# SILVIPASTURE MANAGEMENT CASE STUDIES BY UBESHWAR VIKAS MANDAL (DHAR):

## JOGION-KA-GUDA, KELI AND SEEDH

**BAIF/NRI Goat Research Project Report No. 4**

**NRI Report No: 2535**

**July 2000**

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## *Preface*

This report is based on work undertaken in connection with a goat research project that is jointly managed by the Natural Resources Institute (NRI) and BAIF Development Research Foundation (BAIF). The BAIF/NRI Goat Research Project is concerned with easing seasonal feed scarcity for goats in various parts of semi-arid India, through a participatory approach: until now the work has focused on South Rajasthan and one district of Gujarat. The project, which began on 1 October 1997, is a three-year one: it is funded by the UK Department for International Development's Livestock Production Programme[1], whose support we gratefully acknowledge. This is the fourth report of the BAIF/NRI Goat Research Project. Copies of this report can be obtained from Ubeshwar Vikas Mandal or NRI. Copies of previous reports[2] can be obtained by contacting by emailing BAIF or NRI at the addresses given below.

The poorer rural livestock-keepers tend to be small or marginal farmers (or landless people) who do not have sufficient land to grow forage crops, preferring to give priority to food crops and cash crops. For them, common lands are often the most important source of forage for their goats and other livestock. Thus, the project concluded that one type of technology that could potentially be appropriate for poor goat-keepers is enhancing the forage resource productivity of village grazing lands and state-owned forest lands.

Use of common lands in Rajasthan has been primarily open access during the last few decades, and a large proportion of them has become degraded. During the last 15 years or so there have been many initiatives to rehabilitate them. A review of the literature on silvi-pasture development in Rajasthan, commissioned by the project, found that there was very little information in the existing literature on: (a) the effect of these initiatives on livestock feeding systems and numbers; or (b) the economics of this kind of intervention. Thus, in late 1999 the project commissioned 14 case studies of silvi-pasture development interventions that had been initiated in the 1980s or the early 1990s, with a view to filling in these and other knowledge gaps. This report contains three of these case studies, which were undertaken by a local NGO, Ubeshwar Vikas Mandal. The rest of the case studies will be published as subsequent reports in this series.

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[1] This document is an output from a project funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

[2] The first three reports were:

1. Conroy, C. and Rangnekar, D.V. (2000) *Livestock and the Poor in Rural India, with Particular Reference to Goat-Keeping.* BAIF/NRI Goat Research Project Report Number 1. BAIF/NRI.
2. Conroy, C. and Rangnekar, D.V. (2000) *Constraints Facing Goat-Keepers and Ways of Addressing them through a Participatory Approach: Some Experiences from Semi-Arid India.* BAIF/NRI Goat Research Project Report Number 2. BAIF/NRI.
3. Conroy, C. and Paterson, R. (2000) *A Review Of The Literature On Silvipasture Management And Development On Common Lands In Semi-Arid Regions.* BAIF/NRI Goat Research Project Report Number 3. BAIF/NRI.

## INTRODUCTION

UVM is a local community-based voluntary organisation involved in the ecological, cultural and spiritual regeneration of the tribal (Bhil) people in the Aravali hilly region of Mewar in South Rajasthan. It has been working since 1985 in some 50 villages and hamlets of Gogunda and Girwa Tehsils of Udaipur district. It has undertaken activities such as pasture protection, nursery raising, plantation, soil and water conservation, minor irrigation, biogas plants, water harvesting, saving and credit groups and documentation of traditional agricultural practices. Of all these, silvipasture management of the village/panchayat common lands or 'charnots' has been the major component where promotion of community self-management has been the key objective. This is where UVM has achieved its outstanding successes and has had heart-rending failures.

UVM involvement in the present case studies with the support of Natural Resources Institute (NRI) has been motivated by the desire to gain a better understanding of its own experience in order to be of greater help to the communities in moving towards a better management of their resources and of themselves at this juncture. In addition, NRI's overall research priorities have been included, namely: study of impact of silvipasture development on livestock, especially goats; economic cost / benefit analysis, and study of indigenous community management system and technical knowledge about silvipasture.

Three cases of silvi-pasture development (SPD) were selected for study. Of these, two - Jogion ka Guda (JKG) and Keli - are from UVM's area of work; while the third, Seedh, is from Kanor Block/Tehsil in the eastern part of Udaipur district. The choice of Seedh has been guided by its special character as a self-governing Gramdaan community with statutory powers over its resources.

Silvipasture development in the village pasture of **JKG** was the most problematic of the initiatives supported by UVM. It involved internal conflicts, court cases, stoppage of work, change in Panchayat decisions and constant pressures of grazing and felling by neighbouring villages. Despite these odds against it, the community completed the protection, plantation and soil conservation works and ensured their maintenance for nearly a decade. There were real benefits in ecological and economic terms. However, internal organisation and capacity building remained unattended, and fell apart after the elders who had sustained it passed away.

Protection work in **Keli** broke down soon after completion of the initial works, essentially because it was taken up only as a wage labour opportunity. Once the mistake was realised the traditional elders took the lead to ensure restoration. UVM also adopted a more flexible and integrated watershed development perspective, adding land improvement and lift irrigation components. As a result, the community has grown in self-confidence to link itself with government schemes. Even in the current drought it has more than adequate supply of fodder and water in the village.

SPD effort in **Seedh** is a unique expression of community's traditional claims over common pastures and visionary inspiration for self-governance propelled by the zeal of the village priest. Striving over four decades it has succeeded in evolving elaborate protection, use and benefit distribution arrangements with accurate records. It has dealt with Panchayat Raj institutions, Forest Department and support NGOs on

its own terms to improve productivity of the common lands and increase its cultivated/irrigated area to produce surpluses in fodder, grains and milk for sale.

The studies were conducted between mid-December 1999 and end March 2000. The methods used included: review of the project and/or village records; and personal interviews, field observations and surveys, in the framework of the checklist of topics designed by NRI.

# CASE STUDY 1: JOGION KA GUDA

## 1. Background - Community, Livestock, Livelihood

Jogion ka Guda (JKG) is a revenue village in Kachhba Panchayat of Gogunda Block / Tehsil in Udaipur district. It consisted of 60-65 households in 1987, which have increased to 90 at present. These are distributed in two hamlets: the main one is near the temple, with 60 households (52 Bhil and 8 Jogi/Nath); and the other is with 30 households of Bhils whose elders came from another village and settled here some 30 years ago.

The total livestock of JKG numbered 497 in 1987 and 636 in Jan. 2000. Their composition is shown in the following table.

| Year | Cows | Bullocks | Buffaloes | Goats | Sheep | Camels | Poultry | Total |
|---|---|---|---|---|---|---|---|---|
| 1987 | 68 | *105* | 25 | 188 | 84 | 2 | 30 | 497 |
| 1999 | 78 | 127 | *55* | *256* | 80 | 1 | 39 | 636 |
| *% increase* | *14* | *20* | *120* | *40* | *-5* | *-200* | *30* | *28* |

The present day livelihood systems of all the families in JKG are a combination of agriculture with livestock and unskilled and skilled employment / labour in agriculture, mining and construction work. Traditionally, Nath-Jogi families were engaged in devotional (Bhakti) singing as singer-saints. They wore saffron clothing and travelled to the villages of their jajmans (followers -supporters) at festivals. This changed after the 'fifties when they were alloted land and settled. The traditional occupation has been either given up or has decreased in importance.

**Holdings and Livestock**

| | Goat | Cow | Bullock |
|---|---|---|---|
| Size of holding | Average no. per household | | |
| >3ha | 2 | 2 | 4 |
| 1-3ha | 4 | 1 | 1 |
| <1ha | 4 | 0 | 0 |

The recorded landholdings of all the households are in the marginal category, i.e., less than 3.5 hectares (ha.). Only two households have more than 2 ha. of land, 30 have holdings from one to two ha. and the other 58 have less than one ha. of land. Most of the holdings are unirrigated with only rainfed crops. In addition, there is unrecorded private pasture land in possession of the more enterprising households. The number of livestock per household varies from one to 36, with the following distribution pattern.

| No. of animals | % of households |
|---|---|
| 30-40 | 2 |
| 20-29 | 8 |
| 10-19 | 30 |
| Less than 10 | 60 |

In terms of type of labour, 50 % are skilled and 50% are unskilled. There is an average of 240 days of per person per year engagement in work by an average of two persons per household; and estimated incomes of Rs. 30,000 per year for skilled work and Rs. 15,000 per year for unskilled work. Thus, labour outside the village -- in urban areas, or mines and/or public works -- is the mainstay of livelihood of people in JKG. This is especially the case for men who are 15 to 50 years of age. Livestock (traditionally, 'Dhan' or 'Lakshmi' or wealth) is now second in importance as a basis of livelihood, while cultivation with very small holdings and little irrigation has the least importance in the household economy of the great majority.

## 2. Natural Resources

JKG has a total land area of 255 ha. According to 1988-89 revenue data 163 ha.was classified as area not available for cultivation, either being hilly (102 ha.), wasteland (l5 ha.) or other (46 ha.). There were 37.41 ha. of village pasture or common land, 32 ha. of unirrigated and 4 to 7 ha. of well irrigated land for cultivation and 25 ha. of culturable waste and fallow. There is no forest land in JKG. The cultivable area is likely to have increased through land improvement and soil and water conservation (fieldbunding, land levelling) work carried out in the last decade. Similarly, there is likely to have been an increase in private pasture (beed) land by encroachment on unalloted revenue (bilanam) lands. The real situation can only be brought out by landholding and land use survey on household basis. 42.43 ha. of land is owned by non-residents, who are of other villages (8), of Gogunda (20) and of Udaipur (2). Of these the largest landholding is one of 6.07 ha. belonging to a family of Udaipur.

JKG lies at the head of a rivulet that flows into the headstreams of Ayad -Berach - Banas. It has a landscape of rolling hills in a broad valley bounded by Siyamagra (magra-ridge) with moderate to steep slopes on the west and more moderately sloped Kadmaliya ridge on the east. Cultivable land has been created by fieldbunding, cutting and levelling along the valleys and the lower gentle slopes. The steeper and upper slopes of hills and ridges serve as pasture lands. The soils are shallow and gravelly in the land capability classification No.VI.

The water resource endowment of JKG is extremely poor with only monsoon seasonal and post-monsoon streamflows and groundwater. There are 17 open wells mostly along the streambed, enabling irrigation of 4 to 7 ha. in their vicinity and providing water for livestock and household use. Two hand pumps have been installed. Rainfall figures available for Gogunda (5 km away from JKG) show an annual mean of 28" (711 mm.) varying generally between 18" (457 mm) and 34" (855mm) during 1943-1993. In 1973 and 1987 it was less than 12" (304mm).

## 3. History of Settlement and Changes in Natural Resources and Livelihoods

Jogion-ka-guda is said to derive its name from the Nath-Jogi community which comprises of 8 households at present. This is by no means certain since traditionally they were itinerant, devotional singer-saints. Some 50 years back there were nine households of Bhils and Jogis in JKG. The Bhils were engaged in buffaloe-keeping,

with herds of 20-25 per family maintained through open grazing in the well-forested and well-watered hilly terrain around the village. Maize, lentils and oilseeds were grown on shifting cultivation (valra) basis for subsistence needs. Surplus milk was converted to ghee and sold to local traders. Forest produce - leaves, fuelwood, bamboos, wood for construction, herbs, gum, honey - was gathered prudently for own requirements and local markets. Occasionally the Bhil families, subject to the Kachhba Thikana[3], had to provide 'veth' or compulsory labour to cultivate Thikana lands and carry out other chores.

