

**Sustainable Livelihood
Through Small Ruminant Production**

Critical Issues and
Approaches

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Preface

Small ruminants are associated with the rural poor. They play a big role in supporting the livelihood system of the poorest men and women livestock keepers, especially in the marginalised areas. In spite of its livelihood contribution and contribution to the livestock economy, this sub-sector received only diminutive attention in the country.

This approach paper was evolved using the inputs received from a series of consultations and a multi-stakeholder workshop participated by representatives from the Department of AH & D (Ministry of Agriculture, Government of India), the Central Institute for Research on Goats, National Bank for Agriculture and Rural Development (NABARD), National Centre for Agricultural Economics and Policy Research, Indian Institute of Management, NGOs, technical experts and representatives from SDC, IC and its Projects in Orissa, Andhra Pradesh and Kerala.

The material provided here does not cover all issues in small ruminant development. It introduces the readers only to the most critical issues involved in small ruminant production and suggests suitable approaches and strategies to improve the livelihood of small ruminant rearers through a sustainable framework.

This approach paper is addressed to policy makers, policy implementers, programme officers, farm managers and other individuals and organizations in the government and non-government sectors concerned with small ruminant rearers. The audience also includes officials in the ministries and departments as well as representatives of Panchayats and civil society groups.

We hope that this approach paper would be found useful by the intended audience, especially the policy makers, planners and implementers in translating the approaches into programmes and activities for the socio-economic upliftment of the small ruminant rearers on a sustainable basis.

While inviting your feedback and suggestions on the approaches suggested, we request you to kindly use this material in all possible ways to promote discussions in different platforms in your circle so as to integrate the livestock of the poorest in the development programmes in line with the approaches suggested.

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1. Overview

In India, there are about 120 million goats and 62 million sheep¹. In spite of heavy slaughter rate (27%) and inbuilt prejudice and biases, both goat and sheep populations in the country have been growing for the past few decades.

Goats are widely distributed across all agro-climatic regions of the country. Their density is the highest in the irrigated ecosystem followed by hill and mountain ecosystem. Concentration of goats is mainly in the states of West Bengal, Rajasthan, UP, Maharashtra Bihar and Madhya Pradesh.

Sheep population is generally found in the arid and semi-arid areas of Western India, Deccan Plateau and Western Himalayas. About 60% of sheep in the country are concentrated in five states, namely Andhra Pradesh, Rajasthan, Karnataka, Tamil Nadu, Jammu & Kashmir and Maharashtra. Sheep density is the highest in the arid ecosystem and least in the irrigated system.

The small ruminants, particularly sheep are found associated mainly with pastoralists. Decreasing grazing areas in the migratory route, lack of veterinary health services, conflicts with the agriculturalists, lack of education etc. are the main problems faced by the pastoral communities.

Small ruminants make an important contribution to the sustenance of small and marginal landholders and landless rural people in India. They also make a substantial contribution (Rs 24,000 million per annum) to the rural economy². The contribution of agriculture sector to national GDP is 25% (during 1990s) and the share of livestock in agricultural GDP is 23%, of which small ruminants contribute about 10% to the total value of livestock sector. At the national level, small ruminants account for 14% of the meat output, 4% of the milk output and 15% of hides and skin production in the country. But it receives only about 2.5% of the public spending on livestock sector, which is much less than the share of small ruminants in the value of output of the livestock sector.

The demand for animal protein in India is increasing at a very faster rate³. The annual meat consumption has increased from 3 million tonnes in 1983 to 4 million

¹ Department of AH&D, MoA, GoI. (2003). "17th India Livestock Census - All India Summary Reports". New Delhi.

² BIRTHAL, P.S., DEOGHARE, P.R., SHALANDRA KUMAR, RIYAZUDDIN, JAYASHANKAR, J. and ABHAY KUMAR. (2003). "Development of Small Ruminant Sector in India". ICAR.

³ Delgado et al (1999). "Livestock to 2020 – The Next Food Revolution". ILRI. Nairobi.

tonnes in 1993 and the projection for 2020 is 8 million tonnes. Human population growth, increasing urbanization and rising incomes are predicted to double the demand for, and production of, livestock and livestock production by 2020. Trends reveal that though mono-gastrics have become important meat suppliers over time, the role of small ruminants in meat supply is growing in India as meat of these species are still the most preferred.

2. Critical Issues and Approaches

Small ruminant production, in the context of sustainable livelihood of the poorest is facing a number of grave problems in India. The important ones are:

- Poor awareness regarding the importance of small ruminants in the livelihood system
- Absence /lack of active rearer organizations
- Pressure on fodder resource base
- Inadequate veterinary health services
- Lack of adequate focus on genetic improvement
- Reduced access to credit and insurance
- Lack of efficient marketing mechanisms
- Poor inter-departmental coordination

CRITICAL ISSUES:

(1) Poor Awareness Regarding the Importance of Small Ruminants in the Livelihood System of the Poor

(a) The Issues

In the overall development sector small ruminant sector has been widely neglected basically due to poor awareness regarding its role in the livelihood system of the poor.

In many states of India, small ruminant rearing provides significant proportion of self-employment opportunities and is a source of supplementary income for the landless, adivasis (*tribals*), and the dalits. Women play a greater role in the day-to-day management of small ruminants, especially goats. Apart from traditional rearers there are also new entrants (Dalits with one or two goats) coming as part of the economic activity. Nevertheless, keeping a few sheep and goats allows women to realise some income that forms part of their savings and is also a source of prestige.

The small ruminants easily fit into the smallholder production system, as they require low initial capital investment and low operational cost. They also give quick returns because of short generation interval and high level of prolificacy. In transhumance /nomadic system, the animals are often kept under scavenging conditions with little or no attention paid to supplementary feed inputs, or to disease control and housing.

They are less costly to acquire and maintain, and can often thrive on harsher terrain. At the same time, they provide products for cash sale when a need arises, and provide the household with much needed protein.

In spite of its important contribution in poverty reduction, the small ruminant sector has received only scanty attention in the country.

