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IMPLICATIONS OF FEED SCARCITY FOR GENDER ROLES IN RUMINANT LIVESTOCK PRODUCTION*

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Abstract

Gender division of labor in ruminant livestock production systems varies across regions according to economic, socio-cultural factors. There is a distinct age and sex division of work in pastoral (nomadic and sedentary) systems. Men are in charge of general herd management and selling of livestock. Women carry out dairy-related activities and manage vulnerable animals (calves; small ruminants; sick, injured and pregnant animals). Children undertake most of the routine work such as herding. In the mixed systems both men and women take part in animal husbandry activities such as harvesting and transportation of feed, chaffing of fodder, feeding of animals, milking, cleaning of sheds and sale of milk. Their degrees of involvement in each activity vary from place to place. Processing of milk is solely women's job. Children of both sexes tether and herd animals. Like in animal husbandry activities, crop cultivation tasks are shared among household members and also vary across regions.

Feed scarcity increase work burden of all household members, but more for women and children in many situations. Feed scarcity reduces livestock, crop and non-farm productivity. It reduces availability and access to food, via decreased food supply and incomes and hence reduces food and nutrition security and consequently human welfare.

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Introduction

Ruminant livestock is an integral part of most agricultural production systems of developing countries. They are important in maintaining the livelihood viability of their keepers by providing food, traction power, manure, raw material, cash, security, social and cultural identity, medium of exchange and means of savings and investments. The demand for ruminant livestock is increasing with rising population, urbanization and incomes. Several constraints, however, limit livestock productivity growth. These include inadequate and poor quality feeds/fodder, animal health problems, unavailability and high cost of improved breeds, and poor livestock management. The inability to adequately (quantitatively and qualitatively) feed animals is a critical problem in smallholder ruminant livestock production systems in the tropics.

Gender roles in agricultural production became an important subject of inquiry after Boserup (1970), called into question if women and men benefited equally from development. Gender is broadly defined to include socially prescribed responsibilities and tasks according to age and sex. Although gender refers to men, women and children, particular attention is normally given to women, because in some cases, they undertake major responsibilities in agricultural production – especially for subsistence, in addition to performing household chores and reproductive activities, most of which go unrecognized in employment records.

This paper examines the implications of feed scarcity for gender roles in ruminant livestock production in the tropics on the basis of available literature, which is scanty. The smallholder ruminant livestock production systems considered are nomadic, agro-pastoral and mixed crop-livestock farming. The paper begins with a brief discussion of gender division of labor in these systems.

Gender Division of Labor in Nomadic- and Agro- Pastoral Systems

Nomadic- and agro-pastoralists have distinct age and sex division of labor and responsibilities. Men are in charge of general herd management. This responsibility requires constant attendance at markets and other gathering places to obtain information on range conditions, water availability and incidences of diseases. They

direct the herders and guarantee that animals are well fed and watered. Men also take care of the dips, carry out most of the dipping, and supervise spraying of animals. They inspect animals in the evening to ensure that none is missing, or sick and if any is about to give birth. Men buy and administer veterinary drugs, perform minor veterinary procedures and castrations, sell and buy animals after consulting other family members.

Women are primarily responsible for dairy-related activities. They milk cows, process milk into butter and cheese, and market surplus milk and dairy products. Women take care of stocks requiring particular attention – such as pregnant cows, new born calves, injured and sick animals; kept near the camp. They assure that these animals are well fed and drink enough water. Women play significant roles in animal disease control. Their close contacts with the cows via milking enable early spotting of diseases. An abrupt drop in the milk yield is an indication of ill health (Bruggeman, 1994).

Most of the animal husbandry routine work is carried out by children, they do all the herding and much of the work around the homestead. Compared to boys, girls herd mostly small stocks. Herding small stocks and calves permit girls to return to the homestead on time to help in food preparation and other domestic chores. Children also assist in milking and watering of animals.

The gender division of labor in animal husbandry described above is fairly common among the Masaai in Kenya (Grandin et al., 1991), the Boran of Ethiopia (Coppock, 1994), the Baggara and Fulani nomads of South Dafur in Sudan (Kerven, 1987), the agro-pastoralists in central Nigeria (Waters-Bayer, 1988) and the Beja of Sudan (Morton, 1990). Gender division of labor is not very strict in these systems. When need arise, men milk the cows. In central Nigeria (Waters-Bayer, 1988) and the Beja of Sudan (Morton, 1990), for example, it is mostly the men and the boys that milk the cows and allocate the milk to different uses.