After Independence 'veth' and 'Thikanadari' were abolished. The lands cultivated by Bhils and other peasants were recorded in their names and steps taken to demarcate forest, revenue and village pasture lands. These were followed by the exploitation of forest areas for state revenue. This took place in an uncontrolled manner and was extended to non-forest lands by unscrupulous contractors.

In due course even the local people took to felling trees in their vicinity for fuelwood headloads and charcoal-making. These processes of degradation over two decades led to a weakened resource base, drought proneness, altered livelihoods (with more goats and sheep and fewer cattle), and heavy dependence on relief and labour outside the locality, and acute poverty. The lowest point in these downward trends was reached in 1986-87 with only 12" (304 mm.) of rainfall, the worst drought of the century. This was associated with acute food, water and fodder shortages and heavy livestock mortality.

**Typical Livestock per Household Pre and Post - 1986-88 Drought**

| | Cows | Bullocks | Buffaloes | Goats |
|---|---|---|---|---|
| Before 1986 | 3-4 | 2 | 1-2 | 10-15 |
| After 1988 | 1-2 | 1 | - | 3-4 |

## 4. Origins and Objectives of Silvipasture Initiative

Silvipasture development in JKG was initiated in 1987 during the drought of 1986-88. Some of the village elders learnt about the pasture protection and regeneration work started by UVM in neighbouring villages of Majam and Bagdunda in 1986. One of them, Shri Dhannaji Gameti, contacted Shri Gulab Ram Tawer and Shri Kesu Lal Kher of Kheda hamlet of Bagdunda, who had taken the lead in this work in their village. After being satisfied about the potential importance of this work in JKG, the village elders Dhannaji, Hiraji, Dallaji and Gamanaji invited UVM worker, Prem Shankar Sharma, for a briefing meeting in the village.

In this meeting UVM policy and approach were explained. Although the immediate needs were for relief labour and fodder during the drought, and these had to be met, it was clarified that for preparation, execution and subsequent maintenance responsibility had to be taken by the community. Following this, village meetings

[3] ' Thikana' refers to the residence/place of Thikanedar or local Rajput hereditary feudal authority. It also refers to the people /territory under his jurisdiction/control.

were held to decide on the area for this work and to assign responsibilities. Siyamagra village / panchayat common land was selected for protection and development, map and revenue records were obtained from the Patwari and the Panchayat resolution got passed for permission for this work. Earlier the same area had been earmarked for silvipasture development by the forest department and some initial work got done by the Panchayat; but this was not approved by the forest department.

In the course of planning the work with UVM the village community was consulted regarding the area selected, species to be planted, labour contribution, nurseries and work supervision. An agreement was reached with the community for its responsibility and arrangements for protection and for the sharing of produce. The existence of users from neighbouring villages was also brought to the fore and the decision taken to do stonewall fencing. The available skills for nursery-raising and benefits to women in terms of easy access to fodder were also taken into account. Deepening of the open well for nursery raising and for watering livestock were the new objectives included after the start of the project.

Information about encroachments and related problems was not made known to UVM at the start. While four of the six cases of encroachment were dealt with amicably by the elders, the two cases concerning Nakla and Sohanlal Daglia were the source of considerable harrasment, hardship and financial loss to the community. These will be discussed in detail in later section.

## 5. Baseline Information about the Protected Area

The protected area is called Siyamagra village / panchayat pasture and is shown as such in the revenue records. Its selection for intervention was done by the elders of the main hamlet of JKG. They were guided by various considerations. The most important of these was the legally accepted and recorded status of Siyamagra as a village pasture. This was an area largely clear of encroachments except in the part along the road. The elders knew about these and were determined to remove them especially those by the outsiders and recent settlers in the smaller hamlet. In this they had the support of the whole community except the encroachers. They were also supported by the Panchayat.

Siyamagra was said to have been well-wooded earlier. However, like the rest of the area around JKG, it had been deforested. Before the intervention it was being used for open grazing and fuelwood collection. The village pasture covers an area of 37.41 ha. It is situated along eastern slope of Siyamagra, a north-south aligned ridge with steep slopes and 15 gullies ranging from 10’ to 15’ in depth. It has shallow gravelly soils with small boulders and rocky outcrops in several places. At the time of planning the intervention the area still had the rootstock and seeds of: grasses such as Paleva, Seran, Buhari, Roda, Gondia; shrubs like Ratanjot, Anwal, Thor, Lantana, Ber ; and trees like Kher and Dhavra. There were also a few older trees like Mahua, Runjhia and Khakhra scattered over the area.

## 6. Nature of Silvipasture Development

Silvipasture development work by UVM was undertaken with the perception of a crisis marked by drought distress amongst the people, and a degraded and worsening natural resource base posing a threat to the survival of the communities. It was also guided by the principle of primacy of people as workers, beneficiaries and owners / managers of their own resources. The choice of technologies was made on the consideration of available knowledge and skills of people and of the forest department and other resource agencies, especially Action for Food Production (AFPRO) and Society for Promotion of Wasteland Development (SPWD). The cost norms were in accordance with the pattern decided by the main support agency, the National Wasteland Development Board.

**Species of Saplings Planted in Siyamagra Pasture**

| Species | No. |
|---|---|
| Deshi Kalia | 1000 |
| Kikar (Jungle Zalebi) | 10163 |
| Subabool | 2633 |
| Ber | 500 |
| Sitaphal | 230 |
| Eucalyptus | 2503 |
| Karanj | 59 |
| Bamboo | 6090 |
| Prosopis Juliflora | 1652 |
| Acacia Nilotica | 5000 |
| Acacia Catechu | 4000 |
| Kalicirus | 540 |
| Lemon | 290 |
| Mango | 745 |
| Jamun | 1080 |
| Neem | 609 |
| Guava | 62 |
| Papaya | 402 |
| Tamarind | 1206 |

For fencing stone walls were constructed with locally available material. Trenches, checkdams or gullyplugs and contour bunds were used for soil and water conservation. For plantation bamboo and largely local species of trees were selected. The saplings were in part raised in nurseries and the rest obtained from the forest department nurseries.

Grassland development was undertaken on a demonstration basis in 1990-91 with support from InterCooperation, Switzerland. This was done in three equal sized (one ha. each) plots A, B, and C. Plot A was planted with an improved fodder grass (1-lathighas) and treated twice with urea and once with potash fertilizers. Plot B with local grass was treated twice with urea and once with potash and plot C with local grass was left without any interventions. The full grown grass in each plot was cut and weighed. The yields from plots A and B were 2 and 1¼ times respectively that of plot C.

*6.1 Schedule Of Activities*

The work on the project was started in 1987 and continued till 1993 in different phases. The years for each activity were:

1. Construction of Boundary Wall 1987, 1988,
2. Digging of Pits 1987, 1988,
3. Planting of trees 1988, 1989,
4. Demonstration of Hathi Grass 1990
5. Soil - water conservation 1989, 1990, 1993
6. First Year for cutting grass 1988

*6.2 Costs Of Silvipasture Development*

This work was planned as a joint project of the JKG community and UVM. Both paid and voluntary labour was utilized. Since it was work on the common pasture. 25% of the labour cost was borne by the people of JKG. They were the only labourers engaged. Till November 1990, Rs. 14/- per day per person was the wage rate. This was the official minimum wage rate set by the government. After 1990 till 1993 Rs. 22/- per day per person was paid. Men and women were paid at the same rate. Children were not permitted to work. Roughly equal number of men and women were engaged. The disaggregated costs (planned - actual) and rates are given in the following table.

| **Activity** | **Planned cost (Rs.)** | **Actual cost (Rs.)** | **Rate** | **Years** |
|---|---|---|---|---|
| Boundary wall | 42,550.00 | 42,550.00 | Rs. 1000 /- Per Ha | 1987, ‘88, ‘93 |
| Pits | 35,000.00 | 35,848.00 | Rs. 1.OOperHa | 1987 to’91 |
| Plantation | 17,500.00 | 17,924.00 | Rs.0.50per sapling | 1988 to ‘91 |
| Weeding | 7,000.00 | 7,170.00 | Rs. 0.20” | 1988 to ‘91 |
| Nurseries | 21,000.00 | 20,182.00 | Rs. 0.60” | 1987 to 89 |
| SoilwaterConservation | 106,375.00 | 1,11,119.00 | Rs. 2,500 per Ha | 1989, ‘90, ‘93 |
| Total | 2,29,425.00 | 2,34,768.00 | | |
| Overheads @ 10% | 22,942.50 | 23,476.30 | | |
| People’s contribution @ 25% of project cost | 57,356 | 58,690.75 | | |
| **Grand total** | 3,09,723.75 | 3,16,930.05 | | |

## 7. Protection, Decision-Making and Management of Pastureland

This was done on the basis of the restoration of the common pastureland of the village and of promoting relief and development with community management. The various aspects included: prevention of grazing in the common land, stopping felling of green trees, supplying fodder and fuel from other sources, generating employment in the village, curbing migration, creating environmental awareness, promoting savings and mutual help in labour and credit, soil and water conservation and minor irrigation.

With the initial leadership of the village elders regular monthly meetings of the community were started in the main hamlet and were attended by most of the men and women. The families in the smaller hamlet were not included in the meetings or benefits since they had opposed the decision to remove the illegal possession of

pasture land by one of their kin. These meetings were the medium for addressing problems related to protection and for planning. UVM worker took part to provide support and overview. A village committee of the elders and active workers of both communities was also evolved for day - to - day supervision and liaison for pasture protection. A women's savings group was formed. Through camps, outside visits and cultural programmes a sense of common social responsibility for the pasture land was developed. The village elders and women took a leading role in these. Women gained enough confidence to take a stand against the lapses by men in the matter of protection. At times they took independent action to chase off intruders from neighbouring villages. By 1992 the village fund had been established to support protection arrangements. Later there was a breakdown of control to village fund.

Protection was ensured through a combination of boundary wall construction, voluntary duty on rotational basis by village men, engaging a watchman (for four years), taking vows before the Ubeshwar Mahadev (Shiva temple) deity and reviewing rules and problems in meetings. Between 1992 and 1996 a watchman was appointed and paid Rs. 600 per month by the village. Before and after this period protection was done as an all family responsibility reinforced by a sense of the sacred about the commons. This was only partially effective and it broke down in 1998.

Through common consent in the village meetings rules were formulated for harvesting and sharing fodder grasses after their ripening and dispersal of seeds. The pasture area was demarcated into sixty strips up and down the slope for the sixty households of the main hamlet. Grass harvesting was done during November-December each year. According to villagers, there is low demand on labour for other purposes and the grass is likely to become drier and therefore of less nutritive value, if left longer.

Time and duration of harvesting and the number of harvesters per household were decided annually in an open meeting before the time of harvest. Lopping, cutting of trees and grazing were forbidden in the protected area from 1987 to 1998. Fallen leaves and dry wood could be collected and removed. Violation of these rules was punishable with a fine of Rs. 51/-. To curb damage by neighbouring villagers help was taken from the police authorities in Gogunda on some occasions. This reflected the weakness of community's self-defence arrangements and coherence. It also aggravated the relations with the neighbours.