(b) Approaches

- **Knowledge sharing platform:** Facilitate formation of platform/s (consisting of representatives from AHD, Watershed, Research Institutes, Veterinary Colleges, RD Department, Forest Department, PRI, NGOs and private actors linked to small ruminant production) at the central and (selected) State levels for Knowledge sharing.
- **HID** of key service providers:** The key service providers, especially the AH department staff should be given exposure and training to improve their knowledge and understanding on the production system of poor farmers who rear livestock under 'low input' system using common property resources because of economic compulsions. They should also be trained to equip them to handle issues related to small ruminant production.
- **Creation of knowledge on women's participation in small ruminant rearing and production:** Explore the relationship between women's involvement in small ruminant rearing, their mobility, access to fruits of labour and their decision making potential on small ruminant issues at household and (rearer) organization levels.

*** HID in the development context refers to a set of processes that promotes value-based changes in individuals, groups, teams, families and institutions for a common objective of poverty reduction and promotion of justice & empowerment for sustainable development.*

CRITICAL ISSUES:

(2) Absence /Weak Rearer Organisations

(a) The Issues

Ignorance of small ruminant rearers on the need for their social organization is barring their development. Since unorganized, they are unable to voice their

demand and requirement. Absence of active supportive organizations for the mobilization of the rearers is another reason attributing to the lack of development of the small ruminant rearers. Experience of working with small ruminant rearer groups & NGOs representing the cause of pastoralists has shown that most of these rearer groups are informal & semi-organized institutions often deeply rooted in micro realities and lacking the wherewithal to lobby effectively for themselves and their rights.

(b) Approaches

Human and Institutional Development:

- **Human Development:** A focused programme of extension and training shall be an integral part of capacity building of small ruminant rearers. It should focus on:
 - creating awareness on human and constitutional rights
 - creating awareness on networking and communication
 - creating knowledge on enhancing managerial efficiency
 - creating knowledge on accessing credit and insurance
 - training on better husbandry practices, preventive health care and first aid (including validated indigenous practices)
- **Representation of women:** Develop key pilots to mainstream equity based (in representation) rearer organizations to enhance women participation.
- **Institutional development:** If rearer organizations already exist, strengthen them. Otherwise support and mobilize the rearers to get them organized in the form of associations /cooperatives /federations /networks. Initially there is a need to have an outside agency (NGOs or other agencies) to initiate and extend support to rearers, village leaders and groups in bringing them together. These NGOs should play a role in creating awareness, capacity building, advocacy, building networks, bringing synergies /convergence and empowering the rearers through rearer SHGs, networks etc. All NGOs working in the same area for the same cause should network to form a consortium to synergise their efforts rather than working in isolation.

CRITICAL ISSUES:

(3) Pressure on Fodder Resource Base

(a) The Issues

Declining area of CPRs: A vast majority of small ruminant rearers such as the small and marginal fe/male farmers, pastoralists, dalits, adivasis and landless labourers largely depend on CPRs to feed their animals to make a living. CPRs mainly consist of village pastures belonging to the Panchayats, revenue land (Revenue

Department) and forest land (Forest Department). Several studies⁴ in India's dry regions show that there is a decline in the area under common property from 1950 onwards due to expansion of agricultural land, encroachment, privatization, land reform measures and conversion of forest area into national /game parks (Rajaji park in Uttaranchal, Kumbhalgarh sanctuary in Rajasthan, Grizzled squirrel Sanctuary in Tamil Nadu etc.). This has serious implications on the livelihood of the marginalised communities.

Qualitative Decline of CPRs: Studies^{4, 5} also show that the CPRs are under severe degradation due to unsustainable exploitation and lack of attempts for regeneration. Under situations of limited availability of grazing resources, lack of adequate efforts for CPR development and increasing animal numbers, if people are allowed to extract private goods (goat /sheep production) from public goods (CPR) without any control or limit, its degradation will be higher⁴. This would affect long-term sustainability of the very same natural resource base on which the poorest depends on. The well-known 'tragedy of commons' illustrates that under conditions of open access, households will continue to reap the benefits of free grazing until no biomass is left. This is exactly what is happening in many places.

New Entrants: Introduction of credit facilities under the various micro-financing and entrepreneurship development programmes caused entry of many new people with no experience on small ruminant production. They also had little awareness on rotational grazing, which was practiced by the traditional rearers. This has further increased the small ruminant production dependency on CPRs and hence added to the degradation effect on the grazing lands.

Low priority to common land development: has been taking place in the country mainly through community managed silvo-pasture development projects, JFM /forest protection schemes and watershed development programmes. The process of common land development is complicated because of socio-political considerations and the conflicting motivation and vision of different stakeholders. The main issues in CPR development are found to be:

- Ignorance regarding the importance of small ruminants for livelihood /survival resulting in their complete negligence
- Lack of willingness of the custodians of the common land (Panchayat, Revenue Department and Forest department) to release the CPR for its development with user rights. (In the absence of user rights, people are not ready to invest in land improvement as there is no assurance that they can harvest the benefits after 4-5 years)
- Lack of competent agencies with a development perspective to (a) mobilise the rearers (b) motivate, guide and take up CPR development and (c) implement sustainable management.
- Inadequate involvement of the rearers themselves in micro-planning

⁴ Jodha, N. S, "Common Property Resources and Dynamics of Rural Poverty in India's Dry Regions"

⁵ CALPI-IWMI-FAO. (2005). "Livestock Environment interactions in Watersheds: A Study in semi-Arid India", South Asia, Hyderabad.

- Conflicting interest among different rearer groups (traditional Vs new entrants)
- Lower cast and hence least attention

(b) Approaches

- **Release of CPR (with user rights) for Development:** Support formation of strong small ruminant rearer /pastoral associations in respective villages /states and facilitate dialogue process with the owner of the common land (Panchayat /Revenue Department /Forest Department) for leasing out the common land to rearers (with user rights) for use. The release should be under the condition that it will be developed and used on a sustainable basis.

This will be a long-term process as it involves legal, policy, attitudinal and administrative changes. NGOs and relevant line departments should not limit their role only to helping wo/men farmers to access their rights but also involve in developing common lands and its sustainable management through community participation.

