

Good Practice Note

Community Ownership and Institutional Mechanisms to Develop CPRs' and Enhance Livelihoods



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Community Ownership and Institutional Mechanism to Develop CPRs' and Enhance Livelihoods

A Kavalas Way

Good Practice Owners	RAJASTHAN RURAL INSTITUTE OF DEVELOPMENT MANAGEMENT	
	BAIF DEVELOPMENT RESEARCH FOUNDATION	
Good Practice Champions	Authors:	B.G. Rathod, S.E. Pawar, B.R. Patil
	Reviewers:	Jagdeesh Rao, Karna Bahadur Ghallay, Lucy Maarse, Rita Brara, Mona Dhamankar, Sanjay Joshie, Varun Sharma, Viren Lobo, Ugo Pica-Ciamarra
	Contributors:	A.K. Chourasia, Bhagchand Gujar, Mithusingh Shaktawat, M.S. Sharma, Rakesh Sharma, Sanjay Verma, Yogesh Gupta
	Content Editors:	Lucy Maarse, Shefali Misra, Sheila Koyyana

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I. Background Information

1.1 Common Lands in Rajasthan

Common lands often referred to as Common Property Resources (CPRs) play a crucial role in supporting the livelihoods of rural people, especially poor and landless livestock keepers, by ensuring a wide variety of essentials like fodder, fuel wood, timber and medicinal herbs. Traditionally, in India, village CPRs are recognised as village *Gochar* (Pasture) land, revenue land (meant for pasture) and degraded forestlands used for grazing purposes. Rajasthan has over 11 lakhs has village common lands (30% of the total geographical area), with immense potential for pasture land development. There is high dependency on CPRs for feed and fodder for livestock, as a sizable number of livestock rearing families belong to landless, marginal and small land holding categories who are extremely poor (over 80% of poor households depend on fodder and fuel resources from CPRs). Many of these households do not have adequate land to grow forage crops; preferring instead to give priority to food crops. These common lands are the most crucial in arid and semi arid areas of Rajasthan as the poor 'Below Poverty Line' families derive 20% of their income from common lands, against 2% people above poverty line.

Due to various factors, large proportions of these common lands are today degraded and have lost their green cover resulting in poor productivity. Their use has been primarily unregulated and there is open access to village cattle, buffaloes and small ruminants for grazing. Overall, the trend in land use shows a decline in CPRs which is largely due to illegal encroachment and land distribution. Other causes associated with this degradation are Lopsided policies¹ that reallocate pasture lands for other purposes. In the background there is also the need to have robust institutional arrangements at the village level and locally developed strategies for sustainable development alongwith management of common lands by local communities themselves, which can ensure sustenance of regeneration work independent of external support.

This good practice showcases the impact the investment in building robust community systems and institutions has on increasing fodder availability and improving the biomass. It also showcases how an external agency can facilitate transfer of technology in an iterative manner that assures its absorption and incorporation by village institutions. Finally, the practice showcases the complexity of CPR management wherein numerous users come with numerous needs and thus 'building synergy within the common pool' is critical for sustainability.

1.2 About the work

Village common land development on a 50 ha area in Kavlas village was undertaken with financial support from SDC and technical support from IC, BAIF and RRIDMA. Through this initiative, development of village institutional mechanisms has helped in sustaining common land development efforts and has strengthened the Panchayat Raj Institutions (PRIs) to respond to CPR development. This good practice has proved that equipping and empowering village communities for effective management of common land is mutually beneficial to both man and livestock. The conservation work has created feed resources for livestock of

¹ Examples are the promotion of bio fuels – e.g. Jatropha - , introduction of special economic zones (SEZ) etc.

communities, especially the poor (BPL) families. Improved soil moisture regime and vegetation has had positive impacts in terms of increase in biomass and perennial availability of fodder for village animals, improved milk production and livelihood support for small and marginal families. Looking at this community managed initiative, the work on CPR development has been replicated in over 3000 ha elsewhere in Rajasthan.

1.3 The Location

Kavlas is a tiny village comprising 394 households situated in the Asind block of Bhilwara district (Rajasthan). It is broadly classified as a semi-arid area with an average annual rainfall between 400 mm to 650 mm. Average minimum and maximum temperature of the area is 5°C to 44°C respectively. The literacy rate in the district is 50.5% with 67% among men and 33% literacy among women. The district has a population of over 2.0 million of which 79% is primarily rural. Population density is 192 persons per sq. km. with a household size of average 5 members per family. The community comprises 16 % Schedule Castes and 9% Schedule Tribes, amongst which Gujar and Meena are the major livestock keepers. The district has a total area of around 10 million ha of which about 6.75% is forest land, 14% irrigated land, the area under cultivation is 39% and common land is just about 5%. Agriculture is the main occupation of a majority of the population and more than 90 % of the workers are engaged in this occupation. The alluvial soil of the district is only marginally productive. Owing to rainfall variations, livelihoods not only rely on crop production but also have livestock keeping as a complimentary activity. In the district, livestock population constitutes over 60% small ruminants and 37% cattle and buffaloes. Communities in the village are mainly agro-pastoralist, tribal and non tribal families. Since over 80% of the households have small land holdings, families owning livestock are mainly dependent on crop residues and fodder from the village common. As far as land utilisation is concerned, out of 1120 ha, 39% is under crop cultivation (440 ha), 45% is mostly revenue and forest waste land, and 16% is village common land (180 ha).

1.4 The Project

During 1991, BAIF initiated work in selected villages of Asind and Mandal talukas of Bhilwara district on a Sirohi goat development pilot project. Kavlas was one of the project villages. The project had a focus on improving goat productivity through breed improvement and augmenting feed resources. In Kavlas village, over 78 % of the families were dependent on mixed farming of crop-livestock as a source of livelihood and other 12% were wage laborers. However, only 27% of total land was under crop cultivation resulting in a shortage of feed resources in terms of crop residue and greens. In this situation the poorly maintained common lands were the only option to meet feed resources. To address this problem, BAIF field staff and villagers promoted the concept of common land development. The donor agency SDC and its implementing agency, IC joined hands with BAIF and the concerned village community in developing CPRs through a project called "Innovative village common development and management through local institutions". Towards this end, villagers were motivated to generate ideas and modus operandi for pasture land development. Initially, the work started on 10 ha area during the year 1992-93, and subsequently 40 ha village common land was covered by the year 1996.

1.5 Agriculture and Livestock relations

Crop-livestock mixed farming is traditionally the major source of livelihood of the community in the village. Rainfed farming is predominant with food crops such as maize, black gram, green gram, chickpea, cumin, etc being produced along with cash crops like groundnut and cotton. Besides dependency on rains, small land holdings and marginally productive soils are serious cause of low food production. Livestock keeping is mainly concentrated to rearing of cattle, buffalo, sheep and goat. The total livestock population of Kavlas village is over 3,000 heads of animals of which 54 % are sheep and goat and 46% are large ruminants. Rearing of animals is the most important source of livelihood towards improving economy of the villagers (Census, 2007). The community pasture is often the only basic feed resource for village livestock. Given the background of semi arid conditions and owing to recurrent drought and overgrazing, the fodder availability from the pastureland is very limited causing concern for those who depend primarily on livestock for their livelihood and sustenance.

