

World Resources 2005

The Case Studies

Attached are excerpts from three of the five case studies discussed at length in *World Resources 2005*. These studies outline in detail how the linkage of poverty relief to environmental stewardship through governance has worked in real-world practice.

These are just a few examples, but they are varied enough by circumstance and geography, we believe, to validate the thesis of *The Wealth of the Poor* – that with the proper management and with the incentives that come with control and accountability – ecosystems can generate income that puts the poor on the path out of abject poverty.

These efforts are not without their flaws. The case studies do not flinch from pointing out what didn't work in each instance, what changes are still needed, and what fundamental challenges still remain ... challenges often specific to and deeply intertwined with the culture of a country and region.

Despite the variety of the case studies, they have a few common elements that define the initial successes each achieved:

- The resources at issue – a watershed, a beach – had once provided significant benefits to the community but had become so degraded as to cease being of much value.
- The resource at issue had to be under the control of a locally constituted authority. That authority needed legal recognition and it needed to represent all elements of a community, especially the poor. Control includes ability to restrict access to such resources.
- Initial support during an inevitable transition period had to be available, provided by government or NGOs, or both.
- The model can be replicated.

These are real undertakings in difficult circumstances, not theory and surmise. As such, they provide real, grounded lessons and guidance for the future.

RECOVERING FIJI'S COASTAL FISHERIES, VILLAGE BY VILLAGE

In the early 1990s, residents of Ucunivanua village, on the eastern coast of Fiji's largest island, realized that the marine resources they depended on were becoming scarce. Village elders remembered when a woman could collect several bags of large *kaikoso* clams—a food staple and important source of income—in just a few hours. By the 1990s, however, a woman could spend all day on the mudflats and come home with only half a bag of small clams.

The decline of Ucunivanua's marine heritage reflects a larger pattern of depletion repeated throughout the Fiji islands. A combination of greater commercial fishing and larger local subsistence harvests have left most of Fiji's coastal waters overfished, sometimes heavily so. Rural Fijians, who constitute half of Fiji's population of nearly 900,000, have been hurt. Most of these villagers still lead a traditional subsistence-based livelihood, communally drawing on local marine resources for at least part of their daily protein and income. In the past, the abundance of the marine catch meant a moderate level of affluence and food security. With that abundance gone, the pressure on village economies has mounted, leaving 30-35 percent of rural households in Fiji below the official poverty line.

But Fijians are fighting back, village by village, linked by a network of communities that carefully regulate the use of their coastal waters, slowly restoring their productivity. Although these *locally managed marine areas* (LMMAs) are an innovation of the last decade, they call on a rich tradition of village management of ocean resources. In this new incarnation, traditional local conservation practices are blended with modern methods of monitoring, and energized by the full participation of members of the community, who design and implement the marine management plans. The goal is to bolster local incomes and traditions by replenishing local waters—a grassroots approach to rural development.

The *kaikoso*, a clam found in shallow mudflats and seagrass beds, is the clan totem of the people of Ucunivanua—the community's symbolic animal. It is also a food staple and primary source of income, along with agricultural crops and other marine resources such as octopus. To preserve the *kaikoso*, residents of Ucunivanua began working in the 1990s with the University of the South Pacific (USP) in Suva, Fiji). This collaboration began when the son of the high chief of Verata, the district in which Ucunivanua is located, studied land management at USP and asked his teachers there to help address some of the problems in his village.

At the end of two years of workshops and training in environmental education and community planning, the community decided to set up a 24-hectare *tabu* area on the mudflat and seagrass bed directly in front of the Ucunivanua village as an experiment. The hope was that as the clam population recovered in the *tabu* area, more clam larvae would settle in adjacent fishing areas as well, eventually leading to increased clam harvests in these areas—something called a seeding effect.