In addition to animal husbandry, agropastoralists cultivate crops. All household members contribute labor to cropping. In the agro-pastoral system in Central Nigeria, for example, the plots are managed by men, who with the help of hired labor and older sons, undertake crop cultivation activities (Water-Bayers, 1988). Women help in planting, fertilizer application and weeding. Grain harvesting is undertaken by all family members, but women and girls carry most of the harvest home. Post-harvest work is done by women, though men construct granaries and help

in crop storage. Women also keep small kitchen gardens with various vegetables, condiments, shrubs and trees bearing edible leaves and fruits. They work on their gardens with the help of their children and hired farm boys.

In addition to agricultural production, women are responsible for the daily and time consuming tasks of childcare, food preparation, and water and fuel collection. Nomadic pastoral women build and maintain homes. This necessitates dismantling the houses, loading them on the donkey or oxen for transportation, and rebuilding them at the next camp.

Gender Division of Labor in Mixed Crop-Livestock Systems

Gender division of labor varies from region to region in mixed crop-livestock production systems, based on culture, religion and socio-economic variables. A large number of animal production related tasks like harvesting and transportation of feed (green grasses/weeds, fodder, forages etc), chaffing of fodder, feeding and milking of animals, cleaning of cattle sheds and sale of milk products through formal and informal channels are done by both men and women, in varying degrees in different regions. Milk processing is primarily the work of women. Children of both sexes graze animals. Men make decisions about breeding of animals and marketing of large ruminants.

In the Coastal province of Kenya (Mullins et al., 1996), in the Ghusel village of Nepal (Thomas-Slayter and Bhatt, 1994), in the Karnal and Nadia districts of Haryana and West Bengal (Dhakar et al., 1993), for example, women's labor contribution to ruminant livestock management is highest in their households. In the high castes and rich families in Ahmedabad and Udaipur districts of India, most of the animal husbandry tasks are undertaken by either men or hired labor (Rangneke et al., 1993). Most of the animal husbandry labor in Holetta-Ethiopia is provided by children (Shapiro et al., 1998)

In intensifying mixed farming, the traditional gender responsibilities in animal husbandry are subject to negotiation and change over time. Technological change and market-orientation of smallholder dairying, for example, affect the basis of gender division of labor. It has been reported that where intensified dairying is associated with hand feeding (stall-feeding), the extra labor burden disproportionately fall on

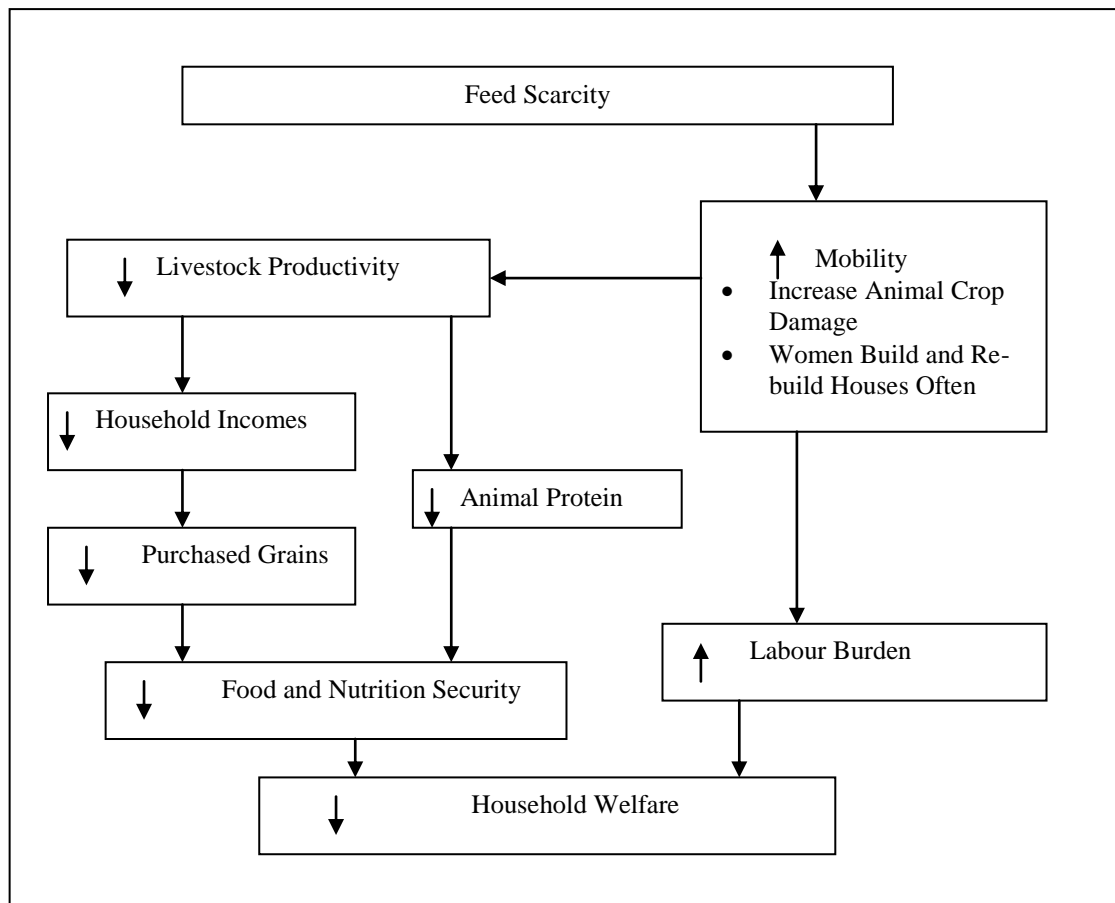
women (Chavangi, 1983; Whalen, 1984; Dhaka et al., 1994; Muylwijk, 1994; Thomas-Slayter and Bhatt 1994; Mullins et al., 1996).

