The role of socio-cultural issues in the sustainability of camel production in Jordan

Anas Abdelqader [University of Jordan]

Abstract:

This study aims to discuss the relevance of Bedouins to the socio-cultural sustainable development of camel farming. Data were collected from 24 camel herds by surveys and structured questionnaires. According to camel herders' perceptions, milk and meat production were the most frequently reported reasons for keeping camels. However, farmers reported many socio-cultural issues for keeping camel as a farming culture that go beyond milk or meat production. These socio-cultural issues included: farming desire, hobby, the use of camel's milk as medicine, religious factors, ethnic identity and preservation of Bedouin culture. Owning camels is considered a source of pride, glory, power, honor, and nobility. In the past, camels were offered as dowry and were also used as a means of compensation (blood-money, i.e. *diyyah*) to solve conflicts. The camel fulfils significant functions in the livelihood of Bedouins; however, many constraints are facing its sustainable farming. Disease outbreaks resulting in high mortality, poor rangelands and poor subsidies were, in descending order, the major constraints facing sustainable camel farming in Jordan. Solutions should start with institutional support and governmental subsidy. Development of initiatives to improve health and management of camel herds is an overriding priority. These include concerns, values and meanings about camel farming, which stem from a socio-cultural context.

Introduction

Agricultural development in Jordan is one of the fastest growing capital-intensive sectors. Demand for sustainable animal farming is a global concern, which promotes animal welfare, environmental protection and food safety (Thompson, 2006). Camels connected to Bedouins life, environment and history hundreds of years ago. They are called "the ship of the desert" because of their potential to survive and travel long distances without water or being tired, and because of their ability to bear harsh environmental conditions, such as high ambient temperature, dryness and poor quality shrubs. If other species of livestock are exposed to the same conditions, they will die. The adaptive potentials of camels make them the candidate livestock for sustainable food security in harsh desert conditions. What keeps camel farming sustainable over hundreds of years is its valuable traits, adaptive potential and socio-cultural roles. Farshad and Zinck (1993) determined three dimensions of agricultural sustainability that include economic, ecological and social ones. Economic sustainability is considered the core of sustainable agriculture and refers to economic considerations such as profitability, efficiency and productivity (James, 2006). Ecological sustainability refers to the conservation and non-depletion of natural resources (Payraudeau and Van der Werf, 2005). Social sustainability relates to the quality of life of those who work and live on the farm, as well as, those in the surrounding communities (van Calker, et al., 2005). Social sustainability aims at sustaining farm families by settlement of rural populations at their communities (Thompson, 1992). Values in a society are the core of its culture and identity (Hofstede, 2001, Schwartz, 1999, Vinken and Soeters, 2004). Values of livestock farming system can be described as an aspect that people use to evaluate that system

(Boogaard *et al.*, 2008). Agricultural sustainability is influenced by societal values. Sustainability is defined as a socio-cultural concept for livestock production systems, which includes values, subjects and processes that really matter to people (Boogaard *et al.*, 2006). Consequently, the values of camel farming represent the major role in socio-cultural sustainability. Camel farming has renewable values for Arabic society. This study aimed at investigating the role of socio-cultural heritages practised by camel farmers to sustain camel farming and to identify constraints to their further adoption.

Conceptual Framework and Methodology

Data were collected through baseline surveys supported with a structured questionnaire in 2010 in the north-eastern Badia (habitats of Bedouins) of Jordan. The survey covered various aspects of camel farming, socio-economic and socio-cultural indicators. The study area is dominated by arid climate, long hot summer and short cold winter. Herds were selected through a stratified sampling method, and then enrolled in the study. A total of 24 owners of camels were interviewed on an individual basis. Data were collected by personal interview with the head of the family or with the caretakers of the camels. Herd visits started with an introduction with the farmer and a walk around the surrounding landscape. The main research questions were designed to investigate the socio-cultural factors and issues that motivate respondents to keep camels. Objectives, constraints and needs of camel farmers in the Badia of Jordan were identified. Our main research questions were: (1) How do Bedouins value various aspects of camel farming? (2) What are the socio-cultural determinants of keeping camels among Bedouins? Pre-defined sustainability issues were included in the questionnaire. Throughout the analysis, we emphasized how social perceptions of Bedouins towards camel farming can contribute to sustainable development. Constraints and opportunities to improve camel production systems in Jordan were identified.

