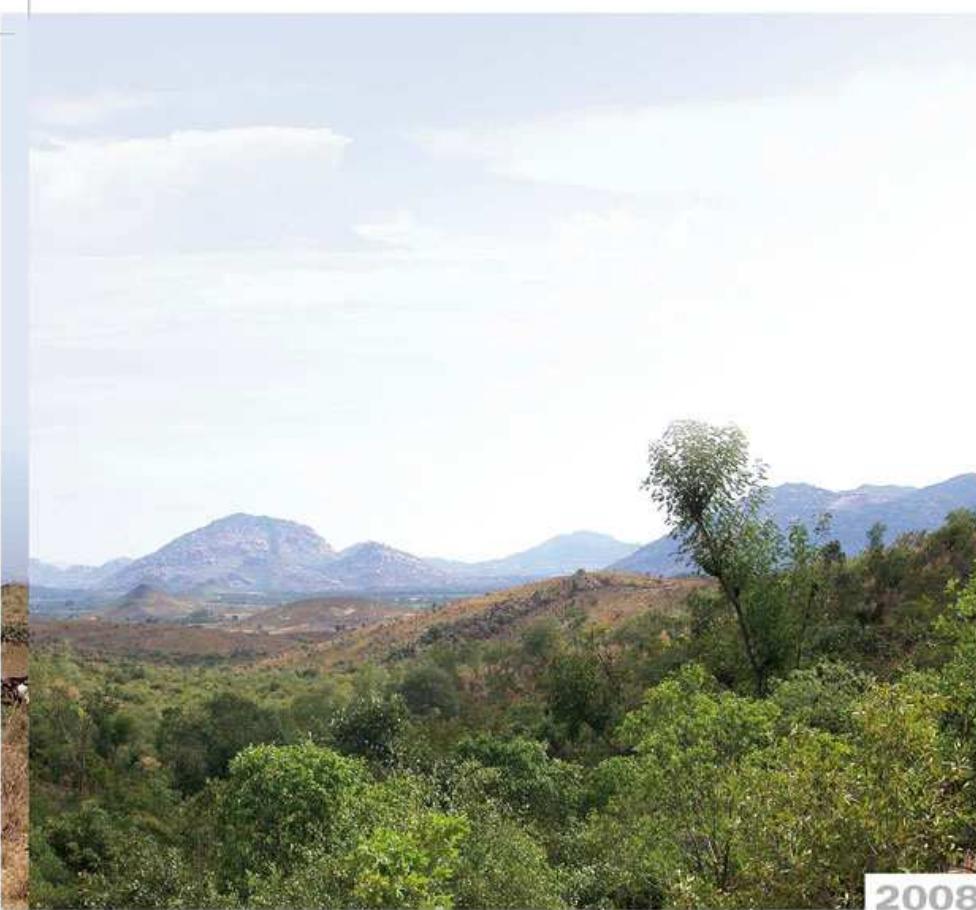
Biomass Study of Sadhukonda RF in 2007



An assessment of the phytomass and phyto-diversity in Sadhukonda Reserve forest (RF), Chittoor district undertaken in 2007 drawing 243 sample plots estimated the availability of about 1.297 million MT of above ground phytomass. This is more than double the phytomass assessed using similar methods in 2003 (0.525 million MT). The study enumerated 412 floral species with 158 tree species, 110 shrubs and climbers, 144 grass species as compared to 252 species found in 2003.

In Andhra Pradesh, our efforts on ecological restoration are being implemented in the lower catchments of the Papagni river basin which form a contiguous area spread across the north western parts of Chittoor and south eastern parts of Anantapur district. Located at the tri-junction of the Deccan Plateau, the Eastern Ghats and the Western Ghats, the region displays a unique geography with elements drawn from all three. Forests on the higher slopes, give way to wastelands and agricultural lands in the lower reaches. Semi-arid and rocky and scrub vegetative cover render a picture of widespread barrenness and dryness.

Initiated in 1991, our work now covers 234 habitations protecting and managing about 14,421 hectares of forests and revenue wastelands by *Vana Samrakshana Samithis* (VSS) and Tree Growers Mutually Aided Co-operative Societies (TGMACS) respectively. Our activities over the past few years in restoring green cover



2008

The valley above is a part of the larger Sadhukonda range of forestlands and the adjoining 'wastelands' that are being protected by local communities. Studies to assess the increase in vegetation and patterns of consumption of biomass highlighted the need for implementing energy conservation programmes in the neighbouring villages and towns. Besides construction of biogas plants in rural households, the installation of improved designs of commercial stoves in the hotels in the area helped reduce the firewood consumption.

and reviving the water regime have to an extent insulated the project villages from facing a scarcity of fodder and water.

In recognition of our efforts in efficiently supporting six *Panchayats* in making optimum utilization of NREGA provisions for improving their natural surroundings, the District Administration of Chittoor has designated the team as the Project Facilitating Agency to facilitate NREGS activities in 14 *Panchayats* (143 habitations) for a five-year period. The Forest Department has also approved the proposal for using NREGA provisions to undertake soil and moisture conservation measures and revegetation measures on reserve forestlands through *Vana Samrakshana Samithis*. Our engagement with NREGA and *Panchayats* provides an opportunity

to nest institutions that are promoted to work on natural resources within the constitutional framework of the *Panchayati Raj* Institutions.