The tenuous situation about protection came to a head in 1998 when the families in the smaller hamlet, who had been excluded from the village meetings and decision-making and had taken an adversary position towards the main hamlet, started cutting the trees in the pasture. By this time several of the elders had passed away. It was feared that those deaths were caused by the evil powers of the elder, Gamana, in the smaller hamlet. This fear, and the fatigue of a long drawn out court case relating to encroachment, broke the community's will for protection. The families in the main hamlet and others from villages nearby joined in the cutting and removal of trees. The bulk of decade-old natural and planted trees were cut down in a matter of 2 to 3 weeks during November 1998, the stonewall was damaged and the area became open for grazing.

## 8. Past and Current Vegetation and Yields

Between 1987 and 1998 Siyamagra pasture of JKG went through a full circle: from unprotected barrenness; to a well managed productive grassland stocked with naturally regenerated trees and shrubs and planted trees, stable and improving soil quality; to a state of plundered and damaged open area with scant grass and scattered stumps of trees.

Biomass yields during 1988 to 1998 have been estimated on the basis of number of bundles and headloads of fodder and fuel collected by the 60 households from the pasture on annual and weekly basis, as recollected by the people. The estimates are given in the table below.

| Product (Tonnes) | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Grass | 18 | 40 | 45 | 60 | 60 | 60 | 60 | 65 | 65 | 65 | 65 | 65 |
| Fuelwood | 20 | 20 | | 20 | 20 | 20 | 20 | 20 | | | | |
| Dry leaves / litter | 8 | 8 | 20 | 10 | 10 | 10 | 10 | 10 | 25 | 25 | 25 | |
| Loppings | | | 8 | | | | | | 12 | 15 | 15 | |

(Units : Grass - 1 pula - 3 kg; Fuelwood - 1 Bhara = l0kgs ; Litter - 1 Bhara - 5 Kg)

### STOCK OF TREES AND SHRUBS

The present stock is very low except in a one hectare area protected personally by a household with own land at the edge of the pasture.

| **Trees** | | **Protected Area (1 ha.)** | | | **Open Area (41.55 ha.)** | | |
|---|---|---|---|---|---|---|---|
| | | Number | Average Girth (Feet) | Average Height (Feet) | Number | Average Girth (Feet) | Average Height (Feet) |
| Natural | | | | | | | |
| | Runjhia | 300 | 2 | 10 | 400 | 1 | 5 |
| | Banyan | | | | 3 | 5 | 40 |
| Planted | | | | | | | |
| | Jamun | | | | 2 | 2.5 | 20 |
| | Mango | | | | 2 | 2.2 | 20 |
| | Eucalyptus | 50 | 2.5 | 20 | 200 | 2 | 40 |
| | A.Auriculiformis | | | | 50 | 2 | 30 |
| | Subabool | | | | 20 | 1.5 | 20 |
| | Acacia Indica | 60 | 2.5 | 25 | | | |
| | Khakhra | 150 | 2 | 20 | | | |

Vegetation in the 1 ha. protected area is an indicator of the peak stock condition before destruction. It is estimated that during the eleven years (1988-98) the village obtained 650 tonnes of grass from the SP area. This was worth Rs. 6,50,000.00 at the prevailing rates. About 20,000 trees of different kinds were cut in Nov. 1998 after protection arrangements broke down. If we assume a (conservative) value of Rs. 5 00/- per tree, these were worth Rs. 100,000,000 (one crore).

## 9. Use And Effects of Protected Area on Livestock

Livestock continues to be an important and integral part of the livelihoods of almost all households of JKG though the pattern varies for each family. The livestock

feeding systems rely on a combination of: grass from protected area, stored crop fodder, open grazing, loppings and leaves, cultivated fodder, cut green grass and concentrates and grains. Feed calenders were constructed using pairs of Vikram Samvat month and calendar months and seasons around which agriculture / livestock activities are organised and described. Villagers were asked to express in Anas[4] the proportions of feed from different sources in each period. This was done separately for large ruminants (buffaloes, cows, bullocks) and small ruminants (goats, sheep).

**Feed Calendar: Large Ruminants**

| Source | Siyala (Winter) | | Hunala (Summer) | | Chaumasa (Rains) | |
|---|---|---|---|---|---|---|
| | Nov.-Dec. | Jan-Feb. | Mar.-Apr. | May-Jun | Jul-Aug | Sept-Oct |
| Loppings | | | | 1 | 2 | |
| Stored Crop Fodder | 6 | 8 | 5 | 3 | | |
| Grass from protected area | 6 | 5 | 9 | 10 | 8 | |
| Concentrate/ Grains | I | 1 | 1 | 1 | 1 | |
| Cultivated green fodder – Barseem | | | | | | |
| Open Grazing | 3 | 2 | 1 | 1 | 1 | 4 |
| Green Grass cut | | | | | 4 | 12 |

**Feed Calendar: Small Ruminants**

| Source | Siyala (Winter) | | Hunala (Summer) | | Chaumasa (Rains) | |
|---|---|---|---|---|---|---|
| | Nov.-Dec. | Jan-Feb. | Mar.-Apr. | May-Jun | Jul-Aug | Sept-Oct |
| Loppings | 6 | 5 | 3 | | | |
| Stored Crop Fodder | | | | | | |
| Grass from protected area | | | | 2 | | |
| Concentrate/ Grains | 1 | 2 | 2 | 1 | 1 | |
| Cultivated green fodder – Barseem | 1 | 1 | 1 | 1 | | |
| Open Grazing | 8 | 8 | 10 | 12 | 14 | 14 |
| Green Grass cut | | | | | 1 | 2 |

Grass from the protected area is the most important component for feeding the large animals. Preference is given to milch animals and those which are pregnant. Goats are fed on this grass only when there is no other fodder e.g. in June, just before rains. In 1998, grass from protected area was fed to large animals between November '97 and May '98. For most of this period it is fed mixed with stored crop fodder. In July-August grass from the protected silvi-pasture area (PSPA) is the main feed. In the later part of rainy season (August -September) the large animals are mainly fed on cut green grass.

For the small ruminants open grazing is the main basis of feeding throughout the

[4] In old Indian currency 1 Rupee was equal to 16 Anas. People think of 16 Anas as 100%, 8 Anas as 50%, etc.

year. It is most important from June to October and is supplemented with lopping and leaves from November to February. Concentrates and grains are given in small amounts to milch and pregnant animals in all the months except the rainy season. May and June are the lean months when only 60-70% of fodder need is met. This is the case for both large and small animals. It has been estimated on the basis of actual fodder given to animals every day.

In open grazing the proportion from different sources is given in the following table.

| Source | Percent | Anas |
|---|---|---|
| Private fields / cultivated | 15 | 2 |
| Private pastures (Beed) | 20 | 3 |
| Unalloted open land (Bilanam) | 68 | 11 |

Fodder (mainly grass, but also tree fodder) from protected area was recognized to have benefitted all the animals, increasing average milk yields of goats and cows by 50% and of buffaloes by 30%. It also reduced disease and mortality and enabled better reproductive performance.

There were also gains for the owners in the form of: increased livestock (hence increased income from sale of bucks); less time spent on gathering fodder; and security of fodder available in the village. After the breakdown of protection, the households have to purchase grass worth Rs. 3000 to 5000 during the current season.

As mentioned earlier, there was significant increase in the livestock numbers after silvipasture protection[5]. The most dramatic increase, 120 %, was in the case of buffaloes. Goats increased by 40% and there was 20% increase in bullocks. The main reason given for increase was the assured and plentiful availability of grass, loppings and leaves from the protected area. Increase of buffaloes has a status aspect also while the goats are a source of cash income twice a year.

## 10. Other Benefits

In the course of the PSPA development activities from 1987-91 each of the sixty participating households obtained labour wage of around Rs. 4000/-. There was no direct contribution to village fund. Around 5 to 10 families with very few livestock (less than four) sold some of their share of grass from PSPA. This is estimated at 1500 kg. per family, yielding an income of Rs. 750-1500. The lower prices (Rs. 0.50 per pula) prevailed during January to March and the higher rates (Rs. 1.00 per pula) were obtained in May and June. There was no purchasing of fodder from outside when the PSPA was protected, whereas prior to that grass had to be purchased from outside. In 1986-88 drought it was supplied through fodder depots run by UVM.

Wildlife has returned to the area - jackals, leopard, deer and rabbits have been seen. There was also increased bird life. Improved groundwater recharge was indicated by better streamflows, rise in well water levels and assured wheat/gram

[5] Editor's note: However, since the initiation of silvipasture protection coincided with the end of a very severe drought, it is difficult to say to what extent, if at all, the increase is due to protection.

crop using subsurface moisture (known as Heerma locally). With longer lasting streamflows there was some increase in winter crop irrigation. 40 families with streams and well irrigation in 7 ha. of land benefitted from this.

Soil and water conservation, especially gully-plugging brought, about dramatic decrease in soil erosion especially along the gullies. The regeneration of grass, shrubs and trees also stabilized the soils on the slopes. Both of these led to the prevention of damage through gully erosion and sand / rubble deposition in the fields below the protected area.

Manure availability and application also increased due to increases in livestock numbers with the households, and greater degree of stall feeding, especially for buffaloes. For the large animals 42% increase in manure, and for small animals 17%, can be linked to PSPA. The estimates are based on the proportion of fodder from the PSPA. This in turn led to better and healthier crop yields and savings on chemical fertilizers.

There have been increases in crop yields, in the range of 150-200 % for maize and wheat, on the lands adjacent to the protected area. This is due to reduced soil erosion, land improvement, bunding, levelling and increased manuring combined with more attention to agriculture, especially by women.

In terms of social benefits, a degree of coherence, mutual trust and responsibility came into being during the time of initiating protection of the common pasture and for several years following the work. The recognized village elders played an important part in this. They had to contend with deep inner division around the actions and claims of recently settled families and the nonresident outsiders who had been allotted or had purchased substantial area (40%) of village land. Both these were kept outside the councils of the village and were not considered entitled to the benefits of the protected area.

A women's savings group was formed and remained active for 7-8 years. As the main beneficiaries of the produce of the protected area they took an active interest in its care and management. UVM provided support in reviving and building the leadership and beneficiary groups through UVM workers' participation in their meetings, trainings, cultural programmes and through exposure visits. The UVM support enabled the arrangements of protection to be sustained for over a decade. However, it was not adequate enough to prevent the breakdown. UVM's own crisis after 1995 led to neglect and failure to address the situation in JKG.

## 11. Beneficiaries and Distribution of Benefits

The only beneficiaries from the protection activities were the 60 households of Bhils (52) and Nath Jogis (8) in the main part of the village. The families of the recently settled Bhils - originally from another village - were excluded from deliberations and benefits for two reasons. First, one of them had encroached on the common pasture and insisted or getting it converted to private land in connivance with the local revenue official. Second, their elder had a reputation of having ritual magical power which he was known to have used against adversaries. These included

the five elders of the main village whose deaths between 1995 and 1998 were attributed to the ill designs of this individual. Non-residents from neighbouring villages, Gogunda and Udaipur, numbering 29, owning land in JKG were also not considered entitled to the benefits of the protected area.

The main benefit, fodder grass, was distributed among the beneficiaries in two ways. Initially it was done through fixing one person per family for cutting and collection for the duration of harvesting of the fodder. This lasted till the bulk of grass had been collected, which was three days in the first instance. The quantities collected varied from 400 to 650 pula. The stronger persons were able to collect more and better quality grass. Some who were engaged in labour outside were not able to collect their share. Subsequently, after one year, cutting and collection was done by demarcating 60 plots of equal size up and down the slopes and assigning responsibility for protection and collection as convenient for the households. This system was followed for the rest of the duration of protection and was generally considered fair. Fuelwood and leaves were collected on ad hoc basis as needed. Grazing and cutting were not allowed but did take place as enforcement of protection rules remained weak. This was related to lack of capacity building for this purpose (see 12 below).

