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# NEAR EAST FORESTRY AND RANGE COMMISSION

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### RANGELANDS MANAGEMENT IN THE NEAR EAST AND NORTH AFRICA REGION: BRIDGING THE GAP BETWEEN GROWING NEEDS AND SHRINKING RESOURCES

#### I. INTRODUCTION

1. Rangelands are natural ecosystems occupying vast areas in the countries of the Near East and North Africa (NENA) region, exceeding in some countries 50 percent of total land area<sup>1</sup>. However, it has to be noted that, in the absence of a harmonized definition, the area of rangelands in the countries depends on the definition adopted for rangelands in each country.
2. Globally adopted rangelands definitions<sup>2</sup> emphasized two major attributes of rangelands: first, rangeland is a type of land due to its inherent biophysical characteristics, and second, the rangelands to be managed as a natural ecosystem for sustainable provision of goods and services.
3. Rangelands in the NENA region suffer from continuous degradation resulting from combination of multiple forces. Climate change effect coupled with human pressure and government-imposed policies and actions, which led to the abolition of the traditional management systems without providing effective alternatives, have inflicted drastic deterioration on the rangelands.
4. With all these forces, still rangelands continue to provide, though diminishing, a wide range of goods and services, with livestock grazing to produce meat, milk and fiber as the most perceived use. Inhabitants of NENA rangelands have engineered pastoral and farming systems that have sustained their livelihoods in these usually dry environments for centuries.
5. This paper outlines the drivers of rangelands degradation in the NENA region, the main governance systems, the lessons learned from past and ongoing rangelands management programmes

<sup>1</sup> AOAD. 2015. [www.aoad.org/eAASYXX.htm](http://www.aoad.org/eAASYXX.htm)

<sup>2</sup> Stoddard *et al.* 1975 In Tueller, P T, 1988. Vegetation science application for rangelands management (edited). Kluwer Academic Publisher, Dordrecht, Boston, London; UNCCD. 2011 in <https://books.google.com.eg/books?isbn=1848263708>; Society for Rangeland Management. 2015 in <http://articles.extension.org/pages/58844/rangeland-glossary-preface>

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and present some recommendations for raising the profile of rangelands, mainstreaming the sector within the national priorities and integrating rangelands management with the actions taken to respond to countries' international environmental commitments.

## **II. KEY DRIVERS OF RANGELANDS DEGRADATION IN THE NENA REGION**

6. The term rangeland degradation refers to both soil and vegetation and is generally defined by the lowering of the productive capacity of rangelands. In most NENA countries, rangelands are considered as wastelands which can be used for urbanization, mining, and dryland farming, when needed. This has put rangelands in the NENA region under mounting pressures resulting from a range of anthropogenic forces. These forces are often associated with additional (key) drivers that exacerbate rangeland degradation and pastoral vulnerability including through inappropriate policies, ongoing socioeconomic changes and climate change effect.

7. Paradoxically, while rangelands area in NENA region is deteriorating and shrinking, with average vegetation cover as a percentage of land area decreased from 3.7 percent in 1990 to 2.8 percent in 2013<sup>3</sup>, livestock numbers increased in the same period by 25 percent, under diverse livestock production systems to meet the growing demands for animal source foods<sup>4</sup>.

8. The majority of decision-makers in the region, dealing with rangeland resources, do not appreciate the rationale of pastoralism. A knowledge gap of the triggering factors for pastoralism and a power imbalance between pastoralists and other livelihood groups in each country definitely will result in inappropriate policies.

9. The absence of rangeland governance schemes, which empower the local pastoral communities to responsibly manage their rangelands, has exacerbated rangeland degradation. Any policy aims at the settlement of pastoralists, through restricting flocks mobility and/or abolishing the local institutional arrangements will undermine pastoralism. Policies of subsidizing feedstuffs adopted by a number of NENA countries to induce self-destocking on rangelands were not successful and have led to an increased flock size and more damage to the fragile rangeland resources.

10. Pastoralists are experiencing a lot of pressure to shift from sustenance to commercial production to fulfil the increasing demand for animal products. The competition between the sustenance and commercial production groups ends in favour for the investors of commercial production, thus leading to increasing numbers of marginalized pastoralists and more pressure on rangeland resources that accelerates their degradation.

11. Government policies often aims at keeping consumer prices of livestock products as low as possible. As a result, and to compensate the producers, governments provide subsidies that allow producers to purchase inputs at prices below their real value, offer free services or grant subsidized credits. All these measures contribute to an artificially maintained system that can lead to inefficiencies, inequities, distortion of investment, and degradation of pastoral resources.