II. Problems Identified and Objectives for Silvipasture Development

Kavlas village Panchayat has pasture land of 180 ha. All community members irrespective of the caste and religion have traditional rights to use it for grazing their animals. Traditionally, in Rajasthan, grazing areas have been designated by the villagers for open grazing by cattle, buffaloes and small ruminants. Such areas are maintained (by caretakers for grazing and a nominal fee is charged by them for their services.) However, in the absence of an effective system of governance and CPR management, the pasture land is highly overgrazed, causing scarcity of biomass availability for livestock. The main problems identified were:

- **Overgrazing of pastures:** The villagers allowed their livestock to graze freely in the community pastures spread over 180 ha (900 bighas). As a result, over the past few decades the pastures had been overgrazed and neglected. The productivity had decreased leading to severe shortage of fodder for animals. It was largely the powerful groups who would enjoy maximum benefit from the pasture while the weaker sections were left out. Further, as there were no demarcated village boundaries and the land was open for grazing to all animals, occasionally the encroachment from the neighbouring villages was also a problem.
- **Crop damage by wild animals:** In addition to domesticated animals, a large herd of Blue Bull (locally known as Neelgai) were also not able to get their share of feed and would thus attack agricultural crops in the night. As the problems of controlling Neelgai and developing community pastures were beyond the capability of the poor villagers, no serious efforts were made to tackle them and they were accepted as a part of their long struggle for survival.
- **Degraded land and moisture stress:** Marginal soils with low and erratic rainfall had resulted in inadequate soil moisture, which could not support good vegetation and grass cover. There was a need to address issues of inadequate fodder production, management of marginally productive grassland and improvement of the fragile ecosystem. An appropriate system that promoted community involvement and developed their knowhow was required to improve the situation. Lack of community based pasture management systems, protection of village common lands and absence of regeneration efforts were key problems identified in converting village common lands into a productive asset.
- **Shortage of fodder:** Scarcity of biomass availability for the livestock owners was strongly felt. Poor families, who generally drew about 71% of the fuel wood and 84% of the fodder by grazing on village common land, were severely affected. Shortage of the fodder due to degraded pastures and overgrazing of the CPRs led to deficient nutrition to the livestock. Poor and landless families were severely affected, who were mostly dependent on the commons for fodder.

Objectives of Silvipasture development on Village Commons

The "Innovative Village Common Development and Management through Local Institutions" shortly referred to as 'Silvi Pasture Development' had the following long and short term objectives:

Long term objectives:

- to develop rainfed pastures on village commons,
- to create feed resources for livestock especially poor families,
- to demonstrate development of degraded village commons to improve environment, increase income and nutrition of village communities,
- to build local institutions – like the Village Management Committee, for sustainability of pastureland and empowering local community, and
- to revive the old culture of protection of village commons.

Short Term Objectives:

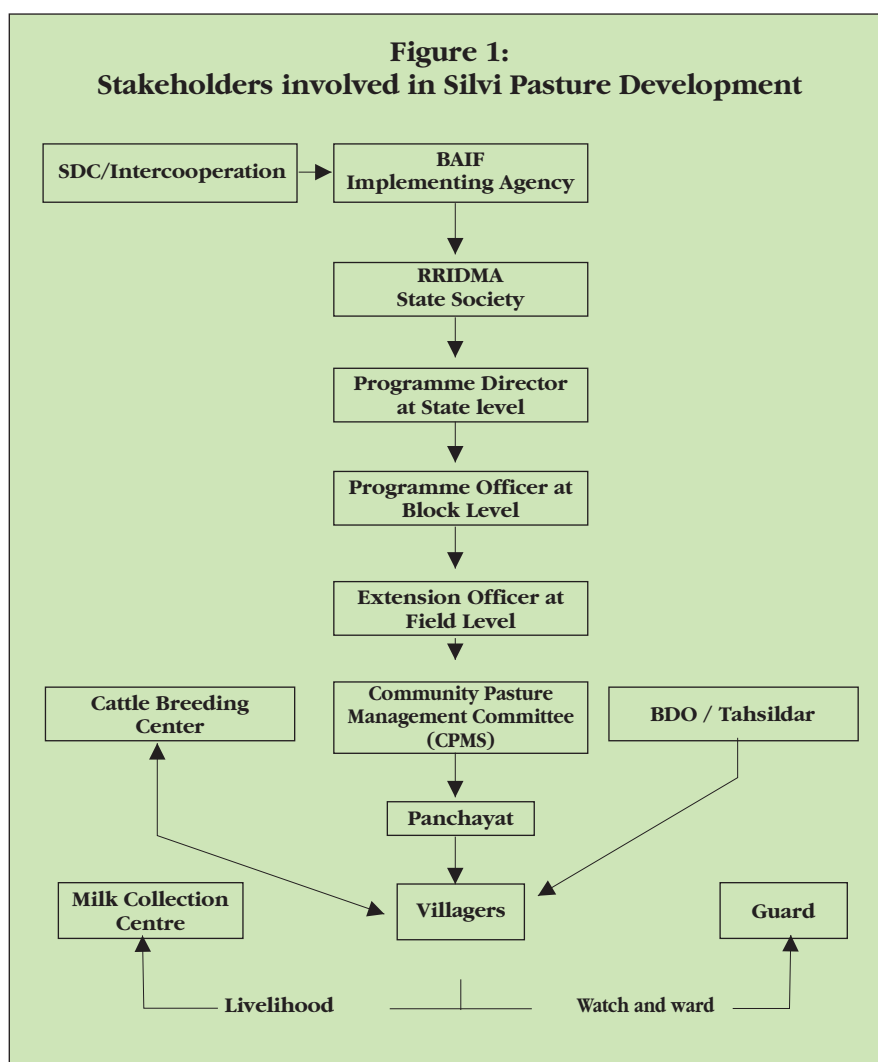
- to generate community awareness about CPRs,
- to protect, develop and manage village commons,
- to produce fodder and fuel wood on a sustainable basis to meet local needs , and
- to check process of environmental degradation.

III. The Good Practice

This good practice shows that community led development of CPRs through local ownership and institutional mechanisms greatly enhances livelihoods of livestock keepers especially the poor, landless and BPL families. The practice helped improve the environment by reducing soil degradation and increasing soil moisture and vegetation. In succession, this resulted in increased biomass in terms of quantity and quality and thus the overall year round fodder situation improved. The improved fodder situation led to more output per animal and subsequently more animal products for home consumption and sales. Overall, it also contributed to an improved nutritional status of village communities.