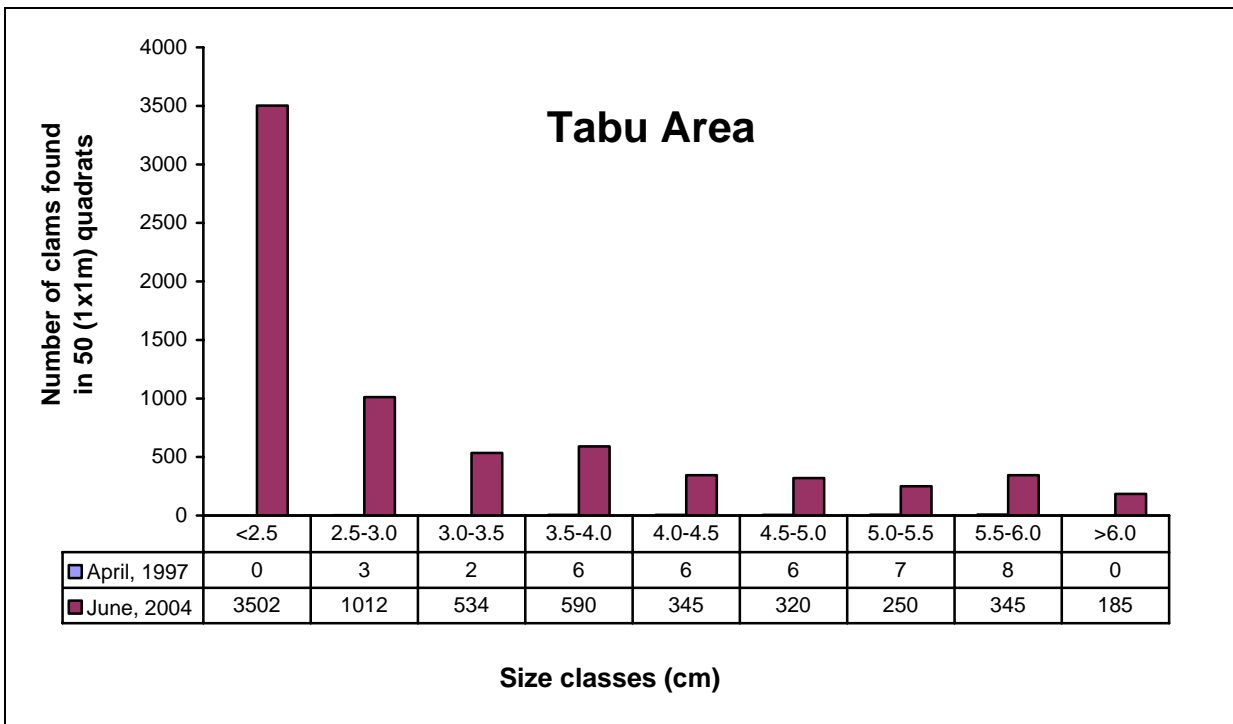
The village chose a group of 20 men and women to be on the *tabu* area management team. From the outset of the planning process, advisors from USP had requested that the team include equal numbers of adult men, women, and youth—an unusual step in traditional Fijian culture. The *tabu* area management team staked out the boundaries of the proposed protected area. The team then worked with the paramount chief and elders of the village to hold a traditional ceremony declaring the area *tabu* for three years.

Monitoring data from 1997 and 2004 indicate the dimensions of the experiment's success. The number of clams increased dramatically in both the *tabu* (Figure 1) and adjacent harvest (Figure 2) areas. At the start of the project, it was extremely rare to find a clam bigger than 5 cm in diameter. Today, the Ucuivanua community routinely finds clams in the *tabu* area that are over 8 cm in size. Due to its success, the Ucuivanua *tabu* area, which initially was intended to be closed to fishing and collection for just three years, has been extended indefinitely.

