Exploring Goat-rearing as a Livelihood Activity in Abu Road

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Ensuring timely vaccinations for goats against deadly diseases and encouraging the use of better practices in rearing them has had a noticeable impact on the health and longevity of the animals thereby increasing the willingness of the villagers to consider goat-rearing as a viable, primary, income-generating activity

PRADAN started its operations in Abu Road in 2009. Abu Road lies in the foothills of Mt. Abu, the famous tourist destination in Rajasthan. Abu Road block in Sirohi district is situated at the southernmost tip of Rajasthan. It is surrounded by Gujarat in the south and west. To its east lies Udaipur. Abu Road is well connected to Udaipur and Palanpur through the national highway (NH 14) and is a major railway station on the Delhi-Ahmedabad route.

Abu Road is divided into two geographical regions–*bhakhar* (the hilly area) and *bitror* (the plains). Table 1 shows the distribution of the land, according to different categories. The demographic profile of the block shows that there is a huge concentration of below the poverty line (BPL) and schedule tribe (ST) families in the area. Table 2 shows the caste-wise and the poverty-line wise distribution of households in the 25 *gram panchayats* of Abu Road, according to the 2001 Census.

Table 1: Categorization of Land in Abu Road

Land Category	Area in Hectares
Cultivable land	19,713
Uncultivable land	6,573
Grazing land	1,523
Forest land	58,382
Hilly land	4,423
Total Land	**10,493**

Table 2: Demographic Profile of Households in Abu Road

Category	Number of Households
ST	16,858
SC	1,607
OBC	3,629
Others	2,644
BPL	9,152

In 2010, PRADAN conducted a study of Abu Road, to map the livelihood activities practised by the community in the area. The study was conducted with 500 families, as part of a baseline survey. Based on the study, the livelihood activities of the area were mapped under five criteria:

- Acceptance of the community
- Risk (how much and what type of risk is involved in that livelihood activity)
- Return on investment
- Local resource utilization
- Market scope

After mapping the potential livelihoods in Abu Road, and keeping in mind community suitability and market attractiveness, three sectoral livelihood activities emerged with an initial focus on goat-rearing.

1. Agriculture
   - Cash crop—irrigated
   - Food crop—irrigated and rain-fed
2. Livestock
   - Goat-rearing
3. Youth skill building

Table 3: Categorization of Families, Based on Land Holdings

	Landless	Small-holder	Medium-holder
Land Holding	0–1 *bigha*	1–3 *bigha*	> 3 *bigha*
% with irrigation	11%	18%	45%
% with livestock			
- Cows	15%	22%	41%
- Buffaloes	22%	50%	46%
- Goats	39%	59%	49%
- Average goats per family	2–3	3–4	4–5
Food security (own land)	4–5 months	6–8 months	12 months+
Income (Rs)	25,000	27,000	40,000

Source: Livelihood Study, PRADAN, Abu Road

The team conducted a focused, in-depth study next in each of these activities, to understand its scope, market availability and acceptability in the community, the availability of resources, the gaps in the activity and a suitable model for the area. The team interviewed various internal and external experts, research institutions, other agencies (such as the Goat Trust), the Animal Husbandry Department, the Forest Department, traders and rearers for the study. Also, extensive field visits were made to various agencies, communities, the goat *mandi*, commercial farms, etc. Goat-rearing emerged as an activity with high potential for the poor small-holders in the region.