Towards these ends, village institutional mechanisms were established to sustain development efforts on a longer term especially after withdrawal of project support. Formation of the Village level management committee (VLMC), strengthened the PRIs and revived the tradition of safeguarding village commons for mutually beneficial purposes of man and livestock in a sustainable manner.

**Figure 1:
Stakeholders involved in Silvi Pasture Development**



3.1 Stakeholders of the Good Practice and their Roles and Responsibilities

The Swiss Development Corporation (SDC) provided the financial means while its implementing agency, Intercooperation (IC) supported the project technically, while BAIF and RRIDMA conceptualised the initiative. Village level Community Pasture Management Committee (CPMC) was promoted to implement, monitor and manage the CPRs. PRIs were involved in supporting the initiative and endorsing the decisions of the CPMC. The District Rural Development Authority (DRDA) supported the Cattle Breeding Centre (CBC) in the area. The CBC provided artificial insemination services, health care support and provided inputs on feeding and management practices. The relationship among the different stakeholders is depicted in Figure 1.

Under BAIF's guidance, a twenty-one member CPMC was formed with due representation from each caste. The president and secretary were selected through a participatory approach and

by seeking consensus of the members. This committee was mandated to implement common land development activities with technical support from BAIF. The state society of BAIF, RRIDMA was responsible for the overall coordination of the project at the state level. The Programme Director (PD) placed at the State headquarters was responsible for the overall management of programmes in the State. In field areas at the block/ tehsil level, Programme Officers (PO) were placed to coordinate field activities and provide technical input support to the extension workers at the village level. Extension Officers reported to the Programme Officers and helped in project implementation at the field level.

The Local Panchayat was responsible for land allocation for silvipasture development. Since the land was under the jurisdiction of the Panchayat it was legally handed over to the community for development. BAIF had its presence in the area through the cattle breeding centre and already had a good rapport with the village Panchayat. This resulted in establishing an enabling environment to develop the CPR. Although the Panchayat granted permission for land use, support of the tehsildar and the District Collector was crucial in conflict resolution on illegal encroachment by nearby villagers of Mokhampura. The guard selected by the villagers played a crucial role in watch and ward for proper upkeep of the common land. For organised milk collection from the area and to maximise profit for the livestock owners from sale of milk, a Milk Collection Centre set up in the village. Finally, the villagers were incharge of management and use of CPRs. They were also the prime beneficiaries of the project.

3.2 Delivery Mechanisms, Technology and Suitability

When analysing a Good Practice, three aspects² are distinguished namely, the 'delivery mechanism', the 'technology option' and 'its suitability to context'.

At the onset of the initiative, the absence of local institutional mechanisms and lack of a cohesive policy support was leading to deterioration of commons. The essential component of the work, therefore, focused on institution building by involving villagers in the process of regeneration of common land. Keeping in mind the need for overall skill development, BAIF team was placed for overall coordination and monitoring of village activities. The team consisted of resource specialists from diverse backgrounds such as agriculture, livestock and social sciences and focused on promoting appropriate practices taking into consideration the interest of different livestock keepers. As a result, certain methodologies were conceived, operationalised and monitored over a period and the results have been found to be effective to have an impact on majority of the families in Kavlas village to a varying degree.

In Kavlas, village commons included pastureland, revenue wasteland and forest lands. Rights to use and manage these lands also differed. Therefore, local communities required facilitation on legal matters to achieve tenurial security. Realising the need, BAIF involved taluka and district level government officials and local Panchayat in the process of institution building. BAIF team mobilised and empowered the local community to form the CPMC (Community Pasture Management Committee), which had amongst its members, Gram Panchayat, Livestock Owners, Landless people and village representatives from each caste, along with the BAIF Programme Officer. The CPMC played a pivotal role in the upkeep and maintenance of the silvipasture, equitable distribution of proceeds and in establishing linkages with the government. The resource team comprising of Extension Officers, supported the CPMC. The implementation structure of the field team is given in Figure 2.

Identifying the contextual needs of the community was also crucial; herein, the development

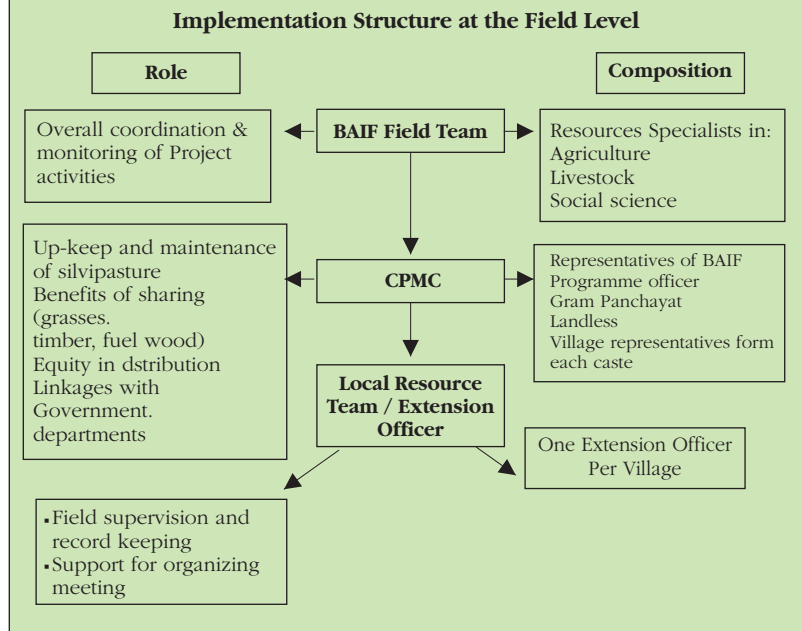
² **Aspect One: 'Technology'** refers to the technology option of the Good Practice; it can relate to preventive animal health (e.g. vaccination), feeding (e.g. tree leaves), manure management (e.g. composting technique), etc.;

Aspect Two: 'Delivery Mechanism' refers to how the delivery, the dissemination of the technology is happening, which in most cases involves more than one actor and can be vertical (top to bottom, bottom to top) as well as horizontal (farmer to farmer). It is about the services needed to deliver and the ways these are organized;

Aspect Three: 'Suitability' refers to whether what is delivered is suitable to the context, to the given circumstances. For instance, a costly input technology is not suitable for situations where returns to sales of livestock products are limited.

