Ram Lamb Rearing
A Potential Enterprise in Promoting Local Breed

Process Experience of
Andhra Pradesh Drought Adaptation Initiative (APDAI)

THE WORLD BANK

Commissioner, Rural Development
Government of Andhra Pradesh
Sheep rearing, integrated into natural resources is an essential complement of diversification of livelihoods. Sheep converts naturally available grasses and agriculture residues into meat, manure and wool. Though Climate Changes adversely affects other production systems, it might be beneficial to sheep rearing. Off-season rains, if any, in March-May would help in regenerating grasses and scrub biomass in the summer, which is the most fodder scarce season. This would ease the fodder scarcity. Filling up of water bodies due to high intensity rains would result in moisture spread and availability of drinking water. The changes in the rainfall distribution may bring in an element of unpredictability of diseases incidence. This type of climate change variations potentially helps the small ruminant based production systems. But the increase in temperature and higher diurnal variation necessitates a more resilient breed that can sustain such extremities. The local and time-tested Deccani breed of sheep has better resilience in these aspects and is recognized to be the most appropriate breed for the area (see Box 1). In this context, strengthening of sheep production systems and enhancing concerned livelihoods gained importance in AP Drought Adaptation Initiative (APDAI)\(^1\)

**Box 1: The issue of ‘Breed’**

The Deccan Plateau traditionally had Deccani breed of sheep. These are black in colour and have relatively low body weight. They produce course wool and are adapted to the local climate and fodder availability. They are also disease resistant. With the objective of improving the ‘productivity’ the Government introduced the Nellore breed of sheep, which is brown colour. These have higher body weights when compared to the local Deccani breed. The Nellore breeding rams were provided on subsidy to the sheep rearers and co-operatives. Though there were advantages in the beginning, after 2 to 3 generations of hybridization, problems cropped up. The body weight gain was not up to the expectations and these animals have become highly susceptible to diseases. Now the situation is such that the sheep rearers neither have the advantage of resilient local breed, nor the highly productive ‘better’ breed. It is also not an exaggeration to state that it is difficult to find the ‘pure’ species of local Deccani breed.

**An Opportunity in Adversity**

The initial situation analysis with the farmers in APDAI program villages revealed the problems of breed, access to health care services and selling of ram-lambs at very young age. The traditional rearers sell away the ram-lambs at around 4 months. By this time they would weight about 10 kgs. The following were the reasons listed by the rearers for this practice:

- Unmanageability of the flock size, with the retention of ram-lambs
- Increased risks of disease and mortality
- Chance of decrease in conceiving rates if milking is prolonged and/ or if the lambs are with the mother
- Difficulty in managing large number of ram-lambs (in a large flock)
- Cash-needs of the farmers (‘ram-lambs’ are the crop)

The growth rates/ conversion efficiency is very high in ram-lambs during post-weaning period. It is beneficial to rear the ram-lambs until they reach weights of 20-25 kg.

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\(^1\) AP DAI is a pilot program to evolve various drought adaptation measures. It was supported by the World Bank and anchored by the Rural Development Department of the Government of Andhra Pradesh. The pilot was implemented in Mahabubnagar and Anantapur districts of Andhra Pradesh. It was founded on the platforms of Mandal and Village level Women Federations (MMFIs), facilitated by Society of Elimination of Rural Poverty (SERP). WASSAN extended technical and process facilitation support to the initiative. For more details, visit [www.wassan.org/apdal](http://www.wassan.org/apdal)
When ram-lambs are sold off at an early age it results in loss of opportunity. Though it is loss for the sheep rearers (who have flocks), this practice of early selling provides an opportunity for ram-lamb rearing enterprise by a different section of the village community. Shorter rearing period (4 months), dependence on commons and fallow lands, and low skill requirement makes it an ideal supplementary income generating activity for the poor. It is also a traditional income supplementation activity for wage earners and small farmers. The assured and growing markets, liquid nature of the assets and the capacity to cope with drought have added advantages for taking up this enterprise.

