

SIKKIM STATE LIVESTOCK SECTOR POLICY: PERSPECTIVE AND POLICY ELEMENTS:

1. Current Policy Environment:

Sikkim became a State in the Indian Union in 1975. The Government of Sikkim does not yet have a unified policy framework for the livestock sector in the state. With the singular exception of Orissa, no other state in India has articulated a unified livestock policy framework so far. Sikkim is among the few states in the country now attempting to review its livestock sector comprehensively with a view to understand the contribution of livestock to livelihoods, household incomes and rural self employment; in order to formulate a policy framework appropriate to the social, economic and environmental importance of the sector.

Livestock sector in Sikkim is highly livelihood intensive, agriculture along with livestock is the single largest employer in the state, over 80 per cent of the rural households in the state own livestock and earn supplementary incomes from them, distribution of livestock holdings is less inequitous - over 85 per cent of all species of livestock are owned by the marginal and small holders. For this reason, income from livestock is more equitably distributed. Livestock sector contribution to Sikkim's Gross Domestic Product in 2002 was over 6 per cent. In the Sikkim context, livestock has immense potential for diversification in agriculture, offering gainful employment and incremental incomes to tens of thousands of landless, marginal and small farmers.

Sikkim implemented several Five Year Plans during the period 1975 - 2004 (5th to 9th Plans) without a unified livestock policy framework. Livestock policy so far had been ad hoc responses to development needs and so had only a marginal presence in the sectoral economy in Sikkim. Many interventions therefore have failed to galvanise purposeful action. By and large the policies had been more restrictive than liberating.

In the wake of the economic liberalisation sweeping the national and global policy environment, absence of a clearly stated policy frame can prove counter productive. In the years to come the state will therefore have to take a more holistic view of the sector and find ways of catalysing rapid economic growth and development, to the best advantage of the state. The most decisive role that the state government can play for this is to design a policy framework for the livestock sector to guide it through the coming decades, consistent with the state's natural resource base and the geographical compulsions.

2. Livestock wealth of Sikkim

Livestock production in Sikkim is predominantly the endeavour of the small producers. Marginal and small farmers own nearly 85 per cent of all species of livestock and poultry, even though they own or operate less than 55 per cent of the farmland in Sikkim. Even the tiny organised poultry industry in

Sikkim is made up of small broiler farms. Over 80 per cent of all rural households own livestock (often a mix of several species) as part of the traditional mixed crop-livestock farming system: earning substantial incomes and enriching family diets with nutrient rich animal products.

Villages are virtually self sufficient and the linkages with both input and output markets are less vigorous than in other states in the country, primarily because of the hilly terrain and the difficulties in inter market movement of goods. Most households produce food grains and shortfalls are met by the supplies under the benevolent public distribution system. Milk however is a commodity traded across the rural areas, outside markets as well in the milk cooperative society areas. Milk constitutes a major source of household income. Meat markets are local, confined to village clusters both in the case of beef and chevon, even though the trade is substantial and totally informal. Eggs are traded among village clusters but poultry meat consumed is often home-grown.

Livestock numbers	Cattle	Goats	Pigs	Sheep	Yaks	Livestock numbers
Livestock	2.65 Lacs	62% Cattle of which 37% CBJ	26%	9%	2%	1%
Poultry	2.21 Lacs	-	-	-	-	-
Asset Value						
Livestock	995.27 millions	46% from milk	16.17% from goat meat	8.13 % from pork	1.26% wool, meat	4%
Poultry	2.2%	-	-	-	-	-

Stock holding pattern	More than 85% of all species are held by marginal farmers, small farmers and landless labours 90% poultry held by marginal & small farmer group (backyard)
Contribution of livestock to state economy	<ul style="list-style-type: none"> • Contribution of LS to State economy- 8.16%GSDP • Employment in LS 4.5% growth rate per annum • Milk is the second largest agriculture produce next to maize • 70 % main workforce
Impact of Livestock on Rural Income	<ul style="list-style-type: none"> • 14.32% from milk • 0.5 to 3.2% from other livestock sources

As such the total income per family will be a combination of the species specific incomes listed above. These are income levels under the existing subsistence production systems, sub optimal and with major yield gaps and uninfluenced by government policy interventions. Better management levels (feeding, disease control and genetic inputs) would substantially reduce the yield gaps and enhance output & incomes. A Nation wide study of the milk sector by the NCAER (1991) reports the share of livestock as 37 per cent of the rural household income in the Eastern Region. **The Sikkim LSRE Sector Analysis however shows that over 60 per cent of the rural household income in Sikkim comes from livestock farming.**

Income from livestock is thus a substantial contribution to the subsistence farming systems in Sikkim. Reduction in the yield gap (difference between potential yield and actual yield) needs only simple measures, which will result in quick response, such measures alone will enhance output by 50 per cent. Enabling the small holders to maximise livestock income can make all the difference between subsistence and progressively viable farming systems. A critical role the government needs to play therefore is to help them maximise returns on their existing household livestock enterprises in the short term and enhance productivity in the long term. For this several specific policies can be considered.

Because of geographical isolation, extensive terrains and fragile rural economy, the smallholder group will find it difficult to participate in the development process. Government policy therefore must focus on aggressive strategies to integrate the predominantly small producers in the state in the larger process of sectoral growth. Increasing farm incomes through increased productivity (adoption and application of technologies) is the critical pathway to achieve their involvement and inclusion in the growth process.

3. NEW LIVESTOCK SECTOR POLICY (GOALS)

On the basis of the detailed Sector Analysis carried out by the State Livestock Review Exercise in 2003-04, and in the light of the facts placed above, it appears that the following will be the most appropriate policy considerations for the growth of livestock sector in Sikkim:

- Use the livestock sector as a growth engine for the social and economic development of the rural population, increasing rural self-employment opportunities, enabling steady growth of rural household income and improved quality of life in the Sikkim villages.
- Enable the small producers to actively participate in the process of development by equipping them with appropriate skills and technologies to transform the growing challenges of the market place into opportunities to build comparative and competitive advantages through improved livestock quality and higher productivity.
- Ensure the ecological and environmental sustainability of the livestock sector growth and modernisation; constantly monitoring

the environmental impact of the growth process and designing policies and programmes to effectively mitigate their adverse impact.