In the years to come besides expanding our activities to neighbouring areas we would gear up to face the challenge of making rainfed agriculture resilient and a viable proposition. In an economy suffering from agricultural distress, we shall continue our efforts towards strengthening farming systems, reducing the consumption of fuel wood and generating surplus incomes for the households through livelihood enhancement opportunities. It is proposed to explore innovative options to evolve institutions that could manage commercial objectives and are yet answerable to conservation aims. ■

UPDATE 2007-2008

■ About 62,000 saplings were planted over 317 hectares of common land.

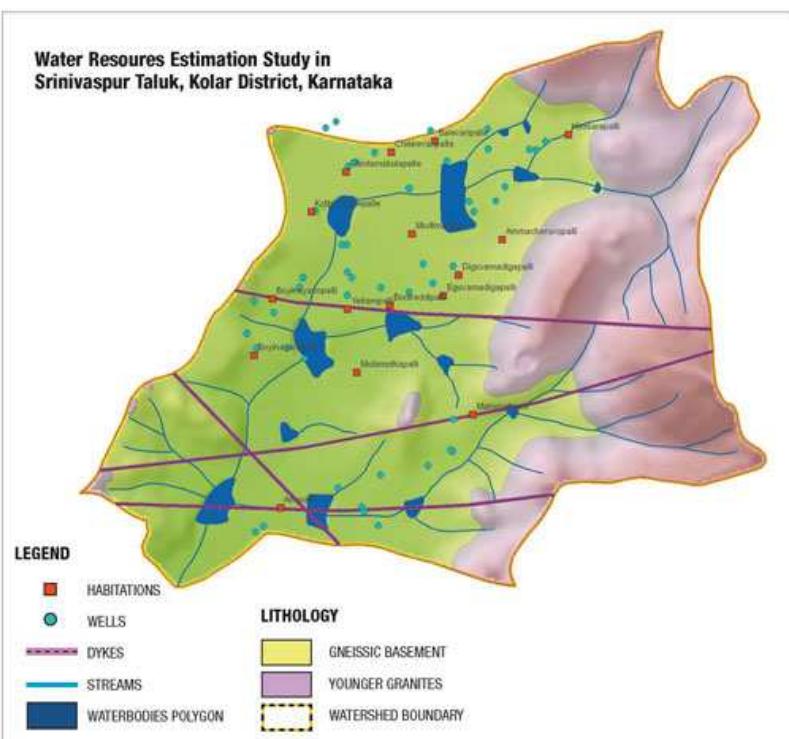
Nearly 227 kg of seeds of forestry species were dibbled in the forest area and about 12,000 saplings of Pongamia were planted along stream banks and near water bodies. About 0.24 million agave suckers were planted in project villages.

- The past year saw the installation of 458 biogas units spread across 65 habitations as part of larger efforts aimed at reducing pressure on biomass for fuel wood, work that was carried out with partial financial and implementation support from Non-Conventional Energy Development Corporation of Andhra Pradesh (NEDCAP).
- Hydro-geological mapping and drainage analysis undertaken for two sub-watersheds with assistance from the Advanced Centre for Water Resources Development and Management (ACWADAM), have been instrumental in planning and locating various activities such as the construction of check dams, community wells and farm ponds/percolation tanks for optimal recharge.
- Biomass and biodiversity assessment studies were undertaken to assess the extent of change in vegetation in the Sadhukonda forest range due to protection by village institutions. Compared to the baseline data of 2002 the forests show a marked improvement of 230% (1.2 Million MT on 6300 ha) percentage of biomass and increase to 412 (252 in 2002) species of grass, shrub and tree species.
- At the invitation of the District Administration an initiative of expanding into strengthening institutions for the management of tanks was taken up. Tank restoration plans including the managerial aspects submitted to the Government are under active consideration.
- As part of the Celebrations of the World Environment Day we took active part in organizing the Madanapalle Citizens Initiative Group conduct daylong events that highlighted global issues such as climate change and local issues such as the mounting dependence of the town on the surrounding villages for mining drinking water.

CHINTAMANI KARNATAKA

FACT FILE

Project Districts	Kolar and Chikballapur
Forest Types	Tropical Thorn Forest
River Basin	Papagni
Percentage of Common Lands, Including Forest	44%
Percentage of People Living Below Poverty Line	23%
Village Institutions Associated With	127
Area Under Protection	6,999 hectares
Total Households of Project Villages	8,009



The above map of Mudumadugu Panchayat watershed reveals numerous dykes (in purple) which run diagonal to the slope and act as barriers for the flow of groundwater. In this watershed it is estimated that the groundwater extraction exceeded the recharge in the last four years. The storage level of water table has also gone down by 1.89 cm in 2005-06 and as much as 5.18 cm in 2006-07. Such information is critical to engage village communities on budgeting water.

In Karnataka we work in the upper catchments of the river Papagni that fall in the northeastern part of Kolar and Chikballapur districts. Forestlands and common lands classified as grazing lands (*gomala*) are typically located on the hills and hilly slopes, mostly bereft of dense vegetation and strewn with large and picturesque boulders. Irrigation is largely through tube wells and tanks, and in recent decades is increasingly through tube wells with alarming decline in the subsurface water levels.

