

DECEMBER 1-15, 2010

SCIENCE AND ENVIRONMENT FORTNIGHTLY

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GOAT RETURNS

Booming goat trade stirs
the ecology v economy
debate



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The goat gamble

It has been a slow and steady shift over decades. Forced by declining returns from farming in ecologically fragile areas, small farmers have been taking to goat rearing. Today, goats ensure income to five million households in India. It is now bonanza time, with demand for goat meat projected to shoot up. India will have to almost double its goat population in 10 years. Government is encouraging goat rearing. But no one considered one question: where will the goats graze? Over the past 50 years land available for grazing has shrunk by half and forests are reportedly overgrazed. If India does not secure its pastures, goats might turn from an asset to a liability, reports KUMAR SAMBHAV SHRIVASTAVA



Giyasilal Saini is a marginal farmer who has market savvy. It comes from experience. Living in a semi-arid area like Alwar in Rajasthan, he always knew he could not depend on farming alone. So he would keep some goats, like others in village Jaitpura. Then three years ago the pond that irrigated his tiny field dried up. "Rains have not been enough. I spent a fortune on irrigating my field but could not grow enough for my family," said the 36-year-old. He devoted his energy to goat rearing.

Within three years Saini's herd grew from 20 to 80-strong, the largest in his village. "They serve as a 24-hour cash bank," he said, closely inspecting the mouths of goats. He displayed two large teeth in the lower front jaw of one of the goats. "It means the *chhendi* (goat) is over 12 months old and the thickness of its backbone suggests it has gained 10 kg of weight," said Saini. "I can now sell it for at least ₹1,500."

Saini sells 35 goats in a year to the *Khatiks*, a community that trades in goats, for ₹1,500-1,800 per head. While earlier he could hardly make ends meet, today he has one of the most well maintained houses in the village.

Goat rearing is not capital intensive, hence easy to start. The partially denuded Aravali hills provide free grazing ground; that saves close to 70 per cent of the rearing cost. Being prolific eaters with super efficient digestive system, goats can eat anything anytime.

Like Saini thousands of small and marginal farmers in rainfed Rajasthan

have switched to goat rearing. In the process they have earned the state a superlative: host to the largest number of goats in the country. As per the National Livestock Census 2007, Rajasthan has 21.5 million goats, which is about 14 per cent of India's total goat population. In the past 10 years, goats in Rajasthan have increased by 27 per cent as against the all-India rate of 15 per cent. But why does a state with least mutton consumption in the country make this choice?

The reason is ecological. With the expansion of desert in Rajasthan, the population of goats will rise. People shift from agriculture and cattle rearing to goat rearing because goats can sur-



Farmer-turned-goat rearer Giyasil Saini

vive in harsh environment and still provide good profit. "This is the reason Rajasthan has the highest goat population in the country even though its non-Muslim population is mostly vegetarian," said K A Singh, director of the Indian Grassland and Fodder Research Institute in Jhansi, Uttar Pradesh.

Sixty per cent of the state is arid or semi-arid. It has suffered 40 droughts in

the past 50 years. Less than a third of the total 21.6 million hectares (ha) of cropped area has assured irrigation. Land degradation and uncertain monsoon have encouraged farmers in most parts to diversify into goat farming, vouch farmers of Alwar. The more arid a place, the more its dependence on goat rearing. Livestock contributes up to 60 per cent to the household income of marginal farmers in western Rajasthan.

Goat's biology makes the trade competitive compared to one-crop rainfed farming. From the age of one, they are able to conceive and breed twice a year. Most of the time they give birth to twins, sometimes to triplets or quadruplets. "It is like a crop. By the time you sell one bunch, another gets ready," said Saini.

Lucrative crop

India follows Rajasthan's trajectory in goat rearing. It has the world's largest goat population after China. As per the National Livestock Census the goat population in the country has almost doubled in 30 years: from 76 million in 1977 to 140.5 million in 2007. The rate of increase in goats in the past five decades has been the highest among all ruminants; they beat sheep and cattle (see graph 'Goat numbers grow fastest' on right). This growth rate is in spite of an annual slaughter rate of 38 per cent.