SCOPE OF GOAT-REARING

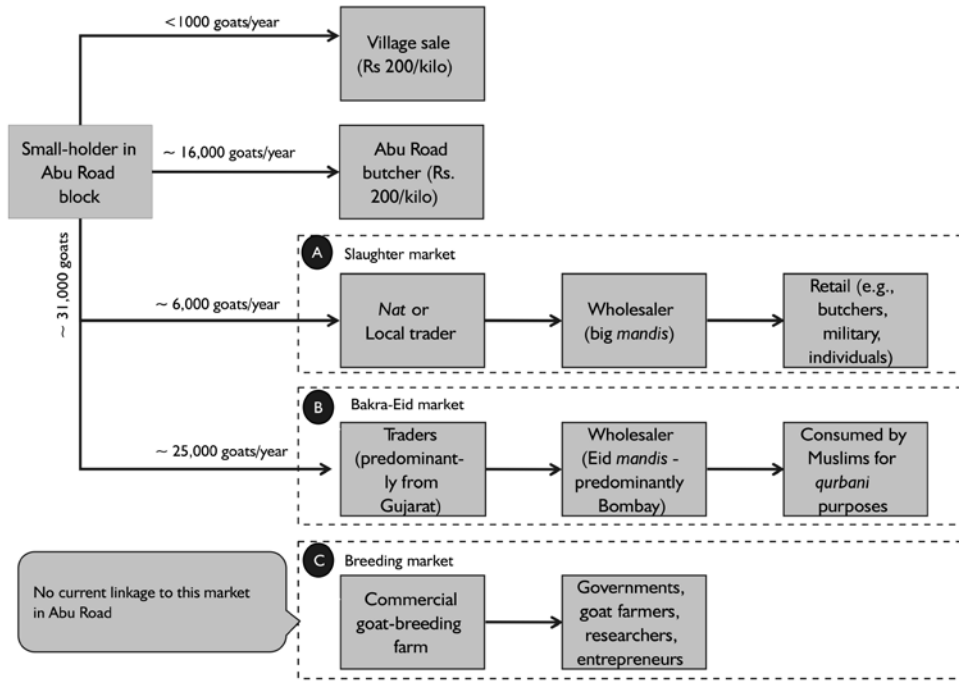
As per the International Food Policy and Research Institute (IFPRI) estimates, the calorie supply from animal products will increase by 89 per cent between 2000 and 2025. Currently, the goat represents 12 per cent of the livestock market in India and is expected to grow at five per cent per annum due to rising incomes, urbanization and population growth. Poultry, goats and sheep are likely to represent the majority of this growth, given the cultural and social restrictions on the consumption of cattle and pork. Globally, India is the second-largest producer of goat meat (5,44,000 tonnes), second only to China, but due to trade restrictions and a high local demand, 99 per cent of the produce is consumed internally. Although there is a huge demand for the goat, the production of goat has remained flat, increasing at the rate of only one per cent since 2002, as compared to China with a growth rate of four per cent. India has the lowest yield of 10 kg per animal in the world. The biggest reason for the production to remain flat is that the goats are reared mostly by small-holders, who lack not only knowledge about goat-rearing but also the capital to invest in the business. They are stuck in a cycle of low productivity and the inability to invest, preventing them from tapping the full potential of goat-rearing.

MARKET AVAILABILITY IN ABU ROAD

The distinct market for goat is for its meat. Goats are bought mainly by slaughterhouses and the highest demand is at the time of *Bakra-Eid* in national as well as global markets. Goat by-products such as goat milk and goat skin also have their own specific market. Abu Road has two local slaughter markets, which have external links to both *Bakra-Eid* and the regional slaughter markets, with a total demand for around 31,000 goats per year. Currently, there is not much demand from the Breeding Market, but it could be considered as a potential market because of the availability of the high-quality *Sirohi* breed.

The local market, however, is small with less that 0.1 per cent share of the domestic slaughter market. The demand for goats in the local market is usually catered to by nearby villages and there is almost 50 per cent more supply than demand in the market. Although the local market is constrained, Abu Road has access to major *mandis* such as Ajmer, Ahmedabad, Surat, Delhi and Mumbai. The community prefers not to sell their goats to the butchers because he exploits them, especially during a cash crunch.

Figure 1: Supply of Goats from Small-Holders to Local Slaughterhouses and Major Goat *Mandis*



Source: Livelihood Study, PRADAN, Abu Road

RESOURCE AVAILABILITY

In Abu Road, goat-rearing is a major livelihood activity, after agriculture and labour. As more than 80 per cent of the families are either landless or small-holder farmers, goat-rearing is seen as the major activity for these families. Abu Road is home to the popular *Sirohi* breed of Rajasthan. (*Sirohi* goats are medium-sized, and are reared for both milk and meat. *Sirohi* is popular for weight it gains and better lactation, even under poor quality rearing conditions. *Sirohi* is also resistant to major diseases and is easily adaptable to different climatic conditions.)

To encourage goat-rearing as a significant livelihood activity, the resources of the area and the target population were mapped—based on the current availability of water, land, grazing-land, the existing human capital, the willingness of the community to opt for goat-rearing as a livelihood activity, the aspirations of the community and whether there is enough capital available to invest in and initiate the activity.