- **Development of CPR and its Sustainable Management:** This may be done through the following ways:
 - (a) Facilitate organizing a common platform (under the leadership of AH Department) where relevant departments (PRI, AH, Revenue, Forest) and civil society organizations come together to discuss and develop a plan for CPR development based on an agreed common charter.
 - (b) Identify civil society organization/s with NRM competence and give proper orientation to sustainable management of common land so that they can support the community in CPR development on a sustainable basis.
 - (c) Together with all sections of the community and different related departments, develop guidelines for sustainable use of the common land (see case studies in Annexure 1 & 2). Controlled /stratified grazing in CPR through community controlled customary rationing mechanism is a must for sustainable use of the resource base generated. Social norms and codes of conduct are to be fixed by the communities for rotational grazing /controlled use. Special attention should be given to make sure that the deprived segment of the community (goat /sheep rearers, tribals etc.) is mostly benefited (not alienated) through this arrangement. For this there is a need for a deeper analysis of the livelihood systems of different castes, particularly the poorer sections while planning interventions. The challenge is to devise a production system as well as an institutional mechanism which takes into account the diverse needs and interests of the users. The emphasis should be on multi-product benefit system, which caters to the needs of all the users

without compromising on their livelihood practices but with due priority to landless and marginalised small ruminant rearers. (In all the case studies given in Annexure 1 and 2 there is one glaring disadvantage: the fodder requirements of small ruminant keepers are left out. This in turn has undermined the livelihood security of caste groups, who are dependent upon rearing small ruminants for their livelihood sustenance).

In the watershed development programmes also though the interventions improved the natural resource base, the landless, the marginal, the goat /sheep keepers and the pastoralists are reported to be alienated because of ban on grazing and other restrictions^{6, 7, 8}.

- (d) As per agreed plans, develop multi-tier silvo-pasture in waste /leased /fallow /forest lands with special focus on small ruminants (shrubs and tree lopping for goats and grass for sheep). Emphasis should be propagation of multi purpose fodder trees (fodder, fuel, medicinal value, mulching) and not limited to 'greening' the land. An example is available in the Rayalseema region of Andhra Pradesh, where the Center for Peoples Forestry (CPF) facilitated formation of a multi-stakeholder fodder management committee which raised fodder nurseries (in the VSS area allotted to them) keeping in view the varying needs of the community.

In a case study in Rajasthan (Kabaleswar village in Dausa district), the Forest department in association with the Panchayat developed 45 Ha of degraded forest land through community participation. The land was fenced and closed for five years for regeneration and now it is opened for goats. It so happened that the trees planted (Khejri and Babul) could only be browsed by goats. This is one of the few cases where the silvo-pasture intervention benefited the goat keepers.

- (e) Village committees consisting of members representing all sections of the community can take the responsibility of managing the land. The village communities could be facilitated to take a decision even to provide preferential access to landless small ruminant rearers, as they are poor. Civil society organizations can facilitate this process. In Andhra Pradesh there is an example of a GO supporting leasing of common land to the sheep breeders' primary societies. Here there is a need to equip this GO with required know how so that they can support the societies to develop and manage the land.

⁶ CALPI-IWMI-FAO. (2005). "*Livestock Environment interactions in Watersheds: A Study in semi-Arid India*", South Asia, Hyderabad

⁷ Mangurkar, B.R. (2004). "Working group report on Sustainable Use of Small Ruminants in Watersheds of Semi-Arid Areas in India"

⁸ Ramdas, S. (2003). "*Strategies for Livestock Development in Watershed Interventions*". Hyderabad.

(f) Since the poor, do not have any financial or political capital to develop the CPR and the returns will be available only after 4-5 years, the initial investment required shall be provided by external agencies (Govt./Pvt./others). Later the community shall share their rights and responsibilities for its management (see case studies in Annexure 1 and 2). The investing agencies shall put “sustainable use” as a “Non-negotiable” for funding.

(g) Pilots to demonstrate:

-how could a community ensure a balance between stocking rate and CPR and biomass availability

-long term sustainability of CPR by balancing cost and benefit /income

(h) Many international agencies are now providing funds for “environmental services” based on vegetation and land use change, which helps in sequestering carbon in plants and soil, thus preventing from its release to atmosphere contributing to global warming. This is an excellent opportunity for semi arid India (carbon sequestered in semi arid regions is relatively stable) where CPR is largely available.

- **Feed Supplementation:** In areas where the land is enclosed for regeneration (watershed projects, JFM areas, village pastures etc.), grazing is banned for 3-5 years. This would affect the goat /sheep rearers very badly as the primary source of feed inputs for their animals are these common land resources. The small ruminant rearers in such areas are forced either to migrate or dispose their animals adding to their misery. Promoting feed supplementation in these cases would reduce the problems of the temporary resource alienation. The Alwar goat project (by PRADAN) in Rajasthan is an excellent example to show that goats kept under limited grazing conditions can be successfully reared with supplementary feeding. The goat production system in Kerala is another example of semi-intensive goat keeping. So, semi-stall feeding or semi-intensive system in goats will be a promising viable option, especially in the context of declining CPR base.

Studies undertaken in institutional flocks show that goats maintained under semi-intensive system performed significantly better than those under intensive and extensive production systems. The erstwhile Indo Swiss Goat Project in Rajasthan also produced evidence in favour of ‘limited grazing with supplementary feeding’. Promoting semi-stall feeding would also help indirectly the poor goat /sheep rearers in preparing them to face the future challenges in respect of shrinking feed resource base. Further, it will reduce pressure on the environment. (The zero grazing /intensive production system, on the other hand, has disadvantages such as: lack of recycling of nutrients, no seed dispersal, chances of forest fire, increased work load for women etc.).

Sheep production could also be brought under semi-intensive system but not so soon. But introduction of balanced feed pellets and concentrates might reduce the hours of open grazing which could lessen the pressure on CPRs.

It will reach a stage where we have to test the genetic ability of the animals available to respond to the stimulus generated through improved nutrition and management. This could be studied at an appropriate time.

CRITICAL ISSUES:

(4) Inadequate Veterinary Health Services

(a) The Issues

The small ruminant sector in India receives low allocation of funds and attention for veterinary services. The services available are, generally, not reaching most of the small ruminant rearers as a majority of them are in the remote resource poor areas and are migratory in nature. Even though the number of veterinary hospitals, polyclinics and dispensaries in the public sector has almost doubled during the last 15 years, small ruminant health care still receives low priority, possibly due to lack of infrastructure facilities required for small ruminants, shortage of trained personnel, non-availability of medicines /vaccine, overall lack of information of small ruminants etc. Similarly, in the case of delivery of breeding inputs, though the breeding infrastructure to produce and distribute quality breeds has expanded considerably, the impact of breeding programmes has been limited.