Ucuivanua was the site of the first locally managed marine area in Fiji, and its results have been dramatic. Since local management began seven years ago, the *kaikoso* clam has once again become abundant, and village incomes have risen significantly. The Ucuivanua project set aside the usual approach that only experts know best and that development occurs only when planned by governments. Instead, it let the ultimate choices—the decisions that determine a project's success or failure—rest with the people most dependent on the resources for their livelihoods. The success in Ucuivanua has led to the adoption of LMMAs throughout Fiji, Asia, and the Pacific region.

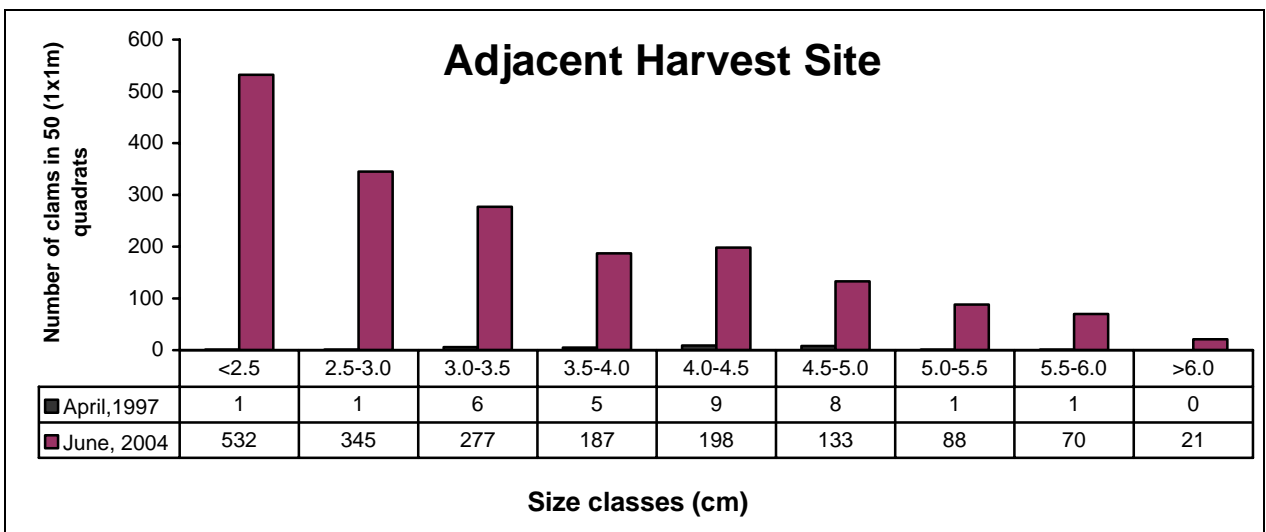
A successful LMMA is, in effect, an alternative income source. The increase in fishery resources not only improves nutrition but also raises household income from market sales (Figure 3). Marine resources, on average, make up more than 50 percent of the household income for these villages, and raise these households far above the median income level of F\$4000 a year in Fiji.

Figure 1: Comparison of clam sizes and abundances in the Ucunivanua tabu area between 1997 and 2004.