4. STRATEGIC FRAMEWORK

To implement the policy considerations mentioned above, the state livestock sector policy framework could be developed using the following thrust areas:

I. Equip and empower the small producers with information and skills to maximise returns from their household livestock enterprises through appropriate technologies and self-help approach to problem solving.

Sikkim livestock farmers need many simple skills and services for the day-to-day management of their household livestock enterprises. These services are: timely vaccinations against diseases for all species of livestock; veterinary first aid; drenching and sprays for endo / ecto parasites; and skills (low cost technologies) like candling of eggs; termite harvesting for feeding backyard poultry; optimal use of fodder (chaff cutting, feeding mangers), innovative feeding practices like pod feeding for small ruminants and shelters for poultry and small ruminants using local materials.

These services and Tasks are constantly in demand in the villages involving very simple skills and appropriate knowledge. They do not need the expertise of a veterinarian or even a Para veterinarian. The department attempts to provide them the services at the time of their need. Since the Veterinary Institutions in Sikkim are few and far between, accessing these services at the time of need often becomes cumbersome. No organised institutional network can make timely delivery of these services in villages. It is inconceivable to expect the department of animal husbandry to dispense these minor services: for example vaccinating thousands of backyard poultry and recurring batches of newly hatched chicks all through the year becomes an immensely difficult proposition.

Capacity building among farmers for self-help right in the village could be the most sustainable solution. In view of high literacy rate in the state (both men and women) simple skill development among the educated young farmers in village/ a cluster of close-by villages can provide constant services to the farmers at the time of their need. Timely access to these services will reduce the farmers' risks and losses due to diseases, enhance outputs, reduce yield gaps, increase stockholding (reduced mortality) and reduce costs of production, bringing about overall improvements in efficiency and viability in their existing household livestock enterprises.

Concept of women livestock link workers

Small ruminants and poultry are usually the charge of the household women and women are likely to be the main users of these services. It would therefore be most appropriate to focus on rural women as the target group for training and train large numbers of women on these skills as 'Livestock Link Workers'. These village based trained lady

livestock link workers would constantly be available in the village, will have far better access to households and housewives at all times of the day; and above all providing these skilled services will give them a small, but all too necessary additional cash income as service fees.

Having established village based lady livestock link workers as service providers, the next step would be to build a group of progressive livestock farmers (Target Livestock Farmers: some 10 men & 10 women farmers in each village) as the permanent body for farmer to farmer livestock extension support and to steadily build up their capacity by repeated village based skill trainings (VBTs). They would gradually evolve as the harbingers of change in the village and together with the lady livestock link worker will help the rest of the village to adopt skills and technologies for higher output and enhanced household incomes. This will facilitate harnessing successful indigenous knowledge and practices for wider application. These processes will further strengthen the noble concepts of Participatory Technology Development (PTD) and its spread, which is currently being implemented in the department.

Such training and empowerment programmes will lay the foundation for a sustainable, decentralised, village based, farmer-to-farmer extension network in the livestock sector, outside of the government departments which will further complement the State's recent initiatives in setting up a livestock extension support system.

The new livestock sector policy should enable the Department to structure these village based skill training's. Further identify suitable agencies (NGOs) to impart the training at strategic locations for easy access to small holders. The department's task is to assess and quantify the training need, to structure and package the training programmes and to farm them out to grass root level people's bodies all over the state for actual implementation.

II. Promote and nurture grass roots level organizations all over the state, as the organic link between the department and the small holders.

Several forms of such grass root level organisations are possible: Milk Producers Cooperative Societies under the Sikkim Milk Union, Breeders Associations, Non-governmental Organisations, Voluntary Agencies and Self Help Groups like PTD groups of village communities. In the Sikkim context the village milk cooperative societies where they exist and women's self help groups in villages would be the most suitable and sustainable form of grass roots level peoples' bodies. They should form the organic link between the Department and the small holder, particularly the departmental institutions at the Gram Panchayet and Block Level. Also they should function as the change agents for motivation, skill training, extension coordination and value addition wherever necessary.

Such training programmes are all of short duration, aimed merely at skill transfer, can be locally arranged anywhere, preferably as close to the participants' domain: partly at common centres and partly in actual

field situations in their villages; and would need refreshing at frequent intervals, on the job. A large number of the trainees are likely to be rural women. Therefore the spatial distribution of the link agencies evenly in all areas, their grass roots nature and rapport with the rural communities of small holders, are essential conditions in promoting and nurturing them.