In addition to raising ruminant livestock, crop cultivation is an integral part of the farming system, and the most important for farmers' livelihood in most cases. Gender division of labor for crop production varies from one place to another. Women in many places in sub-Saharan Africa contribute most of the labor to subsistent crop production than any other household member, except in Ethiopia, where men do most of the farm work and women and children only assist. In mixed systems, women with the assistance of girls, also undertake daily chores – cooking, washing, cleaning, child rearing, agricultural work, tending kitchen gardens, etc.

Gender Effects of Feed Scarcity in Nomadic Pastoral System

The possible gender effects of feed scarcity in nomadic pastoral system are illustrated in figure 1 below.

Figure 1: Gender Effects Of Feed Scarcity In Nomadic Pastoral System



- Feed scarcity increases household members and livestock mobility. Herders, mostly boys under the guidance of their fathers frequently travel long distances, with animals in search of feed and water. Recurrent movements from place to place increase risk of crop damage by animals, and increase women's workload, as they, are responsible for building and re-building of camps more often.
- The effect of feed scarcity and high mobility is diminished nutrient intake. This lowers livestock productivity, particularly milk offtake.
- In contrast to the feed abundant situation where human diet is dominated by milk, meat and in some cases blood, the diet under feed scarcity may be composed mostly of grains. Cereal menus in comparison with milk based diets, require more resources to prepare. Women, with the help of girls spend more time fetching fuel wood, water and cooking food.
- Assets loss (reduction in herd inventory) due to feed scarcity are high. Most of the loss results from starvation and a smaller proportion due to sale and slaughter of animals.
- Another effect of feed scarcity is reduced pastoral terms of trade i.e. the price of cereals and other consumer goods increase due to high demand, while livestock specie prices decrease, as a consequence of increased supply. The strategy of most pastoral families during initial feed shortage periods, is to sell the same number of animals as in normal times, but to use more of the income to purchase grains. Increased livestock sales occur in the later stages when there is no anticipation for improvements in feed availability.
- Decrease in milk production and consumption, reduction in incomes from sale of animals and the decreased ability of households to purchase more cereal reduce their food and nutrition security. Increased workload of all household members and increased food and nutrition insecurity reduces human welfare.