(b) Approaches

- **Disease prevention:** Prevention of diseases to avert risk shall be central to the provision of livestock services to sheep /goat farmers and herders. Prevention strategies against important diseases such as blue tongue, PPR etc. should be developed. Greater coverage should be provided for vaccination against diseases like enterotoxaemia, sheep pox⁹ etc.
- **Diagnostic services:** There is a need for speedy, effective and accessible diagnostic services

⁹Department of AH&D, MoA, GoI. (1996). "Report of the Task Force on Sheep, Goat and Rabbit Production". New Delhi.

- **Services to animals on migration:** In case of migratory small ruminant flocks the approach to providing veterinary services may be through border /migratory route posts where basic preventive veterinary medicine such as vaccination shall be provided. The veterinary care to migratory flocks may include advice on deworming and anthelmintic use, protection against endemic diseases prevalent in the area where the animals are migrating to and prevention of spread of disease through these animals.
- **Training community based para-vet workers:** Training of 'para-vets' from within the rearer /pastoral communities who can treat minor ailments, recognize epizootic conditions and major traumas. There are examples from the field where non government organizations procured vaccine from Indian Veterinary Research Institute and supplied to rearer organizations to vaccinate their animals through trained members in their own community. They are carrying out vaccination successfully.

CRITICAL ISSUES:

(5) Lack of Adequate Focus on Genetic Improvement

(a) The Issues

Development of small ruminant breeds in the Indian context is relatively difficult and slow because: (1) the animals are under constant migration (2) they are under free grazing situation (3) they are under very low plane of nutrition (4) herd size is small and (5) males are sold at relatively younger age making selection difficult. The basic principles of breeding are the same irrespective of the place and the genetic options (cross breeding or selective breeding). In a free grazing situation where there is no possibility of performance recording, improvement of feeding and management, controlled mating etc., genetic improvement of the animals will be comparatively difficult. Instead of AI, selected males of the indigenous breeds can be used by the communities under such conditions but the genetic progress will be much slower. Productivity enhancement among sheep and goat through crossbreeding them with exotic varieties is fraught with the danger of the sheep / goat populations losing their inherent sturdiness, vitality and the ability to withstand stress¹⁰. Many experiments on crossing of small ruminants had met with indifferent results all over India. Cross breeding of sheep has improved wool quality only marginally and quantity, even less¹⁰. Farmers are wise to these compulsions and therefore balance their output from sheep between wool and mutton.

(b) Approaches

- **Selective Breeding:** As the primary objective of small ruminant farming is meat production, the recommended breeding policy is selective breeding for faster growth and higher body weights—traits for which enormous selection differential exists among indigenous breeds¹¹. Superior breeding males in the

¹⁰ Kurup, M.P.G. 2004. *Livestock Policy Synthesis Paper*

¹¹ Indian Society of Animal Genetics and Breeding. 2005. *Proceedings of VIII National Conference on Animal Genetics and Breeding*. Makhdoom, Mathura (UP).

identified breeding tracts should be selected (employing FPR) from elite flocks. The selection intensity can be enhanced with the involvement of farmers' flocks. The farmers' flocks can be regulated to form a goat /sheep breeder cooperative to function as an elite open nucleus herd. The high producing animals of the cooperative herd should be pooled to form the nucleus herd, which will produce proven bucks /rams, which can be sold to farmers.

Examples of community participated, women spearheaded selective breeding in goats and sheep are available in the Malabari Goat Breed Development Project (in Kerala) and Small Ruminant Development Programme (in AP) respectively. In the small ruminant development programme in A P, selective breeding is done through selection of rams from ram lamb units (consisting of lambs of selected breeds purchased from outside). The ram lamb rearing units are managed by women and the selection is done on the advice of a veterinarian (see annexure 3 for details). This helps in meeting the demand of rearers for superior breed rams/bucks in the village flocks. The ram lamb rearing has been found to be lucrative and hence it also forms as part of a livelihood option¹² (only for those families that have the knowledge, skill and experience). These two are good examples of innovations used for gender mainstreaming.

CRITICAL ISSUES:

(6) Reduced Access to Credit and Insurance

(a) The Issues

Access of small ruminant wo/men farmers to institutional credit and its flexibility to match the requirement of farmers are very much limited. The farmers are almost perennially under the clutches of money lenders. Poorer households have little or no capital resources to invest in their livestock enterprise. Investments such as acquiring or upgrading to better breeds or for improved health care, feeding and management practices are too luxurious on their existing resources and hence they keep larger flocks to break even, thus increasing the pressure on the environment. Therefore the money lenders and middlemen shall be put in comparison with suitable and flexible and viable options of micro-credit. Similarly insurance support to livestock, especially small ruminants is also very weak. As goats and sheep are important productive assets and a source of livelihood for millions of poor, any loss of this asset is a direct threat to their livelihood. But it has not received much attention from the insurance agencies or banks. Eventhough there are many practical difficulties, there exists considerable scope to widen the horizons of livestock insurance.

(b) Approaches

¹² Rebecca, K (2005). Small Ruminant Rearing – Leveraging Power and Opportunity. NRMPA. Hyderabad

- **Linking individual rearers and rearer groups with institutional credit and insurance:** The AH Department may facilitate linkages between small ruminant rearing groups (SHGs) and sources of institutional credit. Access to market and feed resources, as well as borrowers' experience on related production activity shall be considered as prerequisite for lending. Credit should also be linked with insurance for covering the risk of loss of production and life. Short-term credit facility available for livestock sector should be extended to small ruminant sector as well. Sheep farmers may be given bank loans to establish pastures and growing fodder trees on their own lands. The Kisan Credit card scheme presently does not allow drawl of credit for livestock rearing. The facility of credit for livestock production may be extended on these cards also. For insurance protection innovative ideas like "Community insurance" through interest groups (SHGs) can be implemented where compensation is paid to the claimant from funds generated out of the premium paid by the members. An innovative example is given in Annexure 4.