Source: L. Maarse, Dhamankar M., Krishnagopal G.V., Pica-Ciamarra U. and Dhawan M., 2008, "Concise guidelines for drafting a Good Practice Note in the context of Pro-Poor Livestock Development", DOC013, SA PPLPP, New Delhi, India. Available at: http://saplpp.org/infomationhub/concise_guidelines-drafting-good-practice-note-pro-poor-livestock-development

Figure 2: The delivery mechanism / implementation structure



of a local institutional mechanism together with technical backup support and facilitation provided to CPMC by the resource team enabled the initiative to succeed. Key innovations that contributed to the sustainability and success of the initiative included the following:

i. Initiating dialogue with the community

It started with initial interactions with the villagers. Extension Officers from BAIF established a dialogue with various groups in Kavlas village, on the scope of conserving 180 ha of pasture land owned by the community in the name of the village, deity – Dev Narayan. Although this concerned a traditional form of management, in this case the temple committee was devoted to the religious cause only; support from the Dev Narayan samittee³ was

sought to motivate the community to form the CPMC. This committee accepted the responsibility of CPR development activities such as fencing the pasture, control of stray livestock, soil conservation, management, protection and decision making to use the village assets properly.

The initial response of the villagers was not encouraging. They felt that this new scheme with strange ideas, would never take off. But having enjoyed the reputation of providing excellent livestock breeding services, the extension officers gained the trust of the community and managed to overcome the initial resistance.

Among others, many senior officers from BAIF visited the village and arranged a series of meetings with the members of various village leaders on pasture development. The officers offered convincing answers to all the questions posed by the villagers as well as authorities during these interactions. The community appreciated BAIF's sincerity and expressed their willingness to cooperate and launch the experiment.

ii. Consensus on area for grazing

Initially, some sections of the society showed resistance, as their livestock was totally dependent on this community land for grazing. In view of the situation, it was decided to develop only a small portion of the 180 ha of pasture land so that the traditional grazing system would continue in the remaining area. The villagers suggested taking up this work on the outskirts of the village, adjoining the neighbouring village, as this part of the pasture was often grazed by livestock from that village. In short, the most complex corner was taken up first.

iii. Formation of committee

The initiative was launched with the formation of a 'village level committee' comprising of 21 members. The CPMC had representation from all castes and those who owned livestock. It

³ 'Samittee' can be translated as temple committee.

was ensured that each livestock keeper was a beneficiary and that the benefits went equally to all beneficiaries involved. Initially, the enthusiasm among the committee members was confined only to a few members and others did not participate seriously. There was agreement on sparing one day in a week for contributory voluntary labour or 'shram daan'. Over a period of time the committee gained confidence in handling fodder production, harvest and overall management of the village commons. The CPMC met at frequent intervals to take stock of the situation and discuss protection issues, watch and ward and finalise choice of species for fodder and fuel and timber requirements of the community.

iv. Land acquisition

Development work was initiated with the involvement of the village Panchayat. For this, a resolution was passed in the general body meeting in which presence of all the villagers was ensured. The land was officially handed over to the CPMC by the village Panchayat. The villagers were made aware of the modalities of implementing the activities such as fodder development and management, its distribution and possible related resolving of conflicts etc. Meanwhile, district and taluka level government officers were briefed about the short and long term benefits of the initiative. The Tehsildar and District Collector agreed to provide support for resolving possible conflicts especially regarding encroachment by other villages.

v. Change in BAIF's role

BAIF's role has changed over time, as initially when the work started there was a need to mobilise the community, build local consensus and to provide technical options to improve productivity of land and livestock. The modalities of this programme were new for the villagers, as a result of which the initial response was moderate. At this stage, BAIF was closely involved in creating awareness and facilitating the planning and execution of the work. The committee members were not experienced in managing the committee and completely new to the complexities of protecting the pasture plot, organising the land preparations etc. Therefore, BAIF assisted the committee on matters related to effective functioning. The entire process of jointly working helped the committee to gain confidence in their abilities which enabled BAIF to take a distance at a later stage of the initiative.

Meanwhile, to monitor day to day work, villagers identified a villager who had keen interest and commitment for this work since the inception. Gradually, over a period of ten years, BAIF changed its role from being directly involved in the overall facilitation and implementation of the work towards fulfilling a much lighter advisory role. Creating a formal body in the form of a local committee and setting rules and regulations for governance served as a strong platform for future work. The committee is now well equipped to work independently. However, with the consensus of the committee BAIF has continued to be a member of the CPMC and BAIF officers provide technical input and facilitation support as and when required.

In the process, unemployed youth with good knowledge about the community dynamics and inclination to work were selected and trained to work as field guides. They served as a link between BAIF field team and the villagers. Regular orientation, training and coaching provided by BAIF field teams capacitated them to work effectively.

vi. Re-constituting the committee and building common corpus

Stray grazing was a major challenge before the committee and charging a fine was the option agreed upon. In view of this, the committee decided to recover a fine of Rs.51/- for stray

grazing by cattle and buffaloes and Rs.21/- for every goat or sheep. Since these decisions affected everybody, many members expressed their desire to participate in the process of decision-making. This enhanced the ownership of the initiative. As a result the committee was reconstituted with two members from each caste. The fines collected formed the basis for establishing a common corpus fund.

vii. Capacity building of stakeholders

Several measures were taken to mobilise villagers for the development initiative. Using techniques such as participatory rural appraisal (PRA) and rapid rural appraisal (RRA), the villagers managed to arrive at a needs assessment and a situational analysis. Exposure visits were organised to field areas in Rajasthan and Gujarat where people could observe and learn how barren and wasteland was converted into productive grassland established and maintained through community efforts. Despite these efforts many villagers did not believe that such an initiative could work and showed little interest in the work. This was partly due to the poor history of the community work in this village, while others were just skeptical about the long term viability, convinced as they were that grazing of the village animals could not be guided. Notwithstanding these impediments, the work was continued with the participation of the interested villagers whereby ensuring the involvement of the committee so as to own responsibility in future. This perseverance showed results in the end and built the faith of the skeptical villagers.

viii. Land demarcation, enclosure and grass promotion

The process was initiated by demarcating and enclosing the entire area of common land to be developed. The committee decided to protect the area from trespassing of animals by creating a trench cum mound around the entire common land. Establishing a live hedge fence with Euphorbia (a thorny shrub) was the choice of the community to restrict entry of the stray cattle. The committee decided to fence an area of 10 ha in the first year. Gully plugging and stone gradonies were constructed at close intervals to control soil erosion. The pasture area was divided into smaller plots by creating contour bunds. Sowing of forage seeds such as Cenchrus setigirus (Dhaman grass) and Stylosanthus hemata (Stylo) was carried out @ 30 kg / ha before the onset of rain. Light ploughing of the land with tractors helped to free the soil and support good germination and plant growth. With the first few showers, tender grasses emerged. Plantation was undertaken selecting species of local choice, which included Acacia nilotica (Ramkathi babul), Azadirachta indica (neem) and Prosopis cineraria (Khejdi). Over 200 saplings/ha were planted in the area.

ix. Involvement of women

Initially, the CPMC was entirely dominated by men in line with the prevailing village traditions where women were not supposed to be active in the public domain. Women being marginalised and suppressed, were ignored by the community and left out of involvement in the committee. They were rarely included in the decision-making processes and initially BAIF was hesitant in being pro-active in involving women. BAIF started by involving those primarily engaged in livestock rearing, agricultural operations and fuel wood collection. However, realising their skills such as seeds collection and grass cutting, the CPMC itself decided to have their representation in the committee. At present the committee has 30% representation of women.