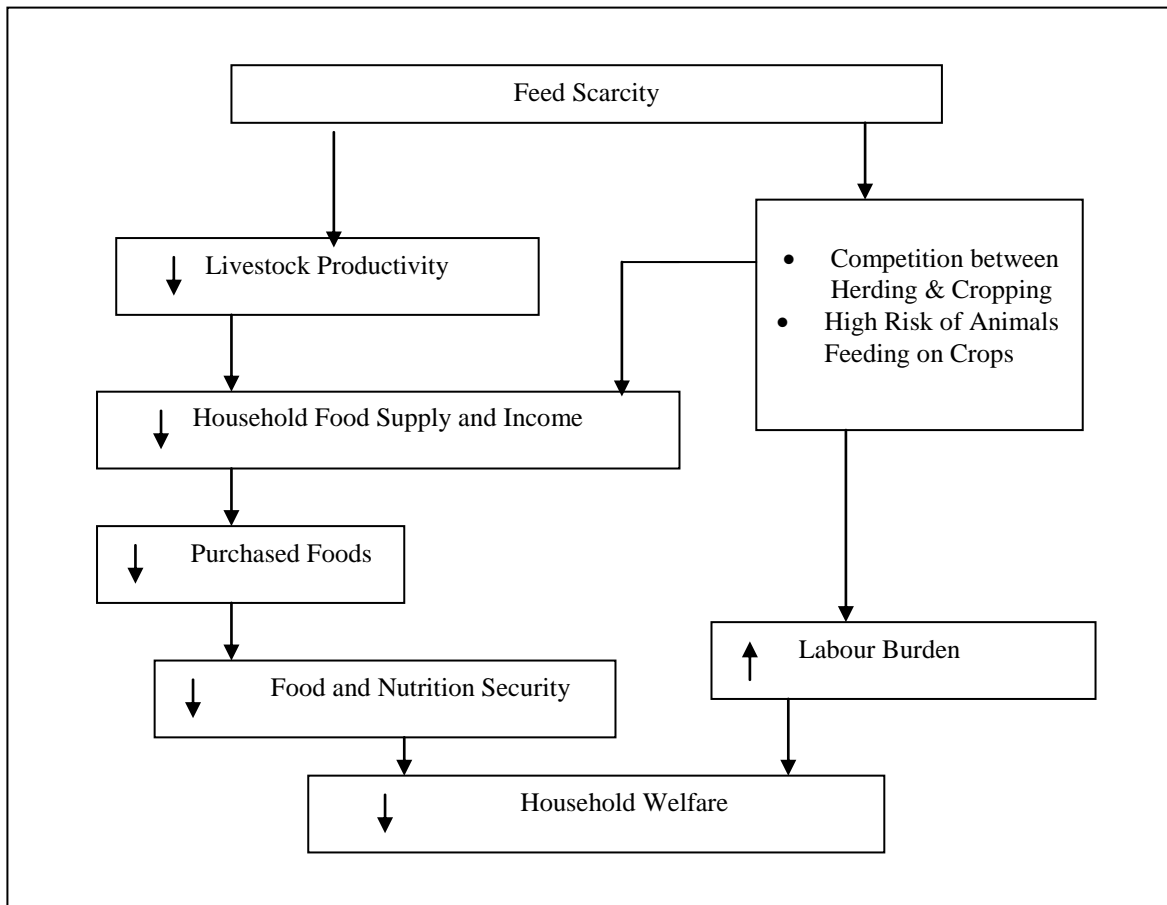
Gender Effects of Feed Scarcity in Agro-Pastoral System

The possible gender effects of feed scarcity in agro-pastoral systems are illustrated in figure 2 below.

- Agro-pastoral systems develop from nomadic system when livestock keepers settle around permanent sources of water with crop cultivation supplementing

livestock production (Camoens, 1985). Feed shortage is one of the reasons that induce settlement.

