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Goat production system

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ABSTRACT

In India the goat is also known as poor man cows it required less space and food as compared to cows. Goat is mainly reared for meat, milk and pashmina (Kashmir) and creates the income for the poor people of rural areas. Goat is easily adapted to harsh and different climatic condition in India and world. Goat is reared in different types of rearing system in India and world. The management of goats are quite easily as compared to dairy animal. The goats contribute 2-3 percent of total milk production in India.

Keywords: Goat, Production, System, Thailand, Malaysia

INTRODUCTION

Numerous livestock production systems can be found in developing countries. Their multiplicity necessitates a system of classification to order and group similar systems for the purpose of identifying opportunities and constraints to livestock development. In a recent multi-donor initiative coordinated by the Food and Agriculture Organization of the United Nations (FAO), a classification system based on criteria was developed: (i) the geographical condition of areas (ii) the level of integration of livestock with crop production; and (iii) the availability and type of land used for livestock production (iv) scarcity of water (v) types of soil and land (vi) economy condition (vii) types of people present that areas. These systems can be found in varying proportions in different developing regions of the world. Crop residues usually play a minor role in grass/rangeland systems, but are very important in mixed crop/ livestock systems. For analytical purposes, and to obtain a better understanding of the relative availability of other productive resources within these systems, they have been regrouped into various management systems. The grass/ rangeland systems constitute the extensive

grazing systems. Land is the principal resource in such systems, but its quality and productivity vary greatly between regions. Mixed crop/livestock systems are found in some of the most populous locations in the world. Potential labour availability in these systems is relatively high, but land and capital are less plentiful. The specialized production systems are made up of intensive enterprises, including the beef feedlots and dairy farms found in some developing countries, particularly near large urban centres. These systems are characterized by high capital inputs.

Management systems of Goat

Systems of goat production can be grouped into 5 categories.

1. Extensive production.
2. Tethering.
3. Semi-intensive production.
4. Intensive production.
5. Integration into crop agriculture.

These systems of goat production are based on the pattern of agriculture, availability of lands. Tethering is popular especially during cropping season where there is access to waste grazing close to grazing.

1) Extensive production: In these system goats are graze over large area of unwanted or marginal lands which are unsuitable for agriculture use. A very low level of unpaid family labour represents main inputs. Unpaid family labour including children help in herding goats & sheep together to graze on waste vegetation. Little management is practised loose & shutting them at night. Cheap family labour & higher return from this system of managements, the flocks' size is relatively large as compared to intensive production. This common systems region of arid & semi-arid climate. Both Extensive production & Tethering are typical of traditional villages systems in Africa, Central America & southeast Asia. Goats are browse & scavenge on any feeds that are immediately available near the farm & households, for example cassava roots peeling & banana skins. In Caribbean, Extensive production most traditional method of rearing goats. 2 types of management systems are recognised.

A) Small-scale production of about 5 to 40 goats in urban fringe areas.

B) Large-scale production of about 50 to 400 goats in rural fringe areas.

In rice growing countries such as in Thailand, Indonesia, Malaysia & Phillippines, goats often graze the stubble in between rice harvest. In Indonesia & Malaysia, it is common to cut leaves of Ipil-Ipil, cassava, jack fruit. Feeding of cut tree leaves is also common in West Indies. Limited stall-feeding of cut grass is provided during shelter. No conservation forages is practised. Extensive production has low carrying capacities where plenty of marginal lands is available. It is characterized by low rainfall & various browse plants. Nomadism & transhumance found for in India, western Asia & Africa are extensive production of goat production.

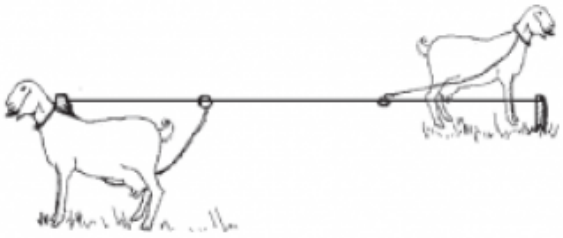
2) Tethering: Tethering is practised in tropics. Two methods are common.