The possibility of constituting Sub Committees to manage natural resources under the *Panchayats* (Karnataka *Panchayati Raj Act* 1993) provides a unique opportunity to make improvements in the governance of *Panchayats* as well as enable a constitutionally mandated institutional format to manage natural resources. We have been operational in the region since 1998 and are currently working with 127 habitations towards protecting and managing 6,999

UPDATE 2007-2008

■ Based on habitat suitability, soil and moisture conservation

measures were undertaken in 16 hectares and revegetation measures on about 693 hectares of common lands. A total of about 30,000 saplings of various native species were planted on common lands. While seed of fodder species was broadcast on about 20 hectares, about 200 kgs of fresh neem seed was used for thicket sowing in about 300 hectares.

- A total of 611 smokeless chullas, 48 Biogas plants and four improved *bhattis* (commercial scale stoves) were constructed during the course of the year. The construction of biogas and *bhattis* is expected to be scaled up in the coming years.
- A seminar on 'Local Self Governance and Natural Resource Management: Role of PRIs' was organized with an objective to share the experiences and learning that have emerged during the course of our work with *Panchayats*.
- Undertaken as a precursor to the much-awaited NREGS in the two districts of Chikballapur and Kolar, perspective-planning exercises were conducted in three *Panchayats*, which met with a high level of appreciation by taluk, and Zilla Parishad officials, which subsequently led to an invitation to extend similar facilitation to 20 other *Gram Panchayats*.
- A rapid survey on assessing the current consumption patterns of fodder, fuel wood, Non-Timber Forest Produce (NTFP) and water was conducted in 15 villages of three *Panchayats* to highlight and deliberate on issues of availability and extraction and the need to regulate use of natural resources.
- With the aim of creating awareness about environmental issues, especially the alarming situation of depleting groundwater levels in the district and mobilize action at the community level to safeguard natural resources, the World Environment Day was observed with active participation of Chintamani municipality and *Panchayats* of three taluks.



Sajupalli, part of Gorthpalli Grama Panchayat, and the last village of Karnataka bordering Andhra Pradesh protects 250 ha of the Yerrakonda range. There are several layers of protection mechanisms that have been evolved by the village community. While those within the village benefit from fodder and water through the year, they allow the neighbouring villages across the border a share of the fodder and water only during scarcities. When there was threat from a mining venture on the common land the village institution successfully managed to stop it by raising the matter at Grama Panchayat and Taluka Panchayat levels.

hectares of grazing lands and forestlands through involvement of *Panchayats* and their Sub Committees and Village Forest Committees (VFCs) respectively.

Studies that investigate hydrology, soil properties and ecological succession are being used to design appropriate biophysical interventions. *Panchayats* incorporate such understanding to facilitate better landscape level planning and draw mechanisms to regulate usage and protection across habitations and also outline measures to revegetate the landscape. Demarcation of *gomala* land (to each habitation) to ensure security of community rights, articulation of the role of habitation level sub committees, and participation of *Panchayat* representatives are vital steps in the process of formulation of

byelaws and preparation of natural resource management plans at the *Gram Panchayat* level.

By constituting sub committees for the improved governance of natural resources, we seek to add a finer layer of effective and coordinated local level governance by advocating the devolution of *Panchayats* to the hamlet level. We also advocate the need for a Standing Committee for natural resource governance and making natural resource planning a mandatory process of the *Panchayats*. We assist *Panchayats* and their sub committees to effectively channel the Employment Guarantee Scheme towards improving the overall ecology of the area and addressing the water situation in particular. ■