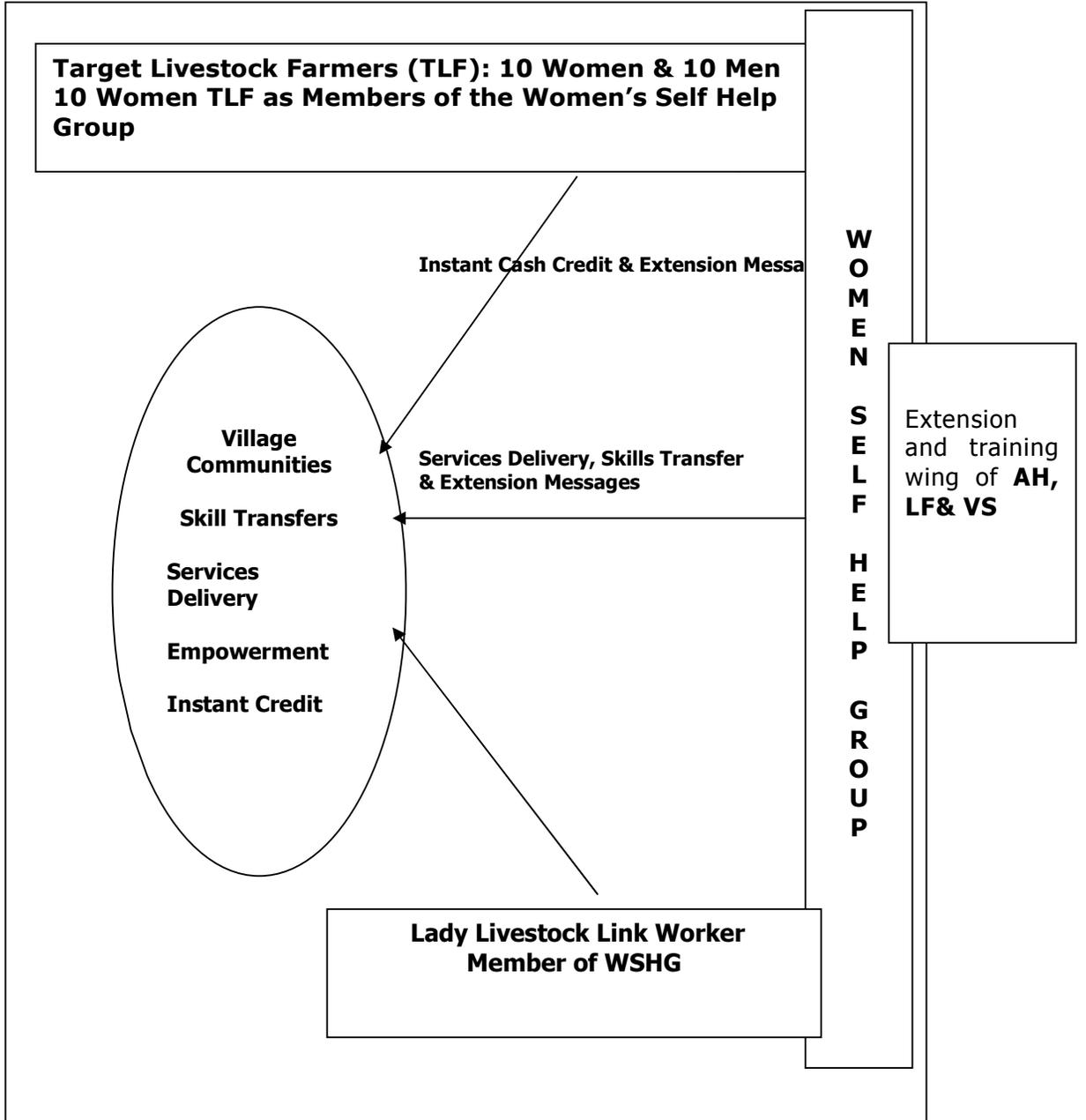
For this the government should launch a programme for promoting grass root level organisations, with the help of larger non-governmental organisations at national, state and district level. Further use the development blocks; gram panchayets; Sikkim Milk Union, and the Sikkim Livestock Development Board etc. A budget for kick starting the movement would also be a part of the policy implication.

III. Enable the village institutions created under the new livestock sector policy to evolve as independent farmer to farmer livestock extension mechanisms in each village; totally outside the government, decentralised, sustainable, live & continuing and completely integrated in the village community.

Capacity Building and Empowerment of Rural Communities, Skill Transfers and the Services Delivery Mechanisms discussed above under the new livestock policy framework, are all dependent on the structuring of a community driven farmer-to-farmer extension (FARINEX) network in villages. The confluence and convergence of such multi institutional network (Target Livestock Farmers (TLF), Lady Livestock Link Worker (LLW) the Women's Self Help Group (WSHG) and Participatory Technology Development (PTD) groups); on the village community would engineer a quiet revolution, in the life styles and livelihoods of these communities, far beyond the realm of their livestock enterprises.

All of them are individuals from the village community, who underwent a process of continuing capacity building selectively through a series of: village based trainings; class room instructions, hands-on training, exposure visits and skill transfers and who as institutions, developed extraordinary synergies and shared a common vision. Together as institutions and individuals, they promote technology adoption, skill transfers and services delivery: all leading to: better resource utilisation at farm level, reduce costs of production, cut down production losses, minimise risks to investments, improve liquidity and access to instant cash credit; eliminating hopelessness and reducing vulnerability; enhancing outputs and household incomes.

Village FARINEX Network: Model



To ensure flow of information and messages continuously into the village community, the linkages of this decentralised farmer to farmer extension network to institutions out side the village is crucial: the prime linkages will be: (i) The department of AH, LF &VS, particularly its extension wing, the lady livestock link worker to the Animal Husbandry Extension Officer in the Block Headquarters; (ii) the Target livestock Farmers to Department of AH, LF &VS Training Centre at Deorali; and (iii) the women's self help group to the commercial bank branches, other rural credit institutions and the NABARD head office in Gangtok.

The new livestock sector policy should enable the Department of AH, LF &VS to coordinate the newly established extension network spread across the villages, through the creation under it of an extension wing made up of livestock extension specialists, specialists on gender related issues and sociology and social welfare specialists: all of them women and all block level AH Extension Officers (EOs) in the Department reporting to the Extension Wing and Coordinated by it.. The Department should also have a Village Training Team for each district (made up of one veterinarian, one agronomist and a sociologist) and a modest budget for meeting the training and coordination costs.

IV. Redesign and reconfigure the input delivery services under the government to serve as protective armour around small producers and their subsistence farming systems.

Animal health care and breeding services are the two most important services that the state now provides to livestock farmers in Sikkim.

The Field Survey carried out under LSRE shows that the cases treated by the veterinary dispensaries range between 84 - 480 and veterinary hospitals some 600-2400 in a year (cost incurred by government: approximately Rs.729 - Rs.4166 per case in dispensaries and Rs.291 - Rs.1166 per case in hospitals). In addition each case costs the farmer Rs.100-300 per case for medicines and his time and cost of his own travel. The system thus helps neither the government nor the farmers.

Geographical circumstances in Sikkim are not conducive for the livestock farmers to bring their livestock for veterinary and Artificial Insemination (AI) services to veterinary hospitals and dispensaries. Therefore in the context of Sikkim the existing practice of delivering veterinary and AI services at farmers house holds need to be formalized through this policy frame work as a mandate. In the revised set up hospital and dispensary personnel will make fixed day village visits in their jurisdiction and provide required veterinary and extension service. AI services will be provided as and when needed at the farmers' doorstep. Similarly emergency services will also be provided at farmer households whenever required. Citizen charters need to be facilitated in order to render farmers understand the services delivered and the user charges etc and the

standards. Accordingly the department has to workout suitable operational strategies.

Further, the new livestock sector policy should permit the Government Veterinarians, Livestock Inspectors, and Stockmen and Inseminators handling these practises, to collect user charges for the services rendered at the farmers households. The department will work out suitable farmer friendly mechanisms to implement the concept of user charges.

For rendering quality and effective services every four to five veterinary dispensaries should be kept under one veterinary hospital for the purpose of technical backstopping, monitoring and evaluation of the functions of the dispensaries' such arrangements will assist to improve the standards of veterinary services and AI besides giving larger opportunities for establishing links in epidemiological approaches which are of public good in nature.