A) Tied to a peg or fence line: goats are tied by rope. The lengths of rope represent the area available for grazing and browsing & usually quite short in length. By

shifting the peg for a different trees or posts, free access to a fresh grazing area is provided.

Goat tied in a peg

B) Tied to a ring on a wire between 2 pegs: a rope is tied to a ring which slides on a wire about 3 mts long in between two pegs. A goats are tied to this ring can move along parallel to the wire on either side. This method provided a rectangular area for grazing.



Goat tied to a ring on a wire

Water is provided when goats are shifted to shelter at night. Very little concentrate, salt, or mineral bricks are provided. This system common practiced in Southeast Asia, Central America and Caribbean. The reason for using this systems that is the goats are closely controlled, there is limited damage to crops & facilitates in situ feeding of crop residues. This method is often used by farmers who are concerned with crops cultivation. This method is common in many parts of Southeast Asia and West Indies.

3) Semi-intensive production: This system varying degree of compromise between extensive grazing & intensive production. Their is limited grazing & stall feeding of cut grass and trees leaves. Semi-intensive production is favoured where labour is limited for intensive production. It is widely practised in parts of Africa & Asia. In these system the goats receives 2-4 hours of grazing & then return to farm in evening. The farmers return with flock at night bringing cut trees leaves for feeding them next morning until the next grazing round.

4) Intensive production: Intensive System is one in which the goats are fed in confinement with limited access to land. Intensive production on cultivated pastures for meat and milk production is not widely practised, because the land is only now becoming a limiting factor. In Jamaica this system on irrigated pangola grass pastures with a carrying capacity of 37 – 45 goats per hectare occur. Cultivated grass & by-products are fed in situ. Goats are commonly fed with Napier grass with or without limited concentrate. Intensive stall feeding is common in most parts of Southeast Asia other areas where there is primary emphasis on crops production. Crops residues are rice straw & bran. The agricultural by-products are converts useful animal products.

This method practised in south India, northern Srilanka & Philippines. In java, Indonesia goats are stall fed intensively. With little or no access to grazing.

Advantage of intensive production

a) It keeps goats from damaging crops & prevents traffic accidents.
b) Goats can make efficient use of crop residue, kitchen waste and agricultural by-products.
c) It well suited to productive animals, exotic breeds and their crossbreed which are more susceptible to disease.
d) It reduces the burden of internal & external parasites.

Disadvantage of intensive production

a) It is costlier
b) Disease spread faster under poor management.

5) Integration into crop agriculture: This system can be extensive, intensive or semi-intensive. Goats are integrated with such plantation crops as rubber, oil palm and coconuts. This system tried in Sri Lanka, Malaysia, Indonesia and Philippines. In Fiji goat raising is almost entirely in hands of Indian settlers & about 70% of goats found in areas growing sugar cane though in non-harvesting season most goats are grazed on extensive hill pasture. The undergrowth in plantation crops such as grasses, weeds and legumes can be utilized and converted to useful animal product. These system successes depend upon the availability of herbage, yield of dry matter, right time of introduction of animals, correct stocking rate, lack of adverse effects on crops & profitable return from the crop and animal integration. These systems exploited much more than it present.

Advantage

a) Increased fertility of the land by return of dung and urine.
b) Control of herbage growth under tree crop.
c) Easier management of tree crop.
d) Greater economic return to the farmer from both the crop and animal components.

Table: Summary of Goat Management Systems

S.NO	Production system	Ecozone	Annual rainfall (mm)	Countries
1	Tethering	Sub-humid	1200	South India, Indonesia, Malaysia, Sri Lanka, Philippines, Thailand
2	Extensive production (highland)	Arid	500	Afghanistan and Nepal
3	Extensive production (lowlands)	Semi- arid	500 – 1200	North India, Afghanistan, Australia , Iran , Bangladesh
4	Intensive production	Sub-humid Humid	1200	South India, Indonesia, Malaysia, Sri Lanka, Philippines, Thailand
5	Integration with cropping systems	Semi- arid Sub-humid Humid	500-1200 1200	South India, Indonesia, Malaysia, Sri Lanka, Philippines, Thailand

Types of People Managing Goats

1. Nomadic Pastoralist.
2. Transhumant pastoralist.
3. Crop farmer.
4. Farmers with mixed farms.
5. Landless agriculture labourers.