**BHILWARA
RAJASTHAN**

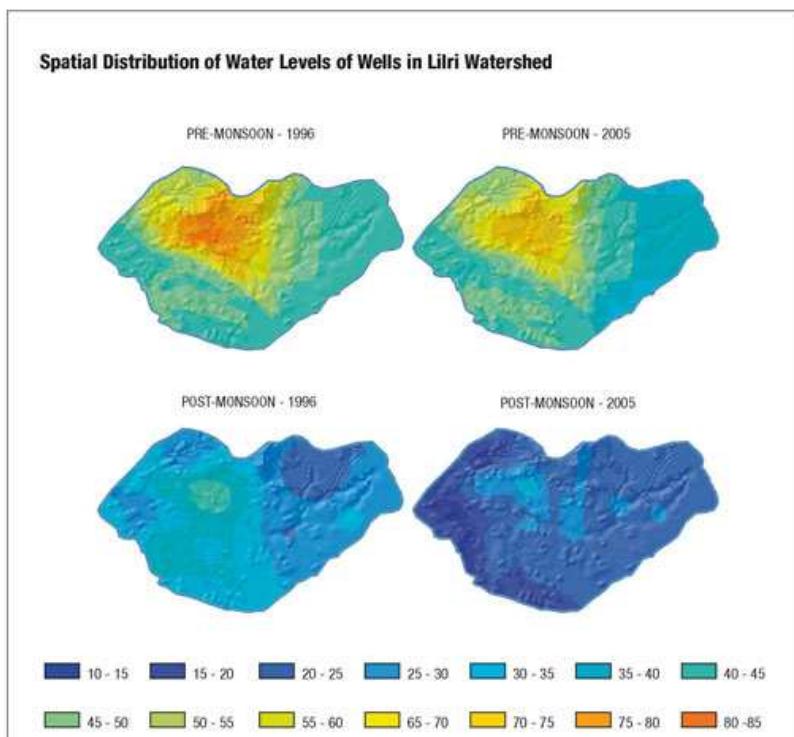
FACT FILE

Project Districts	Bhilwara, Ajmer and Jaipur
Forest Types	Tropical Dry Deciduous
River Basin	Mej, Menali and Lirli
Percentage of Common Lands, Including Forest	55%
Percentage of People Living Below Poverty Line	32%
Village Institutions Associated With	277
Area Under Protection	24,733 hectares
Total Households of Project Villages	35,002



1997

Spatial Distribution of Water Levels of Wells in Lilri Watershed



About 100 wells in Lilri watershed of Bhilwara are being monitored since 1996 to understand the impact of revegetation and water conservation measures undertaken by the village communities. The water levels of wells have significantly improved despite the increased extraction for growing winter and summer crops. The assessment of changes in land use between 1993 and 2007 indicate that area under double crop in the watershed area has increased by 94%.

L ocated in southeastern Rajasthan, the project area is spread across six administrative blocks - Mandalgarh, Mandal, Asind and Raipur blocks of Bhilwara district and Pisangan and Masuda blocks of Ajmer district. The Aravalli and Vindhyan hill ranges intersect the region at several places; topography is largely undulating and is characterized by vast stretches of grazing lands and common lands. Territorial forest area amounts to approximately 7%, whereas grasslands occupy large stretches of the landscape with 11.5% of the total geographical area under permanent pastures.

Initiated in 1995, the project is presently associated with 277 community institutions that protect and manage over 24,733 hectares of common land comprising revenue wastelands, grazing lands and forestlands. A marked reduction in soil-erosion along with improved water availability and biomass productivity indicate the suitability and performance of the ongoing measures in ecological restoration. Improved agricultural productivity and livestock health have



2008

Community initiatives have brought more than 18,000 hectares of common land in Bhilwara under green cover, considered sufficient to meet the daily oxygen requirement of about 0.78 million people. Biomass studies have helped estimate the increase from protected commons as compared to unprotected common lands. Where tree density has increased by nearly 2.7 times, palatable biomass has increased by as much as 135 % and 187 floral species were listed. These have proved significant in strengthening livestock systems and reducing risks of fodder scarcity and high input costs to poor livestock keepers.

helped establish a positive correlation between the restoration of uplands, healthy moisture regime and viability of agriculture and allied livelihoods in the villages.

Our collaborations with International Livestock Research Institute (ILRI) and South Asia Pro-Poor Livestock Policy Programme (SAPLLP) have aided a more grounded understanding of our initiatives on fodder scarcity and vulnerability of poor livestock holders. The outcomes have been clearly perceptible in the form of increased fodder availability, better livestock health and a rising inclination towards dairying as a supplementary source of income.

The vast extent of degraded common lands in the area and the positive experiences of reclaiming such lands on different production systems and the opportunities emerging from NREGA

offer scope for both expansion in the area under better management of land and water resources and the democratic functioning of *Panchayati Raj* institutions. By playing an active role in broadening the base of the existing network of civil society organizations and government departments who have come together under the umbrella *Sanjha Prayas* we would identify and encourage the wide replication of innovative measures that reduce scarcity in this less endowed rain-fed agriculture region. In a bid to promote the conservation of the endangered Great Indian Bustard, we propose to explore options of strengthening community initiatives in conserving their habitats in the Pisangan and Masuda blocks of Ajmer district. ■

UPDATE 2007-2008

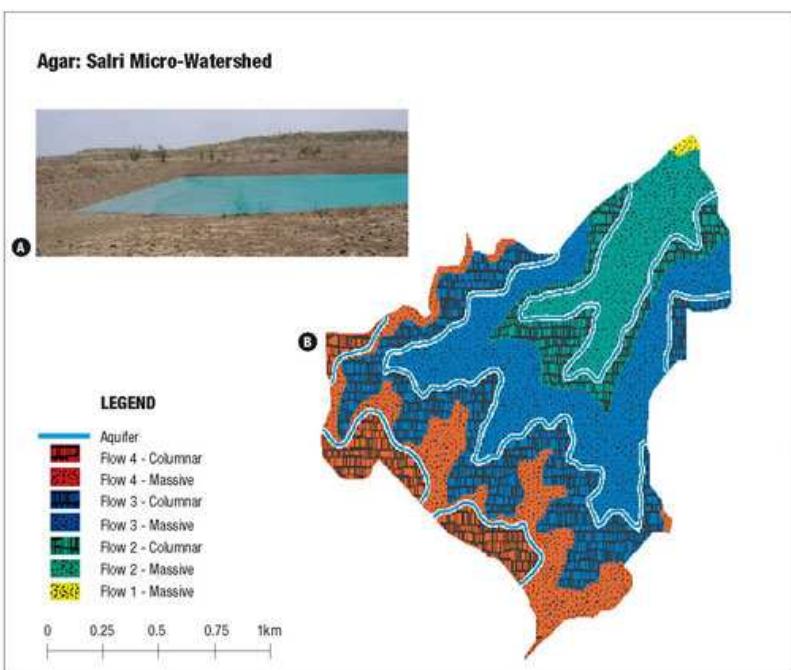
■ Soil and moisture conservation measures were undertaken on 83 hectares of land and about 500 hectares of common land was brought under community protection. Revegetation measures on 75 hectares included the planting of about 23,500 saplings of native species such as *ber*, *arunja* and *desi babool* as well as grass seeding of *dhaman*.