The Statistical Analysis System of SAS version 8 (SAS, 1999) was used to analyze data. Respondents were asked to rank predetermined socio-cultural issues and to indicate others. Results of ranking were analyzed by "Preference Analysis" procedure using Kendall's coefficient that classify pairs of observations as concordant or discordant. The lower the rank of a parameter, the greater is its importance. Ranks were measured indirectly with a 4-point scale (1: I strongly agree, 4: I strongly disagree).

Results and Discussion

The different socio-cultural reasons for keeping camels as perceived by Bedouin camel herders are presented in Table 1. The most important reason in the overall analysis was farming desire. Factors related to hobby satisfaction in the Bedouins' life were ranked second. Socio-economic issues have significant influences on camel farming. Reasons related to the use of camel's milk as a medicine and live animals for sacrifice were ranked high. Camels and their milk were sold to cover family expenses. Some farmers have mentioned that camel farming can generate extra income for the livelihood of the family. Those who keep camels as a source of income considered camel farming as an investment with low risk or little management and few inputs needed, compared to other livestock sectors.

However, the factor "Preserving Bedouin culture from disappearance" ranked the seventh factor; about 17% of camel herders evaluated this factor as the most

important reason for keeping camels. Through group discussions with farmers, all of them stressed the significance of keeping camels as a symbol that preserve their traditions, ethnic identity and culture. While 67% of camel herders inherited camel farming from their ancestors, the other 33% had engaged with this profession for the first time during the last few years. This indicates that camel farmers are trying to maintain the balance between tradition and modernity.

Table 1: Socio-cultural issues for keeping camels as ranked by camel herders in Jordan

Socio-cultural reasons for keeping camels	**Rank***
Farming desire	1
Hobby	2
Use of camel milk as a medicine (folk medicine)	3
Religious factors (sacrifice)	4
A way of life	5
Ethnic identity	6
Preserving Bedouin culture from disappearance	7
Bedouin life conservation	8
Source of pride, glory and power	9
Seeking idyll in holidays	10
Social recognition and nobility	11
Natural and healthy products (meat and milk)	12
Kendall's Coefficient	*0.88***

*The lower the rank, the greater the importance of the factor
** $P \leq 0.0001$

Camel farming is perceived nowadays differently than hundreds years ago. This is because the values of keeping camels had changed among societies throughout the ages. For several hundreds of years the main values for camel keeping were transportation, war, providing fur, food and fuel. However, some of these values remained constant over the course of time, while others became either more or less important. For example, many respondents had highly valued the quietness of the desert. However desert was already quiet hundreds of years ago, but due to changes in society, nowadays it is more appreciated. Therefore, other cultural issues were extracted from Arabic literature to give light on socio-cultural role of the camel in the past. Old Arabic publications showed that camels were offered as a valuable dowry. The greater the number of camels offered indicated the higher social rank of the bride or even signified her greater beauty (Al-Darman and Al-sba'ie, 2000). Furthermore, camels were offered as compensation (blood-money, i.e *diyyah*) which is usually given to the deceased's family to solve the conflicts. Raising camels is also considered by Bedouins, whether in the past or in the present, as a source of pride, glory, power, honor and nobility (Al-Ani, 1997).

Sustainable development is defined as "meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity". Therefore, social sustainability is a fundamental component of sustainable development. It refers to the aspects of human social and cultural life by ensuring that the basic conditions for human life flourish within society. Cultural sustainability refers to the development and maintenance of human cultures that create enduring relationships. Socio-cultural sustainability refers to the maintenance and the stability of social and cultural