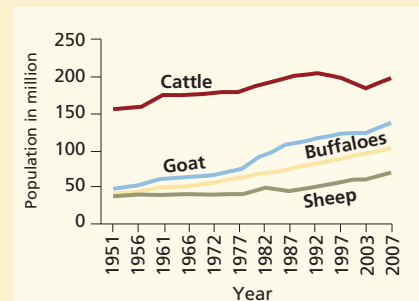
Today about five million households in the country rear goats, up from three million in early 1970s. Many households are absolutely surviving on income from goat rearing. Most of them are poor and marginal farmers, like Saini in Alwar. This reflects in the contribution of livestock to the national GDP. The contribution of the agriculture and allied sector to GDP has declined from 55 per cent in early 1980s to 21 per cent in 2009. But the share of livestock within the agriculture and allied sector has increased from 18 per cent to 23 per cent over the same period.

Market demands

What is also pushing goat numbers is the rising demand for goat meat in India, both for domestic and international market. Consumption demand is

Goat numbers grow fastest

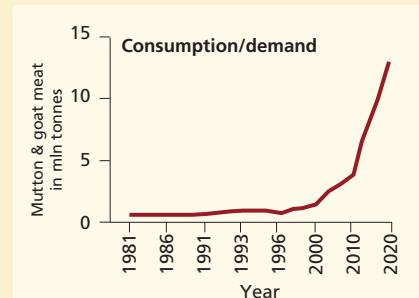
Highest rate among ruminants



Source: Department of Animal Husbandry

Meat demand to skyrocket

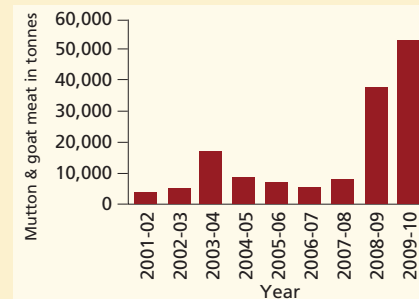
Thanks to urbanisation and export



Sources: NABARD, National Centre for Agricultural Economics and Policy Research

Meat export jumps

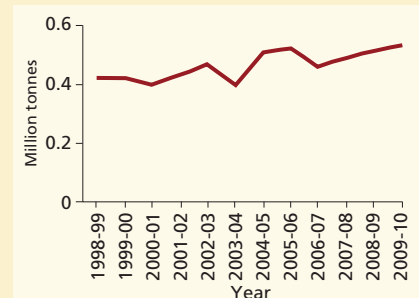
Middle East drives demand



Sources: Department of Animal Husbandry, Agriculture and Processed Food Products Export Development Authority

Goat meat production

It is yet to pick up pace



Source: Department of Animal Husbandry

80% of India's goat meat and mutton export is to the West Asia

more pronounced in urban areas that are growing at the rate of 2.5 per cent per year. While rural population has grown at 1.7 per cent a year between 1981 and 2001, urban population has grown at 3 per cent.

India is the largest goat meat producer after China. The rate of goat meat production (18.6 per cent) in 1997-2007 was double the production rate (9.3 per cent) in the previous decade. Despite a