- In addition to meetings conducted in 52 villages to assist in incorporating elements of village perspective plans in their respective *Panchayat* plans, regular village meetings were conducted to revisit village specific byelaws and strengthen collective mechanisms for management of natural resources.
- Apart from the 17 training programmes that were organized for members of village institutions on institutional, ecological, and managerial aspects, a series of capacity building programmes were conducted to assist the members of Kidimal *Panchayat* to effectively implement the watershed project sanctioned under *Hariyali* guidelines.
- Meetings among clusters of villages have proven most effective in strengthening linkages of village institutions with *Panchayats*, and in leveraging funds and addressing issues of common concern. Local village federations celebrated *Hariyali Amavasya* by conducting *padyatras* in the region to highlight land degradation and water issues and the need to address these collectively.
- The outcomes of the detailed geo-hydrological and vegetation status studies that were undertaken in Kalyanpura watershed were disseminated and discussed with village communities to prepare plans for appropriate soil and water conservation measures and revegetation measures.
- The efforts of local village federations such as Paryavaran Premi Samaj, Mandalgarh and Silhoti Mandariya Manch, Karera during seven-day NREGA *Chetna Yatra* helped build momentum and discussions around employment guarantee programmes.

AGAR MADHYA PRADESH

FACT FILE

Project Districts	Shajapur, Raigarh and Ujjain
Forest Types	Tropical Dry Deciduous
River Basin	Lakhundar, Garhganga and Kalisindh
Percentage of Common Lands, Including Forest	25%
Percentage of People Living Below Poverty Line	42%
Village Institutions Associated With	47
Area Under Protection	6,796 hectares
Total Households of Project Villages	3,300



Studies undertaken in Salri micro-watershed in collaboration with Clemson University, USA to understand the geology and the impact of water harvesting on groundwater recharge, report that of the total volume of 28,872.42 (m³) the evaporation from the Water Harvesting Structure is 7,291.37 (m³) and the artificial recharge volume is 21,581.05 (m³) benefiting 21 farmers who have brought an additional 22 ha under double cropping. The picture above shows the reservoir constructed by communities (hypothetical water level shaded) in A with the geological formation and aquifer mapping of the watershed area in B.

We work along the Lakhundar river basin in Shajapur district that forms a part of the Malwa plateau, which is characterised by an undulating topography with staggered small hillocks and intermittent drains. While forestlands comprise only 1% of the total geographical area of the district, common lands constitute about 25% and mostly comprise of pastures that support the fodder needs of cattle and small ruminants. We support 47 villages with efforts being focussed upon re-vegetation of common lands and the strengthening of local governance mechanisms. Community based protection mechanisms have now been extended to 6,796 hectares, with an additional three taluks of Ujjain district adjoining the present project area being surveyed for expansion.

Over the years, work on regeneration has improved the vegetative cover on the common lands and increased the availability of fodder. We continue to strengthen community efforts in natural resource management by working closely



2008

The village Chackpachora is dominated by the economically deprived Banjara community. Traditional institutions to govern the village life and natural resources add strength to bringing adjoining 'wastelands' leased to them also under an improved vegetative cover. Somewhat uncommon in the area, the village has decided not to plant or seed jathropa a biofuel plant being strongly encouraged by both the industry and government. Instead the village is planning to seed local species like neem and acacia nilotica.

with village level *Gram Sabha* (4th tier under Madhya Pradesh *Panchayati Raj Act*) and the *Gram Panchayat*, and helping in integrating the village level plans into the *Panchayat* plan. Federating bodies of village institutions are in constant dialogue with the district administration to arrive at a mutually agreeable transit route for pastoralists. This minimizes conflicts and also ensures that the common lands under conservation are allowed to regenerate. We are creating a geo-hydrological profile for the region by collecting detailed information on the geology, formation of rocks, infiltration capacity, status of ground water, stream and subsurface flows, etc. which are expected to guide decisions as regards the design and location of water harvesting structures and their impact on recharge of ground water.

With assured availability of fodder and water, we have also collaborated with other organizations in arranging micro finance for the poor so that they augment their meager earnings by providing cattle feed to the livestock keepers in the area. The intensive promotion of *Jathropa* on common and private lands is not only likely to endanger the biodiversity but may also risk the diversion of agriculture land to such non edible crops rendering vulnerable the food security of the small and marginal land holders and the fodder security of those dependent on common lands and crop residues. We are collating information on various negative aspects of *Jathropa* cultivation so as to challenge its injudicious spread as well as use of public funds for its propagation. ■

UPDATE 2007-2008

■ Soil and water conservation measures were undertaken in 165 hectares of common lands across 21 villages and about 540 hectares of common land enriched through dibbling of seeds of local species of trees, shrubs and grasses.