CRITICAL ISSUES:

(7) Lack of Efficient Marketing Mechanisms

(a) The Issues

Rapid urbanization combined with continued economic growth is creating an increase in market demand for livestock products in India. It is found that as income rises people diversify their diet from cereals to meat and other livestock products. This massive growth in demand for livestock products, especially meat is a great opportunity for the Indian livestock keepers, especially the small ruminant rearers. The major marketing issues related to small ruminant production are listed below:

Absence of a direct market access: Small Ruminant Rearers seldom have a direct access to the markets for live animals, meat, milk and wool. Generally, because of the high demand for meat existing in all parts of the country, sale of sheep and goats, pose no constraint even in the remote rural areas. However, the market is unorganised operating under the clutches of a nexus of small traders, market agents and middlemen. Small rearers find it difficult to penetrate these markets because of the nexus. Absence of strong rearer organisations and their network to address the marketing needs of the rearers and consumers is one of the bottlenecks in capturing the markets.

Absence of market information: Rearers, their organisations or SHGs do not have any access to information on market prices, margins, cost of operations etc. either of the local or the distant markets. The rearers are therefore not in a position to recognise or appreciate the market opportunities and exploit them. In the absence of market information, the rearers lack the drive to explore newer and better options for marketing.

Lack of rearer organizations: Considering the growing demand for live animals and meat in the national and global market, the opportunities for SR production are

immense in India. However, absence of strong rearer organisations and appropriate infrastructure for production, procurement, processing, marketing and productivity enhancement are major bottlenecks in exploiting the fast growing national and global market potential. It also requires a critical mass of rearers and their output produced on the basis of market specifications, to be pooled to exploit such market demands. This would also require large investments on processing, transport and distribution infrastructure.

Setting market standards and specifications: Presently there are no prescribed market standards for live animals or meat or acceptable practices for sale of animals and animal products. In the rural areas, animals are generally sold on the basis of head count. Sale by weight is seldom accepted by traders and market agents.

Disease prevention and eradication: Some of the diseases like Foot and Mouth hinder exploitation of the global market potential for live animals and meat.

(b) Approaches

- **Establishment of Strong Gender Balanced Rearer Organisations:** Establishment of strong rearer organisations at the district and state level is an essential need for exploiting the market potential. A vertically integrated two tier structure, owned, controlled and managed by rearers' self help groups or associations or co-operatives at the grass root level federated into a state level Unit /Federation will be the ideal structure for rearer organizations. It should be a democratic structure with well defined roles and responsibilities for each tier and adequate infrastructure owned and controlled by the rearers through professional managers. An integrated approach to production, procurement, processing/marketing and productivity enhancement under which all the infrastructure are owned and controlled by the rearers themselves would be the ideal way of stimulating production and growth. Such an organisation should be able to provide extension and inputs for production, assured market round the year and assure a reasonable price band to the rearers and build brand equity in the long term.
- **Pooling & Dissemination of Market Information:** Related government departments, rearer groups and NGOs working with rearers should arrange to collect and disseminate information on prices, market dynamics, standards, quality, preferences etc. so as to exploit the best possible markets. They may also be organised to change their production system to suit these requirements.
- **Disease Prevention and Eradication:** This requires efforts by the Govt., rearers and rearer organisations to draw up and implement long term plans to control and eradicate such diseases, which are major impediments to

exploring global markets. There should also be knowledge regarding international safety standards.

- **Setting Market Standards and Specifications:** It would require earnest efforts by rearers, rearer organisations, NGOs and Govt. bodies to work towards establishing such standards practices and brand equity.
- **Exploration of Niche Market:** Special attempts should be made for producing and marketing specialty products such as goat-milk cheese and organic products (from pastoral production) for niche markets. Also capitalize the emerging trend of using goat milk as a health food. An example of capitalizing niche market is seen in Alwar project of PRADAN, where women rearer goats for Id market during Ramzan.

Other approaches should include:

- Introduction of a mechanism for sale of goats & sheep on body weight basis is to be evolved.
- Setting up of rural abattoirs (management in the hands of rearers) for sheep and goats to process and distribute the meat and meat products in ready packs to consumers would fetch higher price to the rearers and hygienic meat for the consumer.
- Establishment of animal market yards (management in the hands of rearers) with facilities for marketing of animals may be established.
- Government involvement in laying meat quality norms and in providing relevant information.
- Newer opportunities for market exploitation may include: (i) Planning and scheduling to avoid gaps in supplies or glut, (ii) Grading and specifications of animals and animal products for the market, (iii) distribution to different markets, (iv) negotiation of long term price and supply contracts, (v) processing and marketing and (vi) market oriented production.

CRITICAL ISSUES:

(8) Poor Inter-departmental Coordination

(a) The Issues

Lack of institutional coordination: Non-convergence of policies and programmes of different departments is a matter of serious concern in small ruminant development. For instance, the Department of Rural Development promotes goat rearing whereas the Forest Department bans goats. When grazing policy is made by the Forest Department, it is normally done with no consultation with other relevant stakeholders like AH Department, Panchayats, Revenue Department, Agricultural Department etc. The local community is also not often involved in the policy processes.

Lack of Inter-state coordination: This is also a matter to be seriously considered in respect of migratory wo/men farmers and their movement to neighbouring states in search of grazing resources.

(b) Approaches

- **Inter-departmental committee:** An inter-departmental committee consisting of key stakeholders should be formed to give them opportunity to understand programmes of related departments and to explore possible areas of synergy.
- **Inter-state coordination:** The Animal Husbandry Department (in the states where large scale migratory animals are present) with the help of pastoral NGOs and rearer associations should take initiative to coordinate with concerned department in the recipient states for fixing migratory routes, norms of migration, code of conduct, services during migration and other related issues faced by the rearers during the course of migration. This is currently being practiced in a few states like Rajasthan and Jammu & Kashmir.

3. Other Approaches

- A **Small Ruminant Cell** may be formed within the Department of Animal Husbandry (Central level as also in the States, where small ruminant population is high). Within this cell special responsibility may be entrusted to handle issues of pastoralists such as conflicts related to operational issues with forest department, migration to adjacent states, health services during migration, training on breeding, health care and management practices etc.
- Develop a **Small Ruminant Policy** (participated by the stakeholders including rearer organizations) in the states where there is significant sheep /goat population. Based on these evolve a National Small Ruminant Policy at the Central level under MoA (Department of AH&D).
- Government to provide /enhance **Infrastructure Facilities** required (for small ruminants) within the AH Department.
- **Private partner in development:** In the emerging context, many of the functions, especially those related to forward and backward linkages like procurement, distribution, marketing, supply of inputs (feed, vaccination, and disease control) could be organized through public – private partnership under cover of mutually agreed norms.