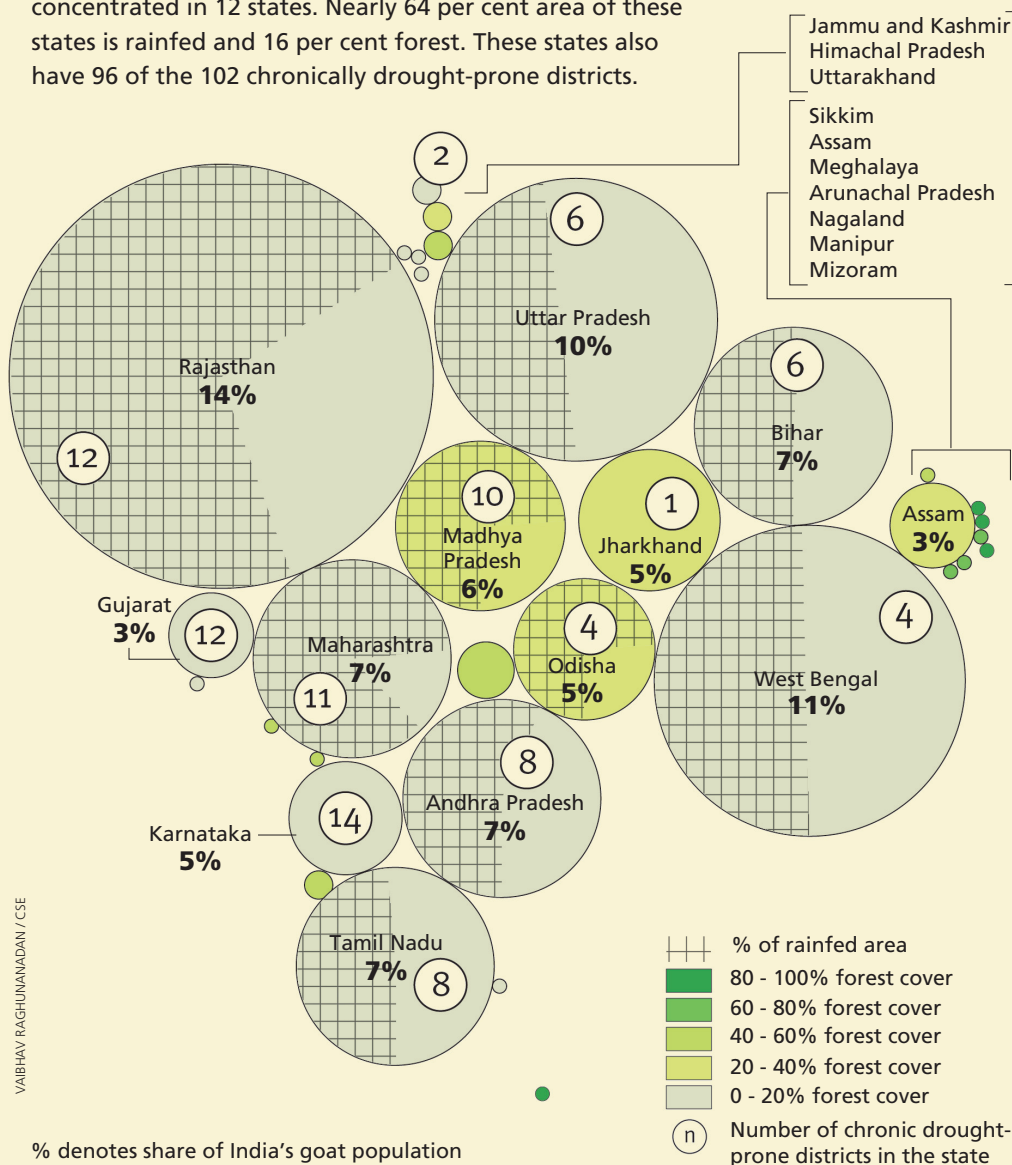
steady increase in supply, goat meat prices are continuously rising. The Wholesale Price Index shows the prices of mutton and goat meat have increased by 75 per cent in the past five years. This is the highest among all the primary food items except pulses and potato. In Delhi, goat meat prices increased from ₹170 per kg to ₹260 per kg in the past one year.

“The main reason for the price

increase is the rising export of goat meat to West Asia,” said Mohammad Aqil Qureshi, former president of the New Delhi Meat Traders Association. Sixty countries import goat meat from India. Big importers are Saudi Arabia, UAE, Kuwait, Angola and Egypt. Nearly 80 per cent of the goat meat and mutton export is to West Asia. Although India’s current export of goat and sheep meat is 6.4 per cent of the production, export is

Where are goats in India?