■ Change detection and vegetation study was undertaken for the Ladwan watershed to assess the impact of the work on commons on animal husbandry and agriculture. The study suggests that open category forest area has increased by about 240 hectares and double cropping areas by nearly 65% in the last 10 years.

■ The federating meetings were geared towards discussing and resolving the issue of migrant pastoral groups who generally pass through in the month of September. The forum worked out different means to resolve conflicts arising out of extra pressures on biomass during the said period, and further approached the Forest Department and Collector to plan out a transit route for the migrant pastoralists.

■ A study in collaboration with the Gujarat Institute of Development Research (GIDR) with support from South Asia Pro Poor Livestock Policy Programme is being undertaken to validate the benefit provided by commons in 10 villages of the project area of which six villages fall under a single watershed.

■ In collaboration with Clemson University, USA, a study to understand the geo hydrological profile of the Salri watershed has provided detailed information regarding the geological profile, nature of rocks, infiltration capacity and the status of ground water. The findings are being discussed in federation meetings to evolve mechanisms for regulating water use.

■ Apart from regular village meetings, 15 issue-specific training programmes and two exposure visits were conducted with local communities, primarily for building their capacities on aspects of natural resource management.

ANAND GUJARAT

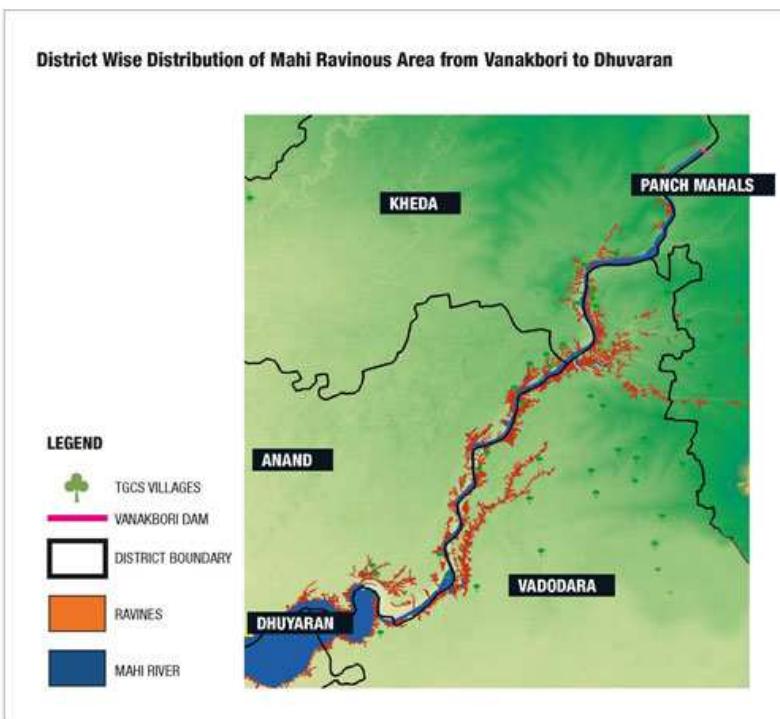
FACT FILE

Project Districts	Anand, Kheda and Vadodara
Forest Types	Tropical Dry Deciduous
River Basin	Mahi
Percentage of Common Lands, Including Forest	33%
Percentage of People Living Below Poverty Line	33%
Village Institutions Organised	72
Area Under Protection	1,825 hectares
Total Households of Project Villages	19,091



1986

District Wise Distribution of Mahi Ravinous Area from Vanakbori to Dhuvaran



Ravines of Mahi river pose considerable threat to the adjacent agriculture lands as the top soil is eroding at 28.34 tons/ha./year as per a study undertaken by FES. Using Remote Sensing imagery it is estimated the extent of such ravinous land along the River Mahi is about 19,000 ha and is spread over 107 villages. FES is presently working with 11 of these villages in preventing soil erosion and bringing the area under effective green cover (see above photographs).

We work with 72 villages spread across the districts of Anand, Kheda, Vadodara and Panchmahals in Central Gujarat. Increasing expansion of ravines along the river Mahi, deforestation of mangroves along the coast of Cambay and anthropogenic pressures on the several wetlands characterise the important areas for conservation action in the region. The area is known for its prosperity as a result of well-established industries, cultivation of cash crops and inflow of funds from the sizeable Non Resident Indian population. Paradoxically the area also records a very high rate of infant mortality in the rural areas.