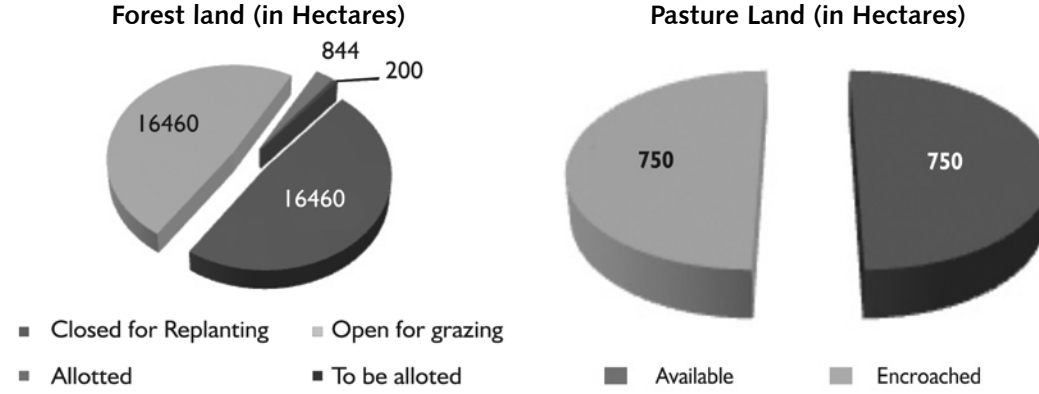
Table 4: Factors for Goat-Rearing as a Livelihood Activity

	Key Elements	Minimum Need
Natural Resources	1. Land a. Grazing b. Forest land c. Farmers' personal land 2. Water	- 0.2 bigha, or 0.05 ha, of medium quality grazing or forest land per goat - 4–5 litres per goat per day
Human Resources	1. Labour 2. Profit expectation a. Major income source b. Supplemental income source 3. Excitement about goat-rearing 4. Knowledge	- 25–100% of one adult's time - Rs > 50,000 (100% of HH income) - Rs 15–20,000 (30–40% of HH income) - High - Awareness about best practices
Capital	1. Fixed capital 2. Working capital	- > Rs 20,000 (depending on breed and herd size) - > Rs 5,000 (depending on feed and herd size)

Source: Livelihood Study, PRADAN, Abu Road

Abu Road has a huge forest area available, as seen in Figure 2. Of the total land available in Abu Road, more than 50 per cent is either un-allotted or free for grazing. The forest department allows grazing on land that has not been allotted. Some area of the forest is reserved for regeneration and some area of the allotted land is also available for grazing. Grazing on the other 50 per cent of the allotted land will also be permitted by the Forest Department because goat excreta provides manure for the forest.

Figure 2: Forest Land and Pasture Land in Abu Road (in Hectares)



Source: Livelihood Study, PRADAN, Abu Road

Abu Road also has around 1.500 ha of pasture land, of which half is available for grazing whereas the rest is encroached upon by big farmers. Other than this, 80 per cent of the families have less than three *bighas* of land, which is mostly used for agriculture purposes (primarily to provide food security). So only a limited number of goats, five or ten, can be supported by agriculture waste.

Although there is huge scope for goat-rearing in Abu Road, the activity, per se, is seen only as a buffer that can be used in emergencies rather than as a viable livelihood activity in itself

Assuming that the grazing land required per goat is around 0.05 ha, the available land (forest and pasture land) in Abu Road can support an additional three lakh goats (current goat population in Abu Road is 32,000). This means that 6,000 families can pursue goat-rearing activity as a livelihood, presuming that the each family has a herd size of 50 goats.

The survey revealed that around 55 per cent of the income of the families comes from wage labour, mostly unskilled labour, regardless of the primary occupation of the community, and around 22 per cent comes from agriculture. Although a large number of families rear goats, only two per cent of the families consider livestock or goat-rearing as the primary source of income, mainly because of the lack of capital to invest in goat-rearing as well as the fear of the high mortality rate of goats. Usually, the goats are taken for grazing, either by the children (mostly girls) and old men or women because goat-rearing is seen as a secondary activity.

Discussions with the community indicated that goat-rearing could become an activity of focus if it were to fetch a competitive return of more than Rs 20,000 per year and the un-skilled labour can eventually look at goat-rearing as a replacement activity.

Challenges in Goat-Rearing in Abu Road

Although there is a huge scope for goat-rearing in Abu Road, the activity, per se, is seen only as a buffer that can be used in emergencies rather than as a viable livelihood activity in itself. Goats are highly susceptible to diseases and have a high mortality rate. Goat-kid mortality is as high as 50 per cent whereas the mortality for the adult is 30 per cent; moreover, there are almost no veterinary services in the area. There are only nine veterinary sub-centres for 87 villages; these are inaccessible to farmers because of these are so far away.