Goats are found more in rainfed areas with poor forest cover; 89 per cent of the total goat population in India is concentrated in 12 states. Nearly 64 per cent area of these states is rainfed and 16 per cent forest. These states also have 96 of the 102 chronically drought-prone districts.



where demand is set to explode. Export of goat and sheep meat has, in fact, increased more than eight times in the past two years, while production has increased marginally (see graphs on P29). "People in West Asia are shifting from Australian sheep to Indian goats because the meat of our goats is tastier and low on fat," said Qureshi.

This has turned goat into a much sought after economic instrument.

"Both exporters and local traders buy from the same market. Since exporters have a better purchasing power they have captured 60 per cent of the goat market in Delhi," said Qureshi. Exporters are buying goats at an even higher

price going up to Rs 300 a kg, said Billal Qureshi who owns a meat shop in Delhi.

The average sale age of goats is coming down. "We realised demand for the tender meat is rising," said Rahul Chaturvedi of the Foundation for Ecological

Fodder accounts for 70% of the rearing cost. It's free since goats graze in the open

On a good day trade at Baladi goat market near Alwar in Rajasthan could go up to ₹1.5 crore



Security, an NGO studying the goat market chain in Rajasthan and Karnataka.

The goat meat market is set to rise as the middle class is expanding and meat consumption is increasing. Demand for goat meat and mutton will rise to 12.72 million tonnes in 2020 against 3.8 million tonnes this year (see graph 'Meat demand to skyrocket' on P29), according to the National Centre for Agricultural Economics and Policy Research, Delhi. India will need 248 million goats to meet this demand, which is almost double the number of goats in 2007.

Insurance for the poor

Goat rearing was never so lucrative. Since goats were domesticated 10,000 years ago, they have been poor people's most reliable livelihood insurance. The National Institute of Rural Development, Hyderabad, studied the economics of one buffalo v five goats in Rajasthan in 1999. It showed yearly profit from the goats was higher than from a buffalo.

This explains goats' geographical and class biases. They are found more in ecologically fragile arid and semi-arid areas and goat rearers are mostly the poorest. It is not known whether goats were domesticated for riding out tough life in such areas or goats were responsible for ecological damage. But what is known is that in India goats are the most reliable source of earning a living in ecologically degraded areas. Of the 100 districts with high goat population in India, 24 are agriculturally distressed, 42 are chronically drought-prone and 21 show deforestation in 2007 as compared to 2005. Goat population is also high in disaster-prone areas, like parts of Bihar frequently ravaged by floods. In many ways, goat has everything a poor or a person in emergency needs: low investment, high and consistent returns and near liquid monetary status.

Add to this the spurt in demand for goat meat, and it is nothing short of an economic bonanza for India's poorest. But the goat's geographical bias also dictates its growth limit. The biggest incentive for goat rearing—free grazing—may not be there as the number increases. Saini of Alwar grazes his goats on a hill in Sariska National Park. Goats of 40 other villages graze on it. Once the hill is stripped of its vegetation, Saini will have to think of some other ways of providing for his family.



Costly silence

No one is debating where goats will graze

Goats give good returns only as long as fodder is free. Unlike cattle that are fed crop and crop residue, goats and sheep graze in wasteland, common grazing land and forests. In western Rajasthan, where degrading farm land and feed shortage forced people to abandon farming and cattle and turn to goats, pressure on grazing areas is showing.

Kankwari village in the core area of Sariska National Park is being shifted outside the park. Its remaining 55 families, with two-three goats each, graze goats on a hill inside the park, though grazing is not allowed in the core area. "We can survive only if our goats are allowed to graze on the *dungar* (hill)," said Kajod Singh, 70. Summers are especially tough. Mahavir Kumar of Baletha village in Alwar, who owns 50 sheep and eight goats, had to spend Rs 500 a tree a

day to feed his livestock in summers. "Even *vilayati babul* (*Prosopis juliflora*) was rented out at ₹500," he said. Not all can spend on feeding goats. "I'd rather sell the goats in summer than spend ₹8,000-10,000 (on 25 goats) to feed them," said Sohan, a farmer in Gopalpura village in Alwar. This is what will happen to the goat economy if grazing land is not ensured.