1) Nomadic Pastoralist: Nomadic is a livestock system found under mainly arid, semiarid, & steppe condition. It is characterized by extensive system of husbandry management. Recurrent drought with consequent shortage of feed & low technological level in these regions. A limited number of crops can be grown in some areas & camel, cattle, goat & sheep rearing is the principal means of livelihood. In western Asia barren land with sparse vegetation, poor water supply & erosion exist and under such environment condition nomadic flock owner practice traditional system of goat production. During the long dry season in western Asia goat are grazed in close proximity to water & watered either daily or every other day. The hamlets in which a group of families settle are separate & independent of camels & cattle camp and each family has it own separate pen for goat. In northern Kenya here lack of grazing rather than water is the motivation for Nomadism. In Turkana nomads of this region divides their stocks into animal that browse – camel & goats & animals that are graze – cattle. In system goats are grazed in plains during dry season & moved into mountains with onset of rainy season and in case of cattle are vice versa.

Herd diversification: owing different species with different grazing habits, e.g. browsing by goats & grazing by cattle, reduce the possibility of total loss of all animals. Loaning animals & sharing herds it acts as an insurance policy, at any season droughts occur in some areas but not other. Consequently a network of social contacts is very useful.

Movement of herds

It is obvious strategy for survival & includes various types of migration, seasonal, short distance or long distance.

2) Transhumant pastoralist: it is differs from Nomadism in that practice other than migration may be important. Transhumance involves some shifting, rain-fed arable cultivation systems in villages during certain season of the year. These system found in countries e.g. Savanna zone Africa, where livestock may be moved into forest zone during dry season or grassland are seasonally flooded. Size &number of livestock herds determine wealth of farmer. The sedentary livestock owner cultivate such crops as millet, sorghum & cotton during wet season but migrate away from their land during dry season. Sometimes livestock of sedentary farmer entrusted to the transhumant pastoralists. In western Sudan transhumant pastoralist move northwards as rains come & plantation. Herd continues graze & return to their land for harvesting of crops along with their herds move southwards & spend in dry season where water & feed available. This cycle are continues with season change. In west Africa movement may be : from north to flood plains of rivers in the south from east to west where crops are grown &

harvested during dry season & retuning in north at onset of rains. From one fertile area to another settling in each from 1 to 3 years. Each tribe by custom has special territories of areas of their own dar of Baggara stockowner in Sudan or Dirah of Arabian peninsula. Transhumant people make an important contribution to the productivity & economic status of several countries in tropical Africa & western Asia.

Transhumance varies from tropical & sub- tropical countries in Asia. In Jordan tribal people are nomads or transhumance & grouped into 4 types

i. True nomads (people of the camels)
ii. Semi-nomads or transhumant people who rear goats and sheep.
iii. Tent dwellers & settled cultivators of the land
iv. The village settlers

In western Asia migration take place in the spring from winter quarters in the valleys & plains to Summer Mountains grazing lands in northern parts. In Egypt & Libya relative short movement in north-south direction are common from the north Mediterranean to spring grazing in south. Longer distance as far as the Nile valley take place during droughts. In Iran people migrates in spring from low altitude to cooler mountains areas from which they return in autumn. In Iraq migrations enter the desert in search of winter feeds. The search for water takes them to the fringes of irrigated land along canals. In Baluchistan people mainly found in highland plateau and mountain areas. In winter herds graze the irrigated areas of sorghum and other cultivated crops grown in the lowlands of the Indus valley & Karachi plains. In spring animal return from these areas. During winter when the people & animals are away from highland plateau and mountain areas, nomad from Afghanistan migrates to these areas away from more trying winter at home. In Nepal large migratory flocks of goat & sheep of about 160- 400 heads are found in High Mountain ranging from 5400- 7200m. These herds are managed under both village & migratory production systems. In villages flocks follow a route between village & High Mountain pastures. The migrations to the plains occur around October every year. Occasionally when feed shortage is acute, the herds migrate to higher altitude during summer & lower during the winter.