The relative importance of the benefits varied over time. Wage labour was the most significant between 1987 and 1991 and again in 1993. This was of equal value to all the participating households. During the period 1988-93 grass as benefit was second in importance. After 1993 grass became the most important benefit. As mentioned earlier, the users (before enclosure) from the neighbouring village and the encroacher families were excluded from the benefits.

## 12. Gender Issues, Capacity Development and Sustainability

As a roadside village not far from the Tehsil headquarters, and with easy access to Udaipur city, JKG households' main livelihood component is skilled and unskilled labour. Women also take part in unskilled labour on public works road construction, soil conservation, and forestry work in the vicinity. All the men except the very old are away from the village during the day and in many cases for prolonged spells. As a result of this the bulk of responsibility for agricultural work and livestock falls on women. They were the main beneficiaries from the produce of the protected area. Being close to their homes and giving assured and adequate supply, it lightened their burdens considerably. Therefore, the women had the most positive attitude towards PSPA and made repeated efforts to thwart grazing and cutting by neighbouring villagers. They also goaded the men for a more effective protection role and responsibility. Today, they see the men as guilty and ashamed of failure and still unable to come together to face the situation. There is only one woman- headed household, that of a widow, who also supported protection. Grass was cut by both men and women at harvest time. After that women did the cutting and carrying. This is an extra burden, but it is accepted as part of their household duty as the men are away for work outside. There is no sale of milk from the village. Sale of grass is decided jointly by men and women in the household.

In the overall decision-making for the PSPA there was tacit acceptance by the male

elders of women's participation in meetings and expression of their views. However, no substantive responsibility was assigned to women nor attempt made to develop their capacity either by the village leadership or by the support organisation beyond creating awareness of their role.

UVM did not have a well-thought out strategy for capacity building or withdrawal. It relied heavily on the self-organisation potential of the community and its own ways of problem-solving. It had very inadequate understanding of the ground realities and conflicts around land ownership and the extent to which there was lack of social cohesion. As a result, no capacity development around PSPA management took place; and the self-designed arrangements broke down leaving JKG without any community management body. Neither the PSPA nor the JKG community organisation could be sustained.

## 13. Problems Encountered

UVM's intervention in JKG silvipasture development was perhaps the most difficult amongst its efforts in fifty or so communities. Certainly, the organisation failed to comprehend and adequately respond to social problems and challenges posed by the situation in JKG. Its own enthusiasm, and the drive of JKG community elders to take control of their common pasture and bring wage labour to the village in a time of drought distress, led to under-estimation of: issues around encroachment threats from neighbouring villages, panchayat policies, stakes and manoeuvering of powerful outsiders and dissatisfaction of those excluded.

The encroachment problem was around the claim of one of the members of the families that had recently settled in JKG. He had been allotted some revenue land but had taken possession of part of the pasture land. This was opposed by the JKG elders but the position was kept ambiguous by the patwari. The other case concerned a non-resident who, as a former revenue official, knew the records and made claim to part of the pasture as his own land. Soon after the protection work started, these two claimants applied to the Tehsildar and got an order issued to exclude from protection the lands in their possession. The village elders refused to accept this but UVM chose to recognize this and stopped the work. After an unsuccessful effort at resolution at the village level UVM yielded to community pressure and restarted the work. A court case was registered against the village by the claimant but the work was allowed to proceed. After several years and much expenditure (Rs. 30,000/-) and harrassment suffered by the villagers, judgement was given in their favour.

Graziers, and fuelwood and leaves collectors from within the village and from neighbouring villages, who had been using the area before protection, continued to pose problems. Legal action was taken to curb grazing of cattle from Naion-ka-Guda. The rotational protection arrangements, levying of fines and periodic assertions by women were only partially effective. Only when full time paid guard was in place for four years was there a semblance of proper protection.

In technical terms, the survival rates in the nurseries (80%) and plantation (30%) were on the low side, as there were deficiencies in the skills and care needed for both. Soil and water conservation structures were well constructed and maintained. The

protection wall was repaired through community labour when necessary. No fire hazard was encountered during the protection period.

## 14. Relationship with Panchayat and Other Agencies

JKG is one of the 9 revenue villages in Kachhba Panchayat of Gogunda Tehsil. Since the common pasture lands (Charnots) are legally under the control of the Panchayat, it was necessary to get a resolution of the panchayat giving permission for work by UVM for silvipasture development of Siyamagra. Getting this done was the responsibility of the village. The late Shri Dallaji, the Ward Panch of JKG in 1987, played the lead role in this. Permission was obtained for work in Revenue Blocks (Arazi) Nos. 3 (20 Bigha) No. 17 (50 Bigha), 59 (75 Bigha). Later permission was also obtained for 28 bighas of Panchayat land in RB No. 17. This was due to JKG elders' determination to enclose as much area as possible and to secure it against encroachment and grazing from neighbouring villages and the newly settled families.

Some time after the work started the Sarpanch (Panchayat Chairman), decided to cancel the permission to UVM and to transfer it to the forest department. Apparently, differences had arisen between Dallaji and the Sarpanch who wanted the labour engaged according to his own interest. He wrote to UVM about his decision alleging that the terms of permission had not been observed. UVM sent its response refuting the charge. With the insistence of Dallaji the work was restarted. This episode shifted the allegiance of JKG community to a new aspirant for Sarpanch position in the panchayat elections of 1988. This person was elected as the new sarpanch. He cancelled the decision of the ex-sarpanch and restored the permission for work by UVM.

The generally weak Panchayat played little role in the inter-village encroachment problems, even though the proper maintenance of pasture land is Panchayat responsibility. UVM basically relied on JKG village community leadership for protection and development and did not establish any effective liaison with the Panchayat.

For a short while soil conservation work was done by the Dept. of Soil Conservation on private lands in JKG. This was purely on wage labour basis. No attempt was made to involve the community. Currently work on micro-watershed development is going on in the neighbouring villages in which 60 persons from JKG are employed. Wage labour continues to be the dominant need of the village especially in this drought year. According to one of the Nath-Jogi elders interest in JKG village pasture protection could be re-evoked only after the ongoing work comes to a close and new work started on the pasture land.

## 15. Lessons Learned by the Community and UVM

JKG case was selected for the purpose of learning from an experience of failure. The case study work so far has helped to pull together the salient features of the community / resources, SPD effort, benefits and their management, and the problems faced. There has not been an opportunity to review these with the community or

amongst ourselves to draw out the lessons. We intend to do this and shall prepare a report based on this. Meanwhile some tentative suggestions about how UVM would approach things differently in the future can be made.

1. UVM would not be so strongly influenced by the immediate needs and people's zeal aspects.
2. It would pay special attention to understand the concrete historical experience of changes in land relations, livelihoods and politics within and outside impinging on decision-making. It would address the non-resident, non-cultivator ownership of land in JKG.
3. It would engage a much more capable UVM worker support for the community and ensure technical competence and soundness in SPD activities.
4. It would see the PSPA initiative as a part of a comprehensive natural resources / livelihoods improvement programme in collaboration with other agencies.
5. It would put in place a programme of education for self-management and external liasion based on community's own understanding of its situation and potential.
6. It would identify and address the points of internal conflict and develop conflict resolution capacity in the community.

## EPILOGUE

On the evening of 8th April 2000 a meeting of men and women of JKG took place under the neem tree facing the Mother Goddess temple. The findings of the case study were put before them. They listened to the half-hour presentation with rapt attention and broad comprehension. They affirmed and agreed with the sequence of events and the facts about benefits and loss. They reiterated that it was the wearing down of the internal will and responsibility that led to the situation of wanton destruction of a valuable asset. A measure of blame has to be borne by UVM but the major failing was that of the community.

When asked about the prospect ahead there was ambiguity in answers. All accepted that protection of the common pasture should be restored. Some indicated willingness to put in voluntary labour to repair the boundary wall. There was deep concern about the prevailing drought and shortage of drinking water, fodder and work. Some of the younger adults in their thirties were prepared to take the initiative to re-establish links with UVM and to consult with the community. The need for a working fund to facilitate travel etc. by the initiators was discussed.

The self-appointed spokesman and master of the 'sob narrative' ruled out the possibility of any contribution by the villagers. He was contradicted by others. UVM offered to match whatever was raised by the community. Information was also shared about the watershed development project already approved for the area. This could be accessed if efforts were made by the community. UVM would help if asked. Once again the spokesman expressed his scepticism. He was countered by the UVM President, who stressed that people's organised initiatives, especially Gramsabha in both the Tribal Self-Rule and Panchayat Raj context, were getting recognition and support from the present government as a matter of policy. It was for the community to get itself and its act together. The meeting continued even after we left. The outcome remains to be known.

# CASE STUDY 2: KELI

Keli has been selected as a case which illustrates failure, recovery and steady consolidation of self-concept and confidence around its natural resource endowment, and acquiring new capacities to mobilize external support for its improvement.

## 1. Background

Keli is a small village in Bachhar Panchayat of Girwa Tehsil. It is situated 40 km. southwest of Udaipur at a height of 880 metres above MSL level in an elongated north-south basin bordered by steep ridges rising to 1000 metres. There are 63 households scattered in small and large hamlets. All the families are Bhils.

The present livelihood patterns are combinations of agriculture, livestock, wage labour and making country liquor. According to District Information Centre data (1993) the numbers engaged in different types of work were:

| | Agriculture/ livestock keeping | Agriculture labour | Construction work |
|---|---|---|---|
| Men | 51 | 12 | 15 |
| Women | 52 | 12 | 12 |
| Total | 103 | 24 | 27 |

Around 30 families were reported to be engaged in making country liquor deriving an average income of Rs. 1200 per month. Labour work away from village, with daily trips to Udaipur and other urban centres, is taken up for six to eight months a year with earnings of Rs. 60 per day, for men and women. Around 20 adults migrate for longer periods to work in marble mines in Rajsamand - Kumbhalgarh area. The size of the family land holdings is generally small. Only three households have above 2.5 ha. of land, 47 of the 63 have less than one ha.

Numbers of livestock owned per household range from 2 to 43. Eight families have more than 20 animals, 16 have 10 to 20 and 37 have less than 10. The families with larger (> 2.5 ha.) holding have an average of 26 livestock per family, while the rest have 8 to 10 animals per household.

**Size of Landholdings and Numbers of Livestock**

| | Above 2.5 ha. | 1-2 ha. | 0.5-1 ha. | Below .5 ha. |
|---|---|---|---|---|
| No. of families | 3 | 13 | 23 | 24 |
| Average no. of livestock per family | 26 | 10 | 10 | 8 |

## 2. Natural Resources and Land Use

The recorded land area of Keli is 413.28 ha. Of this the largest portion is forest land at 225.97 ha.: 103.7 ha. is unalloted (Bilanam) revenue land, 16.10 ha. is common pasture, 9.8 ha. Panchayat land and 1.5 ha. Devasthan or temples department

land. The rest (66.86ha.) is in private possession. Of this 7.7 ha. is in the name of villagers of Kaliwas to the east.