systems. Socio-cultural sustainable development of camel farming systems is defined by public perceptions. These include concerns, values and meanings about camel farming, which descended from a socio-cultural context. Camel production has been taking place in the Arabian deserts for many centuries and has made a major contribution to economical, environmental and social development and sustainability in these areas. Economic sustainability of a camels farming systems must ensure that the production system is economically profitable. It can be ensured in a camel herd by improving its economic viability. This could be achieved, in the short term, by improving health management which will increase the performance. However, in the long term, improving meat and milk quality will raise the values of the production system. Furthermore, camel farming systems could be run by local knowledge and low machinery use, which also provides an opportunity for economic sustainability. Environmental sustainability is frequently described as the ecologically sound practices that have little or no adverse effects on the natural ecosystem, or even enhance environmental quality. Camels can achieve this through efficient utilization of natural resources such as water, poor quality forages and desert shrubs. The camel is considered the most efficient animal in converting thorny plants into valuable nutrients such as meat and milk. Due to the distinct grazing behavior of camels, they are considered the most efficient livestock in protecting range lands and pastures from deterioration (Alkhalidy and Razzouk, 2008). The contribution of camels toward biodiversity and wildlife will support the conservation of natural habitats. Social sustainability relates to the quality of life of those who work and live in the farm. It refers to the regeneration of the social system and its continuous ability to achieve social objectives such as social cohesion, social mobility, empowerment and equity, institutional development, and cultural identity. Livestock production systems have more cultural values for society than merely food production (Boogaard, *et al*., 2008). We can conclude that camels constitute a significant portion of Bedoiuns' life, but the key question is whether sustainable camel farming can be productive enough to ensure food security of Bedouins livelihood. It is emphasized that there are no cultural or religious taboos relating to consumption of camel meat, compared to that of cow or pig. Moreover, there are trends in consumers' general preference for livestock products from animals kept in free-range conditions or in their natural habitats. This conforms entirely with camel production systems. Such production systems are run by Bedouins by implementing their local knowledge of breeding, feeding and health practices with minimum input costs.

The present study showed that number of camels owned per farmer ranged from 3 to 17 heads with an average of 8.3 ±3.5. Total numbers of camels are decreasing in Jordan (Figure 1) due to migrations, changes in socio-cultural habits, and food consumption patterns. The census figures for camels fell from 60,000 heads in 1950 to less than 13,000 in 2002 (Jordan Department of Statistics, 2011). This reduction has been accompanied by a reduction in the numbers of transhumant herders. Camels have played a distinct role in all agricultural practices such as ploughing, draft power, transport, which disappeared after the discovery of oil, and mechanization. Therefore camel farming in Jordan was considered for long time as a sideline agriculture activity. Camel populations have been neglected from the conservation and development programmes. Instead exotic cattle are introduced and supported by the government. Furthermore, respondents reported numerous constraints hindering camel farming sustainability. The major constraints of camel production, as ranked by farmers in order of importance, are diseases and parasites, shortage of feed and poor rangelands, and poor governmental funding and subsidies. The most important diseases are mite, pneumonia, internal parasites and enterotoxaemia (Al-Awadi and Al-Mohssen, 2009). It is essential to study the opportunities for improving camel farming through proposing solutions for all constraints. Therefore, it is extremely important to involve governmental organizations and NGOs for the conservation of camels as valuable natural resources. The potential of the camel sector to contribute

to sustainable development should be emphasized. Despite the formerly stated constraints, the socio-cultural issues have been securing the continuity of camel farming over long time. Farmers' desire to preserve Bedouin life and culture from disappearance, and their attitude to keeping their way of living and their ethnic identity were the significant socio-cultural aspects of present-day camel farming. Camels as a source of pride, glory, power, social recognition and nobility were the socio-cultural aspects of both past and present-day camel farming.