3) Crop farmer: who own a few animals a few goats is kept in the Savanna grassland nearest to the forest where there is a sufficient annual total rainfall for crop production. It is widely practised in Africa, West Indies, and Central America & in Southeast Asia. The farmer do not manage goat because they attend to crop cultivation. The task perform by children when herds size is small (30 goats) or hired shepherds when herds are larger (above 30 goats). During dry season goats grazed 4 to 6 km daily and during rainy season goats are grazed nearer the villages. Goats grazed 8 hours & return to the village at night. In many parts of West Indies such as Jamaica & Guyana goats leave homestead at morning and return to their own at evening. When herds are larger goats may be returned to common kraal. These system goats graze under coconut, oil palm or rubber plantation. In Asia relatively small areas, the number of goats reared is small. The emphasis on crop production and secondary importance of goats and sheep remains both species are valued by small or peasants farmers. Efforts to improve the

productivity of these animals must take important points of small farmers into consideration.

- Farmers are crop-oriented subsistence peasants with low incomes who live close to poverty.
- Landless peasants may or may not grow crops or rear animals. If they do not hired to shepherd the goats for extensive grazing & return to owners.
- Rearing goats involves minimum management attention is a source of investment, has low risk and definite source of income.
- In crop- growing area where crop by-product are varied and abundant rearing of goats is means of converting crops residue to animal products.

4) Farmers with mixed farms: These farmers are mainly transhumant people who as well as migrating with their livestock practice some form of crop cultivation. The pattern differ from shifting agriculture in that livestock including goats get just as much priority and occasionally even primary attention over crop production. Grazing natural pasture is the rule & only occasionally is grasses are especially cultivated for goats. In many parts of Africa, tropical America and Asia their is annual & short-term perennial crops are grown. Within this system just as different people, varying in culture and customs, their is also great variation in the crops grown, intensity of cultivation & integration of livestock with cultivation of crops. In Sudan the Baggara stockowners cultivate millet, sorghum and cotton. In Ghana maize is grown as rain break and immediately followed by other crops such as pepper, okra, and other vegetables. The Sonjo people in Tanzania have attention to goats and their system of goat husbandry. Goats are divided into two groups.

1) Young animals and does in milk that are kept in the village and milked twice a day by the women.

2) Adult male & dry females are kept in camps several kilometres away.

From camps goats are taken by young boys to graze by day and brought back at dusk to the shelter to protect them from predators. Kids are kept in separate pen & zero grazing by young men who gather forage for them consisting of branches of trees & leaves. Some crops like maize & cassava are grown & these supplement the income earned from goats. The crops also provide substantial amount of the food requirement of the people, some of crop residue are fed to the goats. The systems of goats grazing cereal stubble or other crops residue require minimum labour since goats are managed by children or other family member. The grazing of this stubble is a common feature of livestock management and complements crop-oriented agriculture. In India the farmer of Andhra Pradesh pay premium for penned goats in their fields since ensure the improved soil fertility for cereals.

5) Landless agriculture labourers: Peasant is those who do not have own land & may or may not own goats. The majority of them own small herds which are grazed from one area to another. The type labourers are found India & Pakistan & many of them subsist by Employment in agriculture. Whether or not they own animals these people is hired to shepherd goat. This shepherd goat they tend them along with their employer's animals. The goats are often shepherded on fallow areas where crops are grown so they

fertilized the land by the return of dung and urine. In semiarid and arid zones of Mexico there are 1 to 1.5 million peasants whose entire livelihood is the management of goats under these category.

CONCLUSION

It concluded that the goat production system is different in different countries. Systems are also varied with climatic condition. Each system contains own benefits and limitation. The nomadic pastoralist system commonly occured in hilly areas or countries and crop farmer system mixed commonly seen in rural areas.