12. Reports of climate change pertaining to the majority of the NENA countries indicate that the region is experiencing an increase in annual average temperatures and decreased amounts of rainfall<sup>5</sup>. The postulated impact of climate change on rangelands includes increasing dryness, accelerating soil

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<sup>3</sup> [https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/land-degradation-neutrality-arab-region-english\\_2.pdf](https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/land-degradation-neutrality-arab-region-english_2.pdf)

<sup>4</sup> <http://www.fao.org/3/a-mp852e.pdf>

<sup>5</sup> [www.fao.org/docrep/013/k9769e/k9769e00.pdf](http://www.fao.org/docrep/013/k9769e/k9769e00.pdf)

erosion, decreasing water resources, which will be reflected in changes in rangeland productivity, land use systems and rangeland-based livelihoods<sup>6</sup>.

13. Measures are urgently needed to halt further degradation of rangelands and promote effective rehabilitation of the degraded lands. These measures are expected to tackle three elements: rangelands as the resource base, the pastoralists as the traditional resource users, and the resource outputs.

### III. RANGELAND GOVERNANCE SYSTEMS

14. The general perception that places rangelands as a residual category for areas that have not (yet) been converted to other uses with higher rates of economic production and return, reflects the dilemma of rangelands governance in the NENA countries. Pastoralists and rangelands users have to operate under the risk of losing their use rights for any land use type which is perceived by others as most economically sound or profitable.

15. Traditionally, rangelands in the NENA were managed under tribal systems where tribal leaders controlled territories, animal movement, range use and resolve conflicts between user groups. With the introduction of the modern government administrative systems, and to solve conflicts between tribes on land tenure and the exploitation of rangeland resources, governments abolished these traditional systems and put the rangelands under collective open-access grazing system, “where the land belongs to everyone and to no one”.

16. The tribal authority, as an effective institution for regulating the use of rangeland resources, was undermined without substituting it with effective systems of management to control animal grazing or establishing a clear property rights. This had opened the door for the irrational use of the range resources leading to growing rates of rangelands degradation. Though steps have been taken to shift to more community-based rangelands management systems, still the collective-access land governance system remains by far the dominant one in the region.

17. The drawbacks of open-access system necessitate the adoption of collective actions for sustainable rangeland management in a number of NENA Countries. Examples of such actions include, but not limited to: the rangeland cooperatives where herders of a certain geographical location or claimed tribal “grazing domain/rights” are organized to form an entity according to the laws and by-laws of cooperatives in the country; the Agriculture Development Group (GDA), which has a combined membership from the community and the local government administration; the traditional Hima management system in which land and key resources are set aside so that communities can conserve them and regulate their use in line with tribal traditions, and the concession operating system in which lands is granted the tribes (40 year operation) to establish a de facto ownership that would allow for better management of pastoral resources.

18. Private ownership of rangelands exists in limited number of countries. Access to these private rangelands by other users is governed by contractual arrangements between the land owners and the users. Even though land ownership is well defined, private rangelands also show clear signs of degradation due to overuse.

19. Looking at the existing rangelands governance systems, it is clear that the ones which are based on collective actions of the rangelands users such as rangelands cooperatives, the GDA and the Hima systems are promising to achieve the goals of sustainable management of rangelands, if properly designed through transparent system, well capacitated and promoted by robust policies and structured purpose-oriented incentives.

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<sup>6</sup> Hoffman, M. and C. Vogel. 2008. Climate change impacts on African Rangelands. *Rangelands*, Vol 30: 12-17.

#### **IV. SECTORS IMPACTING RANGELANDS**

20. The sector of rangeland resources is not isolated from other sectors in any country. The sectors directly influencing the sustainable management of rangelands are: agriculture, water, environment, urban planning, tourism and mining.
21. Rain-fed farming which is accentuated with population growth and the raising demand for staple food crops and animal products, has led to encroachment of cereal production into the most productive rangelands. Construction of artesian wells to extract ground water for irrigated farming and its spread in many countries has negatively impacted rangelands. National parks created in pastoral areas are sometimes challenged by pastoral societies because they are established on the rangelands.
22. Rural development plans necessitate construction of roads and building infrastructure in remote areas which attracts people to urbanize the areas under rangelands use. The encroachment of urbanization fragments the habitats of rangelands and disrupts the integrity of watersheds.
23. The tourism sector has both negative and positive impacts. While unplanned recreation activities in wilderness have negative effects on rangelands through driving cars, solid wastes, pollution and unregulated hunting which threatens rangelands biodiversity, desert and culture tourism has created job opportunities for pastoralist communities in North Africa and provided alternative income generation options through marketing of animal products-based handicrafts.
24. The flourishing of mining activities in the last decades in many NENA countries has resulted in severe damage to vast areas of rangelands through clearance of native vegetation, disturbing the normal water flows in watersheds, and fragmentation of habitats.
25. These all necessitate the need for a shift in planning and policy formulation from sector-specific approaches to more integrated and environmentally sensitive approaches that take in consideration cross-sectoral coordination and national environmental concerns.