x. Species selection

Based on BAIF's experiences in agro-forestry, the importance of selecting the appropriate species of multipurpose utility was realised from the onset. During the participatory rural appraisal and matrix rankings, BAIF oriented the villagers on the advantages and disadvantages of the different species, while also acknowledging their own knowhow with regard to trees, shrubs and grasses. Various meetings took place before a common consensus in species' selection was reached. Based on the type and degree of the slope and magnitude of the surface runoff, vegetative barriers to control soil loss were introduced. Soil fertility and other characteristics were also important criteria in the selection of species. The grass specie Dhaman (*Cenchrus* spp.) alongside the leguminous Stylo (*Stylosanthus hamata*) were successfully introduced. Apart from its utility, these species were selected to improve the soil fertility through nitrogen fixation and usage of green manure (biomass decomposition). On the degraded areas the plant litter formed an important source to protect the soil and improve its fertility. To provide legume tree fodder, species like *Acacia nilotica* and *Prosopis cinararia* were preferred by the community as the species have multipurpose utility such as fodder, fuel and timber, while also positively impacting the organic matter.

xi. Conservation measures

The concerned common land had a moderate slope, but in some places gullies were formed, eroding soils in the area and losing grass cover. *Prosopis juliflora* (vilayati babul), a thorny species, known for its deep rooting system and often perceived as weeds by livestock keepers, was spread all over the pasture land. Cleaning on the pasture land was done by uprooting these bushes from the entire protected area so as to initiate plantation of species of utility to the community. Seeding with *Zizipus mauritiana* on the boundary inside the common land was done to create fodder resources for small ruminants. Contour trenches were designed based on the survey of the slope and, accordingly, at an interval of 15-20 metres contours were laid down to control soil erosion and recharge rainwater. The grasslands were also heavily infested with termites and without controlling it the newly introduced grass, shrub and fodder species would not survive. The insecticide Chlorpyrifos was used as a control measure for termite infestation.

xii. Conflict Resolution

Villagers from neighbouring village, Mokhampura were not involved in the contributory labour in the pasture development and, therefore, the Kavlas villagers were not ready to share the benefits with them. It was a drought year and natural availability of grasses was very low. Mokhampura villagers used to trespass in the grassland damaging the enclosure at night time to graze their cattle and harvest the grass. The Kavlas committee (CPMC) initiated actions against the illegal trespassing and use of its protected grasslands. Penalties were recovered from the trespassers and cases were lodged against the villagers showing resistance to the penalty. In August 1998, the conflict between the two villages turned into violence on the issue of trespassing and penalty, causing injuries to some of the villagers. Finally the police and the District Collector had to intervene in the matter to stop the violence and resolve the issue. Since then no such untoward incidence has occurred in the village.

xiii. Fodder harvest — cut and carry method

Dairy animals (cows, buffaloes) are stall-fed in this area and for this the cut and carry method is practiced. The grass is harvested around November/ December. As per the villagers' insights, this is the right time to harvest grasses as seed matures and reseeded helps to extend grass cover area. Other important reasons being the ease in seed collection, due to dryness in the land, and the availability of labour for harvesting. This is the period when demand for dry grasses increases as green fodder is in short supply. Villagers expressed that late cutting after December damages grass due to the foggy situation caused by low night temperatures. In terms of nutritive value, harvesting at an earlier stage would actually be recommendable, but year round fodder availability is the primary concern of the livestock keepers. Tree lopping is practiced to feed goats outside the commons. This was agreed upon in order to allow goat keeping families, who belong to the resource poor strata of the community, to benefit, while in addition tree fodder from thorny species is not liked by the large ruminants. Limited and careful lopping was introduced so as to avoid tree damage and ensure healthy re-growth.

IV. Project Impact

The impact of regenerating and development of degraded pasture lands in Kavlas village concerns large and small benefits of a direct as well as indirect nature. Some are of interest to the resource poor households of the village, others benefit typically the resource rich. The direct impacts are in terms of fodder, water and employment generation, followed by what these benefits imply in economic and livestock production terms. Indirect impacts included changes in livestock management as well as community empowerment.

4.1 Increased Biomass availability

The main sources of palatable biomass to ruminants are the grasses, shrubs and trees. Fodder from grasses and leguminous: Availability of grass increased substantially from the protected common land. Before the enclosure there was hardly any grass cover on the land which could support grazing. With the introduction of *Stylosanthus hamata* (Stylo grass) and *Cenchrus* spp. (Dhaman) grass, the biomass availability increased from 160 kg / ha to 2,500 kg/ha in the fifth year. During the project period, a total of 310 tons grass was produced and used by the families from 50 ha of regenerated commons. In monetary terms this was valued at Rs.310,000/- benefiting more than 90% of the families. The increased fodder availability was in the range of 15-20% of the total feed requirement of the livestock in the village. This minimised the dependency on outside fodder collection as well as purchases. In short, the year round availability of fodder was secured.

Fodder from tree and shrubs: Palatable biomass available from fodder tree species such as *Acacia nilotica*, *Prosopis cineraria*, and *Azadirachta indica* increased the total tree biomass production of the site, enhancing grazing efficiency up to the level of 2-3 folds over the base line i.e. before protecting the common land. Estimated total biomass inclusive of lopping from all surviving tree species was 217 tons which at the rate of 4.34 tons/ha (Table 1) was valued at Rs.217,000/- and benefited mostly the landless, and marginal farmers including goat keepers.

Table 1: Palatable Tree Biomass estimate from the Common Property Resource at Kavlas

<i>S. No.</i>	<i>Tree/ shrub species</i>	<i>Plants promoted/ha</i>	<i>Plants survived/ha</i>	<i>Estimated biomass tons/ha</i>
1	<i>Acacia nilotica</i>	120	78	2.11
2	<i>Prosopis cineraria</i>	40	26	0.26
3	<i>Azadirachta indica</i>	40	26	1.89
4	<i>Prosopis juliflora</i>	40	26	0.08
	Total	240	156	4.34

4.2 Soil and Water Conservation

Soil and water conservation activities on 50 ha village common land was carried out through 16,750 running metre treatment work, that conserved and recharged an estimated 31,657 cubic metre of water, which was equivalent to 31.66 million litres per year. This has influenced the subsoil water table thereby improving the overall water regime. As a result, 12 dry wells were revived and water level, in 22 wells increased by 1-2 metres. Due to increased water availability, about 80 ha of agriculture land was brought under seasonal irrigation for wheat and barley cultivation and, in turn, increased the availability of straw and other agricultural byproducts for animal feeding. The soil treatment measures prevented soil loss to the tune of 200 tons from the entire common land of 50 ha per year and prevented further soil erosion and degradation of the commons.