Tapping the Potential

In AP DAI, ram-lamb rearing was integrated into the deccani breed conservation and promotion initiative. It was implemented by the federations of SHGs at Mandal (Mandal Mahila Samakhya) and Village levels (Village Organisation). A special insurance product was developed along with United India Insurance Ltd, to address the risks. As part of the initiative, quality deccani ram-lambs were purchased from the uncontaminated Maharashtra tracts, Karimnagar, Warangal, Mahabubnagar districts. They were reared for about 8 months and rams for breeding purpose were selected from them. The culled ones in this process were sold into the meat markets. This proved to be a practical strategy and the production of ‘breeding rams’ in this process emerged as a potential enterprise option. Systems were established in AP DAI for selection of these ‘breeding rams’ by the traditional rearers, procurement from the ram-lamb rearers and placing them into the larger flocks. This has been integrated into the program called ‘Jeeva Kranti’ implemented by the Animal Husbandry department.

A total of two cycles were completed during the program. In the first cycle 586 deccani ram lambs were procured for three Mandals of Mahabubnagar district. This had an investment of Rs.8.65 lakhs of which a part of was member contribution and remaining was met through project revolving fund (see table 1). In the second cycle, a total of 900 ram lambs were purchased in the last quarter of 2009.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Mandal</th>
<th>Total ram lambs purchased</th>
<th>Members contribution (Rs.)</th>
<th>Project revolving fund (Rs.)</th>
<th>Transport, exposure visit and other expenses</th>
<th>Total amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dowlatbad</td>
<td>155</td>
<td>96,875</td>
<td>103,075</td>
<td>31,000</td>
<td>230,950</td>
</tr>
<tr>
<td>2</td>
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<td>260</td>
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<td>172,900</td>
<td>46,800</td>
<td>382,200</td>
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<td>3</td>
<td>Bomraspet</td>
<td>171</td>
<td>106,875</td>
<td>113,715</td>
<td>31,635</td>
<td>252,225</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>586</td>
<td>366,250</td>
<td>389,690</td>
<td>109,435</td>
<td>865,375</td>
</tr>
</tbody>
</table>


1. **Selection of villages and members**

Villages with functional SHGs and Village Organisations were selected. Access to fodder (fallow/common lands) and water was also considered. Three categories of SHG members were given priority:

- Wage labour - EGS card holders having worked at least for 50 days as wage labour in the last year
- Single women/ women headed house holds
- Women with experience in sheep rearing
- Having access to and experience of grazing sheep in orchards

In this process, 221 reasers were identified in the first cycle in 9 villages. These selected reasers were organized into Common Interest Groups (CIGs) and they purchased 586 ram-lambs.

2. **Funding modalities**

Of the total cost of the ram-lamb, 50% was directly contributed by the members in cash and the rest of the 50% (with a ceiling of Rs.700 per animal) was given as loan to the member from the SHG. The cost of visiting distant markets for selection of deccani ram-lambs and transportation was borne by the project. The member entered into an agreement with VO on the terms given below.

- **Related to rams**
  - The ram lambs are to be reared up to nine months to one year of age when they can be selected for breeding purpose/ culled for slaughtering.
  - The animals chosen for breeding must be maintained and sold only for breeding purpose.
  - The reaser should not sell the animal without the notice of VO.

- **Related to Insurance**
  - Rearer has to inform the insurance cell (through the VO) immediately after the death of animal.
  - No insurance is paid for animal that die within 15 days of payment of the premium.
  - Insurance will not be accepted for animals without vaccination.
  - The dead body of the animal with the insurance tag intact should be shown to the claim assessment sub-committee.
  - The payouts will be used for replacement of the animal.

- **Related to Repayment**
  - Repayment with 3% annual interest rate
  - Total amount would be repaid immediately after the sale of animal.