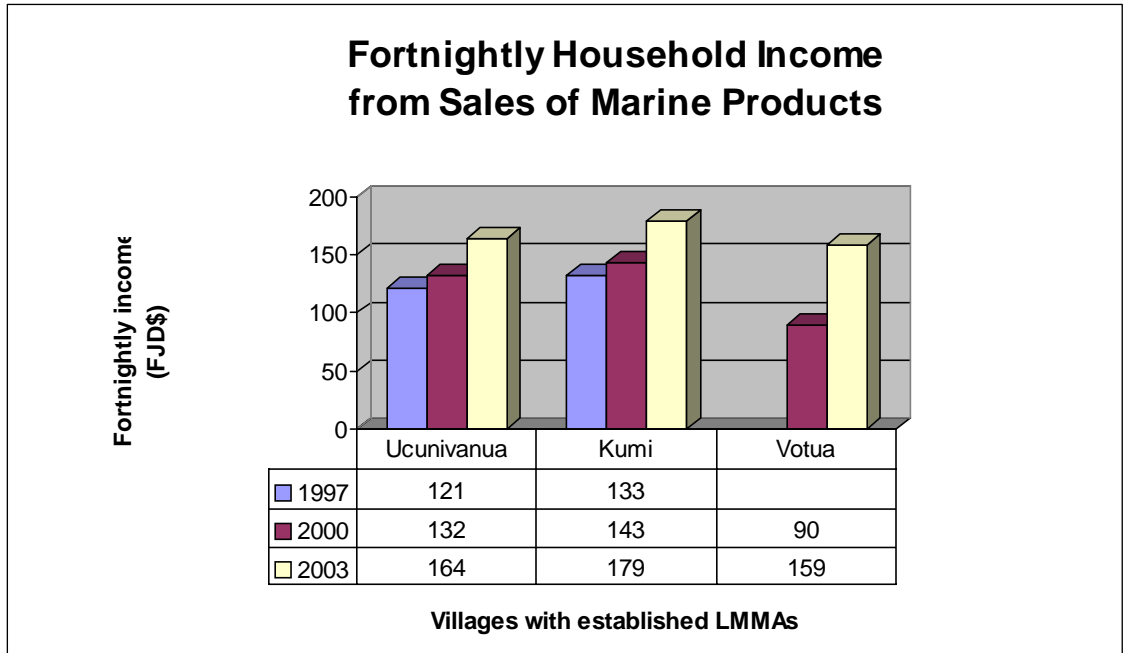
Source: Aalbersberg and Tawaki 2005

Figure 2: Comparison of clam sizes and abundances at the adjacent harvest site between 1997 and 2004.



Source: Aalbersberg and Tawaki 2005

Figure 3: Fortnightly Household Income from Sales of Marine Products in Verata (1F\$=0.5US\$)



Source: Aalbersberg and Tawaki 2005

NATURE IN LOCAL HANDS: THE CASE FOR NAMIBIA'S CONSERVANCIES

Namibia is a strikingly beautiful country of desert dunes, woodland savannah, open plains, and river valleys. Its small but growing population of 1.8 million people is highly dependent on natural resources for food and livelihoods. Large areas, primarily in the wildlife-rich plains of the north, are communally managed by more than a dozen different ethnic tribes.

By the early 1980s ecosystems were rapidly deteriorating in the north, with rampant poaching of elephant ivory and rhino horn and severe over-use of drought-prone land. Populations of Namibia's world-renowned wildlife, including the desert elephant, endangered black rhino, zebra, lion, impala, and oryx, plummeted.

In the mid 1980s an innovative anti-poaching program developed by Namibian conservationist Garth Owen-Smith provided an early template for community-based conservation. He won the trust of traditional leaders in the Kunene region, who agreed to appoint local people as community game guards and work with local NGOs to promote an increased sense of stewardship over wildlife.

Meanwhile, Namibia's Nature Conservation Department (now the Ministry of Environment and Tourism, or MET) had devolved wildlife user rights to white-owned freehold farms. Private farm-owners were allowed to sustainably utilize animals for game meat, trophy hunting, and tourism.

Following independence, these two models formed the basis of government action to extend the same kinds of use rights that farm-owners had enjoyed to those who lived on communal lands. The Nature Conservation Act of 1996 enabled the establishment of conservancies—legally gazetted areas within the state's communal lands – through Namibia's Community Based Natural Resource Management Programme.

Namibia's establishment of conservancies is among the most successful efforts by developing nations to decentralize natural resource management and simultaneously combat poverty. In fact, it is one of the largest-scale demonstrations of so-called "community-based natural resource management" (CBNRM) and the state-sanctioned empowerment of local communities.

Most of the conservancies in Namibia are run by elected committees of local people, to whom the government devolves user rights over wildlife within the conservancy boundaries. Technical assistance in managing the conservancy is provided by government officials and local and international nongovernmental organizations (NGOs). In late 2004, 31 conservancies were operating on 7.8 million hectares of desert, savannah, and woodlands occupied by 98,000 people. Fifty more were in development.