Figure 2: Gender Effects Of Feed Scarcity In Agro-pastoral System

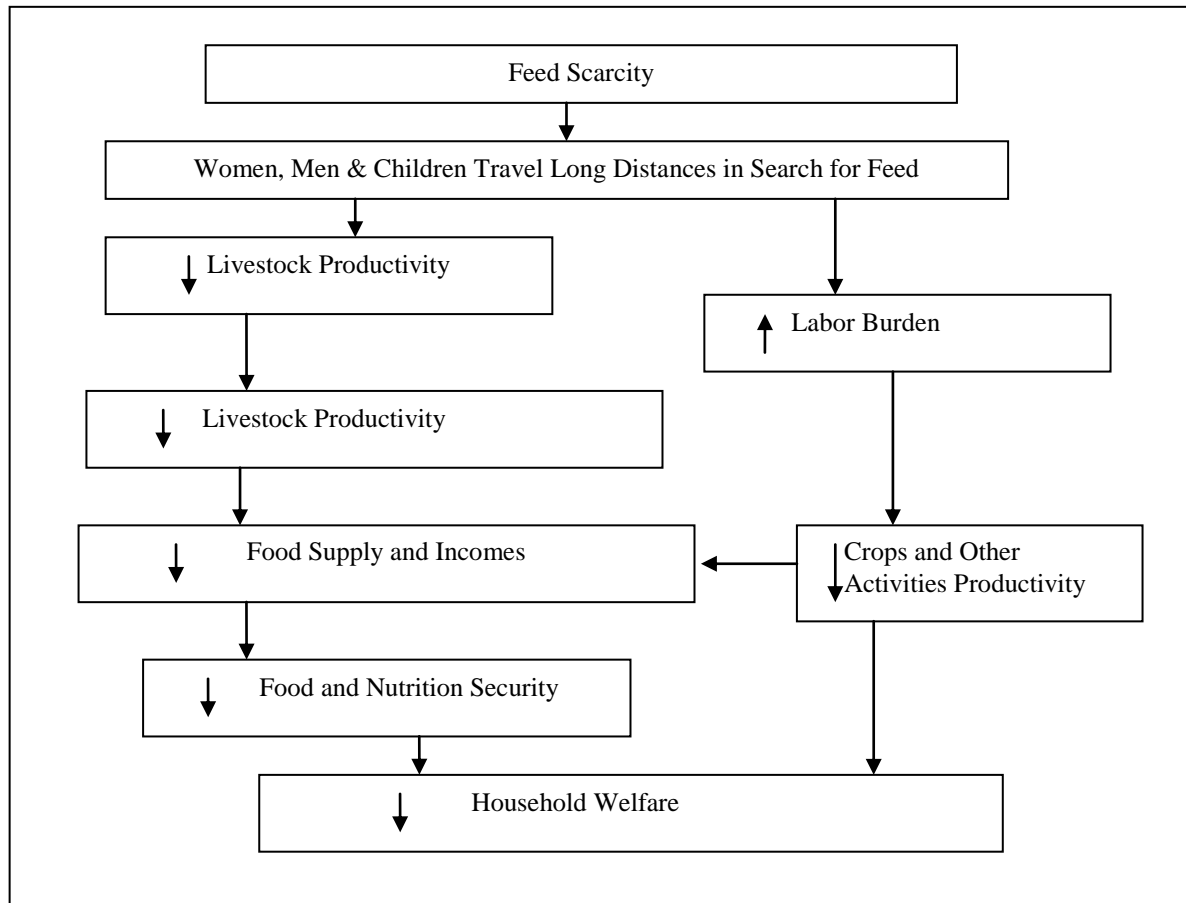


- With feed shortage, men and boys responsible for herding, spend more time doing so. In such situations, women and children may also assist in herding. This increases competition in labor demand between herding and cropping.
- As in nomadic pastoral system, feed scarcity reduces livestock productivity and may force farmers to further reduce their herd sizes.
- Lower livestock productivity and increased competition on household members' time between herding and cropping, may result in lower crop productivity as well. Reduced crops and animal output diminishes households' food supply and incomes, and hence their capacity to achieve food and nutrition security.
- The overall effect of feed scarcity in agro-pastoral system is decreased livestock productivity, reduction in income from sale of livestock and livestock products, reduced availability and access to food, increase labor burden of all household members, and reduced food and nutrition security and human welfare.

Gender Effects of Feed Scarcity in Mixed System

The possible gender effects of feed scarcity in mixed farming systems are illustrated in figure 3 below.

Figure 3: Gender Effects Of Feed Scarcity In Mixed Systems



- Crop production for both subsistence and cash generation is the main activity of mixed farming system, with livestock playing a supportive role. The exception is in intensified systems, where livestock production generates more income than crop production.
- The immediate feed scarcity effect in mixed systems is increased long distance travel by men, women or children according to gender division of labor and region in search of feed, whose quality is low in most cases. Poor feed reduces livestock productivity.
- Increased animal husbandry labor input may reduce time spent on crops and other activities, if the labor supplies of members responsible for such tasks are inelastic. Agricultural production and incomes may therefore reduce, having a negative impact on food and nutrition security.

- Reduction in food and nutrition security in addition to increased labor burden, reduce household welfare.

Conclusion

A limited amount of available literature suggests that feed scarcity increases work burden of all household members and reduces agricultural productivity. This lowers food availability and incomes and hence households' ability to achieve food and nutrition security. Individual member's increased labor burden further reduces their overall human welfare. These relationships need to be empirically established by undertaking appropriate research in different parts of the world and in different production systems.

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