With just 7.87 per cent of its area as forest and 4.98 per cent as permanent pastures and other grazing land, Rajasthan is especially vulnerable.

Change in cropping pattern is also shrinking grazing space. In the dry season a large number of herds of goats and sheep migrate from western Rajasthan to northern and eastern parts of the state, Madhya Pradesh and Uttar Pradesh. Earlier, farmers in villages on the



Residents of Kankwari village graze goats on this hill in the core of Sariska park

way would ask herders to spend nights in their farms so that droppings of sheep and goats provide manure, said S K Shrivastava, chief conservator of forests, Rajasthan. Now people grow two-three crops a year, so most of the times the fields are cropped and farmers do not allow herders. "Herders often request us to let them stay in the forest," he said.

Demand on forests will only rise with Rajasthan setting aside large chunks of community wastelands for biodiesel plantation. The Rajasthan Land Revenue 2007 Rules allow 1,000-5,000 hectares (ha) of village common land to be transferred for 20 years from communities to the biofuel industry. Jatropha plantation in Rampura, Unti and Manpura villages of Jaipur district have affected fodder availability, found a survey done in 2007-08 by non-profit Centre for Community Economic Development Consultants Society that works in Rajasthan.

They turn to forests

Threats to goat rearing are similar across India. Between 1960-61 and 2003-04, land allotted for permanent pastures and forest grazing land decreased by a fourth, from 13.97 million ha to 10.44 million ha. In the same period the goat population more than doubled. In the next 10 years it will almost double again. "Since the grazing land is diminishing, the pressure is definitely going to be on the forest," said Sunandan Tiwari who worked with non-profit Winrock International India that has recently prepared a proposal for the Centre to develop a national grazing policy.

Winrock International estimates 272 million livestock graze in forest land and 78 per cent forest area in India is subject to grazing. According to BAIF Development Research Foundation, a public charitable trust, forest areas are overgrazed, with 100 million cow units (grazing equivalent of an adult cow)

Mixed breeds

Changing socioeconomic conditions are shrinking the populations of some of the best indigenous goat breeds in India. Jamunapari, one of the highest milk-yielding breeds also reared for meat, is disappearing from its native upper Gangetic plains in Uttar Pradesh. It is also known for its big size. Another breed Beetal of Punjab, also used for both meat and milk, is declining in number. Jamunapari constitutes 0.75 per cent of the total goat population and Beetal 0.22 per cent. Scientists blame loss of vegetation and habitat for dwindling populations.

India has 23 recognised breeds of goats; together they form only a third of the total goat population. According to the Livestock Census 2007, which for the first time calculated breed wise population of goats, rest of the goats are of non-descript nature. Most indigenous breeds have evolved through adaptation to agro-ecological conditions; and are very well adapted to harsh climate, long migration and lack of vegetation and water. Government's breed improvement programmes have not been able to make extensive use of indigenous breeds.

Indian breeds are divided into three categories on the basis of their use. Marwari in the western dry region of Rajasthan, Kutchi in the Gujarat plains and Black Bengal in the plains of West Bengal are reared for meat. Jamunapari in upper Gangetic plains, Beetal in trans Gangetic, Jhakrana in the central plateau and Osmabadi in the western plateau are known for high milk yield. Chigu, Changthangi and Gaddi goats in northern temperate regions are reared for good quality pashmina, chevon and hair.

grazing in forests against a capacity of 31 million in 2004-05.

Forest officials already see goats as a threat. "There is a saying in Rajasthan that *Oont chhode aankda, bakri chhode kankda* (the camel eats every plant except aankda, a thorny shrub common in the desert, but the goat eats every-

The goat debate

Are they good or bad for the environment? How the debate picked up and then floundered

CHECK POPULATION: In 1976 National Commission on Agriculture (NCA) recommended bringing down the goat population in the country. Their population in India had risen from 47 million in 1951 to 68 million in 1972. It recommended increasing the slaughter rate to bring down goat population to 67 million by 1985 and stabilise it at 40 million by 2000. "The trend of increase in goat population, particularly in the desert areas is disturbing. This can produce a devastating effect on vegetation due to browsing habits of goats," said the NCA report.