V. Promote adoptions of advanced technologies, encourage and support their application for productivity enhancement, both of the livestock and of the smallholder producers.

a. Cattle breeding for milk:

To increase productivity, a critical area for experimentation and promotion is the "intermediate production system" which enables the small holder to gradually integrate the highly productive modern technology and management into his traditional system. Introducing crossbred milch animals (half-breds) into the traditional producer households is an excellent example of the intermediate production system, which gives the farmer some high production features but also preserves some of the ruggedness of the local animal he is used to. Crossbred cows can be promoted in the more accessible areas where trading in milk is possible: example the dairy cooperative society areas.

Production of high quality half bred bulls for dairy breeding, Siri breeding bulls and AI system, are all highly specialised tasks. They involve building and improving infrastructure, developing skills & technologies in a sustained manner. The government should therefore move these aspects of livestock production from the department of animal husbandry and entrust it to the newly promoted autonomous body "the Sikkim Livestock Development Board", which will manage it with the levels of excellence required and in an economically viable manner.

The total requirement of Frozen Exotic Bull Semen for the cross breeding programme and Frozen Half-bred Bull Semen for the inter se mating of the half-bred heifers / cows born under the state's AI/ Natural Service programme, should be obtained from National Organisations / other states / Nongovernmental organisations (like NDRI, NDDDB, SAG, KLDB, BAIF etc.) as this would provide the large turnover required in the

number of bulls used, in order to ensure a wide genetic base for the inter se-mating of half-bred cows in the state, over the years. **The SLDB should not attempt to build frozen semen production stations nor produce crossbred semen in the state, as the numbers of bulls involved will be too small to satisfy the statistical minimum for genetic progress.**

The new livestock sector policy should encourage delivery of AI at the farmers door-step as a shared-cost input, by mobile Inseminators both government and private, in order to reach out to much larger numbers of farmers and progressively covering, under AI, at least half the breeding female among cattle earmarked for cross breeding every year; steadily increasing the number of cows in Sikkim to the targeted numbers and enabling the vast majority of small holders to include crossbred cows in their production systems in areas earmarked for crossbreeding. **Cross breeding should not be promoted in areas reserved for pure breeding of Siri Cattle.**

Most importantly in Sikkim the answer to increased milk production lies in making good quality crossbred bulls available for natural service. These bulls have to be procured from farmers' based on the field recording programme already under way in the Department and are to be rotated amongst the villages every three to five years, to avoid inbreeding.

Application of advanced technologies like multiple ovulations and Embryo Transfers (MOET) as strategic tools to produce high quality crossbred bulls for breeding crossbred populations and high quality pure Siri breeding bulls for conservation of Siri germplasm and also to produce pure Siri draught cattle to meet the farm power requirement of the state.

b. Cattle breeding for draught:

Sikkim needs assured supply of good quality indigenous Siri breed bullocks for farm power, as crop production in Sikkim is completely dependent on work animals for farm power. Cultivation of crops in narrow terraces on steep mountain slopes needs the special small, compact and sturdy Siri Bullocks. To ensure a steady supply of good quality working bullocks for crop production in Sikkim, a good number of the Siri cattle are found in Sikkim, particularly in areas of difficult access in parts of East, West and North District, should be reserved for selective breeding. Siri cows do produce a reasonable quantity of milk, which will be used by the farmers for home consumption and / or limited trading in the village itself. All male calves born would be raised as future work animals. The demand for work animals in Sikkim is high in all four districts and therefore the selection and work animal production programme will be viable and sustainable. This would generate a moderately buoyant economy in the reserved areas. The Department of AH, LF &VS has already started a field-recording programme to identify good Siri bull mothers. Selected bull calves will be raised as Breeding Bulls by identified skilled farmers for pure breeding of the Siri breed through natural

service. **Positioning a large number of selected natural services Siri bulls in the reserved areas will be the strategy thrust for Siri Work Bullock Production.** Similarly breeding local Siri cows with selected Siri bulls for production of bullocks for agricultural operations is of paramount importance as agriculture in the state is entirely dependent on work animals for farm power.

c. Cattle Breeding for Meat:

Meat comes as a by-product from cattle. Most of the meat consumed in Sikkim comes from beef. Larger number of unproductive and senior bulls and bullocks contribute to the beef produced in the state. Large numbers of unproductive cattle also migrate to Sikkim slaughterhouses for beef. Beef comes as a by-product. Breeding cattle for commercial beef production has never been the choice in the livelihood option of the livestock farmers and the land laws do not permit for cow slaughter.

d. Production of other Livestock for meat production:

Pigs, goat and sheep largely contribute to the human food security in the state. Poultry too contributes substantially to minimize protein hunger in the state through backyard poultry for meat and eggs.

Policy interventions in the sheep, goat, pig and back yard poultry sub-sectors should not be designed as subsidies for subsistence and poverty alleviation; but actually as sustained measures of equipping and empowering the households involved, to rise well above the poverty line, through skill training, self help, awareness and appropriate technology for management and production enhancement of the species of livestock they depend on. These interventions should actually comprise a package of measures for:

- Skill training, subsidies for acquiring breeding stock like Custom bred Bucks, Rams, Boars and Cocks; and concession credit schemes for household level livestock enterprises on the one plane;
- Breeding and selection programmes for all species: at the departmental poultry farms for desi fowls; with trained sheep / goat breeders for raising breeding stock for sheep and goat; trained pig breeders and non-governmental organisations for breeding stock for pig, on the second plane; and
- Aggressive promotional activities for building up the organic link of people's bodies out side of the government (grass roots level NGOs), is essential for the sub-sector, on the third plane.

e. Breeding Swine for pork meat

Rearing and breeding swine for domestic consumption ranks second in the state in the food basket of Sikkim. Practice of grading local pigs having many of the rugged qualities and capabilities with exotic boars are an ongoing practice in Sikkim.