As mentioned earlier, the major portion of land in Keli comprises of low hills and ridges along a broad valley bounded by steep slopes on each side. It is drained by the Keli stream which flows only during the rains. Close to its outlet through the western ridge there is a perennial spring. The building of an anicut at this site with UVM support has created a permanent reservoir of water around which a lift irrigation scheme is being developed. There are 9 open wells and 3 handpumps for drinking water. Cultivable land in Keli has been created through bunding and levelling work along the valley floors. However, most of the land has grassy slopes with barren rocky outcrops. The soils are generally shallow and gravelly. The average annual rainfall is 625 mm. Rainfall in the last worst drought year (1987) was 268 mm. It was 405 mm. in 1999.

Some 60 years ago there were 15 households in Keli with a Mukhia and Nyavatia (Head and Justice giver) of their own. There were rich forests and grasslands around the village which were used both by the community and for the grazing of royal elephants of Udaipur. The Keli families had to perform obligatory labour, if required by the officials. Their own livelihoods revolved around their own livestock, mainly cows; shifting cultivation, with Jowar as the main crop during the rainy season; and collection and sale of forest produce - honey, gum, bamboo, fruit and medicinal plants. Soon after Independence cutting of forests was done on a large scale and indiscriminately by contractors from Udaipur with labour from Maharashtra. By the 1960s the forests were gone. The elephants had also returned to the palaces. For some years the men of Keli were engaged in cutting and carrying fodder grass for the royal grass depot at Popalti, a few km. northeast of Keli. Following the large scale deforestation, the frequent droughts of the 1970s and 1980s led to increased dependence on relief and outside labour, and acute poverty. The worst came in the drought of 1986-88, with total loss of crops, severe water and fodder shortages and heavy livestock losses.

## 3. ORIGIN AND OBJECTIVES OF SILVIPASTURE INITIATIVE

The main effort at silvipasture development in Keli so far has been around the 16.1 ha. common village pasture along the east facing slope of the western ridge. The first work was initiated by the Panchayat for boundary wall construction, with 54 quintals of food-for-work support in 1985-86. This was not completed and was discontinued. During the even more severe drought distress of 1987 Shri Hakraji, one of the more concerned and active elders, came to know about UVM's efforts in silvipasture development in the villages to the north of Keli.

Hakraji contacted UVM workers and requested support for work on the Keli village pasture. Village meetings were held and UVM's approach and terms explained. The necessary revenue record, Panchayat resolution and village agreement were obtained; and planning was done for protection, plantation and soil / water conservation activities with support from National Wasteland Development Board. Boundary wall construction was done in 1987-88. Plantation work was done in 1988,1989, and 1990.

With the return of normal rains in and after 1988 the people of Keli lost interest in the protection of their pasture. It seems they had seen the work as another relief labour opportunity. They had neither understood nor accepted the aspect of taking responsibility for their resources. As a result of this neglect, the boundary wall and plantation were damaged and the area became open for grazing. UVM decided to withdraw and no work was done in 1990-91 and 1991-92.

In 1992-93 Hakraji again contacted UVM conveying that people had realized their error and were keen to restart the work and take responsibility. UVM asked the villagers to demonstrate their earnestness by repairing the boundary wall through voluntary labour. After this was done the work was restarted. Replantation was done in 1992-93. Species selection was done by the villagers. Soil and water conservation was done in 1993-94.

After support was assured by Caritas, Switzerland, other activities were carried out in 1995-96, 1996-97, and 1997-98. A lift irrigation scheme using the water from the reservoir was also taken in hand. This scheme is being extended with support from District Rural Development Agency. Meanwhile the Forest Department has also become involved in protection, plantation and soil / water conservation work on 50 ha. of forest land. It is being conducted on Joint Forest Management basis with a Forest Protection Committee of the village.

**Schedule Of PSPA Activities And Expenditure**

| Year | Protection | Pits | Plantation | Nurseries | Soil & water conservation | Expenditure Rs. | Agency |
|---|---|---|---|---|---|---|---|
| 1985-86 | Yes | | | | | 54 quintal foodgrain | Gram Panchayat |
| 1987-88 | Yes | Yes | Yes | Yes | | 32,280=00 | UVM-NWDB |
| 1988-89 | Yes | Yes | Yes | Yes | | | UVM-NWDB |
| 1989-90 | | | | | Yes’ | 3,880=00 | UVM-NWDB |
| 1990-91 | | | | | | | |
| 1991-92 | | | | | | | |
| 1992-93 | | | Yes’ | | | 876=00 | UVM-CARITAS |
| 1993-94 | | | | | Yes | 40250=00 | UVM-CARITAS |
| 1994-95 | | | | | Yes | | UVM-CARITA5 |
| 1995-96 | | Yes | Yes | Yes‘ | | 22037=00 | UVM-CARITAS |
| 1996-97 | | Yes | Yes | Yes | | | UVM-CARITAS |
| 1997-98 | Yes’ | | Yes | Yes | | 16,538=00 | UVM-CARITAS |

| | |
|---|---|
| Total- | 115761=00 |
| Local Contribution | 30000=00 |
| Overhead Charges | 11576=00 |
| **Grand Total** | **157337=00** |

Species-wise breakdown of saplings planted in Keli Pasture was as follows:

| Bamboo | Kikar | Subabool | Sitaphal | Kaliasirras | Anwla | Karanj | Jamun | Mahua |
|---|---|---|---|---|---|---|---|---|
| 1750 | 3476 | 1930 | 725 | 700 | 100 | 480 | 50 | 20 |

| Acacia | Eucalyptus | Deshi Babul | Amrud | Ber | Kher | Gulmohar | Total |
|---|---|---|---|---|---|---|---|
| 862 | 395 | 365 | 20 | 200 | 55 | 122 | 11250 |

## 4. Protection System, Decision-Making, and Management of Access & Use

As explained earlier it took some time for the Keli community to understand its responsibility for the protection of PSPA. It took a concrete shape in the form of a committee of elders and younger active members only after regular monthly meetings on fixed days became established with the assured presence of a UVM worker. Whenever there was a lapse in this the meetings stopped. Gradually the community and the leadership were able to evolve ideas about long term improvement of the watershed. UVM encouraged these and mobilized support to get these going.

A guard has been functioning to ensure protection and maintenance. He does this duty along with his own family work. A payment of Rs. 25 per family per year is made to him. Rules have been made regarding use and access. Cutting of grass and wood is forbidden. Fallen dry wood can be collected. Till 1998 grazing was not allowed in the protected area. From early 1999 grazing of large ruminants (cows and buffaloes) is being permitted. Goats and sheep are not allowed. Grazing is permitted after fodder grass has been harvested. One of reasons for this decision is the prevention of fire hazard arising from the clumps of uncut dry grass adjacent to bushes.

Harvesting of grass is done in November and December when crop harvesting and winter crop sowing work is over and the grasses have seeded. Harvesting is done for a fixed number of days by the families. This is estimated on the basis of the quantity of grass. In 1995 harvesting was done over 5 days with benefit of 500-600 pula per family. In 1998 it took 8 days and up to 1000 pula per family was taken.

A system of fine of Rs. 101 for violation of rules has been put in place and is resorted to when necessary. The neighbouring villagers are allowed to cut and take surplus fodder after the main harvesting has been done. This has improved the relations with them and the earlier problem of illicit grazing and cutting trees in the PSPA has been brought under control.

Very limited and careful lopping of more than 5 year/old naturally regenerated bushes and trees and planted trees for leaf fodder for goats is permitted from the protected area. The lead sprouting of the stems and main branches are not cut. Only side growth lopping is done. The main species used for this purpose are Bolia, Runjhia, Bamboo, Kikar, Semel, Ber, Gobal.

## 5. Current Vegetative Condition and Yields

A survey of the PSPA was carried out in accordance with the method suggested by SPWD, Udaipur: 22 plots of 1000 sq. m. were taken for this. About 620 trees per hectare were counted, giving a total of nearly 10,000 trees for the area.

The numbers ,density and size of different types of tree are listed below:

| Tree | No. | Density per ha. | Average Girth (ft.) | Height (ft) | Average no. of stems |
|---|---|---|---|---|---|
| Bamboo* | 168 | 70.36 | .75 | 12 | 5 to 10 |
| Bolia* | 2 | 0.91 | 6.0 | 8 | 3 |
| Khirni | 438 | 199.09 | 1.5 | 8 | 6 to 8 |
| Umbia | 105 | 47.73 | 2.0 | 12 | 8 to 10 |
| Gobal | 25 | 11.36 | 5.0 | 25 | 4 to5 |
| Dhaman | 21 | 9.55 | 1.5 | 20 | 5 to 6 |
| Bil | 13 | 9.91 | 1.5 | 10 | 3 |
| Kamer | 18 | 8.81 | 2.0 | 10 | 4 to 5 |
| Dhawra | 438 | 199.09 | 1.5 | 15 | 2 to 5 |
| Lapiya | 27 | 12.27 | 3.0 | 10 | 4 to 5 |
| Reji | 1 | 0.45 | 4.0 | 8 | 2 |
| Babul* | 73 | 33.18 | 2.0 | 15 | 2 to 3 |
| Semal | 1 | 0.45 | 2.0 | 18 | |
| Khakhara | 1 | 0.45 | 4.0 | 18 | 2 to 4 |
| Bahera | 1 | 0.45 | 4.0 | 10 | 2 |
| Karmela | 5 | 2.27 | 2.0 | 10 | 2 to 3 |
| Kalia* | 2 | 0.91 | 2.0 | 10 | 1 |
| Haldu | 1 | 0.45 | 2.0 | 20 | 5 |
| Gangali | 4 | 1.82 | 1.5 | 8 | 1 to 2 |
| Karonj* | 10 | 4.55 | 1.5 | 10 | |
| Runjhia | 6 | 32.73 | 1.5 | 10 | 2 to 4 |
| TOTAL | 1360 | 618.79 | | | |

Note: Those marked * are of the planted species. The rest are naturally regenerated. Bamboo is both natural and planted.

An estimate of annual yields of produce of different kinds was made on the basis of recollection by villagers and extrapolation.

| Product | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Grass (Tonnes) | 20 | | | 20 | 30 | 40 | 50 | 50 | 50 | 60 | 60 | 60 |
| Fuelwood (tonnes) | | | | | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| Loppings (tonnes) | | | | 50 | 60 | 60 | 60 | 60 | 60 | 75 | 75 | 75 |
| Bamboo (pieces) | | | | | | 400 | 400 | 500 | 500 | 500 | 500 | 500 |

Note: Grass is collected in bundles or pulas. 1 pula=3 kg. Fuelwood loads are called muli. 1 muli= 15kg. Lopping loads or bhara =15kg.

All the families are entitled to collect grass from the PSPA. The one family without any livestock does not collect PSPA grass. The benefit of grass is mainly to those households who have livestock. Others with adequate fodder in their private pasture also do not take the grass from PSPA. Dry fuelwood collection from the area is done by all the families. This averages around 4-5 Mulis or 60-75 kg per family per month. Only 20-25 families collect the loppings as fodder and fuel from the PSPA area. Each family obtains 1 Bhara or 15 kg daily for four months of the year in two phases : Nov. and Dec. and mid-April to mid-June. Around 40 families collect an

average of 25 bamboo poles and other timber per year.