If a goat falls ill, it is treated locally. The villagers were not aware of vaccinations and de-worming for goats. They had no idea how or why goats fell ill, and largely believed that if a goat becomes sick, it is difficult to save it. They cited examples when the entire herd of a family was wiped put because of disease. As per the data available from the Animal Husbandry Department (AHD), the seasonal mortality of goats is 25–30 per cent mainly from PPR (*Peste Des Petits* Ruminants) also known as goat plague , FMD (Foot and Mouth Disease), diarrheoa, etc. People do not invest more than Rs 100–200 on goats; whereas they do understand that it is a big liquid asset for them, they find rearing goats to be very risky.

The community also does not have any separate enclosures to keep goats, mainly because it consider goats to be a liquid cash asset; so the villagers share the same room with the goats. However, some of the bigger farmers have now begun to construct a *bada* (local, compact, open fencing) for sheltering goats but these are prone to thefts and also attacks by wild animals.

Table 5: Challenges in Goat-Rearing

Challenges	Drivers	Impact
Low body weight and milk yield/ Malnutrition	- Use of low productivity/non-descript breeds - Limited capital to buy nutrient-rich fodder and supplements - Mindset of treating goats as a sustenance animal, thereby driving the lack of investment in key productivity (for example, fodder) and health (for example, de-worming) drivers	- 60–100% less meat/goat - Up to 100% less goat productivity, and slower herd size expansion
High mortality rate	- Limited access to, or willingness to invest in veterinary services - Lack of awareness about goat diseases and preventive measures	- Mortality rate is up to 25%
Inefficient and socially harmful grazing habits	- Labour-constrained families send children to take goats out to graze. They are not able to properly tend to the goats	- In-breeding - Negative impact on children's education
Goats stolen/ eaten by animals	- Lack of secure sheds to ensure physical safety of animals	- Loss of 5–10% goats
Exploitation by butcher	- Excess supply in the Abu Road local slaughter market - Lack of awareness of prices and true goat weight - Distance of more than 100 km to major *mandis*, and the lack of labour and capital challenge individual small-holders' access to markets	- Goat price is 20–30% less than potential

Source: Livelihood Study, PRADAN, Abu Road

As many as 95 per cent of the families that rear goats, practise full grazing—deploying mostly young girls or old women for the job. Goats travel almost 12–15 km per day, hampering weight gain and productivity, and also allowing in-breeding. Although the *Sirohi* is a sturdy breed, many farmers have non-descript breeds that do not gain weight and are more susceptible to disease. And because the demand in the local *mandi* is met by the nearby villages, traders usually exploit farmers and negotiate the rate to their own advantage. Because of all these challenges, families get less than 10 per cent of the potential income from goat-rearing and, hence, they practise it as a subsistence livelihood or a secondary livelihood.

PILOTING THE ACTIVITY

After the livelihood analysis, the team, at end of 2012, thought of piloting the best practice model with 50 families, which would be a demonstration for the other farmers. These families were selected from four villages on the basis that they already practise goat-rearing,

are landless or small marginal farmers and are members of an SHG. The demonstration was conducted with support from Centre for Micro-finance (CMF), Jaipur, for infrastructure and MPOWER for capacity-building of the para-vet.

The main objectives of the pilot were to:

- Bring change in the feeding practices (from full-grazing to semi-stall feeding).
- Ensure para-vet services to each family.
- Demonstrate the impact of constructing sheds on goat health.
- Control cross-breeding (castrate all non-descript bucks and introduce improved breeds of bucks).

INTRODUCTION OF FEED AND FODDER

Feeding habits that would ensure proper growth of goat-kids and reduce mortality were introduced, which would take care of the goats during pregnancy and of the kids after birth. Instead of only open grazing, all farmers were educated to add locally available materials such as maize *daliya* (ground), *jeerala* (feed concentrate) and *chana daliya* to the diet of the goats and the kids. This brought a major change in the health of the animals in terms of meat production and also in family awareness levels. Now, at least 50 per cent of the families have adopted this practice whereas the rest are slowly accepting this. We have started fodder plantation (*Ber* and *Dhencha*) with some families, to improve fodder availability during stress periods.

SHED CONSTRUCTION

The construction of goat sheds is a critical intervention in promoting goat-based livelihoods. The design was verified by experts. Inputs from farmers, based on local resource availability and their preferences, led to changes being made to the design. The material for the shed construction for all the families was centrally purchased and the farmers took responsibility for constructing their own sheds under the supervision of a para-vet and other professionals. It was a time-consuming activity; by the end of June 2013, however, all the sheds were completed.