- Grading up of the indigenous pigs continuously with Large White Yorkshire/ Saddle back/ Land Race/ Middle white Yorkshire and Hampshire Boars and supply of high grades of graded boars to farmers for mating their sows may be continued.
- However farmer centered swine production system and distribution of broiler pigs, as fatteners might prove beneficial to produce commercial pork as entrepreneurships. Few clusters of self-help groups may also be promoted to produce breeding boars to cater to the needs of the farmers engaged in swine breeding. Another cluster of SHG may be promoted to take up high-grade commercial pork production as another entrepreneurship.
- Such practices become coherent over a period of time promoting ancillary entrepreneurships in swine production and in turn elevating the thinking horizons in livelihood options and life styles.

f. Breeding Goats for meat

Custom bred Half-bred goat (Local x Boer) on trial basis and selective breeding between Singhari (local breed of Sikkim) in order to enhance animal productivity and support livelihood options.

g. Breeding sheep for meat and wool

Banpala and Gharpala are the indigenous strains of sheep available in the state. These are dual purpose sheep that have survived the natural selection process. Selective breeding among these strains of indigenous sheep in Sikkim would assist the state in conserving the indigenous germ plasm. However adequate focus has not been given to this sector because of its marginal contribution at the moment, to the total livestock asset value. However due emphasis is to be given as and when required, based on peoples demand.

Breeding and improvement of sheep and goat will have to depend on natural service. This needs provision for breeding buck and ram production in very large numbers: an approximation of the numbers would be: genetically selected Rams 1000 and Bucks 10000, annually. No government farm can produce such numbers. Only participatory efforts involving large numbers of well to do and progressive farmers will succeed. There are in Sikkim a good number of medium farmers, farming goats for the market. They normally have larger flocks and would be interested in producing breeding stock on commercial line instead of market animals, because of possible higher prices. The government should target these farmers for Local x Boer (half bred) bucks production on trial basis. Similarly selective breeding of local Singhari goats is tried out. Build their capacity for breeding stock production through skill trainings and encourage them to produce quality breeding stock in their private domain in technical collaboration with the Department of animal husbandry / ICAR. In the initial years this programme would need to be supported by incentives, both cash and skills. Once structured well, the

movement will go on, on its own, as the breeders will have commercial incentives for marketing breeding stock to the small holders. Government should use the organic link of grass root level links it establishes with the non-governmental organisations to motivate and train the small holder sheep and goat farmers to progressively improve their flocks by constantly using selected Rams and Bucks on their flocks and also changing them from time to time to avoid consanguinity.

h. Breeding backyard poultry for eggs and meat

Introduction of Selected Custom bred varieties of Fowls for the Backyard like Curoilers, with higher body weights and faster growth rates from other states are all examples of intermediate technologies, which will considerably improve productivity of household livestock enterprises without disturbing the harmony of the traditional production systems. While attempting to conserve the existing backyard poultry germplasm, the policy should facilitate implementation of innovative concepts of generating people centred backyard hatcheries as is being practiced under the Bangladesh Academy of Rural Developments (BRAC) need to be promoted.

The government's focus for poultry development in Sikkim should be two fold: (i) the desi fowls in the back yard poultry system and (ii) the tiny commercial stream of organised farms as the commercial poultry industry in Sikkim is far too small to bring in change and modernisation on their own. Therefore all public money available can be directed towards support for the desi fowls and the back yard system. Using the organic link the government policies should build up awareness among the farmers on skills and systems useful to them and train practitioners from among them to provide these skills in the village itself. These skills include vaccination, candling of eggs, feed supplementation (termite culture) and shelter innovation.

- Grading up the local fowls with better Indian Breeds of Fowls through supply of pullets of the selected Indian breed repeatedly over a five-year period (by which time the entire population of local fowls would be transformed into high grades of the chosen breed); and then allowing the flocks to multiply naturally in villages.
- Introducing high yielding custom bred sturdy breeds of poultry curoiler; with production potential of 150 eggs a year and slaughter weight of 2 kg at 12 weeks for raising as free ranging, foraging birds in the back yards.

i. Breeding Yak and conservation of the germplasm:

One disconcerting feature related to large ruminants however deserves Government's immediate attention: the growth and multiplication of domesticated herds of Yaks in the fragile eco-zones of North, East and

West Districts. Notwithstanding the general view that local farmers hold yaks in small numbers is now well researched and with empirical evidence) that these fragile eco-zones above 9000 ft MSL hardly have any settlers, as the climate is extremely harsh and hostile.

VI. Encourage growth and modernisation of the State Livestock Sector in a well-balanced format, where all species of livestock are allowed to grow and develop in proportion to their livelihood intensity and potential to enhance livelihoods; not merely in proportion to their population size.

Development of the livestock sector in Sikkim during the past three decades, under the different five year plans, had largely been monopolised by the Bovine, almost to the exclusion of other species; the plans having largely ignored their livelihood intensity and potential. It is nobody's case that nothing at all has been done for the development of these species under the five year plans: but what was done was grossly inadequate, totally out of proportion to the sterling contributions these species (small ruminants, pig and desi fowls in the backyard system) provide to livelihoods.

Cattle indeed are the most popular species and are therefore the most preponderant, some 61 per cent of all livestock population; 71 per cent of all households own them. They also account for over 65 per cent of the total annual output value of the sector.

Never the less, sheep, goat, pig and back yard poultry, are far more livelihood intensive, are held almost entirely by the bottom end of the small holder spectrum, their numbers are very large, over 67000 households, and almost all of them live below the poverty line: in fact the poorest of the poor in Sikkim. Ignoring the development of sheep, goat, pig and back yard poultry, therefore is evidence of a fair amount of social and economic insensitivity on the part of the planners, Central as well as State.

The new livestock sector policy for Sikkim should incorporate adequate safe guards to balance the species wise outlay of the state and central plans largely in proportion to the livelihood implications of these species of livestock. The policy should ensure that government interventions in the development of these species and the small holders who farm them, takes place largely on a participatory format, heavily involving the proposed organic link of peoples bodies and self help groups, to reach out to the small holders, particularly those who live below the poverty line.

The department is finally accountable for the implementation of different livestock programs and activities for value addition to farmers' livelihoods. Besides the AH, LF VS Rural Development department, Sikkim Milk Union etc also operate livestock components quite independently without the knowledge of AH, LF & VS department. As a consequence there are overlaps of livestock related activities including distribution of

livestock and breeding bulls. These overlaps lead to parallelism thereby creating confusion among the different service delivery agencies and farmers. Instead of that a collaborative approach will minimise such overlaps leading to sharing of goals and rationalization of budget utilization in the larger interest of livelihood support.