To qualify, communities applying had to define the conservancy's boundary, elect a representative conservancy committee, negotiate a legal constitution, prove the committee's ability to manage funds, and produce an acceptable plan for equitable distribution of wildlife-related benefits. Once approved, registered conservancies acquire the rights to a sustainable wildlife quota, set by the ministry. The animals can either be sold to trophy hunting companies or hunted and consumed by the community. As legal entities, conservancies can also enter into contracts with private sector tourism operators.

The first four conservancies were legally recognized in 1998. By October 2004, there were 31, with 31,000 registered members spread across six geographic regions. Conservancy committees had also set up 18 joint-venture agreements with private safari hunting and tour operators.

This rapid expansion can be traced to a combination of factors. Government leadership and community enthusiasm were the prime ingredients. But an equally crucial factor was a strong commitment from support organizations. Collectively known as NACSO—the National Association of CBNRM Support Organisations—these included the University of Namibia and 12 national NGOs.

While the success of Namibia's conservancies is dependent on local people's enthusiasm and commitment, the movement has also been significantly bankrolled by international donors. By late 2004, the development agencies of the United States, the United Kingdom, Sweden, and the Netherlands, as well as the World Bank and the European Union, had spent N\$464 million on the effort to build a national community-based natural resource management program. By 2004 this investment had begun to show strong economic results. Five of the longest-running conservancies—Torra, Uibasen, Nyae Nyae, Marienfluss and Salambala—were financially self-sufficient, and four more are on track to become so in 2005.

Perhaps the most striking benefits of Namibia's experiment in people-led natural resource management are to wildlife. Populations of elephant, zebra, oryx, and springbok have risen several fold in many conservancies as poaching and illegal hunting has fallen. Northwest Namibia now boasts the world's largest free-roaming population of black rhino, while game in the large Nyae Nyae Conservancy have increased six-fold since 1995. In Caprivi's eastern floodplains, seasonal migrations of game between Botswana and Namibia have resumed for the first time since the early 1970s.

Namibia's conservancies have significantly altered the country's land-use landscape—to the benefit of biodiversity. Eighteen registered conservancies sit alongside or between national parks or protected game reserves. This facilitates the safe, seasonal movement of wildlife between parks and communal lands and adds an extra 55,192 km² of compatible land use to Namibia's protected area network of 114,080 km².

Benefits for human populations are also clear-cut, although they vary among conservancies. Over 95,000 Namibians have received benefits of some kind since 1998, according to the United States Agency for International Development (USAID), a funder

and supporter of the conservancy effort. These benefits include jobs, training, game meat, cash dividends, and social benefits such as school improvements or water supply maintenance funded by conservancy revenue.

In 2004 total income from the CBNRM program nationwide reached N\$14.1 million, up from N\$1.1 million in 1998. Of this, N\$7.25 million was distributed across communities in the form of cash dividends and social programs, with the rest earned by individual households through wages from conservancy-related jobs and enterprises. Tourist lodges, camps, guide services, and related businesses such as handicraft production employed 547 locals full-time and 3,250 part-time. In all, 18 conservancies received substantial cash income, averaging N\$217,046 in 2004.

A 2002 World Bank study of 1192 households in Caprivi and Kunene found benefits spread equitably across conservancy members. In Kunene the researchers recorded a healthy 29 percent increase in per capita income due to the combined direct and indirect effects of community-based natural resource management, and that did not include non-financial benefits such as bush meat. These findings suggest Namibia's conservancies are starting to play a significant role in fighting rural poverty.

Despite their well-documented benefits, however, Namibia's conservancies remain a work in progress. Two issues, in particular, are raising concerns within the government, donor, and NGO communities. The first is that the ad hoc manner in which some conservancies distribute their benefits does not always favor the poorest households. The second is that limited participation in conservancies is hampering genuine local governance and empowerment. A deeper, more structural problem is the limited nature of local rights, with conservancy residents denied full property or tenure rights. Despite periodic discussion of land reform, ownership of all communal lands is retained by the government, in a holdover from colonial times.

