



Peri-urban Camel (*Camelus dromedarius*) Production System in Saudi Arabia: A note

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ABSTRACT

Several livestock production systems, ranging from nomadic, semi-nomadic, transhumant, agro pastoral to different forms of sedentary small holder and large scale commercial units ,exist in Africa and Asia. Several factors natural or man-made, beside some socio-economic changes have caused resources degradation and resulted in production systems disruption. In Saudi Arabia camel plays multiple central roles to livelihood and culture of the nomadic people notably provision of milk, meat , race and coat purposes, and source of income from sale of live camel and camel show (Mazayen) .Thus ,camels play an important role in this country. Camel production system in Saudi Arabia was affected by the socio-economic changes that took place after the petroleum era which attracts the Bedouins to settle in urban areas. With the aid of cars and vehicles, they can look after their herds around cities and towns where they live nowadays, in addition to the increasing demand in camel milk by growing urbanized population, stimulating the development of peri-urban camel dairy production. Systems of urban and peri-urban agriculture (UPA) take many forms in terms of integration of different activities, production intensities and production orientations. The present study is aimed at a refined characterization of the diversity in terms of production orientation, resource endowments and production strategies of the different types camel production with special emphasis on peri-urban camel production system in Saudi Arabia.

Keywords : Bedouins, dromedary, pastoral, camel, urban

In the Kingdom of Saudi Arabia (KSA) where less than 1% of the lands are suitable for cultivation (Hussain and Al-Saati, 1999), raising camel stands as a well known practice since ancient time. The wild dromedary was probably domesticated on the Arabian peninsula, perhaps as early as the 4th millennium BC, the animal became popular in the Near East (Peter, 1997) .The camel milk and to large extent its meat are important sources of animal protein for the nomads and city dweller, as documented by Shoal (1983. The camel population is estimated to stand at more than 813000 heads (Ministry of Agriculture, 2012) and is considered as a national



socio-cultural heritage. it is regularly growing by 5.2%/year (source: FAO stat, 2010) since 1961, date of the first FAO official statistics. The camel population represented more than 50% of the total livestock unit in the country which is one of the highest in the world (FAO, 2010). Thus, the camel production is still central in the livestock economy of KSA. The life of Saudi Arabians still living in rural areas is effectively closely connected to the camel which was domesticated in the Arabian Peninsula thousands of years ago (Uerpman and Uerpman, 2002). Nowadays, the camel farming systems are changing due to the urbanization, climatic changes and growth of the economy of KSA (Auty, 2001.)

The purpose of this note is to refer to the emergence of new camel production system in Saudi Arabia, beside the well known traditional production systems for camel in this area .

CAMEL FARMING SYSTEM IN SAUDI ARABIA

Historically, the production systems have been very extensive and migratory in nature. However, over the period, the traditional subsistence role of camel has been subject to visible changes throughout Asia. Thus, emergence of various production systems is a gradual phenomenon. The CARDN, Pakistan documented the most traditionally prevailing camel production systems in at least four countries is .e. Afghanistan, Iran, India and Pakistan. Socio-economic importance of camel is closely associated with existing production systems. These system are generally determined by climatic conditions, topography, plant phonology, water resources, socio-cultural norms etc. (Jasra and Mirza, 2005). ILRI defined 10 livestock production systems for the developing world. The description of each system is primarily based on agro-ecological classification (Thorton *et al.*, 2002). In Pakistan, three livestock production systems have been reported which are (a) Rural livestock production (b) Desert/Rangeland livestock production and (c) Commercial milk production. The former two are in fact sedentary and migratory production systems as defined by Jasra and Isani (2000), however, the latter one is recent development applicable to commercial cattle/buffalo dairy farmers (www.pakissan.com). These are equally good to be used for camel production. Khan *et al.*, (2003) have reported the camel production systems as following:

1. Traditional system.
2. Peri-urban system.
3. Ranching and
4. Research system.

Most of these systems do not describe properly the camel production systems in Asia. Hence, there are so many ways to define camel production systems and there is need to define universally agreed parameters in this regard.

In Saudi Arabia, livestock production systems were described according to the ecosystem where livestock is reared and according to the link with agriculture (Boum, 2003). Some references on the herding strategies and health performances in Saudi camel farms were available but limited to restricted area (Abbas *et al.*, 2000). Few data published in scientific papers were available for specific description of camel farming system, notably according to the husbandry practices (Gaili *et al.*, 2000).

Traditionally, livestock systems in Saudi Arabia like in most of the arid countries are divided into nomad (or transhumant) systems and settled systems (Jasra and Mirza, 2005). At the national level, a recent report (Mahmoudi, 2010) had identified 6 types of camel farms including commercial farm, racing farm, camel farm for leisure (“week-end farm”), camel farm for renting, traditional farm, and camel for prestige. In the survey published by Abbas *et al.*, (2000), four types were described in Qassim region as commercial dairies, prestige herders, pastoralist and agro- pastoralist herders and periurban feedlots.

THE DIVERSITY OF CAMEL PERI- URBAN SYSTEM

Recently, Abdalah and Fay, 2013 conducted a field survey involving camel farmers (owners) from the northern, eastern and central part of Saudi Arabia using Ascending Hierarchical Clustering method depending on the farmer ,its herd and management practices. They summarized camel farm types in Saudi Arabia into four global types of farming system with two subtypes in each main type.

The first type was pure camel farmers living more or less exclusively by their camel, they were divided into two subtypes: pure camel farmers having big herd with traditional way of life more or less integrated to market, the second subtype was a moving pure camel owners having big herd living in desert and regularly moving with traditional farmers with homogeneous herd (only one breed) with higher integration to market and modernized management.

The second type was retired people still keeping camel for different purposes which are divided into two subtypes: retired people or shepherd owning herd of low reproductive performance and variable management practices, keeping camel for hobby, the second subtype being clearly retired people having camel for market activity. The third type included pure camel farmer and or multi-active people with small herd but good integration to market, this type was subdivided into two subtypes again: pure camel farmer living in desert with small or medium camel herd composed of one breed only, low management practices and low productive performance but commercially active, the second one being multi-active farmers with small herd using camel for market but with traditional management practices.



The fourth group was mainly multi active owners practicing camel rearing as hobby, but have proper management. They could be divided into: camel farmers living in cities, multi- active, sometimes retired having one breed only with good reproductive performance, but rather low market integration and low management programs, the second subtype are multi-active owners herd of one breed with high reproductive performance but with moving animals and better commercial objectives than the previous subtype.

Generally, previous studies on camel production systems concentrated only on the pastoral systems (Jasra and Mirza, 2005; Mahmoudi, 2010) and there is a little or no available information on the peri-urban camel production systems, However, Abbas *et al.*, 2000) pointed out the peri-urban camel feedlots in Qassim area, while Adullah and Fay, 2013 mentioned an informal subsystem based on urban farming with traditional mini-dairy plants and delivering milk in local shops and retail outlet.

CONCLUSION

The peri–urban camel production system is now days emerging around many towns in Saudi Arabia, where the sale of the raw camel milk is an important economic activity, this could be attributed to the prospects of better returns arising from the increasing demand for camel milk by urbanized population as source of food and / or medicine for many diseases and disorders. This result demonstrates a peri-urban camel system as a market oriented system, reflect the changing roles of camels with progressive market integration, However in the pastoral or nomadic systems, camels are mainly kept for subsistence purposes and there is less emphasis on milk marketing. This is well arranged with Auty, 2001 who concluded that, nowadays the camel farming systems are changing due to the urbanization, climatic changes and growth of the economy of Saudi Arabia.

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