4. Conclusion

Small ruminant development is an important intervention in poverty reduction. Ignorance of key stakeholders regarding importance of small ruminants as vital part of livelihood systems, absence of active rearer organisations, lack of strong pro-rearer support organizations, declining fodder resource base, lack of veterinary health and breeding services, weak marketing systems, reduced access to credit and insurance and lack of capacity building efforts are the major constraints in the development of the small ruminant sub-sector in India.

The following approaches are suggested for small ruminant development in the context of sustainable livelihoods of the poor in India:

- (1) Development of a multi-stakeholder platforms for knowledge sharing and Inter-departmental coordination**
- (2) Promotion of gender balanced small ruminant rearer organizations**
- (3) Capacity building of rearer groups through HID interventions**
- (4) Mechanisms to improve veterinary health services**
- (5) Institutional arrangements to improve access to credit and insurance**
- (6) Selective breeding for breed improvement and**
- (7) Effective systems to improve access to remunerative market**

The strategies include: formation of a small ruminant cell within the Department of AH & D at Central and State levels to provide adequate focus for small ruminant development in the context of poverty reduction. Government should provide adequate infrastructure facilities and start up support required for small ruminant development.

5. Prioritised Plan of Action

- Formation of knowledge sharing platform/s
- HID support for developing rearers /rearer organizations
- Pilot study to understand as to how a balance between stocking rate and biomass availability can be ensured.

Annexure 1 Silvo-Pasture Intervention in Village Pastures

Case Study 1: Silvo-pasture intervention in Barawa Village in South Rajasthan

Sevamandir, an NGO based at Udaipur demonstrated the benefits of developing degenerated pastures in some private pastures in Barwara Village. Seeing the

benefits, the villagers approached Sevamandir to try similar activities in the village pasture. After considerable difficulties, the villagers got the land in 1988 on lease from their Panchayat for five years. Sevamandir organized the village community in the form of a Samuh, which had representatives of all the castes in the village (total 7). The Samuh resolved to retain 6 Ha for open grazing and enclosed 23 Ha for treatment. This was to build consensus with Rebaris (powerful caste who used the pasture for grazing their cattle) who initially opposed the work in the village pasture. Construction of boundary wall, planting of multi-purpose trees & grasses, soil and moisture conservation works etc. started. The committee employed a guard, who is paid a token amount of 2Kg of grain per annum by each household of the village. Fine was imposed on intruders. A set of rules was developed to manage the pasture and share its benefit.

After four years the first harvest was made. All families participated in harvesting by depositing a token amount in the village fund. The committee ensured equitable distribution of benefits. Till 2000 only grass was harvested. The committee had tried to work out a mechanism to harvest loppings without harming the trees.

Goat rearing has been the traditional source of livelihood for one of the caste groups. With the closure of most pasturelands, it was no longer feasible to keep large herds. So the number of goats per family decreased over years. The pasture may start giving some benefits for goats once the lopping of growing trees and shrubs is undertaken.

Cost incurred in the first year was Rs 70,000. More than 80% of the cost of project was in terms of labour, a direct benefit to the local community. The benefit cost ratio worked out in the year 1989-90 was 1.30.

Case Study 2: Silvo-pasture intervention in Selu in Rajasthan

More than 50% of the pasture land in the village was encroached by powerful families. Due to continuous meetings and demonstrations the encroachments were vacated. The villagers got the land on lease for 10 years and physical activity started in 1992. Samuh was formed and it took full responsibility of protection of the land and paid 30% of actual expenditure to the village fund. Apart from this they also decided to work one day in 15 days on a voluntary basis. Sevamandir helped the Samuh technically and financially to carry out the afforestation activities. The projected cost for regeneration of 46 Ha pasture land was nearly R 1.32 lakh.

The Samuh appointed a Chowkidar. In generation of pasture there was full involvement of villagers. They evolved various rules for management of the pasture (no grazing, only one person from each family to cut and carry the grass etc.). Due to protection of pasture, all types of vegetation (grasses, shrubs, trees) have developed (the villagers have no right over trees when they are mature). The vegetation, soil moisture conservation structure and humus content, water holding

capacity etc increased. Every year grass production increased. Tree lopping is not generally permitted; but sometimes for newly born lambs permission is given. The productivity of animals (milk, meat) has increased. The number of all species of animals has increased except sheep (decreased). The no. of goats has increased because (1) there was another patch of common land, where open grazing is permitted (2) 1-2 goats can easily be domesticated by a family where as sheep are to be kept in flocks of 50-60; otherwise not economical (3) male goats are use (sold) for meat and female for milk production (4) for poor farmers rearing of goats is more easy and economical than cows and buffaloes (5) goats can also be domesticated on stall feeding.

People revealed that they prefer to keep milking animals of better quality rather than keeping large number of less productive animals. It appears that due to this activity, the livestock management skills of villagers have increased and practices changed.

Annexure 2

Silvo-Pasture Intervention in Forest Land

Case Study 3: Joint Forest Management in Bichhiwada Village in Udaipur District

Many people from Bichhiwada and neighbouring villages encroached upon the forest land. In the beginning encroached area was being used to fulfill the fodder requirement of their cattle. Gradually some patches of and were cleared and agriculture began to be practiced. Many tribal people resented this illicit grabbing of a common property and they protested against the encroachers. Failure of Forest Department to prevent people from encroaching added to the problem. The villagers inspired by the success of the JFM agreement between the people of nearby village and Forest Department approached the forest department through Sevamandir.

Fifty Ha site was selected for community management. A micro-plan for developing the forest was prepared and the forest department granted permission in 1992. Boundary wall was put in place, tree species planted, grass seeds sown (fodder species was suggested by Sevamandir).

Major responsibility of protection lies with Executive committee members of the FPC. A chowkidar was posted. Rules were framed by the villagers (no wood cutting, cow herds and those who take herd of goats to the forest will not carry an axe with them etc.). All the 172 families from the village take fodder. Time was fixed fodder cutting. Penalties charged for the offenders. But the rules were not strictly followed.