## 6. Use and Effect of Protected Area on Livestock

At present the overall figure for livestock in Keli is 887. Of these 382 are large ruminants, 374 are small ruminants and 244 are poultry. There has been significant increase of large and small ruminants since 1987 which was a time of heavy livestock losses due to drought. This is shown below together with % increase:

| | **Cows** | **Bullocks** | **Buffaloes** | **Goats** | **Sheep** | **Camel** | **Total** |
|---|---|---|---|---|---|---|---|
| 1987 | 82 | 66 | 18 | 208 | | | 374 |
| 1999 | 185 | 136 | 56 | 257 | 4 | 5 | 643 |
| *% Increase* | *125* | *106* | *211* | *24* | | | *72* |

While the numbers of cows and bullocks have more than doubled, increase in buffaloes has been more than three-fold. Goats have increased only to a modest extent. Sheep and camels are new features. These increases reflect a number of factors. Some of it is related to the natural increase in the number of households from 39 in 1987 to 63 in 1999. The reliable and more than adequate availability of fodder from the PSPA has certainly contributed to the increase especially in the large ruminants. At present almost all the families have cows and bullocks. This is related to the increased importance of cultivation after the construction of the anicut. These animals contribute manure and provide draught power for cultivation while the crop residues provide fodder for them. Increase in buffaloes has the aspect of status and self-respect enhancement. The camels are important for bulk transport in and around this remote hilly area.

Feed calendars were prepared for both large and small ruminants to see the relative importance of different sources and types of feed / grazing in different months / seasons. These are shown below. It is clear that grass from the protected area has some importance for the large animals only. It becomes the major component of feed for them in May .June, just before the rains. Overall, half the feed comes from the stored fodder and the other half from open grazing. Three months before the rains are marked by scarcity when the livestock stays partially hungry and the weak and old die out.

**FEED CALENDAR**

| Months/seasons<br>Fodder/grazing | Nov.-Dec.<br>Kartik - Magasar | Jan.-Feb.<br>Dosh-magh | Mar-Apr<br>Phalgun-chaitra | May-Jun<br>Vaisakh Jyesth | July-Aug<br>Ashad Sawan | Sept-Oct<br>Bhadva Asoj |
|---|---|---|---|---|---|---|
| | SIYALA-WINTER | | HUNALA - SUMMER | | CHAUMASA-MONSOON | |
| **Cows, Buffaloes, Bullocks** | | | | | | |
| Loppings/leaves | - | - | - | 4 | 5 | |
| Stored crop residue | 4 | 6 | 5 | - | - | |
| Grass from PSPA | - | - | - | - | - | |
| Concentrate/Grain | - | - | 2 | 6 | 2 | |
| Rajka | - | 2 | 1 | 1 | - | |
| Cut green grass | - | - | - | - | - | |
| Open grazing | 12 | 8 | 8 | 5 | 5 | 12 |
| **Goats, Sheep** | | | | | | |
| Loppings/leaves | 1 | | | | | |
| Concentrate/Grain | 2 | | | | | 2 |
| Open grazing | 13 | 16 | 16 | 16 | 16 | 14 |

## 7. Benefits

The availability of grass from the PSPA has also increased the milk yields. Some of the surplus milk is being made into ghee and sold adding to families' cash income. There is improvement in livestock health and reproductive performance while soil health is being improved through greater use of manure. This, in turn, gets reflected in better crop yields. However, this impact is limited to only a few families who are giving more attention to agriculture. Ten of the families derived incomes of Rs. 200 to Rs. 500 a year from sale of grass fodder. Wages for labour was an important benefit in the years 1988-89 and 1993 to 1998 when major activities were carried out for the improvement of the PSPA.

Amongst other benefits there is increase in biodiversity both in natural vegetation and animals. Rabbits, jackals, wild pigs, mongoose and snakes are common. Leopard and fox have also been seen and there is more of bird life than before, with some aquatic visitors to the reservoir. Black drongo, bee-eater, eagles, crows, egrets, starlings, and vultures are commonly seen.

Even though the protected area forms only a very small portion (<4%) of the whole village area, its protection and quite intensive soil and water conservation treatment have been important for the improvement of groundwater situation of Keli microwatershed. Agricultural land improvement and gully plugging work in the area outside the PSPA have also contributed to this. Unlike some of the other villages in the vicinity, Keli does not suffer from water shortage in the present drought year. Since irrigation from the anicut is a new feature installed after the PSPA development, it is not possible to make comparison with the earlier situation without any irrigation. However, even the limited catchment treatment before the construction of the anicut has ensured more even water flows and less soil erosion and silting. The cultivated areas below the protected pasture have been made safe against gully

erosion and silting.

As mentioned earlier there have been major increases in livestock in Keli during the past decade. This has contributed to general increase in manure. However, the extent of stall feeding is limited as open grazing is still the major component of feed for the animals.

Several social benefits have resulted from UVM's community-based approach of PSPA development, including: the revitalization of community processes through regular meetings; formation of responsible committees, and savings/self-help groups for women; and providing opportunities for new leadership. In their newly established relationship with Forest Department (FD) through the Joint Forest Management programme they are conscious and expressive about their rights and views. Recently when the FD wished to extend the boundary of the new plantation closer to the village settlement, they were told about community's disagreement. The village boundaries are carefully monitored and protected against encroachment.

Capacities have been developed to understand and deal with other government agencies like District Rural Development Agency, Rajasthan State Electricity Board and Tribal Commissioner's office. . During the past year some knowledge of the new legislation for Tribal Self-Rule empowering the Gram Sabha (Village assembly) has been gained by the villagers, who have made a declaration to function in accordance with this. Section 4(d) of Central Government Act no. 40 of 1996 considers the Gram Sabha '**competent, to safeguard and preserve the traditions and customs of people, their cultural identity, community resources and the customary mode of dispute resolution'**. Even though this is legally recognized, its implication for relations with Panchayat and FD remain to be worked out.

All the 63 households of Keli are entitled to the benefits of the PSPA on equal basis. The main users and beneficiaries are the 55 families with houses and fields close to the PSPA. Eight families living some distance away from the main village to the south do not take advantage of the benefits.

Women have been the main beneficiaries in terms of assured fodder and fuelwood availability from the protected area. They have become more and more involved in the meetings and have formed a savings/credit group of their own. Cutting of grass and collection at harvest time are done both by men and women. For day to day purposes women do the fuelwood and leaves collection and the loppings. Decisions for sale of produce, use of income, purchase of assets and division of labour are made jointly by men and women in the family.

## 8. Problems and Relations

Apart from the failure to evolve adequate protection after the first attempt at PSPA development, there have been no major problems. Grazing and cutting of wood by neighbouring villagers has been brought under control through allowing them to take some surplus fodder when needed. The Keli village community has regained its coherence with a combination of traditional elders' leadership, young adults' commitment and exposure to new ideas and possibilities.

The Panchayat has played very little role in all this, apart from granting permission to develop the PSPA. The Sarpanch has remained indifferent due to differences in political affiliations between Keli leadership and himself. Keli has relied largely on its contacts and ability to mobilize its own support in and through UVM and others. The relations with FD are close and cooperative with significant contribution by the FD to village fund and welfare and development activities. The full implication and rights under the JFM programme are not fully understood by the villagers.

## 9. Lessons To Be Learned From Keli Experience

As a case of initial failure, self-recovery and continued growth of self--confidence, Keli illustrates well the interplay of traditional livelihood / resource management modes and contemporary development interventions / opportunities. It brings out the strengths and limitations of village family and kinship organization, voluntary agency and government departments. There are also important lessons in building relations and mutual learning among the different players towards incremental improvement of and sustained benefits from the resource base.

First, in the villages there are elders with a traditional sense of sanctity and importance about the community and its common resource. Earlier these comprised the whole village domain, but are now limited to entities like charnot or village pasture. In times of crisis, like a drought, the elders are prepared to take a lead to seek support and mobilize the community for work. However, on their own, they are not able to take community motivation beyond wage labour incentive. They also lack capacities to plan and implement technically new plantation and conservation measures, and to ensure effective protection and management of the assets. There are also limits to the acceptance of their traditional authority by the younger adults.

Despite these constraints these elders remain an important moral influence for common good. Their main strength is their inclination and ability to engage and reflect collective opinion/view (Rai) and to ensure justice (Nyaya). They also have considerable traditional knowledge about subsistence and sustainable use of natural resources. Much of this remains unknown to and un-valued by the outside agencies, and does not get incorporated in their plans for development. In the case of Keli the traditional elders' leadership was given central importance by UVM. Keli's remoteness and difficulty of access also contributed to its basic self-reliance.

Second, after the initial single intervention focus around the PSPA, UVM evolved a more open-ended, flexible and complex approach to livelihoods and natural resources management in Keli. This was facilitated by the mutual learning mode adopted by the support agency (CARITAS Switzerland), UVM and the community. The outcomes were new initiatives and self-managed efforts - in land improvement, lift-irrigation, electrification, plantation on forest land - culminating in declaration of village self-rule. Virtually all the effort in SPD and other activities took place independently of the Panchayat through direct contact with UVM and government agencies. UVM played a facilitative role to ensure timely response and proper implementation. However, capacity-building for self-management and benefit enhancement remained unattended. This major lacuna in UVM's role is being

addressed in the current phase of its work. This will include more effective liaison with the Panchayat and other outside agencies in the context of Gramsabha based village self-rule.

# CASE STUDY 3: GRAMDAAN VILLAGE SEEDH
## SILVIPASTURE DEVELOPMENT IN MAHATMA GANDHI BEEP

### 1. Introduction

Seedh, a village located in Sarangpura Panchayat of Vallabhnagar Tehsil in the district of Udaipur was selected for a case study of Silvipasture Management and Development because of its special character as a Gramdaan village. Gramdaan is a concept of village self-governance which was evolved by Vinoba Bhave in the context of the Gandhian vision of revitalization and empowerment of India's villages. It was shaped in the millenial Bhoodan – Gramdaan sacred giving of land/village movement that covered most parts of rural India during the '50s and '60s. Starting as Bhoodan as a call given by Vinoba Bhave to big landowners for donation of their excess land for distribution to the landless and poor in their villages, it evolved into Gramdan, the collective gifting/donation of all land in the village to the village assembly or Gramsabha for common management.

Gramdan was given a statutory basis in Rajasthan through the Rajasthan Gramdan Act of 1971. A Gramdan village is constituted through the declaration of voluntary transfer of lands by way of Gramdan by the landholders of a revenue village or of a part thereof with a population of not less than 100 persons. These declarations by at least 75% of the landholders owning not less than 51% of the land held by all the residents are confirmed by the Chairman, Bhoodan Yagna Board, and forwarded to the Collector of the district in which the village is situated. The Collector after his/her own inquiry declares the village as Gramdan Village from a specified date. With effect from this date all persons whose names are included in the electoral roll of the Rajasthan Legislative Assembly are deemed to constitute a Gram Sabha or Village Assembly for the Gramdan village. This Gram Sabha is "the body corporate having perpetual succession and a common seal with power to enter into contracts and to acquire, hold, administer or dispose of property over which it has authority"[6].

In addition to its power to manage the donated and pooled lands and revenues as prescribed, the Gram Sabha has been vested with responsibility to manage common lands (subject to the rights therein of the residents of neighbouring villages) and other unoccupied lands of the State Government, with power to improve such lands without obtaining any permission from any authority. It has been also empowered: to set apart lands for community purposes; to carry out improvement to land, including methods of cultivation, reclamation of wastelands and consolidation of lands; and to prepare and maintain village records, including a register of lands in the possession of persons under the Gram Sabha.

A village fund or Gram Nidhi is also provided with power to receive profits, rent, fees or other charges, loans, grants and donations etc. The Gram Sabha is also empowered to function as a Panchayat as a local self-government body for the village under its jurisdiction. There are about 200 Gramdaan villages in Rajasthan in varying state of realisation of the objectives of village self-rule.