The new policy framework necessitates developing mechanisms for collaborative approaches through an organized framework.

Considering the livelihood intensive nature of livestock sector, other government departments/ government undertakings have been seen implementing several state / centrally sponsored livestock schemes wherein the department of AH, LF & VS is nowhere involved. Implementation of such programs by other agencies without technical competencies is jeopardizing the effectiveness of programs.

The present policy should emphasize on incorporate such schemes in the AH, LF & VS department by mandate for planning ,implementation, and evaluation in order to achieve common goal for rural prosperity.

VII. Disease control and clinical health care

Resolute Direct Action by the government, in areas such as disease control and eradication, slaughter house modernisation and quality control mechanisms, where active participation of the public is needed, since markets fail to bring forth the necessary initiatives.

There are areas in which there is no alternative to resolute direct action by the state government; ironically these are precisely the areas where government policy has been the least active. The most important among such areas in Sikkim is animal disease prevention, control and eradication. Because the benefits arising out of animal disease control is in the nature of a public good, private action will never come forth in this field in requisite amount.

Sikkim has considerably good number of animal diseases impeding growth and development of the livestock sector, across all species. The state made little attempt to control or eradicate animal diseases (with the single exception of NPRED), but had always spent the major share of the funds available under veterinary services on curative veterinary care. There had of course been disease control programmes and annual vaccinations, but they were all unsystematic, not of the scale required and invariably sporadic in application.

Control of animal diseases will reduce the yield gap – the difference between actual and potential production – in even the low producing livestock of all species, leading to at least 50 per cent more output. The annual production loss due to the recurring ravages of epidemics in Sikkim is over Rs.80millions, some 10 per cent of the annual output value

of the entire livestock sector in the state. The smallholders who own the largest share of the state livestock wealth invariably bear the brunt of this huge loss. Investments in production enhancement programmes are at least in part in fructuous, if they are not preceded by effective disease control and containment programmes.

The present practice of vaccinating animals against FMD in Sikkim in a sporadic manner all over the state, vaccinating susceptible species along the national high way and / or around the outbreak nucleus is still not very systematic and wasteful way of spending public funds. Protection against FMD works on the principle of herd immunity, not on the level of protection of an individual animal. Sikkim carried out some 5523 vaccinations against FMD all over the state in 2003, when the total population of animals of susceptible species at risk was some 260000 - vaccination coverage of only some 2 per cent of the animals at risk. This would afford no protection at all to any of the vaccinated animals.

As resolute direct action by the government is the only practical approach to disease control and eradication, the new livestock sector policy should pursue the following specific initiatives:

Control of FMD in Sikkim is comparatively easier because of the remoteness of the state and the natural isolation the hilly terrain of the state provides. Border check posts and vaccination along the animal trade routes can effectively control ingress of pathogen into the state. Once this is effectively arranged, outbreaks will be very few and sporadic; and containment and stamping out operations will limit its spread. The state should therefore venture on to a "disease free state" programme as the funds required for it will be within reasonable limits and with very favourable cost benefit ratios.

Progressively cordon off the most potential production areas in the state as Disease Containment Zones initially and later as Disease Free Zones, enabling farmers to carry on their livestock enterprise without hassles or risks to capital employed. Accompanying zoo-sanitary control measures like restriction of movement of infected animals, check posts, border vaccinations, vaccinations along established cattle migratory routes and quarantine, should all be enabled, through a National Act for the Control of Animal Diseases, with pervasive jurisdiction covering all states and union territories. A strong and well orchestrated Disease Reporting and Surveillance System should be put in place to forecast the movement of the disease across the state and the country; and to respond to outbreaks with alacrity, for stamping out operations.

The policy for disease control among small ruminants, poultry and for control of HS and BQ among cattle and buffalo should be to carry adequate distributed stocks of good vaccines, ready for use any time outbreaks occur / vaccination campaigns are arranged. The vaccines should be made available to the trained workers in villages, self help

groups and non-governmental organisations constituting the organic link discussed earlier, for timely use, maintenance of cold chain and delivery to target animals and birds.

VIII. Credit Facility to livestock farmers

A crucial agenda under the new livestock sector policy should be to devise ways to ensure that the sector grows with the active and gainful participation of the resource poor, throughout the state.

Over 80 per cent of the livestock in Sikkim are owned by the smallholder group; marginal, small, the landless put together; and livestock constitute the major source of income for the vast majority of them. Unlike the Crop Sector, Livestock Sector has not attracted any direct subsidies except those packaged under the government's poverty alleviation schemes, like IRDP. Even this is extremely small for the livestock sector – Rs. 300 crore for the whole of India and less than Rs.10 crore for Sikkim. Under the current economic policies of the government, subsidy is not a favoured instrument in development planning. While it is quite understandable that access to better quality credit is a more favoured instrument, there is no denying the fact in the prevailing poverty scenario in Sikkim there is no alternative to a judicious combination of credit and subsidy, to pull up half the state's rural population above the poverty line.

For quite sometime to come, the government needs to devise specific policies and programmes to enable and encourage small holders, the main actors in Sikkim livestock production, to progressively approach viable levels of efficiency and output. This would involve, among other things, access to credit, better quality credit and some subsidy support.

India's aggregate measures of support (AMS) for livestock farmers in comparison to USA and EC were way below (minus 36 per cent in 1997 and not much better even now), leaving India enormous scope to provide subsidy support and other measures of protection to Indian farm sector, without violating the world trade order. Sikkim has all the reasons and economic justifications to strongly argue for subsidies to its livestock sector.

The new livestock sector policy should therefore enable the state to offer:

- a) The smallholder sheep and goat farmers and the backyard poultry farmers living below the poverty line, 50 per cent subsidy for acquiring genetically selected Rams Bucks and Cocks, for the genetic improvement of their flocks
- b) For popularising fringe technologies like Effective Micro-organism (EM) technology under trial in Sikkim, Participatory Technology Development (PTD) for promotion of straw based complete feeds, appropriate levels of subsidy as part of the promotional schemes.

- c) Finally, the cost of village based skill training of small holders and awareness build up through the organic link of non-governmental organisations including managerial grants for those institutions a subsidy package of the appropriate size.

On a different plane, the new livestock sector policy should engineer a new credit policy to improve the small holder's access to credit, improve availability of credit, and ensure better quality credit.