4.3 Employment generation

Besides grass and tree biomass production, the common land also generated additional employment by way of grass seed collection. Villagers having spare time, particularly the landless were encouraged to collect Dhaman grass seeds. In total, sixty landless families collected 746 kgs of Dhaman grass seeds from 50 ha area seasonally. Seeds were purchased by the committee @ Rs.18/- per kg and this generated an additional income of Rs.13428/ year (Rs. 224/year/landless family). Activities such as plantations, soil and water conservation, providing enclosure, grass seed collection and grass harvest could generate additional employment of over 100 man days per ha and 5,000 man days from 50 ha.

4.4 Livestock growth and milk production

The changes in livestock population between the year 1997 to 2004 showed (Table 2) significant increase in the buffalo population (+ 31%) and static cattle population, with remarkable increase in cross bred population by 128% (25 to 57). The population of the small ruminants declined substantially by 45% during the same period. A change in the milch animals, increased buffalo and crossbreds, has resulted in increase in the milk collection from 40 litres /day in the year 1997 to 547 litres/ day in 2004. Three milk cooperatives are active in the village today.

Table 2: Change in livestock population					
S. No.	Type of animal	Year		Change	
		1997	2004	No.	%
		No.	No.		
1	Cattle	1,060	1,023	-37.0	-3.5
	-of which cross bred dairy cows	25	57	32.0	128.0
2	Buffalo	390	512	122.0	31.3
3	Sheep	1,017	530	-487.0	-47.9
4	Goat	661	360	-301.0	-45.5
	Total	3,128	2,425		
	Total Adult Cow Units:	1,497	1,594	97.0	6.5

This has generated additional revenue of Rs.3,549/day, and total Rs. 1,295,385 per year for 394 families, amounting to an additional revenue of Rs 3,287/year/family. Increased fodder availability has not only improved the milk production by 0.75 kg/day/animal but also increased carrying capacity by 6.5%. Not only has milk production increased, but farmers' preference has also changed for type of animals and herd composition, by switching over to dairy buffalo and crossbreds from small ruminants. More recently however due to better access to the market, small ruminants have once again gained popularity.

4.5 Economic returns from CPR

Over a period of five years, the expenditure incurred @ Rs.8500/- per ha on 50 ha area was Rs.425, 000/- (see Table 4). Of this, 60% was spent on providing enclosures and contour bunds, procuring forage seeds and watch and ward. The major cost was met from the grant and the villagers contributed voluntary labour for activities like providing enclosure and treatment measures. Total revenue generated from the sources like grass production (includes grass used for animal feeding and surplus for sale), tree lopping, seed sale and charges for grazing and encroachment was Rs. 676,141/- Based on the investment and the revenue generated from the CPR, community of Kavlas had a net income of Rs. 251,141/-.

Besides this, the indirect benefits received in the form of soil and water conservation have resulted in water recharge, increase in cropping intensity and production, and soil restoration. In addition, the increased capacity of people to manage a common property resource has had a multitude of spin off affects such as joining hands to solve other problems, bening better equipped to contribute to Gram Sabha meetings, ability to organise themselves in order to achieve something (obtain better price for goats, for instance), etc. These benefits are difficult to express in monetary terms, but matter to a large extent.

4.6 Contribution and Cost sharing

In development and management of CPR, BAIF has been working with a people centered approach with focus on appropriate technology options and community mobilisation. The investment by BAIF was for technical backup support on interventions suitable to the area and for institution building and facilitation. The thrust was to provide a broad platform to the community and empower them to address issues on conflicts resolution, benefit sharing, fodder production and alternatives, and upscaling the activities independent of the project.

Costs, from placement of Programme Officers, facilitation and managing till withdrawal was proposed in the project budget based on the time and resources required and worked out to be 20% of the budget for the project period only. Local contribution from participants (10%) was either in the form of labour or in kind, which contributed to corpus generation. Of the total costs on interventions, about 60% expenditure was incurred on providing fencing, uprooting bushes (*Phosopis juliflora*) and rest on soil and water conservation measures,

Particulars		Amount Rs.
1.	Total expdinture (Rs)	4,25,00
2.	Income	
a	Grass used for animal feeding	2,28,400
b	Loopings	2,17,000
c	Other income (from sale of grass, wood, seed, grazing charges and encroachment fine) annexure 1	2,30,741
Total income (Rs) =2a+b=c		6,76,141
Net income (Rs.)= (2s+b+c- 1		2,51,141

Source of Income	Year wise income (Rs.)					Total
	1994-95	1995-96	1996-97	1997-98	1999-2000	
Exnenditure						
Silvipasture developed (ha) @ Rs.8500/-/ha (providing enclosure, treatment measures, forage seeds and watch and ward)	85,000.00	279,000.00	25,000.00	18,000.00	18,000.00	425,000.00
Dry fodder Production (tons)	5.00	30.00	60.00	90.00	125.00	310.00
Other Income						
Grass sale (surplus)	1,800.00	7,200.00	15,400.00	26,000.00	31,200.00	81,600.00
Wood sale	300.00	170.00	-	2,213.00	2,655.00	5,338.00
Dhaman seed sale	-	-	4,680.00	29,250.00	66,000.00	99,930.00
Encroachment Fine	-	-	-	-	-	-
Interest	-	-	-	-	-	-
Shramdan (Voluntary Service)	-	-	2,251.00	200.00	550.00	3,001.00
Grazing of animals	-	-	25,955.00	1,115.00	13,802.00	40,872.00
Total	2,100.00	7,370.00	48,286.00	58,778.00	114,207.00	230,741.00

inputs and watch and ward. In short, a relatively large amount has been invested in bio physical work due to the poor initial condition of the site.

4.7 Changes in feeding, management and community empowerment

The relatively resource-poor households of the community own small ruminants. Stall-feeding small ruminants is generally less acceptable than stall-feeding large ruminants. Because of controlled grazing, the cut and carry method was introduced so as to make use of the available grass. Farmers were motivated to stall-feed their animals and several households practice at least partial stall-feeding for large ruminants. Small ruminants' owners were allowed to lop tender portions of the trees as fodder for feeding outside the enclosure that minimized the damage of the CPR. Although cut and carry methods tend to increase the work load of women, it has not led to severe constraints; men also cut and carry the grass, while time is saved in terms of herding the animals.

For long the local market for goat was not remunerative to the owner as traders were exploiting the farmers' ignorance. Step by step, awareness on market dynamics has been created that factor in the sale of small ruminants such as body weight and age at selling. This has made a difference and there is a good realisation of price for the goat keepers especially during festival season.