LIMIT GRAZING: In mid-1980s T N Seshan, the then environment and forests

secretary, advised prime minister Rajiv Gandhi that the subsidies given on goat rearing to the farmers under the Integrated Rural Development Programme be stopped because goats may encourage deforestation.

It got activists' goat. In 1987 the Centre constituted a task force under the chairmanship of C H Hanumantha Rao, economist and planning commission member, to look into the impact of goats on the environment. Its report

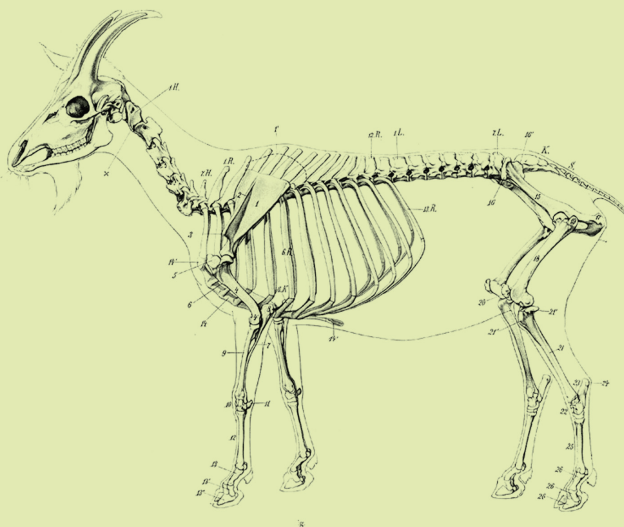
said sheep and goats do not pose a threat to the ecology. But it expressed concern over depleting grazing land.

MEMORY LAPSE: In the 1990s government schemes promoted goats without securing pastures. In 1999 a survey by the Indian Veterinary Research Institute in Mukteshwar, Uttarakhand, found 60 per cent of the foresters, 30 per cent administrators and veterinary officers, 20 per cent bankers and 24 per cent of the farmers it spoke to in the Himalayan region believed goats were a threat to ecology

FINAL WORDS:

T N Seshan: No comments

C H Hanumantha Rao: Find a middle path. Ensure livelihood for the poor, while protecting natural resources



thing except stones)," said S K Shrivastava, chief conservator of forests, Rajasthan. "Whatever little regeneration of the forest happens in the monsoon, it is eaten up by the goats and sheep."

A community of herders, Raikas have been protesting against the forest department across the state for grazing rights inside forests. Residents of Mandalvas village in Sariska's buffer zone complain forest officials often lock the goat and the herder and fine ₹50 per goat. "Troubled by this, villagers have sold goats," said sarpanch Phool Singh Meena. "Till five years ago our village had thousands of goats; now it has 200-300. Grazing is the biggest problem."

Foresters think the damage done by goats to the forest is the maximum among all the livestock due to their grazing habits. "An area where goats graze is not likely to regenerate because they eat the rootstock of the grass. Being small, they can reach places other cattle cannot,"

said P B Gangopadhyay, additional director general of forests. Behavioural studies conducted at the Central Institute of Research on Goats, however, show goats defoliate smallest branches of trees without damaging the twigs, said the institute's director Devendra Swaroop.

Goat v environment

This brings one back to a 25-year-old debate: are goats good or bad for the environment? (See 'The goat debate' above) In 1986 the rural development department had stopped distribution of sheep and goats under the Integrated Rural Development Programme in ecologically fragile areas. It feared goats might encourage deforestation. Civil society came out in support of goats. In December that year a task force was set up to study the impact of sheep and goat on ecology. "A comparative study of sheep and goat rearing and of cattle in ecologically fragile zones indicates that,

within the desired grazing pressure, sheep and goats are more economical and less harmful than large ruminants," concluded the task force in 1987.

All these years, no one defined "desired grazing pressure". It is the first step to sustained grazing.