In almost all villages visited in all Divisions, smallholder livestock farmers had little or no access to farm level cash credit (working capital) for the day-to-day management of their household livestock enterprises. More than half the cash credit needs of the small holder livestock farmers in Sikkim were met by traditional moneylenders in villages. Good quality credit is the single most critical input for development of successful smallholder livestock enterprises. **All livestock farming in India (in Sikkim as well) takes place in mixed crop-livestock farms. It is therefore necessary to access the facility of Kisan Credit Cards for livestock inputs and services. The department and the government may initiate measures to publicize the facility and assist farmers in accessing the Kisan credit cards for the livestock enterprise needs.**

In many of the more developed states in the country the institution of women's self help groups have emerged as the most stunningly effective mechanism for household level cash credit in rural areas and their overall impact on the village communities have engineered a quiet revolution in the life styles and livelihoods of these communities. Access to cash credit to members for all genuine household needs and responsible servicing of credit has been the hallmark of their success. While women's self help groups have started emerging in Sikkim villages as thrift and credit societies, sustained promotion, capacity building and back up support by skilled NGOs are the pre-requisites for mainstreaming them into successful human development enterprises. Initiating promotional projects for the women's self help movement should be the foundation stone for all livestock and livelihood development initiatives in Sikkim.

Sikkim would need for its livestock sector two kinds of credit:

- a) Commercial credit availability for household level livestock enterprises to enable the upper end of the smallholder producers to move into intermediate production systems, but for all species in the same format and commercial logic.
- b) A concessional credit scheme for enabling the bottom end of the small holder spectrum / a combination of concessional credit involving some subsidy as well, in the IRDP format, to enable them to move above the poverty line; and achieve levels of efficiency for entering intermediate production systems.

IX. Ecological and environmental sustainability

Ensure the ecological and environmental sustainability of livestock sector growth and modernisation; mitigating their adverse impact through appropriate policies and programmes.

Unlike in other states livestock including large and small ruminants exert little or no negative impact on the ecosystem and the environment in general in Sikkim because of their low population density. As a matter of policy the state government has prohibited open grazing of animals in the forest areas and other CPRs and this policy has served the state very well indeed in limiting damages to the ecosystem. The most redeeming quality of the livestock population in Sikkim is the male-female ratio among cattle: hardly one third is male, just adequate numbers to provide farm power for crop production. Surplus male and unproductive animals in the population are culled and used as meat animals, retaining in the population only the productive animals and thus optimally using the available feeds and fodder for productive animals.

The state can therefore easily accommodate considerably larger numbers of high yielding cattle as well as goats for food production and employment generation. Other species like pig and desi fowl in backyards are eco-friendly. A planned and structured increase in livestock numbers in Sikkim is therefore a powerful tool for substantial livelihood generation over the coming decade, without any adverse impact on the state's environment.

Crop production in Sikkim is overwhelmingly dependent on draught animals, unlike in many other states in India where electrical and mechanical sources of power has substantially restricted the role of the draught animals in the farm power sector. But Sikkim has geographical compulsions precluding any kind of mechanisation of the farming operations and therefore draught animals will continue to be the mainstay of farm power in Sikkim for the foreseeable future.

Sikkim now has some 29000 draught animals and the numbers has been steadily declining over the past thirty years. **Ensuring their multiplication at least at annual replacement level should therefore form the states policy thrust.** With current levels of breeding efficiency, it will take nearly half of the breeding local cattle in the state every year, to raise the annual replacement stock. Government policy should therefore ensure that half the indigenous cow population in the appropriate ecosystems in the state is reserved for breeding work animals and that crossing with exotic breeds are discouraged in the reserved areas.

Sikkim does not have any animal by-product / co-product based industry now (nor should Sikkim permit such industry in the State) and so pollution from animal based industries is not a concern. The increase in the ruminant population, both large and small, should be carefully

orchestrated and monitored to mitigate negative fallouts if any, with alacrity. With good control on this growth process, the danger however will be so marginal that livelihood development programmes based on large and small ruminants can proceed unhindered along a well-structured growth path.

The Government has to put in place strong deterrence to preserve the rapidly decreasing threatened breed of yaks in the Alpine Ecology in traditional and ethnic system without damaging the fragile eco-system.

X. Institutional Set Up

Restructure and Revitalise existing Institutional Set Up in the Livestock Sector to enhance institution level efficiency; and promote new Institutional Models to handle the emerging challenges in Sector Development.

The Department of Animal Husbandry is the principal agency of the government for all matters connected with the health, production, and development of livestock in the state. The mandate of the department is to provide animal health cover, breeding services and extension support to livestock production. The Department is also responsible for all regulatory functions of the Government related to livestock and allied matters.

The Department has a state wide network of institutions: Veterinary Hospitals, Veterinary Dispensaries, AI Centres, AI Sub-centres and livestock aid centres. The Department also has a considerably good skill pool of professionals and Para-professionals to man these institutions and to provide services. The major services offered by the Department are Veterinary Services for all species of livestock, training & extension services and ns/artificial Insemination Services for cattle and buffalo. The department is manned by a Principal Director AH, LF & VS, and 2 Director level officers heading the Animal Husbandry and Veterinary Services wings; followed by 5 Additional Directors and several Joint Directors, Deputy Directors, and so on. There is a dire need for strong supervisory structure at block levels for effective monitoring and evaluation to add value to the livelihoods of the livestock owners. Despite many constraints, this network has contributed substantially to the growth of the livestock sector in the state. Furthermore, the department should focus on capturing professional competencies existing in the department by placing experts in respect of their qualifications and experiences

Breeding and management of goats, pigs, sheep, back yard poultry and yaks in a manner which is sustainable and supportive to farmers' livelihoods; needs expertise both in terms of technology and extension methodologies. Commercial poultry will continue in the administrative jurisdiction of Sikkim Poultry Development Corporation

Curative veterinary care and artificial insemination services are both in the realm of private goods, in the economic sense. These services generate personal benefits to livestock owners; curative veterinary care does not influence the endemic nature of recurring animal diseases. On the other hand preventive veterinary services will help to control and contain diseases and generate enormous public good for the state as well as the nation as a whole. The state gets approximately 3% budget for animal health out of the departments' budget from all sources. Out of this quantifiable three percent budget nearly 85 per cent is spent on curative veterinary and AI services, where as less than 5 per cent budget is only spent on prevention and control of animal epidemics. India (Sikkim too) still has all animal epidemics that existed in the country in the 19th century and some more. Rinderpest is the single exception as it was successfully eradicated by 1994. Thanks to the NREP, a collaborative venture of India and the EEC. **The present livestock services delivery strategy of the Sikkim Government, as well as all other states in India, therefore needs restructuring and reorientation:**

Private sector involvement in livestock production in Sikkim is confined to the small-organised commercial poultry industry. There is a fairly successful cooperative movement in the dairy sector, the "Sikkim Milk Producers' Cooperative Union". Sikkim Poultry Development Corporation, Sikkim Livestock Development Board,

All aspects of policy, planning, administration, orchestration, and regulatory framework, will be resolute and continuing direct action by the department.