[6] Section 13(2) of Rajasthan Gramdaan Act, 1971

The villagers of Seedh were exposed to the Gramdaan idea in 1959 during Vinoba Bhave's footmarch (Padyatra) through Vallabhnagar. Some of them, led by their traditional priest (Purohit) and social activist Rameshwar Prasad Chaubisa from nearby Sethwana village, met Vinoba Bhave after his prayer meeting. He inspired them to take up the task of setting up Gramdaan in their villages. His succinct message rekindled the traditional spirit of village autonomy and self-reliance. Since then these villagers, under the guidance and relentless commitment of Rameshwar Prasad, have been engaged in realizing these objectives through concrete value-based social and economic reconstruction efforts around their natural resources. Silvipasture development/management of Jogimagra village pasture is one component amongst these.

## 2. Background and Introduction

Seedh village comprises of 116 households. Of these 100 households are of Rawats, 4 of Rajputs and 3 of Meghwals. There are 8 hamlets : Dangwala Phala, Bujhanaka Phala, Hari-magri, Navaghar, Kachoria Phala, Jambutalai Vachlaphala and Patelonka Phala. The livelihoods of Rawats and Meghwals are organised around agriculture, livestock and labour outside the village. The Rajputs are engaged in cultivation and livestock keeping. There were 100 households in 1990.

According to household-wise survey carried out by UVM, livestock in Seedh numbered 2425 in 1990 and 1756 in 1999.

| Year | Cows | Bullocks | Buffaloes | Goat | Sheep |
|---|---|---|---|---|---|
| 1990 | 574 | 198 | 212 | 936 | 505 |
| 1999 | 403 | 214 | 149 | 672 | 318 |
| Change% | -30 | +8 | -30 | -28 | -38 |

The livestock ownership pattern is as follows:

| No. of animals | No. of families |
|---|---|
| More than 30 | 11 |
| 31-50 | 18 |
| 10-30 | 45 |
| Less than 10 | 24 |

Rajputs owned only cows and buffaloes.

The land ownership pattern is shown below:

| No. of families | Size of holding (bigha) |
|---|---|
| 3 | Above 30 |
| 7 | 20-29 |
| 31 | 10-19 |
| 53 | 5-19 |
| 22 | Below *5* |

1 ha.=4.66 bigha

The landholding figures are for only those heads of households named in revenue records. There is a pattern of fewer (< 20) animals with household owning less (< 10 bighas) land. However, there are several cases of more than 20 animals owned by families with below 10 bigha holdings. Similarly, there are many families with more

than 10 bighas of land but less than 20 animals. There is one family with 68 animals and 24 bighas of land. There is no significance difference in these patterns between large and small ruminants.

*2.1 Natural Resources and Land Use*

The 788 ha. of land in Seedh village is a combination of low-lying plain cultivable areas interspersed with low flat-topped hillocks used as pasture lands. The village is traversed NE-SW by a shallow stream named Gomti. Its seasonal character has been converted to perennial flow as a result of silvipasture protection and water harvesting measures. In general the soils are shallow and gravelly except in parts of cultivable areas where they have been enriched by field bunding, levelling and manuring. The mean annual rainfall at Tehsil headquarters has been recorded as 582mm. In the l987 drought year the rainfall was 292mm.

In terms of land use the major portion (519 ha.) of land in Seedh is in private possession of the households, 78-82 ha. is protected pasture land or village Beed, while 154-160 ha. is open unalloted pasture land. Irrigated area, which was 25 ha. by well irrigation in 1990, has now increased to 57 ha. with the addition of 32 ha. through lift irrigation in the nineties. In the same time span increase in cultivated/ irrigated areas has been accompanied by decrease in livestock, except bullocks which have shown 8% addition. This could be due to greater reliance, attention and importance to crop cultivation as a means of livelihood.

## 3. Historical Evolution Of Relationship between Community and Natural Resources

The most interesting and important aspects of silvipasture development in Seedh are the history of this community's successful struggle to hold on to their traditional rights in common pasture, to give them a statutory basis in Rajasthan Gramdan Act, and to devise an effective internal system of protection, benefit-sharing and improvement of the asset.

At the time of India's achievement of independence and the subsequent merger of Mewar State, the Seedh pasture area (Beed) was recorded in the name of the Thikanedar[7] of Lunada, with recognition of the grazing and usufruct rights of Seedh, Hariyakheda, Pachoria and Lunada villages. During the fifties the area was declared as forest land and the overall ownership of land was vested in the state. However, the grazing and usufruct rights of the villagers were not disturbed. Along with this at some point, either through connivance or by error, the Seedh Beed remained in the name of Thikanedar Rao Ranjit Singh of Lunada.

Till 1963 grazing and wood and fodder gathering by the villagers continued. In Sept. 1963 Rao Ranjit Singh sold this land to a resident of Kanor named Hanuman Prasad Gandhi who tried to stop villagers' use of the land and engaged a guard for this purpose. The villagers continued to assert their rights and the dispute continued till 1967 when a case was filed with the Sub-Division Officer of Vallabhnagar. The

[7] Thikanedar refers to the local Rajput, hereditary feudal authority.

litigation went up to the Revenue Appellate Authority which gave the final judgement upholding the status of disputed area as forest land and recognizing the traditional rights of the villages.

Seedh village declared itself a Gramdan village in 1980 and put the management of village land, including the Beed, under the authority of the Gramsabha, the village assembly. It took the first decision regarding the village pasture in July 1980. As per the proceedings register of Gram Sabha it reads, "The boundary wall of Seedh forest block has fallen down. It should be repaired by villagers' voluntary labour (Shramdaan). In order to protect the grass from damage by the villagers of Seedh and others, a watch should be kept on the Beed." Around the same time the Forest Dept. (FD), which had earlier constructed the boundary wall, declared the auctioning of the grass from the pasture. In June 1981 the Seedh Gramsabha decided to levy a fine of Rs. 51/- for unauthorized felling of trees and made a rule to allow felling for household need after payment in village fund. In July 1981 the FD again declared the auction of grass. Seedh Gramsabha took the decision to make a bid for this and obtained the contract for Rs. 1611 with Rs. 200 as advance payment. The Gramsabha decided to remove encroachments for private pasture and cultivation. It also made an application to the FD for a waiver of the 'royalty'[8] for grass. This was accepted by the FD which allowed the grass to be cut and removed without payment.

In July 1982, after the registration of Seedh as a Gramdaan village with the Rajasthan Gramdaan Board, the Seedh Gramsabha took the decision that:

> "The Beed area being part of the Gramdaan village Seedh all this land with revenue record nos. 413, 441, 471 (Transfer record no. 273 dated 22.4.82) is in the name of Gramsabha Seedh. The land with nos. 413 and 441 has an area of 357.25 bigha which is the village pasture -Charnot- of village Seedh. This Beed is located in the midst of Seedh settlement / habitation. It has been in possession of the Seedh residents ever since the village was first settled. They have been taking grass from this area free of charge long before the FD constructed the boundary wall. Therefore, as per the earlier decision, if there is any legal objection or hindrance, the Assistant Forest Conservator of Pratapgarh is requested to see the situation at the site."

It was also decided that arrangements should be made to protect the pasture areas. For this two persons, Laloo Lohar and Babru Rawat, were appointed as watchmen till the time when the grass had been cut and carried. They were to be paid in kind - grass and grains - for their service. They would also repair the boundary wall when needed. In October 1982 FD was again requested to reserve the Beed grass for Seedh villagers as this was their only fodder source during drought. It seems that in spite of Gramdaan the village had not gained the confidence to exercise full powers over the pasture land designated as forest land by the state. The management of unoccupied lands of the state government is vested in the Gramsabha as per clause 31(1) of the Gramdaan Act, 1971.

[8] 'Royalty' is the payment to the state for extraction of produce (usually minerals) owned by the state.

In January 1983 the state government gave powers to the Panchayats to stop illegal felling of trees and hunting of wild animals and to carry out protection and management of lands in their area. Seedh Gramsabha implemented this in its own village area under clause 43 of the Gramdaan Act which empowers the Gramsabha to function as a Panchayat under the Rajasthan Panchayat Act, 1953. The Beed area (Revenue Record No. 413, 441, 443, aand 401) had been entered in the name of Gramsabha Seedh in revenue record. In February 1983 a resolution was passed to plant five trees per family supplied by Panchayat Samiti. Monetary support was also given. The Beed area grass was made available without charge to villagers. The grass from unalloted open pasture land outside the Beed was also given but 'royalty' was charged. In June 1983 the cutting of Khakhra trees whole was banned. In 1983 tree plantation festival was held and plantation done with sapling supplied from Panchayat Samiti, Bhinder. Trees planted were Bamboo ( 250), Kher (100), Sheesham (100), Karanji (100), Sagwan (100), Salar (100) and Hansia (100). The FD was informed about the illegal felling of trees by outsiders, and action was demanded against them.

In Jan. 1984 decision was taken to organise cutting and removal of grass from the Beed area. Rs. 11/- per bullockcart was levied as 'royalty' for the Gramsabha and the guard employed by Gramsabha was made responsible to stop removal of bamboo and other wood with grass. FD was again requested to stop illegal felling by outsiders. Gramsabha appointed two persons at Rs. 50 per month as guards. A 'royalty' of Rs. 1573 was received for the grass in this year. The villagers from Gopa Ki Bhagal were fined for taking wood from the Beed area.

In August 1985 plantation of 500 saplings taken from FD was done. In October 1985 the FD gave out contract to outsiders for cutting trees and gathering gum from the Beed. This was stopped by the Gramsabha by asking the gatherers to leave the village. In Nov. 1985 decision was taken to start a nursery of 40,000 saplings. There was scanty rainfall in 1985 and only 10 to 15% of normal grass was available. In January 1986 resolution was passed to plant 60,000 saplings, 10,000 through voluntary labour and 50,000 with paid labour. This was sent to FD. The guard's salary was enhanced to Rs. 200 per month. In March 1985 pit-digging and trenching was done with support from Association of Sarva Seva Farms. Labour payment of Rs. 24,160 was made. In November 1988 family-wise areas demarcation was done for fodder collection in Beed area and a harvesting fee of Rs. 11 per part was decided.

In September 1989 the Gramsabha passed a resolution and decided that protection of trees in the Beed in open pasture land and other places was a responsibility of all the villagers. This was done to involve the villagers and make them more aware. The graziers from Seedh and other villagers were forbidden to carry axes. No felling of trees was allowed in the common lands for five years. Dry wood could be gathered. In addition, Gramsabha's permission had to be obtained to cut trees in family land. Tree fodder of Khakhra leaves could be gathered free of charge. Payment had to be made by outsiders for gathering leaves to make utensils (plates, cups). Another guard was appointed for tree protection. He would be paid 6 kg grain per family, every year. A committee of nine persons from the nine hamlets was formed to reinforce tree protection.

In September 1990 the Gramsabha took the decision that the large animals (cows and buffaloes) and goats and sheep should be grazed separately. The larger ones to

graze in the wooded area west of the Beed and smaller animals to be grazed in the more open grassland area to the east.

In September 1992 Gramsabha caught a person from a neighbouring village while cutting wood. A case was registered with the police, but the trial was conducted by the Gramsabha: a fine of Rs. 1020 was levied and recovered. In the same year the harvesting fee for cutting and carrying grass from the Beed was increased from Rs.11/- to Rs. 22/- per part of the area.