All the forest area adjoining to the village has been closed under JFM. Open forest area is far off from the hamlets. There was a drastic shift from open grazing to force stall feeding. This is also true for goats. Goats have generally not benefited from

this protection arrangement. Now there is enough evidence that goats (and thus the segment of people's livelihood based on goats) have been adversely affected by the enclosure of the site. This is so because goats do not feed on the grasses. Best bet for them is to browse in the open scrub. Some people sent their goats for about a quarter of the year to their relatives in the villages where there is a better forest cover. The number of goats has gone down, which has significant repercussions. The decline in goats has left tribal people more dependent on wage labour.

Measures that could help restore this vital segment of the tribal livelihood include:

- Keeping sufficient open browsing space
- Planting trees which would give quick lopping material and
- Exercising the lopping option in the protected forest at regular intervals

In the absence of such measures, if this deterioration of livelihood base continues it could lead to large-scale migrations to urban centers. This could have its own set of social, cultural and anthropological implications

Case Study 4: Joint Forest Management in Salukhera Village in Rajasthan

The communities of the same village and neighbouring villages used the forest land in Salukhera as a grazing ground until it was enclosed for silvo-pasture intervention under JFM programme. The Forest department approached the village in 1993 to develop the degraded forest. Entire investment was borne by the Department. The villagers participated in the development process. In exchange for the protection, the local communities could partake in the benefits (grass and minor forest produce free of cost also a share of proceeds from the sale of timber at the time of harvest. The project strategy involved working on clusters of contiguous 50 Ha patches of forest, totaling 250 Ha. Each of these plantations of 50 Ha was accorded protection through appointment of guards, who were paid by the FD for 5 years.

Despite the development of forest area, the goat and sheep keeping community was deprived of free grazing area and tree loppings for their small ruminants, in search of which they are migrating. The tribals had to pay heavy penalties when their goats strayed into the plantation. The women went as far as six kilometers away to fetch fuel wood.

The project seems to be owned by the FD in terms of shouldering the capital and operational costs, with villagers only contributing by way of acceding to the rules of protection. The decisions as regards the harvest take place in the village executive committee, which represents the whole village. The executive committee along with FD framed the rules for the management of the area. The attendance of the village meetings was thin and the entire executive committee seldom sits together.

Looking at the overall impact of the intervention in terms of 'who gained and who lost?' it appears that the communities who were dependent on the small ruminants for their livelihood subsistence have lost out. So the challenge is to devise a production system as well as an institutional mechanism, which takes into account the diverse needs and interest of the users. The emphasis should be on multi-product benefit system, which caters to the needs of all the users without compromising on their livelihood practices.

Annexure 3

Small Ruminant Development Programme

Ram lambs Rearing – Leveraging Power and Opportunity

Breed development

Under breed development activity, breeding rams (area specific recognised breed) were being purchased from the shandies (live stock markets) by the rearers in the project villages as per the technical guidance of Veterinarians. The non-availability of required number of breeding rams from shandies to meet the demand of the rearers in different villages prompted the District union/ Project to take up ram lambs rearing for sufficient supply of breeding rams.

From the field experience it was found that the women play an important role as the men in small ruminants' rearing and very often, the lambs, kids and sick animals are mainly taken care of by women in the households. Hence, the project identified the women to take up this activity as a women development programme. In this process the ram lamb rearing would facilitate the **women to gain control over marketing and supply of breeding rams to meet the demand within and outside the village**. At the same time ensure her good income and develop her skills as an entrepreneur.

Objectives

1. To support livelihoods of women from the poor rearers' families
2. To meet the demands of good breeding rams
3. To habituate the rearers to semi-intensive rearing

Implementation

The District Union developed *criteria for selection* of women for ram lambs rearing:

- She should be from an economically poor rearers' family.
- Should have an experience of rearing.
- Be a marginal farmer.
- Willing to become a member of the primary society and
- Abide by the rules and conditions of Primary Society.

A purchase committee was formed with selected woman, President of concerned PS, an experienced rearer and a Veterinarian as members. The DU has given a unit

of 20 ram lambs to one woman in each of the 3 clusters. The total cost of 20 ram lambs was given as a loan from the District Union @ 15% per annum interest. All these ram lambs were covered under “Animal welfare fund scheme” to replace any dead ram lamb. The total loan with interest will be recovered after the sale of rams, which is done in consultation with the concerned Primary Society. The cost on support services is borne by the women on their own. The concerned health worker under the guidance of AHD staff provides health services and the President, PS or Cluster Organiser provides other services that may be required.

All the ram lambs immediately after purchase were applied with ear tags for identification under “Animal Welfare Fund scheme”. Ram lambs were dewormed on the following day and one week after the deworming, were vaccinated for E.T disease. Booster dose of ET was given after 2 weeks of the first vaccination for E.T. Regular deworming and other vaccinations were given as per the calendar of vaccinations in sheep.

Orientation training was given to the concerned Health workers and Cluster Organisers on recording weights of ram lambs periodically (monthly) and other related record maintenance. Suitable proformae were supplied for record maintenance on medication, vaccination, feeding, watering, shed cleaning, dead and replacements etc., and regular monitoring is being done.

The ram lambs after attaining 9-10 months age, were examined by a Veterinarian/ PC-Technical for selection of rams that are suitable as breeding rams. Thus selected ones were sold to the needy rearers within the village or other project villages in consultation with the Primary Society.

Out come of one ram lamb unit taken up by the project (Indloor village of Nalgonda district)

Details of Expenses	Amount in Rs.
Cost of 20 ram lambs	24600.00
Premium for Animal Welfare Scheme (@ 5% of the cost of animals)	1230.00
Expenditure incurred on feed	1400.00
Medicines	240.00
Transportation etc	1036.00
Interest paid to DU/ PS	2152.00
TOTAL EXPENSES	30658.00

Receipts on sale of 20 Rams - 63,050.00
 Less: Expenses incurred - 30,658.00

Profit made on one unit (20) -----
32,392.00
=====

The woman rearer has spent part of her time in rearing 20 ram lambs for a period of seven months and could make a margin of Rs. 32,000.00 on the above activity.

This has encouraged in creating a demand for ram lamb rearing: Two issues are tackled:

1. Women gain control over marketing of breed rams.
2. Meeting the demand of breeding rams of the specified breed – conserving the local breed.