DEVELOPING PARA-VETS AND THE HEALTH SYSTEM

SHG members select a para-vet from the community. The selected para-vets then undergo residential training programmes. They visit farmers regularly and provide veterinary services. A monthly central meeting of all para-vets is held at the Abu Road office, with an objective to track the progress, cross-learning and organizing support plans from professionals.

All para-vets attend SHG meetings fortnightly and interact with women goat farmers regarding the issues and required services. They also maintain a record of the services provided, which is again shared at the Cluster level for service appraisal. Every month, they present a progress report of each farmer at the Cluster level as well as the SHG level, discuss issues and prepare the next action plan in the meeting.

Para-vets had been initially provided with medical kits; but now they maintain their own. All vaccines and medicines are purchased centrally from the Abu Road local market and from nearby areas with an indent generated by the para-vet from their Clusters. Para-vets also collect an advance amount from the community towards the purchase of vaccines and medicines. All vaccines are maintained in the freezer installed at the PRADAN office, Abu Road. To maintain the cold chains, para-vets are provided with ice boxes to carry the

vaccines in the field. All the farmers pay for the cost of services provided by the para-vets as per the rates defined at the Cluster level by SHGs.

Para-vets are also well linked to the nearby veterinary hospitals and, in case of any complication, they immediately refer the case to the veterinary doctors. Besides vaccination, para-vets also provide castration services for male goat kids. Castration stops in-breeding and helps in rapid weight gain, leading to a high yield. Till date, para-vets have attended to 500 such cases with a payment (Rs 50/ per case) from the community.

A Goat-rearing Group (GRG) has been formed, in which only goat-rearing families meet periodically to discuss their business. One member is selected as a pashu sakhi *from the GRG, and PRADAN facilitates her/his skill enhancement so that the* pashu sakhi *is able to provide regular education and some basic services to goat-rearers*

COMMUNITY TAKING CHARGE

Recently the community expressed the need for a separate space for discussing this activity—a place beyond the SHG forum. So a Goat-rearing Group (GRG) has been formed, in which only goat-rearing families meet periodically to discuss their business. One member is selected as a *pashu sakhi* from the GRG, and PRADAN facilitates her/his skill enhancement so that the *pashu sakhi* is able to provide regular education and some basic services to goat-rearers.

GRGs have a Goat-rearing Development Committee (GRDC), which meets once a month at the central office. The main function of the GRDC is to prepare an action plan, review with the Cluster representatives, follow up with *pashu sakhis* and para-vets, and discuss input services (de-worming, vaccination, medicine, equipment, new induction, training and exposure of farmers, para-vets and *pashu sakhis*) and also monitor the output (mortality rate, meat production, market linkages, etc.).

ISSUES FACED DURING IMPLEMENTATION

First-hand experience in goat-rearing threw up several issues and challenges. These were:

- To maintain a cold chain for the vaccines from the government department.
- To ensure that every family provides proper nutrients to the goat and the buck.
- To build the skill level of para-vets, and upgrade their skills and knowledge through the second phase of training. But in MPOWER there is no scope for a second-phase training budget.
- The delay in shed construction resulted in the buck not being introduced as per design.

IMPACT

- There is a change in growth parameters for both adult goats and kids. (A six-month-old buck weighs 6–10 kg.)
- There is a significant change in goat health and the mortality rate in specific clusters. (Reduced from 25–30 per cent mortality to 5–7 per cent)
- There is excitement around goat-based livelihoods. All goat-rearers belonging to a hamlet have formed an activity group (GRG) that meets twice a month.
- Locally established veterinary services have made the process easy and reduced the drudgery for a goat-rearer. Currently, 10 para-vets are actively providing services in 12 villages. There is a well- established linkage with the veterinary hospital and the GRG through para-vets.

- Farmers see the potential in the goat-rearing activity and meet twice a month to share their experiences and also to monitor the activity regularly.
- Preventive services are standardized at the Cluster level, wherein the para-vet is treated like an entrepreneur. Routine preventive services such as vaccination, de-worming and castration have been stabilized at the community level.
- Women entrepreneurs from SHGs have been trained as *pashu sakhis*. They visited ACF (Ambuja Cement Foundation) an NGO in Pali district near Sirohi, where the system is functioning well. Following the exposure visits, four *pashu sakhis*, who are currently functioning in their goat Clusters. More *pashu sakhis* are being selected, to be trained for supporting the service system.
- In January 2014, MPOWER sanctioned a project supporting a total of 1,303 families (including the earlier 50 families). The project included the capacity-building cost as well as part of the infrastructure development cost.