- **Others**
  - The reaser will follow regular vaccination as per schedule
  - The reaser will attend all the training programs

The farmer’s contributions were deposited in the Village Organization. Based on the amounts deposited, the MMS released the project share to the VO as an interest free loan. The reaser also pays 50% of the insurance premium.
3. Members’ orientation
Members were formed into a common interest group (CIG) at the VO level. An orientation program was organized for them on technical aspects of ram-lamb rearing covering program modalities, basic management, disease identification and vaccination schedules.

4. Purchasing Committee
A purchasing committee was formed with two VO office bearers, 2-3 CIG representatives, one or two experienced shepherds in the village and one MMS Executive Committee member. With help from WASSAN, the purchasing committee identified places from where they can procure deccani ram-lambs. Thus, ram lambs were purchased from Mahabubnagar, Karimnagar, Warangal and Medak districts apart from neighbouring Karnataka and Maharashtra tracts.

5. Purchasing Ram-lambs
The Purchasing Committee visited the markets and purchased ram-lambs. The travel and transportation costs were borne by the project. The traditional rearer plays a key role in identifying the quality ram-lambs in the market. The representative of the VO paid the amount. Ram-lambs were brought to the village and distributed among the households according to their indents. Vaccination and de-worming was taken up the next day.

6. Typologies of individual ram-lamb units
Two rearing typologies emerged viz.,
- Households rearing about two ram-lambs: They take them along with them for work. There are 155 households in the category.
- Households taking up about five ram-lambs. This is predominant where the rearers have access to good grazing lands like horticulture plantations. Some of the households pooled their ram-lambs and hired a person to graze the animals. There are 66 households that have taken 3 to 5 animals.

7. Insurance
The animals are tagged after vaccination by the health worker. The Bhima Kendram at the Mandal level prepares the insurance policies and pays the premium (50% by the rearer and 50% from the project) to the insurance company. The village level worker weights the ram-lambs and records the data of each animal.
8. Trainings

Training on management and supplementary feeding of ram-lambs was taken up subsequently.

Box 4: Insuring Ram-Lambs with ‘Community Based Livestock Insurance’

The insurance product of United India Insurance Company Ltd was specially designed for the ram-lamb rearing activity. The product was entirely managed by the MMS. The mandatory requirement of inspection and certification of the veterinarian has been waived in this product. Claims will be settled on the basis of assessment reports by a trained team of women from the insurance cell at the MMS level. The premium is Rs.90 per year inclusive of service charges; the project shared half the cost. Payouts are in two slabs viz., Rs.1700 (if sheep dies below 7 months age) and Rs.2000 (above 7 months) per animal.

Of the 586 ram lambs purchased in the first cycle 497 were insured under UIIC product. 61 animals were insured under the regular government program and the remaining 28 died/consumed before the UIIC product could be obtained.

Out of the total 586 ram lambs a mortality of 111 sheep was reported (about 19%). However, the mortality in rams under UIIC product (68 out of 497) was lower than that (14%). Of these 68 deaths, the MMS insurance cell did not receive calls in 5 cases and another 6 assessments were rejected by the MMS insurance cell itself. This was either due to not showing the dead body or not following the procedure. Of the 57 insurance claims forwarded by the insurance cell at MMS, 40 were cleared by the company and 17 are in process.

The payouts are received by the MMS and are used to replace the asset i.e. buying a new ram-lamb. This is to prevent the member from becoming indebted with the death of the animal. The community managed insurance product is a key aspect of the program that takes care of the major risk to members. For details refer ‘Process Manual on Community Managed Livestock Insurance’ published separately as part of APDAI initiative.

9. Monitoring

One trained animal health worker visits the village every month. During the visits s/he records and monitors the body weight gains, identifies any ailments and prepares a consolidated monitoring report.