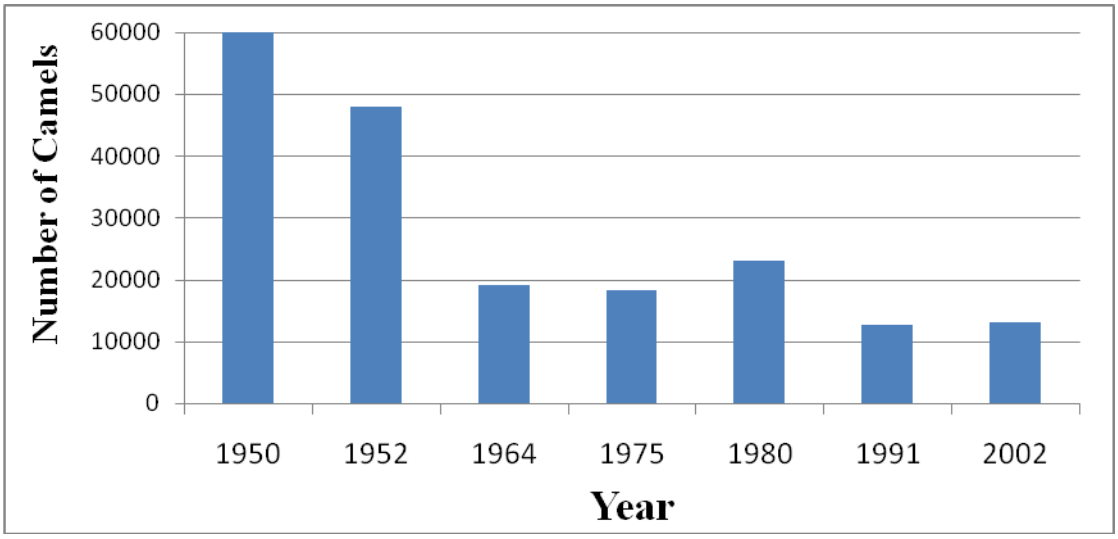

Figure 1: Changes in number of camels in Jordan since 1950.

REFERENCES

Al-Ani, F.K., 1997. *The Camel Encyclopedia*. Alshooroq Publishing and Distribution, Amman, Jordan.

Al-Awadi, Issam and Al-Mohssen, Saleh, 2009. *Camel Diseases in Jordan. Bovine and Ovine Middle East and North Africa*. Vol. 85-86: 16-21.

Al-Darman, Darman and Al-sba'ie, Sanad, 2000. *The Camel Secrets and Miracles*. Atlas printing and offset, Riyadh, Saudi Arabia.

Alkhalidy, Abdul-Rahman and Razzouk, Talal, 2008. "A Study of Social and Cultural Characteristics and Technical Practices of Camel Breeders in the Syrian Badia". *Tishreen University Journal for Research and Scientific Studies - Biological Sciences Series* Vol. 30 (5): 45-59.

Boogaard, B.K., Oosting, S.J., Bock, B.B., 2006. "Elements of societal perception of farm animal welfare: a quantitative study", in *The Netherlands. Livestock Science*, 104: 13–22.

Boogaard, B.K., Oosting, S.J., Bock, B.B., 2008. "Defining sustainability as a socio-cultural concept: Citizen panels visiting dairy farms", in *The Netherlands. Livestock Science*, 117: 24–33.

Farshad, A., Zinck, J.A., 1993. "Seeking agricultural sustainability". *Agric. Ecosys. Environ*. 47, 1–12.

Hofstede, G., 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. Sage, Thousand Oaks, CA.

James, H.S., 2006. "Sustainable agriculture and free market economics: finding common ground in Adam Smith". *Agric. Human Values* 23, 427–438.

Jordan Department of statistics. 2011. http://www.dos.gov.jo/. Accessed on 25.02.2011.

Payraudeau, S., Van Der Werf, H.M.G., 2005. "Environmental impact assessment for a farming region: a review of methods". *Agric. Ecosys. Environ* 107, 1–19.

SAS (1999). *SAS Users Guide*, Version 8.1, SAS Institute Inc. Cary, NC, USA.

Schwartz, S.H., 1999. "A theory of cultural values and some implications for work". *Appl. Psychol*. 48, 23–47.

Thompson, P.B., 1992. "The varieties of sustainability". *Agric. Human Values* 9, 11–19.

Thompson, P.B., 2006. *Ethical Bases of Sustainability*. European Association for Animal Production, Antalya, Turkey.

Van Calker, K.J., Berentsen, P.B.M., Giesen, G.W.J., Huirne, R.B.M., 2005. "Identifying and ranking attributes that determine sustainability in Dutch dairy farming". *Agric. Human Values* 22, 53–63.

Vinken, H., and Soeters, J., 2004. *Comparing Cultures: Dimensions of Culture in a Comparative Perspective*. Brill, Leiden.

E-mail: a.abdelqader@ju.edu.jo