In creating vegetative barriers along the coast of Cambay and stabilizing ravines along the banks of river Mahi, our efforts in the region have succeeded in bringing 1,825 hectares of common land under improved vegetative cover and management of rural communities. The improvement in the vegetation



2007

In an adjacent village where we had been monitoring the changes in ravines since 1991, exercises conducted under a Natural Resources Accounting Systems framework indicate a carbon sequestration of 45 tonnes/ha, and an increase of Nitrogen, Phosphorous, Potash to the tune of 781.20 and 76 kg/ha respectively. Further there is an increase of 156 tonnes of green weight per hectare and the likely soil loss averted is to the tune of 32 tonnes per hectare. Assigning current market prices to the 25 hectares and its benefits amounts to Rs 7.2 million.

along the coast has helped prevent salt laden winds as a result of which the productivity of, and the area under wheat crops in 9 villages falling in the hinterland has increased, and there is scope to expand such work to another 16 neighbouring villages. Similarly our work on revegetating ravines proved effective in reducing the rate of erosion in about 450 hectares in 11 villages and there is scope to expand such activities to another 96 villages where about 13,000 hectares of land could be brought under vegetative cover and prevented from being eroded.

In villages with marked disparity in incomes it is difficult to conceive and establish arrangements where all the households take equal interest in the conservation of common resources. In such a context we are involved in evolving mechanisms that hold adequate appeal

for the privileged, but also safeguard the basic needs of the poor. While the ongoing studies on the ecological status of the wetlands of Kanewal, Pariej and Khodiyar lakes are yet to provide conclusive results on the health of the lakes, it is evident that the lakes host considerable avifauna. Preliminary result show that Khodiyar has the maximum diversity of water fowls, followed by Kanewal and Pariej. High organic load provides sufficient nutrient required for the growth of plankton. Further, shallow water depth at Khodiyar supports a variety of avifauna. In order to prepare ourselves for conserving these wetlands we shall investigate the prevailing socio-economic dependence of the neighbouring villages on these wetlands and also explore institutional options for managing the fragile ecosystems. ■

UPDATE 2007-2008

■ Simple and appropriate soil conservation measures

were undertaken to check gully formation on nearly 39 hectares of ravine land along the banks of river Mahi. A total of about 22,500 saplings of different tree species were planted on common lands, with most saplings being raised in decentralized nurseries in the project villages.

- The past year saw a total of Rs. 8.6 million leveraged from various government programmes, especially NREGS. The leveraged funds were mainly used for construction of water harvesting structures on common lands.
- Apart from assisting 14 TCCS villages in submitting documents for renewal of lease of common land, a series of meetings and capacity building programmes were conducted in 29 villages on various aspects of institution building and collective management of regenerated common land resources.
- Three Panchayats are being assisted to undertake soil and moisture conservation measures and revegetation measures under NREGS on 15 hectares of common land that is being protected by village communities.
- We continued to carry out exercises on the quantification and valuation of natural resources by using Natural Resource Accounting System (NRAS) framework in seven villages. In addition to parameters such a carbon sequestered and soil prevented from erosion, data collection on parameters such as biodiversity is in progress.
- In addition to engaging Coastal Salinity Prevention Cell (CSPC) for support to undertake measures that reduce salinity ingress and improve farmlands, we have obtained support to undertake measures to harvest rainwater for drinking purpose in six villages of Cambay region.

Auditors' Report

We have audited the attached Balance Sheet of Foundation for Ecological Security as at 31st March, 2008 and also the Income and Expenditure Account for the year ended on that date hereto. These financial statements are the responsibility of the management of the Society. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material mis-statement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

Further, we report that:

- (i) We have obtained all information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit;
- (ii) In our opinion, proper books of account have been maintained by the Society, so far as appears from our examination of those books;
- (iii) The Balance Sheet and the Income & Expenditure Account dealt with by this report are in agreement with the books of account;
- (iv) The Balance Sheet and Income and Expenditure Account dealt with by this report comply with the accounting standards applicable to the Society;
- (v) In our opinion and to the best of our information and according to the explanations given to us, the said accounts give a true and fair view in conformity with the accounting principles generally accepted in India:
 - (a) in the case of Balance Sheet, of the state of affairs of the Society as at 31st March, 2008 and
 - (b) in the case of the Income and Expenditure Account, of the excess of Income over Expenditure of the Society for the year ended on that date.

As required by the Rule no. 13.7 of the Society, we further report that:

- (i) no personal expenses of Officers and members of the Governing Board, except for those payable as per the terms of the appointment/agreement or authorised by the rules and regulations of the Society, have been charged in the books of accounts,
- (ii) the transactions of the Society are not in contravention of the constitution of the Society, its rules and regulations,
- (iii) The Board of Governors has been properly constituted in accordance with the covenants of Society's rules and regulations.

For C.C. Chokshi & Co.
Chartered Accountants

H. P. Shah

Partner

Membership No.33331

Place: Ahmedabad
Date: 08.07.2008

Balance Sheet

(AS AT MARCH 31, 2008)

	Sch.	2008 Rs	2007 Rs
SOURCES OF FUNDS			
CORPUS FUND	1	196,460,762	189,557,597
RESERVES AND SURPLUS	2	30,745,327	21,240,941
PROGRAMME FUNDS	3	43,432,782	84,555,199
TOTAL		270,638,871	295,353,737
APPLICATION OF FUNDS			
FIXED ASSETS	4		
Gross Block		44,529,862	42,247,540
Less: Depreciation		26,481,423	25,068,786
Net Block		18,048,439	17,178,754
Add: Capital work-in progress		5,652,562	-
		23,701,001	17,178,754
CURRENT ASSETS, LOANS AND ADVANCES			
Inventories	5	143,638	214,138
Cash and Bank Balances	6	219,852,459	274,949,745
Other Current Assets	7	25,493,291	2,729,963
Loans and Advances	8	5,338,573	5,925,512
		250,827,961	283,819,358
Less: Current Liabilities & Provisions	9	3,890,091	5,644,375
NET CURRENT ASSETS		246,937,870	278,174,983
TOTAL		270,638,871	295,353,737
Significant Accounting Policies	11		
Notes on Accounts	12		