10. Grazing and supplementary feeding

Though initially envisaged, no supplementary feeding was practiced by the rearers, except in Neetur village. The village has poor fodder base – the sheep mostly graze on paddy fallows. But the rearers have collected Acacia nilotica (Tumma/Babul) fruits during the season and fed them to the animals. This resulted in good gain of body weights. The weight gains are generally poor in paddy fallows compared to groundnut fields. Better results were seen in some cases like where the labour working in large horticulture plots purchased 5 ram-lambs and grazed them within the horticulture plots. Bijjaram and Chennaram villages have such successful case studies in this area.

11. Selection for Breeding Rams

Rams in Neetur, Chennaram, Bijjaram gained good body weights. Traditional rearers from within and outside the village selected rams suitable for breeding. 45 rams were selected for breeding. Of these 11 were purchased by accessing 50 per cent subsidy from the Animal Husbandry department and 22 rams from APDAI program.

12. Sale and loan recovery

The rams are sold in different ways viz., a) direct sales for meat locally b) sales in local markets, c) sales to traders, d) sales in Hyderabad market and e) supply to retail chains. The last two are small experiments. Of these, sales to traders has given better price realization.

The loan amounts returned by the rearers are pooled at the MMS level and are used for continuing the activity.
Critical Elements in the Enterprise

Need to Balance Fodder Availability

Figure 1

Figure 1 presents average monthly body weight gains for three different fodder situations in the villages. These are relative to the three situations. The highest monthly body weight gain is 2.44 kg. In spite of discussions, there is little supplementation of feed practiced by the rearers. Lodhipur experience also clearly brings out the need to restrict the stocking to the limits of fodder availability. It also brings out the need to use a strong proxy indicator to restrict the total number of sheep to balance fodder availability.

Appropriate Rearing Period

Timeliness is an important factor in ram-lamb rearing. Many of the ram-lambs are purchased in the months from January to March. The ram-lambs purchased in December fared much better. They are usually sold off just before the onset of monsoons for fear of diseases/mortality during that period. It is also felt that starting early and selling off-rams by April might be better as it can avoid the summer fodder scarcity. This must be synchronized with the breeding season.

The average age at sale is 8 months and the average body weight at the time of sale is 21 kg; 25 kg is however the ideal. Further field level analysis is required to arrive at appropriate mechanisms of low-cost feed/ fodder supplementation.

Linking to Organized Meat Market

An attempt at linking to one of the organized meat retail chain resulted in no additional benefits. About 20 kg carcass was processed in the Mandal and transported to the retail chain’s collection centre. The costs of transport, ice, wages etc, proved to be uneconomical. The price difference between the Mandal and Hyderabad city is also not very substantial. The scope for establishing a rural abattoir as a collaborative venture between the butchers (also traders) needs to be explored.

Economics of Ram-lamb rearing

Table 2 presents the data on costs and returns. The sale price per animal varied between Rs.1400 (failed case) to Rs. 2800. The gross return per animal varied from Rs.120 to 1650. If the failed cases are excluded, the gross returns ranged from Rs.1200 to 1600 per animal. The case of Lakshmi in Bijjaram village illustrates the economics (see Box 5).

The paid out costs involved are – purchase cost, insurance premium, interest on loan (3% rate of annual interest), vaccinator’s charges at Rs.1 per sheep and feed supplementation, if any. Vaccines were sourced from the Animal Husbandry Department. In most of the cases there was no dedicated labor for ram-lamb rearing. Community managed insurance covered the risk of mortality.

Increasing natural resources productivity and meat production

Ram lamb rearing increases the rearing-time from 4 months to 10 to 12 months. This also increases the production (live weight basis) from about 10 to 12 kg to 20 to 25 kg per animal. In this experience, the 475 animals that survived gained an average body weight of 9.44 kg per animal; increasing the total meat production to 4,484 kg in just about 6 months time. This does not require any dedicated land resources and made the best use of crop-fallows and common lands.
Box 5: Income Diversification – A case of Devarai Lakshmi

Devarai Lakshmi is an young women of 28 years age in Bijaram village of Kosgi Mandal. The village is 6 km away from the Mandal headquarters. The family has 3.5 acres of owned land including 1.5 acres under bore well irrigation. The bore well is dependable and crops often dry up. They cultivate pigeon pea, sorghum and other crops in the rained land. Income from agriculture is very unreliable, especially in the drought years. They have fodder availability in their field.