Dr. Anjaiah

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Annexure 4

Community Insurance as an Innovation for Local Self Reliance

Malabari Goat Breed Improvement Programme (MGBIP)

The SDC/IC NGO Programme Kerala conceptualized and developed the MGBIP (Malabari goat breed improvement programme) in the year 2003. “Malabari” is a native goat breed found in the Northern regions of Kerala. The process of concept development entailed participatory interactions with farmers, NGO groups and technical experts, facilitated by the Programme Coordinator, K. S. Sebastian.

The primary objectives of the MGBIP are to:

1. Enhance the quality of the local goat stock by selective breeding of the 'Malabari' breed and its derivatives, and by adopting better management practices through a participatory approach.
2. Improve the income generation capacity of economically marginalized women farmers (who are chiefly dependent on very small- holdings and ruminants for their livelihood).
3. Improve the nutritional status of the poor families, through goat milk consumption. (Being readily digestible, goat milk is a good source of nutrition for the poor, particularly children and the aged).

Emergence of the community insurance:

Considering the vulnerability of goats (which often succumb to injuries, accidents and disease), insurance for the animals against death was felt essential for farmers participating in the MGBIP. However, high insurance premiums and the complex formalities followed by insurance companies have made these companies unpopular with the farmers. Furthermore, the veterinary support available in rural areas continue to be very poor; thus the process and the related expenses involved in obtaining fitness certificate or postmortem report from a veterinary doctor in rural areas is often time consuming and expensive. As a result farmers rarely obtain adequate compensation for the losses they suffer due to the death of their animal; in the worst cases, they incur additional expenses in the process.

At one of the MGBIP quarterly review workshops in 2003, the facilitator K. S. Sebastian discussed the idea of a '**community insurance**' scheme to mitigate the problems faced by the farmers – providing an alternative to the regular company insurance. The idea was well taken by the group of farmer representatives and the NGO staff. However, the scheme did not take off then, as there was a feeling that a lot of risks would be entailed for the farmers as taking group responsibility for managing an insurance scheme. On the other hand, farmers continued to be unhappy with the 'regular' company scheme.

Informal discussions and consultations on the possibility of evolving community insurance in MGBIP continued at regular farmer interactions and meetings in various NGO locations. These interactions over several months culminated in a workshop attended by farmer representatives from 40 groups and 10 NGO staff in October 2004. During this meeting the idea of community insurance was elaborated and several suggestions from the farmers were incorporated for practical field application. The final result was the acceptance and adoption of the community insurance in MGBIP. The scheme also has developed clear operational guidelines for uniformity across various farmer groups/ NGOs, the whole process of fine tuning the 'Community Insurance' involved around one thousand women who are the MGBIP farmers and the NGO staff from 10 Partner NGOs who is implementing MGBIP on the field. The '**innovative community insurance scheme**' developed through a participatory process is now set to stay as an alternative to the regular insurance in MGBIP context. It is further hoped that this model can also be adopted in other community development situations for local self reliance.

Structure of the community insurance: ¹³

1. The community insurance is an alternative and innovative scheme to address the insurance need of the MGBIP farmers, and replaces conventional insurance cover offered by private Companies. The scheme is to be managed by the SHG, (self Help Group) supported by the NGO in the initial stages.
2. Every 25 farmers in the MGBIP form an interest group/cluster and are called an SHG (Self Help Group) for the breed development programme. There are four such clusters in each of the 10 NGO Partners implementing this project; (i.e. presently there are $4 \times 25 \times 10 = 1000$ farmers in this project in the initial stage).
3. All the goats registered under the MGBIP are insured against death for a period of one year at a time; this can be renewed for three years.
4. Under the community insurance scheme, the compensation payable to the farmer in case of death is 10 times the premium paid by the farmer which is equivalent to 75 % of the pre determined market value of the animal. For example, if the market value of the goat is Rs.1000 the sum assured for the farmer will be fixed as Rs. 750. Thus the premium payable in a year is Rs.75. or an amount equivalent to 7.5 % of the market value of the goat insured. If the goat dies during the insurance period the compensation assured for the farmer is Rs.750. or 75% of the pre determined market value of the goat.

Operational details of the community insurance:

- Each MGBIP Self help group of 25 farmers selects three persons from among themselves as the committee members for the year that jointly will decide the market value of the goats. They are also responsible for overseeing the general health care of the goats under the MGBIP, and fixing the insurance premium payable and compensation amount based on the market value, local conditions, health and age of goats.
- The premium collected is pooled in a community fund from all the four SHG clusters in each area, to be available to the members of the group on a nominal interest. The interest and premium accrued over the years will be utilized for paying any claim. The amount is administered in the initial stages with the support of the NGO; later these functions will be vested in the SHGs.
- The goats insured will be tagged and numbered. Only goats above the age of 4 months and up to 5 years are eligible for inclusion in this scheme. The committee will also be responsible for assessing the general health of the goat prior to insuring the animal with the scheme.
- In the event of death of an insured goat, the farmer has to inform the community insurance committee. This shall be certified by any two of the committee members and the NGO staff. The compensation amount will be made available to the farmer of the dead animal within a week to facilitate replacement of the dead animal. The sum assured is 10 times the premium fixed for a year.

¹³ Sebastian, K S. 2004-Community insurance: an innovation for local reliance and sustainability

- The insurance cover shall be renewed every year and appropriate premium paid to be eligible for the insurance cover for the animals in MGBIP. Once the community insurance pool has grown sufficiently over the years the MGBIP farmers will be eligible to get part or full premium waved for a particular period as and when it is appropriate. Similarly an additional premium, if found necessary for the continuance of the scheme at any point of time, shall be collected from the members of the group.
- In case the claims from the farmers exceed the premium amount collected and deposited with the community insurance account due to any unusual large number of goat deaths, this could become a problem in the initial years. For this reason the role of the NGO in the teething period of this scheme is essential to handle any contingencies.

Conclusion: Community insurance for local reliance and sustainability: the innovative idea of community insurance that evolved out of the felt need of the farmers has found wide acceptance among the MGBIP participants. This scheme **developed** through a participatory process with the MGBIP farmers and the NGO staff, as an alternative to the regular company insurance. It is hoped that this model can also be adopted in other community development situations for local self reliance.