Revised policy Frame Work should focus on the following aspects:

- Emphasis on effective disease investigation and preventive health measures.
- Creation of district level disease investigation units and strengthening state level DI cell as centre of excellence.
- Creation of District level disease investigation officers with subject matter specialization.
- Research and development in cold chain management.
- Hospitals and dispensaries will also act as centres for information dissemination, citizen charters etc.

- The technical staff will organize fixed day village visits to their jurisdiction and render services.
- All emergencies and AI services will be attended at the farmer's households at the request of the farmers as and when required.
- A cluster of four to five dispensaries will be under the supervision of one veterinary hospital.
- In view of the above circumstances a policy decision in favour of declaring veterinary services as emergency services looks imperative.
- At the same time the revised policy premise demands streamlining the clinical diagnostic systems, implementation of advanced technologies like Open Nucleus Breeding using MOET and disease surveillance and epidemiological approaches.
- As such it becomes indispensable to enhance the technical and managerial skills of staff. This forms the basis for concurrent training needs assessment and capacity building
- Further, wherever subject matter specialization is required as a policy the relevant subject matter specialists should be placed in strategic locations like disease investigation cell, breeding cell and polyclinics etc
- Opportunities may be given to existing staff for acquiring higher education through sponsorship.
- Modernization of slaughter houses to ensure public health and enhance competitive market standards of meat and related by products.
- Breeding and management of goats, pigs, sheep, back yard poultry and yaks in a manner which is sustainable and supportive to farmers livelihoods; needs expertise both in terms of technology and extension methodologies.
- The Department of Animal Husbandry will conduct a study on the feasibility of continuation and or streamlining different Livestock demonstration units and fodder seed production farms in terms of fulfilling their mandates and value addition. In deserving cases such units and farms may be continued with clear-cut goals, strategies and accountability of the staffs in the larger interest of extension mechanisms and input delivery systems for the benefits of the farmers. Detail information in this regard may be submitted to the Government before the financial year 2007.

These centres will become potential nodal agencies for the purpose of supporting the different section of the department in:

- a) Coordinating disease investigation, animal disease control, containment, eradication, cold chain management and surveillance etc.
- b) Development of the Sector and all economically important species of livestock in feeding and extension management.
- c) Regulatory role of the Government in administration, Policy, Planning, monitoring implementation and assessment for future planning

The department will however make use of the large numbers of trained village level vaccinators, self help groups, grass roots level peoples' organisations and the organic link of non-governmental organisations, built up under the new policy initiatives, for the down stream end of the control programme: vaccination, maintenance of cold chain, logistics, and stamping out operations.

Livestock Development activities will function in a more participatory format and will involve the department itself, its district level institutions, state and district level cooperatives, voluntary / non-governmental organisations, the mobile practices both veterinary and AI, Panchayet Raj institutions and finally the grass roots level bodies, self help groups and village level skill practitioners. Promotional role of the Government of Sikkim has only seen limited application in the livestock sector in the state and where it has been applied, the government has failed to hive off the bodies promoted as fully autonomous going-concerns. Promoting institutions does not mean the creation of new organisations in the public sector. It means, on the other hand, catalysing participatory networks, professional and trades organisations, supporting peoples' organisations and NGOs - besides setting up formal autonomous bodies with clear charters. A variety of mechanisms can be evolved and used by the government to influence these institutions, without actually owning and controlling them, so that their charters become congruent with the state's goals.

The development tasks under the new livestock sector policies would necessitate the promotion and nurture of the following:

- The state has already incorporated a State Livestock Development Board under the Societies Registration Act. The government and the department have to support such new autonomous body to function as the principal implementing agency for the cattle and buffalo breeding programmes in the state.
- The AI infrastructure in the state, save the AI centres in the field, will be transferred to the Board by the department of animal husbandry.
- The Board will acquire bulls for natural service, establish new semen banks and arrange for storage and distribution of frozen semen; establish a state wide infrastructure for bulk movement and

distributed bulk storage of liquid nitrogen; and deliver frozen semen and liquid nitrogen to every AI Practitioner at his door step, against payment, as a regular and continuing arrangement.

- The Board will encourage participation of all agencies involved with livestock breeding in its management and will be jointly owned by the Government of Sikkim together with all such agencies: Milk Unions, village Dairy Cooperative Societies, NGOs / Voluntary Orgs, other local bodies and self help groups. The controlling interests of the board will gradually pass on to the milk cooperative set up in the state as they progressively become the biggest stake holders in its activities.
- The Sikkim Milk Producers' Union (SMU) and the milk societies affiliated to it will be re- promoted with greater autonomy, greater member control and reduced government interventions, in order to enable it to pursue its charter and business interests as a commercial enterprise of the producer members.
- Cooperatives are grass root level democratic institutions, the cradles in which the state and national leadership is groomed and moulded.
- A new policy should enable the cooperatives to become more autonomous and self sustainable.
- Commercial poultry will continue in the administrative jurisdiction of Sikkim Poultry Development Corporation

This can best be done by the State Government bestowing positive discrimination on the Milk Union: that is by according them "favoured status", by offering them resource support, by providing them elbow room to restructure and evolve, survive and operate, by suitable changes in the legal and regulatory framework and above all, by recognising the sterling role they are playing in protecting livelihoods and addressing complex socio-economic priorities of the state. The new livestock sector policy in Sikkim must never lose sight of the fact that in order to be enabling for the livelihood intensive institutions, it is seldom necessary to control them, a principle which is at the heart of positive discrimination.