Crimson Publishers
Wings to the Research

Opinion

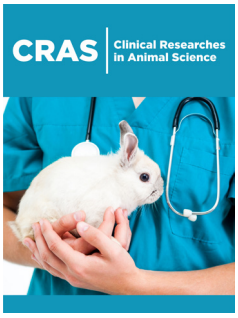
Resilience Consolidation and Sustainable Development of Pastoral and Agropastoral Livestock in Arid Zones and the Impacts of Climate Change

Najari Sghaier[1]*, Atoui Ahlem[1,2], Laroussi Aicha[1] and Abdennebi Mouldi[1]

[1]Arid Lands Institute, Tunisia

[2]Institut Supérieur des Sciences Humaines De Medenine, Tunisia

ISSN: 2770-6729



***Corresponding author:** Najari Sghaier, Arid Lands Institute, Institut des Régions Arides, Gabes University, Tunisia

Submission: May 02, 2023
Published: May 08, 2023

Volume 2 - Issue 5

How to cite this article: Najari Sghaier*, Atoui Ahlem, Laroussi Aicha and Abdennebi Mouldi. Resilience Consolidation and Sustainable Development of Pastoral and Agropastoral Livestock in Arid Zones and the Impacts of Climate Change. Clin Res AnimSci. 2(5). CRAS. 000549. 2023.
DOI: 10.31031/CRAS.2023.02.000549

Copyright@ Najari Sghaier, This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use and redistribution provided that the original author and source are credited.

Opinion

The breeding of small ruminants in semi-arid and arid regions of the southern Tunisia knows, more than ever, a critical situation that jeopardizes its resilience to the effects of aridity seriously aggravated by the impacts of climate change. Moreover, the history of this sector and its evolution have been punctuated by the many crises it has overcome in an area marked by the scarcity of resources, the irregularity of climatic factors and the risks of desertification. Indeed, this sector continues to represent an important regional activity, if not unique, which valued the vast rangelands of the region with scarce resources and according to a traditional and itinerant mode of conduct [1]. Pastoral and agropastoral livestock farming has been able to adapt and survive frequent episodes of crisis for centuries thanks to the adoption of original and appropriate strategies, which buffer the disastrous impacts of drought to reduce its impact on herds and rangelands. However, the importance of the impacts of climate change are aggravating the situation to accentuate the vulnerability of the sector and constrain its sustainability [1]. Nowadays, the salvation of the sector passes by its modernization, the notable improvement of its profitability, its integration in the socio-economy of the region, its contribution to the creation of wealth and dignified employment... and especially, to its sustainability and its respect of the environmental fragility of the exploited resources and constantly threatened by the degradation and the desertification. Certainly, the complexity of the sector, which involves several biological, social and economic disciplines, and which add to its traditional nature, have not allowed the teams involved to contribute to the rehabilitation and salvation of the sector in a significant way.

Among the research teams involved in this sector, the IRA team has, carried out several research and development protocols through the application of thousands of surveys, continuous monitoring of more than 22 herds, performance controls of more than 200 young and adult animals, and also, to apply scientific and technical protocols for the characterization of local and introduced genetic resources and animal products. Before designing the plans for the consolidation of resilience, the research had to identify the structural and functional elements that ensured the survival of the sector in the face of stresses and serious natural and technical challenges. The typology of the sector highlighted the sector's ability to vary its production systems according to the constraints, resources and breeding objectives to adapt to the characteristics of each area. At this level, the results emphasize that the sustainability of this type of livestock farming is essentially attributable, first of all, to the mobility of herds, individuals, animals and funds in order to cope with the marked irregularity of natural and technical factors. The practice of transhumance, association, management of the numbers... are among the techniques that have ensured the profit of the very scattered and irregular

resources and reduced the pressure on the poor and threatened rangelands. This mobility is preparing for several approaches of "modernization" to ensure its role and facilitate the task of pastoralists [2]. Secondly, the salvation of the sector seems to be the result of the important adaptation, acquired through a long and slow natural and human selection, of the animal genetic resources that have allowed survival during shortages and production during favorable episodes. The genetic and behavioral hardiness of local genetic resources is manifested in the variability of the herd, morphology and also through the production potential in interaction with natural and technical production factors. Evolution has "sculpted" these animal resources to provide breeders with animals that are "useful" in this arid production context. Natural selection has favored reproductive performance and has seriously reduced the potential corresponding to heavy physiological needs such as dairy performance. And this to guarantee the continuity of the herd. The body parameters explain the walking abilities and the reduction of maintenance needs, essential for the herds of the arid regions..... Starting from this genetic profile and according to the production objectives, the researchers have created methodologies appropriate to these local resources and their environments in order to ensure the improvement of their potentialities of survival and production.

Finally, the sustainability of the sector has depended on the important pastoral know-how, sedimented and perfected through generations of nomads and pastoralists, which has optimized the management of available production factors in order to maximize profit and/or reduce the damage of famine and environmental risks. However, several current management practices, such as the increased use of supplements, have led to serious simplifications in management, the reduction of herd movements and their fixation in small areas around water points, and also to excessive increases in herd numbers that are no longer adjusted by the availability of pastoral resources. In addition, the gradual disappearance of qualified shepherds urges the development of zootechnical references, appropriate to pastoral and agropastoral livestock, and which contribute to the innovation of management techniques while preserving the principles of know-how. It should be noted that the resilience of the sector depends, above all, on abandoning contempt for the "shepherd" profession and improving its technical and socio-professional conditions.

This scientific diagnosis of the sector and the characterization of its factors of production and its animal resources, could lead to plans, methodologies and original techniques of development of the sector, taking into account the specificities of the various systems. The aim is to optimize the management of resources and constraints in order to consolidate resilience to environmental and societal challenges. The sector resilience seems possible and tangible but depends on its structural and functional organization, on the technical modernization of the management which must be innovative, on the application of programs of management and improvement of genetic resources, and also on the organization of the product chains. It seems more than ever that it is possible to design a modern, profitable, sustainable pastoralism that contributes to the creation of wealth and employment, taking into account the environmental prorogatives of arid regions and the increasing impacts of climate change.

References

1. Najari S (2005) Zootechnical and genetic characterization of a goat population. Case of the local goat population of Tunisian arid regions. State doctoral thesis. National Agronomic Institute, Tunisia, p. 214.
2. Najari S (2016) Local caprine population zootechnic and genetic characterization under arid environment. European Universitary Editions (EUE), p. 217.

Copyright © Najari Sghaier