Five million households in India rear goats. Most of them are marginal farmers

Act before vicious cycle sets in

Without a grazing policy the goat economy can go bust

Goat rearing is the poor's survival response to an ecological crisis. It has turned out to be an economic success. But the goat economy has the potential to precipitate an ecological crisis if grazing is not ensured. Options before India are very few: shrinking grazing ground, restricted forest land and stall feeding. India has to respond quickly to protect both poor people's livelihood and ecology. How can it achieve that?

To begin with, the ministries concerned have to turn attention to grazing. At present, no ministry is concerned with grazing. The animal husbandry department's mandate is to popularise goats, the agriculture ministry is limited to crops, the rural development ministry merely factors in goat rearing in its programmes and the environment and forests ministry just opposes grazing inside forests. If natural resources are to be protected, departments of animal husbandry, agriculture and rural development and the environment ministry will have to work together, Sunandan Tiwari, who has worked with non-profit Winrock International, said. "You cannot stop people from rearing goats; it is a lucrative business. But a clear understanding of the carrying capacity of the land is necessary," he added.

Goats being a private resource that survive on common resources, grazing and forest land, India needs to have a clear policy on goat grazing.

Discussion on grazing policy at the national level has been going on since 1994. Madhya Pradesh and Andhra Pradesh have attempted adopting a policy; it did not work. In Madhya Pradesh, the government formed grazing rules after studying the carrying capacities of the grasslands in mid-1980s. The rules were withdrawn because people as well as politicians opposed them.

Can stall feeding help?

Now there are talks about stall feeding. Hanumantha Rao, chairperson of the task force that was set up in 1986 to evaluate the impact of goat and sheep rearing in ecologically fragile zones, suggested a middle path. "The importance of goats in the livelihood of poor cannot be ignored. But since demand for goat meat is touching the sky a major part of it should be met through commercial goat farming so that there is least pressure on natural resources," he said.

M M Roy, director of the Central Arid Zone Research Institute in Jodhpur, thinks it is already happening. "People are shifting from extensive (open grazing) goat rearing to semi-intensive and intensive (stall feeding) rearing," said Roy. "In the metros many companies are entering goat farming because it is profitable."

Feeding in such farms is done through industrial production of fodder. Given the shortage of fodder in the country, stall feeding may not be tenable. Currently, 253.26 million tonnes of dry fodder is available in India against the demand of 415.8 million tonnes.

The fodder and livestock sectors come under the agriculture ministry. "The ministry thinks its only priority is to feed the people. What about the feed for animals?" asked an official in the Union environment and forests ministry.

Goat is a symbol of the fragile equation between ecology and economy in India. Let's sustain it. ■

With inputs from Ravleen Kaur and Ankur Paliwal

Goats, new cash cows

Entrepreneurs see business in goats' low investment and high fertility rate

An advertisement in a national newspaper invited investors: "Get 2% assured returns plus double your investment amount in four years." The offer was not for investing in gold, silver or equity. The cash cow was goats. Beetal Livestock and Farms Pvt Ltd, a company in Delhi's suburb, Gurgaon, claimed to run goat farms. It asked investors to invest in goats that it would rear.

When this reporter, posing as an investor, visited the company's office, it offered several other plans for investment on goats, all offering over 100 per cent profit. The company even promised insurance for the goats, each costing ₹6,000, and bank security on the investment. It claimed it has over 200 investors. How can it promise such an impressive return? Ashish Jham-sar, one of the sales managers, explained the business model: "Each goat gives birth to four kids every year. We sell these new goats to other investors like you. Thus, from each goat, we make a profit four times of its original value in the first year. Next year, each of those four goats will give birth to four kids and our profit becomes 20 times. The profit keeps multiplying."

The company started in 2008. Initially, it offered 8-10 per cent monthly return. Ragini Chandra (name changed on request), invested ₹1.2 lakh on goats with the company in April this year. She was promised ₹10,080 return per month for three years. She got the returns only for May and June. "The cheques for July and August bounced," Chandra said. Jham-sar said this happened because the company's bank account was frozen because of "some issue" with the documents. "We have sorted it out. We will distribute all due cheques," he added. Chandra is not convinced. "They've been saying this for two months," she said.