Apart from the existing backward linkages such as the BAIF breeding centre, services were established for curative and preventive health and extension delivery for both small and large ruminants. Timely vaccination against diseases like FMD, HS, BQ in large animals and Enterotoxaemia and PPR vaccinations and deworming in small ruminants was of great help in controlling diseases that was supported by effective linkages with the State Animal Husbandry Department. Village youth were trained to work as paravets (animal health workers) to provide basic health care and extension services. The overall impact was on reducing disease outbreaks and mortality in order to improve the overall productivity and thus ensure overall sustainability of the programme.

4.8 Enriching Environment, Biodiversity and Sustainability

The villagers have succeeded in preventing their livestock from entering the fenced pastures and the Neelgais' (blue bull, a wild animal) have found a new home amongst this conservation. They have plenty of grass to graze and bushes to hide.

The project has made a big impact within a period of five years. An abundance of better quality grass as well as tree fodder has improved the microclimate, while establishing greenery. The families have also learnt about the benefits of stall-feeding and importance of preventive health measures.

The time involved in collecting grass is gradually motivating rearers to reduce the size of their herd; the increased productivity per animal is another factor contributing to change in peoples mindsets to keep fewer, but more productive animals. Above all, the harmony among members of different castes is remarkable.

The committee is confident and capacitated to manage a system that will ensure equitable sharing of benefits to all. The committee now, has a net saving of Rs. 58,000/- which enables them to provide the salary for a watchman. The savings are expected to reach Rs. 100,000 during the current year. For a decade now BAIF has withdrawn from the project and the community is managing the activities on their own during this time. The success story of Kavlas is inspiring the neighbouring villagers to adopt this sustainable model of silvipasture that is environmentally sound and beneficial to the entire community.

V. Key Elements of Success and Lessons Learnt

Commons can provide additional feed resources for livestock especially small ruminants, while at the same time play a crucial role in reducing poverty through improvement of livelihoods of the poor. Participatory approaches involving the community and developing institutional mechanisms can lead to better management and development of CPRs. Again, support of government systems and policies help in better utilisation of CPRs. The main lessons from the project can be summarised as follows:

- a) Local communities play a key role in the rehabilitation of common land development. Effective communication between different levels and authorities is important to ensure basic coordination and to establish the legal framework regarding long term access to CPRs, encroachment issues etc. Flexibility in accommodating new initiatives and testing appropriate techniques helps to evolve work that is initiated and owned by the community.
- b) The facilitating organisation should be well-rooted in the village setting so that it has the basic trust of the villagers when introducing new initiatives. It is also necessary that they are in a position to understand the location specific settings and address needs of poor livestock keepers.
- c) Focus on promotion of local species, responsive to the agro-climatic conditions for biomass availability is important for both small and large ruminants. Quality seed and planting material procurement for these species and protecting existing rootstocks in the village common area is valuable for livestock keepers.
- d) The quantity of fodder availability is definitely important, but availability of fodder on time is more significant. In short, the contribution that a CPR can make to secure year-round fodder availability is crucial. For lactating animals fodder availability in time is crucial for securing a normal lactation yield curve, while it is beneficial for all animals when sufficient fodder is available to secure maintenance and growth. Above all, any saving made on purchasing fodder from outside is a financial gain.
- e) The Panchayat and community have often conflicting interests regarding the common land in the village. On a longer term, the Panchayat can benefit as much if the entire community is secured of year-round fodder availability for the animals. When the productivity per animal increases and the forward and backward linkages are sustained, it will enhance the profile and productivity of the village.
- f) Securing access to common land and rights to its benefits is a precondition for community based rehabilitation, development and maintenance of common land. Without these guarantees it is difficult to make the investments. The much needed policies and laws should thus not only ensure that communities have access and can receive the benefits but concerned rights should be secured on an equitable and sustainable basis.
- g) A continuous process of open dialogue is needed so that the problems arising at various stages of pastureland development and management can be addressed by the people. In case of disagreement between the user committee or village level committee (in Kavlas case it concerned the CPMC) and the Panchayat, the final decision making authority should be vested in the general assembly (Gram Sabha) of the village.

- h) Conflict management is crucial and community leadership needs to be involved and developed. This will require devoting time and resources. A statutory body for conflict resolution can even be formed including members of the panchayat, the implementing agency and a community representative. During the initial period, the role of implementing/ supporting agency in conflict resolution is important. This makes protection mechanisms effective and strengthens the local institutions.
- i) Over time it is important to allow open controlled/ stratified grazing by both small and large ruminants. Grazing stimulates healthy plant growth while urine and manure contribute to improving soil fertility. In addition, grass, shrub and tree seeds passing through the ruminant's stomach enable a natural scarification of seeds and, after being dropped allow easy germination.
- j) It is important to share technical information with the communities whether it concerns the ins and outs of soil and water conservation measures, understanding development and maintenance of silvipasture plots, or any other relevant technology options. Certain technology options might be complex to explain, but attempts need to be made by field teams to explain it in a down to earth manner.
- k) Technical (silvipasture professionals, for instance) oriented teams need professional support on social issues and strengthening people's institutions so as to ensure effective and sustainable silvipasture development and management and vice versa. Both are interlinked and synergetic cooperation between these two professional domains is crucial for achieving the planned outcomes.
- l) In this regard, it is important to acknowledge that informal groups and local dynamics play important roles in sustaining/ destroying the local management system and the good work. Homogeneity of community is not always the essential pre-requisite for good management but informed, members are! When all are well informed, communities manage to draft simple rules and monitor its enforcement.
- m) Public-private-community partnerships in CPR management are important. Herein, NGOs can play an important role in community mobilisation, motivation and nurturing institutional mechanisms to own and manage the CPR, while PRIs and an enabling Government can synergise to sustain the success. Exposure of the community to other successful sites has implications in enhancing their understanding of the situation. Further, experimenting and developing a model on a small scale and disseminating the learning's and replicating for increasing the outreach in similar situations has worked out well. In the process, villagers have taken initiatives to convert private marginally productive land areas under fodder production and tree plantation to meet captive fodder needs of their animals.
- n) Benefit sharing between panchayats and villages is an important issue and should be handled properly. The access and benefits should remain secured with the committee rather than with PRIs. PRIs have interest in revenue benefits from the common land while communities are more interested in subsistence benefits.

VI. Conclusion and Scope of Replication

Taking inspiration from the Kavlas case, other initiatives have been taken up on jointly owned common lands belonging to 3-4 nearby villages. This cluster of villages has today worked out to be a homogenous unit and their committees have the power to resolve conflicting issues. Furthermore, having proved the success and benefits of community pasture development, BAIF has presented its experiences to the Government of India and Government of Rajasthan for further support in developing commons under the SGSY (Swarn Jayanti Gram Swarajgar Yojana). The response from the government has been positive and it has provided financial support to replicate CPR development in 76 villages spread over 2,520 hectares area in Rajasthan. Under the District Poverty Initiative Programme (DPIP) of the Government, work on 200 ha common land area has been completed in Jhalawar district. Furthermore, 320 ha of community land spread over 9 villages in Bhilwara district of Rajasthan are also under development along with Govardhanpura and Gokulpura villages in Hindoli block of Bundi district where common land activities are being promoted by the village panchayat through facilitation support by BAIF.