Still in their infancy, Namibia's conservancies have their critics and remain to date imperfect vehicles of local democracy and poverty alleviation. Their active membership can be limited, for example, and wildlife user rights are vested in committees, not directly in village households. Yet they have already delivered clear benefits for both wildlife and people. Zebra, oryx, kudu, and springbok populations are rebounding in many locations, and cash, jobs, and game meat are flowing to communities. Less tangible but equally important gains include the strengthening of local institutions and governance, women's empowerment, and greater community cohesion.

MORE WATER, MORE WEALTH: DAREWADI VILLAGE

In drought-plagued Maharashtra, good water management is a matter of life and death. Small-scale farmers in the Indian state are dependent on infrequent rainfall to maintain their fields, livestock, and forest-based livelihoods. During the dry season, drinking water is so scarce that supplies are regularly trucked into thousands of villages.

In recent years, development initiatives in the region have focused on village-led watershed management activities, aimed at conserving natural resources and improving livelihoods. Among these is the Indo-German Watershed Development Program (IGWDP), which has funded 145 projects in 24 districts, successfully mobilizing villagers to regenerate land through tree-planting and water and soil conservation .

One of the program's more dramatic success stories is Darewadi village, in Ahmednagar, Maharashtra's most drought-prone district. As recently as 1996, the main village and its twelve hamlets were on the verge of desertification. Scarce rainfall supported only 3-4 months of agricultural activity a year, forcing villagers to migrate in search of seasonal work for the rest of the year.

In the 1980's, the Indian government shifted its approach to watershed management in drought-afflicted rural areas. Traditional bureaucratic, top-down, projects had often failed due to lack of consultation with or buy-in from local people. In an effort to increase success rates, the government began to encourage programs based on smaller, people-led projects. Among these was the Indo-German Watershed Development Program, launched in 1992. It is implemented by an independent, state-wide NGO, the Watershed Organization Trust (WOTR), in partnership with the Indian government's National Bank for Agriculture and Rural Development (NABARD).

The program funds village-based, participatory watershed development projects, with communities chosen for their low rainfall, geographical position—generally within primary water catchment areas—and social composition. Villages where a few families dominate land ownership are disqualified on the grounds that such power imbalances would deter consensus on developing local land to the benefit of all. To qualify, villages must agree to temporary bans on tree-cutting and grazing on land designated for regeneration. They must also contribute free labor—a common rural practice known as *shramdan*—to cover at least 15-20 percent of project costs.

Capacity-building is the program's first priority. In each community, a Village Watershed Committee of local residents is nominated, usually by the village assembly, to make and implement decisions. Villagers also work on a pilot project, learning water and soil conservation techniques, with WOTR or another local NGO providing training, technical organizational, and financial support.

The Darewadi watershed covers 1,535 hectares. Two-thirds is privately owned; the rest is made up of common lands owned by the Maharashtra state government's Forest Department (WOTR 2002:1). WOTR's first task was to overcome the mistrust of many villagers, especially sheep and goat farmers, including many poorer families, who feared that grazing bans on regenerating land would cut down the available fodder, harming their already fragile livelihoods. Through a series of village meetings, the NGO explained how the temporary bans would allow trees to grow, eventually yielding more fodder and more water for crops.

Once the villagers had accepted the restoration scheme, WOTR helped them take the necessary official steps to gain state permission and structure the project's management. First they helped the community negotiate a Joint Forest Management agreement with the state Forest Department, legally granting local people the right to work on the state-owned common lands surrounding Darewadi and to own the agricultural produce grown on these lands (Lobo 2005c). Without attention to this question of land use and tenure on state forest lands, a regeneration plan covering the entire watershed would not have been possible, nor would it have been economically attractive enough to gain village support.