As per our attached report of even date

Amrita Patel
Chairman

For C.C. Chokshi & Co.
Chartered Accountants

Place: Ahmedabad
Date: 08.07.2008

H.P. Shah
Partner

Place: Anand
Date: 05.07.2008

Jagdeesh Rao
Executive Director

Schedules and Notes on Accounts are posted at www.fes.org.in

Income and Expenditure Account

(FOR THE YEAR ENDED MARCH 31, 2008)

	Sch.	2008 Rs.	2007 Rs.
INCOME			
Fund Received:			
— For Projects		95,702,446	76,104,272
— Others		19,000	97,080
		95,721,446	76,201,352
Interest and Other Receipts			
(including Rs.95,64,099/- transferred from Corpus Fund	10	10,946,605	606,464
Receipts on Study, Survey and Training		8,572,265	3,410,194
		115,240,316	80,218,010
EXPENDITURE			
A. STRENGTHENING COMMUNITY BASED INSTITUTIONS AND NATURAL RESOURCES			
Planning and Survey		777,999	359,023
Formation and Strengthening of Community based Institutions		303,682	180,109
Soil and Water conservation measures		14,487,685	16,433,599
Revegetation measures		4,244,070	5,529,102
Measures to sustain livelihoods		3,015,654	3,746,596
Energy conservation activities		1,029,099	901,814
Capacity building activities at village level		4,503,664	2,724,143
Managerial assistance		18,781,442	14,770,345
		47,143,295	44,644,731
B. SUPPORT SERVICES			
I. CAPACITY BUILDING			
Survey and Planning for new projects		524,126	513,634
Capacity building of staff members		2,004,625	2,496,477
Promotional activities and Advocacy		3,657,069	3,834,541
Documentation, Studies and Dissemination		3,505,984	895,986
		9,691,804	7,740,638
II. ADMINISTRATION AND RECURRING EXPENSES			
Staff salaries and benefits		24,850,164	20,965,560
Travel and conveyance		678,742	550,680
Professional fees and Consultancy charges		784,116	779,348
Motor vehicle running and maintenance		287,854	311,114
Rent, Rates, Taxes and Electricity charges		2,138,727	1,427,283
Communication expenses		1,146,689	1,212,864
Printing and Stationery		449,378	390,287
Computer maintenance		753,201	802,074
General repairs and maintenance		739,668	649,744
Insurance premium		475,987	409,633
Statutory Audit Fees and expenses		219,798	203,593
Miscellaneous expenses		749,538	509,123
		33,273,862	28,211,303
C. Expenses from Other Funds		90,108,961	80,596,672
D. Expenses on Studies, Survey and Training		52,082	122,042
		3,730,708	2,171,741
		93,891,751	82,890,455
Depreciation (Sch. 4 Column G)		2,644,461	2,907,580
Profit on sale of Assets		144,451	93,058
		2,500,010	2,814,522
Less: Adjusted against Capital Fund (Ref. Sch.2.A)		2,500,010	2,814,522
		—	—
TOTAL		93,891,751	82,890,455
Excess of Income / (Expenditure) over Expenditure / Income		21,348,565	(2,672,445)
Amount transferred to Capital Fund Account (Sch. 2 A)		3,100,231	—
Amount transferred to (previous year from) Projects Account (Sch.3.B)		15,497,462	4,027,201
Amount transferred from Other Funds (Sch.3.C)		24,542	22,422
		2,775,414	1,377,178
Balance of Excess of Income over Expenditure carried to Balance Sheet			
Significant Accounting Policies	11		
Notes on Accounts	12		
As per our attached report of even date			

Amrita Patel
Chairman

For C.C. Chokshi & Co.
Chartered Accountants
Place: Ahmedabad H.P. Shah
Date: 08.07.2008 Partner
Schedules and Notes on Accounts are posted at www.fes.org.in

Place: Anand
Date: 05.07.2008

Jagdeesh Rao
Executive Director

Acknowledgement

We thank the Government of India, the Department of Land Resources, Ministry of Rural Development, Department of Economic Affairs in the Ministry of Finance and the Ministry of Environment and Forests, New Delhi. We thank the District Administration of Chittoor and Anantapur of Andhra Pradesh; Kolar and Chikballapur of Karnataka; Angul, Dhenkanal and Koraput of Orissa; Mandla, Mandsaur and Shahjapur of Madhya Pradesh; Udaipur, Bhilwara and Chittorgarh of Rajasthan; Anand, Panchmahal and Dahod of Gujarat. Our effort would not have been possible without assistance and support from the respective State Governments.

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We also thank the families of the staff members and the many individuals and organizations who have been associated with us over the years and have provided encouragement and support to our endeavour and whose names do not find mention here.

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