Taking inspiration from these experiences, the Panchayat of village Mediya that falls in the neighboring district of Bhilwara unanimously decided to develop over 37 ha out of 50 ha of common land for silvipasture development. However, it is important to recall that promoting CPR development requires an 'enabling' environment both at local and policy level. Such initiatives are usually iterative and require years of engagement with multiple stakeholders. Finally, issues of equity (such as equal access to small ruminant keepers) eventually creep up and access rights often need to be re-negotiated. This is more easily said than done, particularly in the case of CPRs where benefit sharing and usufruct rights often go undefined and common properties provide different products to multiple end-users. Government agencies and NGOs thus need to support CPR development efforts that will bring equity in benefit sharing and sustainability. This good practice showcases one such way.

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Glossary

Bhils	Tribal group widespread in south Rajasthan and adjacent areas
Bigha	Unit of land area measurement
Black gram	A legume grown as rain fed crop
Chloropyriphos	A chemical for termite control
Crore	Ten million
Dhaman	A Fodder crop
Euphorbia	A thorny shrub
Gayris	Caste specializing in sheep-rearing
Gradonies	Narrow terraces with bunds on the downstream side, built along contours in the upper reaches of catchments to collect runoff and to conserve moisture for trees
Gram Panchayat	Elected village council
Gram Sabha	Village assembly
Green gram	A legume grown as rain fed crop
Plant Litter	Plant litter is dead plant material, such as leaves, bark and twigs, that have fallen on the ground. As litter decomposes, nutrients are released to the environment.
Rainfed Agriculture	Agriculture, which is mainly dependent on the rainfall
Rebaris	Caste specializing in livestock-rearing
Rootstock	A rootstock is a plant or sometimes just a stump, which already has an established root system
Sarpanch	Elected leader of the Panchayat
Silvipasture	Area with grasses and trees
Stylo	A legume fodder
Taluka	Tehsil/block
Tehsildar	Head of the block
Usufruct	The right to use and enjoy the profits and advantages of something belonging to another as long as the property is not damaged or altered in anyway
Water Table	The natural level of standing water in a well; the level below, which the pore space in entirely filled by liquid water

Abbreviations

BAIF	BAIF Development Research Foundation
BPL	Below Poverty Line
BQ	Black Quarter
CBC	Cattle Breeding Centre
CBC	Cattle Breeding Centre
CPMC	Community Pasture Management Committee
CPR	Common Property Resources
DPIP	District Poverty Initiative Programme
DRDA	District Rural Development Authority
FMD	Foot & Mouth Disease
HS	Hoemovegic Septicaemia
IC	Intercooperation
NGO	Non-Governmental Organisation
OBC	Other Backward Class
PD	Programme Director
PO	Programme Officer
PPR	Peste des Pestis Ruminants
PRI	Panchayat Raj Institute
RRA	Rapid Rural Appraisal
RRIDMA	Rajasthan Rural Institute for Development Management
SC	Scheduled Caste
SDC	Swiss Agency for Development and Cooperation
ST	Scheduled Tribe
VLMC	Village Level Management Committee

The NDDB-FAO **South Asia Pro-Poor Livestock Policy Programme** (SA-PPLPP) SA PPLPP is a unique livestock development program that aims to 'to ensure that the interests of poor livestock keepers are reflected in national as well as international policies and programs affecting their livelihoods'. It endeavors to do so by: a) creating spaces for and facilitating dialogue among the actors playing a direct and indirect role in the livestock sector of South Asia, and b) drawing from and using lessons from field experiences to influence livestock-related policies, programmatic and institutional changes towards the benefit of poor female/male livestock keepers in the region.

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BAIF Development Research Foundation's mission is to create opportunities of gainful self-employment for rural families, especially disadvantaged sections, ensuring sustainable livelihood, enriched environment, improved quality of life and good human values. This is being achieved through development research, effective use of local resources, extension of appropriate technologies and upgradation of skills and capabilities with community participation. BAIF is a non-political, secular and professionally managed organisation. Various programmes are implemented by BAIF and its Associate Organisations in more than 47,000 villages in Maharashtra, Karnataka, Andhra Pradesh, Uttar Pradesh, Uttarakhand, Bihar, Gujarat, Rajasthan, Madhya Pradesh, West Bengal, Orissa and Jharkhand.

For more information on BAIF, kindly visit their website at <http://www.baif.org.in/>

Rajasthan Rural Institute of Development Management (RRIDMA) is an associate organisation of BAIF established in 1993 under the Societies Registration Act, 1950. The head office is located at Bhilwara. The divisional offices are located in Udaipur and Bundi.

RRIDMA is implementing the multidisciplinary programme covering Livestock Development, Community Pasture Development, Tribal Development, Water and Energy Conservation Project, Transfer of Technologies for Sustainable Development Project, and Women Health and Empowerment.

About this Good Practice

This good practice shows that community lead development of Common Property Resources through local ownership and institutional mechanisms greatly enhances livelihoods of livestock keepers especially the poor, landless and Below Poverty Line families. The practice helped improve the environment by reducing soil degradation and increasing soil moisture and vegetation.

In succession, this resulted in increased biomass in terms of quantity and quality and thus the overall year-round fodder situation improved. The improved fodder situation led to more output per animal and subsequently more animal products for home consumption and sales.

Overall, it also contributed to an improved nutritional status of village communities.

SOUTH ASIA Pro Poor Livestock Policy Programme

A joint initiative of NDDDB and FAO

Regional Office:

NDDDB House (6th Floor) PB 4906, Safdarjang Enclave
New Delhi - 110029, INDIA
Tel: +91 (0) 11 2619 7851 / 7649 • Fax: +91 (0) 11 2618 9122
E-mail: sapplpp@sapplpp.org
Website: www.sapplpp.org

Partnering Institutions

BRAC
BRAC Centre
75 Mohakhali, Dhaka 1212
BANGLADESH
Tel: +880 2 8824180-7 Extn: 2311
Fax: +880 2 8823542, 8826448
E-mail: saleque@sapplpp.org
saleque.ma@brac.net

Department of Livestock
Ministry of Agriculture
Thimpu
BHUTAN
Tel: +975 (0) 2 351102
Fax: +975 (0) 2 322094, 351222
E-mail: tshering@sapplpp.org
naip@druknet.bt

BAIF Development Research
Foundation
Dr. Manibhai Desai Nagar, NH 4
Warje, Pune 411058, INDIA
Tel: +91 (0) 20 25231661
Fax: +91 (0) 20 25231662
E-mail: sepawar@sapplpp.org
sepawar@baif.org.in

For copies of this publication, kindly contact the Regional Office or the Partnering Institutions