## 4. Silvipasture Initiative

In June 1998 the FD brought a proposal for a fuelwood plantation of 40,000 saplings in the 70 ha. protected pasture area. This was accepted by the Gramsabha. A forest protection committee was formed comprising the President and members of the Executive Committee. The Forester at Kanod Forest Post was appointed the secretary. All the rights to the area would remain with the Gramsabha. The protected area was named Mahatma Gandhi Beed.

The plantation work of FD was limited to 80 ha. and 40,000 plants. Pits and trench digging was done in 1997-98. Plantation was done in 1998-99. In 1999-2000 replanting was done. Species-wise distribution was as follows:

| **Species** | **Number** | **Local Name** |
|---|---|---|
| *Azadirachta Indica* | 350 | neem |
| *Acacia Nilotica* | 3300 | Babool |
| *Dendrocalamus Strictus* | 4920 | Bans |
| *Syzygium Cumini* | 855 | Jamun |
| *Madhuca Longifolia* | 300 | Mahua |
| *Ficus indica* | 35 | Barh |
| *Pithecellobium dulce* | 80 | Jungle Jalebi |
| *Phyllanthus emblica* | 3885 | Anwia |
| *Zizyphus mauritiana* | 5925 | Ber |
| *Acacia Catechu* | 10980 | Kher |
| *?* | 430 | Churail |
| *Holoplelia intergrifolia* | 260 | Havan |
| *Manikara haxandra* | 255 | Khirni |
| *Albizzia lebek* | 1225 | Cirrus |
| *Pongamia Pinnata* | 2600 | Karanj |
| Total | 40,000 | |

Most of these local species are of value to the villagers who indicated their preference for these.

Yearwise work done and labour expenditure by FD was as follows:

| | | |
|---|---|---|
| 1997-98 | Soil Work | Rs.2,25,573.00 |
| 1998-99 | Plantation | 1,95,664.00 |
| 1999-2000 | Replanting | *52,736.00* |
| Total | | 4,73,973.00 |

Other inputs and interventions for protection and plantation are summarized below:
1980 Boundary wall repair by voluntary labour
1982 Appointment of two guards @ 6 kg per family per year
1983 Planting 850 saplings / voluntary labour
1984 Guard's payment ~ Rs. 50/- per month
1985 Planting 5,500 saplings from FD . voluntary labour
1985 Nov. Raising a nursery of 40,000 with Rs. 1200
1988 April Guard payment raised to Rs. 200/- per month
1988 March Trenching work worth Rs. 24,160

## 5. Benefits From The Protected Area

The Seedh Beed had been a source of grass fodder and grazing benefit for the people of Seedh since before Independence. The construction of boundary wall by the FD had increased the grass but the real improvement came after 1980 Gramdaan declaration and taking over of protection responsibility by Seedh Gramsabha. Grazing was stopped in the Beed. There were 70 families in the village at that time. They obtained on the average 2 cartloads (500 pulas per cartload, 5 kg per pula) or about 3 tonnes of grass per family. The maximum amount was 4 cartloads or 6 tonnes per family plot. Thus the total yields varied from 200 to 400 tonnes worth about 2 to 3 lakh rupees per year. There was also income from the cutting fees levied by Gramsabha. This ranged from around Rs. 1000 per year between 1983 and 1991 to Rs. 2000 between 1992 and 1997. Since then around Rs. 3000 per year is being received. This is being used for payment to the guards for part of the time.

The grass cutting and carrying fee was raised to Rs. 41/- in 1999. An income of Rs. 2627.50 accrued from this to Gramsabha. This is put into the village fund and used for administrative and organisational expenses.

The vegetation survey of the protected area shows that there are approximately 300 trees per ha. with more than 1 ft thickness. Half of these are planted and the other half are from natural recovery. The approximate thickness of different species is

Banyan 8 ft. Khakhra 3 ft. Gugal 2 ft.
Khejra 2 ft. Kikar 1 ft. Babool 1 ft. Sagwan 1 ft.

The largest numbers are of Khakhra followed by Sagwan, bamboo, khejra, kher, babool and arjun.

## 6. Use and Effect of Protected Area on Livestock

Livestock remains an integral part of Seedh community's livelihood systems though its importance and patterns have changed over the years. During the past decade these has been an overall decrease of around 30%. There has been an increase in bullocks of the order of 8%. Both these relate to the expansion of irrigated area with more time spent on cultivation. The availability of more fodder from crop residues has also lessened the importance of grass from the Beed.

The fodder grass from the protected area is given to buffaloes, cows and bullocks, mostly during the summer season. In case of shortage preference is given to milch and pregnant animals. Daily milk production has increased from 4 kg to 6 kg for cows, 7kg to 10 kg for buffaloes and 1/2 kg to 1 kg for goats. On an average per day 20 kg of milk from the whole village is sold outside. Reduced disease and mortality and better reproductive performance are also reported. The other benefits from the work on protected area have been from the labour component of the work of the FD worth Rs. 4,73,973.00. Rs. 24,160 was contributed by ASSEFA (Association of Sarva Seva Farms) for labour cost for soil works. Rs. 2627.50 was collected as fees for grasses from the protected area in 1999. Earlier fees amount to around Rs. 27,000. Only one family sold grass outside the village, at rates of Rs. 1 to Rs. 2 per pula.

Wildlife species like rabbits, leopard, mongoose, fox, jackal, snakes, monitor lizard have been sighted in the area. Several bird species - crows, cuckoo, drongo, bee-eater, egrets, starlings, babbler, and parakeets - are common.

With improved vegetation cover there is less soil erosion and increased groundwater recharge shown by perennial stream flows and sustained well water levels. Anicut construction on Gomti river and deepening of wells has increased irrigated area by 32 ha. Since the anicut is upstream from the protected area there is no direct impact of pasture area improvement on the surface and groundwater in the vicinity of the anicut

The feed calendars for large and small ruminants have been worked out separately. They are shown below:

SEEDH FEED CALENDAR: COWS, BUFFALOES, BULLOCKS

| Months/Seasons | Nov Dec | Jan-Feb | Mar- Apr | May – Jun. | Jul-Aug | Sept- Oct. |
|---|---|---|---|---|---|---|
| | Kartik-Magsar | Posh-Magh | Phalgun-Chaitra | Vaishakh-Jyeshth | Ashad-Sawan | Bhadva-Asoj |
| Fodder/Grazing | SIYALA-WINTER | | HUNALA-SUMMER | | CHAUMAS-MONSOON | |
| Grass of PSPA | | 5 | 7 | 7 | 3 | |
| Stored crop Res. -maize | 6 | 2 | | | | |
| Stored crop Res. -wheat | | | 3 | 4 | | |
| Green Fodder | 2 | 2 | 2 | 2 | 6 | 8 |
| Loppings/leaves | 2 | 2 | | | | |
| Concentrate/Grain | 1 | 1 | 1 | 1 | | |
| Open Grazing | 5 | 4 | 3 | 2 | 7 | 8 |

SEEDH FEED CALENDAR – GOATS & SHEEP

| Months/Seasons | Nov Dec Kartik-Magsar | Jan-Feb Posh-Magh | Mar- Apr Phalgun-Chaitra | May – Jun. Vaishakh-Jyeshth | Jul-Aug Ashad-Sawan | Sept- Oct. Bhadva-Asoj |
|---|---|---|---|---|---|---|
| Fodder/Grazing | SIYALA-WINTER | | HUNALA-SUMMER | | CHAUMAS-MONSOON | |
| Loppings/leaves | | | 2 | | | 1 |
| Green Fodder | | 1 | 1 | | | |
| Concentrate/Grain | 2 | | | | | 2 |
| Open Grazing | 14 | 15 | 13 | 16 | 16 | 13 |

Livestock is the most important source of fertiliser in the traditional agriculture. Goat and sheep manure is considered the best as it is 'ready to use'. Cows and buffaloes provide bulk of farm and household manure. In Seedh stall-feeding of livestock has become more important after the introduction of fodder harvesting in the Beed. This has led to 15-20% increase in applied manure. However, there has been a 30% decrease in livestock between 1990 and 1999 with a corresponding decrease in dung available for manure.

Capacity development in Seedh has not been a conscious or organised effort by an NGO. The Gramdaan village has received a combination of moral, social and organisational and technical leadership from its traditional 'Purohit' or priest. His own commitment to the cause of Gramswaraj or village self-rule, and his competence as a successful traditional farmer and as a crusader on behalf of the people, are his basic strengths. These have been used in a close working relationship with the Seedh community to take decisions to plan and to solve problems. It has achieved improvement in agriculture, livestock and resource management. The support of NGOs and government machinery has been drawn upon as needed and shunned or resisted when it appeared to be against the principles of Gramdan or interests of the community. All the land-related records, and minutes of the proceedings of the Gramsabha are maintained in the village.

## 7. Beneficiaries and Distribution of Benefits

All households receive equal benefit of annual fodder collection from the Beed. This is organised in a Gramsabha meeting just before the harvest, when the days, the rates and the system of carrying are decided. Each household gathers fodder from the area (Paant) alloted to it. Tree fodder (eg. Khakhra or salar leaves) can be collected free of charge. The quantity of fodder grass collected per household has varied from 400 pulas to 2000 pulas. Distribution is generally regarded as fair. According to the villagers grass has been the major benefit from the protected area. Wage labour ranked above grass as a benefit in 1988, 1998 and 1999 when soil works and plantation by outside agencies (Assefa and FD) were done.

The Seedh Beed was earlier used for grazing by several other villages -- Gopa-Ki-Bhagal, Hariakheda, Magriphala, Lunda and Kerpura. This was restricted after 1963 and the restriction was strictly enforced after Gramdaan declaration by Seedh in 1980.

## 8. Gender Issues

Women's attitude toward PSPA is generally positive. There are no female-headed households. There is limited participation by women in decision making though two members of the executive committee are women. No special efforts have been made for women's skill development. A mechanised spinning wheel (Ambar Charkha) has been purchased by the Gramsabha recently to train women in this skill.

Both men and women cut the grass. Herding is done by children, women and old men. With increased irrigation the workload of both men and women has increased. Men give more time to cultivation and marketing while women carry out tasks related to livestock. Division of labour and use of income are decided jointly at the family/ household level.

## 9. Capacity Building, Sustainability and Lessons

The PSPA intervention in Seedh is self-initiated with deep roots in traditional resource use, livelihood and socio-cultural values, which are sought to be revitalized through the Gramswaraj vision. The relationship of the chief motivator, Shri Rameshwar Prasad, with the community derives from this dual basis. As a traditional 'Purohit' he has functioned as the friend, philosopher and guide of the village, even though he does not live in Seedh. As a self-inspired social worker and activist he has led the village in its struggles by legal and other means to retain its rights over its natural resources. He has also given it support to seek and utilise outside resources for improvement of community assets.

There is now a well-accepted and active Gramsabha process around the silvipasture management tasks, with detailed and careful record of its proceedings and decisions. Organisational and accounting capacities are beginning to be developed amongst the younger educated members of the community. This is being done through informal co-functioning around specific tasks with restatement and re-dedication to values and principles in celebrations like Vinoba and Gandhi Jayanti and other cultural occasions.

It is not that Seedh has become a harmonious and just community. It has its share of internal dissensions, disparities and self-seeking. It has also not been very mindful of the traditional use rights of neighbouring villages over the Seedh Beed. Nevertheless, there is a consciousness of the problems, and a constant reminding to resolve them in accord with the values and vision of Gramswaraj.