Lakshmi purchased 5 ram-lambs (about 4 to 5 months age) by investing Rs.3125, while the Village Organization invested an equal amount from AP DAI program. The animals were purchased from Pebbair shandy within the district. She paid Rs.225 as her share of the insurance premium and the rest was met by the project. She got her animals vaccinated as part of the community based vaccination program. The total expenditure including the project investments amounted to Rs.6795.

She reared the animals for 5 months taking them along with her on wage work. One ram-lamb died after one month and the family got the asset replacement through MMS. She reared the remaining animals for four months and sold at Rs.2750 each to rearkers in the same village for breeding purpose. The family realized a gross return of Rs.11000 from this sale. The net profit realized is Rs.6,205 (Rs.13000-6795). This income added an assured livelihood portfolio to further diversify the family income presently dependent on agriculture and labour wages. They repaid the loan to the Village Organisation and requested for increasing the next loan to purchase 10 ram lambs.

Table 2: Growth and Financial parameters in Ram-lamb rearing in APDAI program villages

<table>
<thead>
<tr>
<th>Total rams purchased</th>
<th>Average body weights at the time of purchase (Kg)</th>
<th>Average price at the purchase (Rs)</th>
<th>No. of days reared (Average)</th>
<th>Average body weight at the time of sale (Kg)</th>
<th>Incremental body weight gain (Kg)</th>
<th>Body weight gain per (Kg)</th>
<th>Average sale price (final stage) (Rs)</th>
<th>Gross returns per animal (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antaram</td>
<td>45</td>
<td>11</td>
<td>1225</td>
<td>110</td>
<td>18</td>
<td>7</td>
<td>1.91</td>
<td>2650</td>
</tr>
<tr>
<td>Gokaphasalvod</td>
<td>50</td>
<td>12.5</td>
<td>1250</td>
<td>125</td>
<td>17</td>
<td>4.5</td>
<td>1.08</td>
<td>2000</td>
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<tr>
<td>Neatir</td>
<td>60</td>
<td>11</td>
<td>1300</td>
<td>185</td>
<td>22</td>
<td>11</td>
<td>1.78</td>
<td>2800</td>
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<tr>
<td>Lodhipur</td>
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<td>140</td>
<td>15</td>
<td>3.5</td>
<td>0.75</td>
<td>1400</td>
</tr>
<tr>
<td>Chennaram</td>
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<td>12</td>
<td>1240</td>
<td>135</td>
<td>23</td>
<td>11</td>
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<tr>
<td>Bijaram</td>
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<td>195</td>
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<td>Nagireddypalli</td>
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<td>1.78</td>
<td>2100</td>
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<tr>
<td>Chowdarappalli</td>
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<td>1000</td>
<td>190</td>
<td>25</td>
<td>14.5</td>
<td>2.29</td>
<td>2650</td>
</tr>
<tr>
<td>Bomaraspet</td>
<td>45</td>
<td>12</td>
<td>1250</td>
<td>140</td>
<td>21</td>
<td>9</td>
<td>1.93</td>
<td>1850</td>
</tr>
<tr>
<td>Total/ Average</td>
<td>586</td>
<td>11.39</td>
<td>1231</td>
<td>156</td>
<td>21</td>
<td>9.44</td>
<td>2.28</td>
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</table>

The experience provided basic proof-of-concept (and quantitative evidence) that ram-lamb rearing can become a critical process in the overall sheep production systems and related livelihoods:

- It provides supplementary incomes to the poor and non-professional rearers by converting crop-fallows and grasses into incomes and manure.
- It can become a source of providing quality rams for improving the breed, in the present case deccani sheep
- Through increasing efficiency of natural resource use and the conversion rate, meat production can be substantially increased.

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