Next, the *gram sabha* (Village Assembly) nominated 24 people to the Village Watershed Committee, which became the registered project authority, legally responsible for managing funds and overseeing development activities. Members of the Village Watershed Committee were assigned tasks by the village assembly. Responsibilities included monitoring grazing bans, organizing paid and voluntary laborers, supervising work and wages, maintaining records, and imposing fines on villagers who broke agreed project rules. Committee members were unpaid, trained by WOTR, and held accountable for fulfilling their duties by the *gram sabha*

Five years of regeneration activities followed, including tree and grassland planting and sustainable crop cultivation. Soil and water conservation measures to nurture the regenerating land included the construction of simple water harvesting and irrigation systems such as hillside contour trenches and rainwater harvesting dams.

The Darewadi project's costs were substantial, totaling 8.7 million rupees when the value of voluntary labor is factored in. By 2001 the results were apparent. Barren hills and common lands covering 395 hectares had been planted with trees and grasses, with a 65 percent survival rate. Land under irrigation increased from 197 to 342 hectares, with maize, wheat, and vegetables among successful new crops. Grass fodder for livestock increased 170 percent as a result of the soil and water conservation measures. (See *Tables 1 and 2.*)

Despite three years of drought since IGWDP funding ended in 2001, the project's benefits are continuing, testifying to the effectiveness of the regeneration and the Village Watershed Committee. The local water table has continued to rise, as have supplies of livestock fodder and the volume of land under irrigation. The availability of agricultural work availability and wage levels have held steady. In early 2005, 11 villagers acquired telephones.

Inhabitants have also gained in less tangible ways from the self-organization which has driven their village's revival. They have learned new skills and found new social cohesion. The Darewadi project and similar experiments are not perfect: the role of women can be limited, and landless people may not share equally in the benefits. Nevertheless, Darewadi's undoubted success provides one encouraging model for people-led sustainable development in arid regions, where many of the world's poor live.

Table 1 More Water in Darewadi

Impact Indicator	Before Watershed Development, 1996	After Watershed Development, 2001	January 2005
Months requiring delivery of drinking water by tanker truck	February to June	Tanker free	Tanker free
Average depth of water table below ground level	6.5 m	3.5 m	3.1 m
Number of active wells	23	63	67
Electric motors for pumping water	6	52	65
Land under irrigation	197 ha	342 ha	381 ha

Source: WOTR 2005

Table 2 Darewadi Watershed Restoration Benefits

Benefit	Before Watershed Development, 1996	After Watershed Development, 2001	January 2005
Cropped area:			
Kharif	490 ha	616 ha	620 ha
Rabi (winter)	310 ha	417 ha	425 ha
Rabi (summer)	0 ha	38 ha	40 ha
Main crops grown	Bajra (Pearl Millet)	Bajra, Onion, Tomato, Wheat, Jowar (Sorghum), Maize, Vegetables	Bajra, Onion, Tomato, Wheat, Jowar, Maize, Vegetables
Waste land	167 ha	17 ha	15 ha
Livestock:			
Crossbred cows	14	113	97
Indigenous cows	170	101	85
Sheep	1017	434	610
Goats	306	132	215
Summer milk production	Insignificant	788 liter/day	550 liter/day
Fodder availability	1054 tons/year	2848 tons/year	3265 tons/year
Agricultural employment	3-4 months/year	9-10 months/year	9-10 months/year
Agricultural wage rate	Rs. 20-30/day	Rs. 40-50/day	Rs. 40-50/day
Value of cropped land	15,000 Rs/acre	65,000 Rs/acre	65,000 Rs/acre
Value of waste land	4,000 Rs/acre	18,000 Rs/acre	20,000 Rs/acre
Biogas units	0	2	2
Gas cylinders	0	32	32
Smokeless chulhas (stoves)	0	54	54
Kitchen gardens	0	30	30
Individual latrines	0	50	50
Televisions	3	76	76
Bicycles	2	122	122
Motorcycles	0	42	45
Tractors	0	2	1