#### **V. HALTING RANGELAND DEGRADATION**

26. Degraded rangelands are characterized by sustained reduced biological and economic productivity, associated with improper or unsustainable human land uses. The causes of rangeland degradation are complex in time and space and associated with interactions between pastoralists, governance and policy, and environmental factors. To maintain and improve ecosystem services from rangelands, the direct and indirect causes of rangeland degradation should be understood. As rangelands degradation proceeds in steps, which are increasingly difficult and costly to reverse, knowing the different steps helps find the proper approach for restoration and gives an idea about the cost of restoration.
27. Collaboration among all stakeholders, especially pastoralists, decision makers, experts, NGOs, and financing institutions is essential to develop a working policy aiming to halt further degradation of rangelands, and at the same time, enabling the environment for effective rehabilitation of degraded lands.
28. Any policy for achieving sustainable management of rangelands should address the issues of rangelands from the different angles: resource base (land), resource users (pastoralists), and resource outputs (goods and services).
29. Halting rangelands degradation requires investing in land tenure reform, community-based rangelands management systems, rangelands monitoring, building strong rangelands data-base and information system and investing in mainstreaming rangelands issues with the national development agenda and global environmental policy processes.

30. Understandingly, rangelands are primarily grazing-dependent systems characterized by dry periods and droughts, these characteristics should not be a barrier to their development and the resource can be managed sustainably through careful planning and rational utilization. Sound rangeland management should emphasize the transition of humans from users to stewards of natural resources within the context of socio-ecological systems.

## VI. VALUATION OF RANGELANDS ECOSYSTEM SERVICES

31. Rangelands in the NENA region produce a range goods and services and contribute to the livelihoods of millions of Bedouin and pastoralist communities. They provide the basis of a variety of livestock production systems and are by far the cheapest source of livestock feed. Nonetheless, the contribution of rangelands to national economies and livelihoods in the NENA countries is not well understood and valued. Even in countries where the share of livestock in the agriculture GDP is high, such agriculture GDP figures rarely include livestock production figures from pastoralism and transhumant systems operating in rangelands.

32. The present regional contribution of rangelands to the animal feed requirement is estimated at 10 per cent. At individual country level the figure reaches up to 35 percent<sup>7</sup>. Still the potential is far more if rangelands ecosystems are properly managed.

33. Few countries, such as Tunisia and Iran, have made attempts to valorize the goods and services provided by rangelands ecosystems. A study conducted in Tunisia<sup>8</sup> estimated the Total Economic Value (TEV) of the direct use value of rangelands as fodder at about 200 million Tunisian Dinar (125 Million USD). In Iran the total value of ecological services of forests and rangelands was estimated at about USD329 per hectare (Karimzadegan et al, 2007)<sup>9</sup>. These attempts need to be encouraged and a proper assessment of the contribution of rangelands to the peoples livelihoods, the national economies and the environment is required.

34. The persistence of inadequate recognition of the multifarious roles of range resources and the perception that rangelands are nothing more than waste lands have led to low investments in the sector and inferior status of rangelands institutions. This situation will only change when rangelands' role as one of the backbone elements of regional food security, as a safeguard of ecosystem vitality and productivity, and a barrier against the advance of desertification will be substantiated and recognized.

## VII. LESSONS LEARNED FROM DEVELOPMENT PROJECTS FOR RANGELAND IMPROVEMENT

35. Many countries in the NENA region tried, through development projects and programmes and policies to elaborate rules, regulations and actions, to develop the rangelands or at least to slow down their degradation. Most of those interventions were top-down and not sustainable<sup>10</sup>. Examples of these interventions are settlement of pastoralists, cancellation of tribal fronts "Wajihat", feed subsidy, resting and or reseeding of rangelands, plantation of fodder shrubs, establishment of range reserves, and construction of water ponds (hafirs) for watering animals. Overlooking the role of local community and lack of information on the rangeland ecosystems and the socioeconomics of pastoralists are the key factors for unsuccessful interventions on rangelands.

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<sup>7</sup> FAO. 2011. <http://www.fao.org/3/a-i12557e.pdf>

<sup>8</sup> [www.teebweb.org/media/2013/10/Economic-valuation.Tunisia.pdf](http://www.teebweb.org/media/2013/10/Economic-valuation.Tunisia.pdf)

<sup>9</sup> [https://ijer.ut.ac.ir/article\\_137\\_05a406852c974d0bb55d6eb1e8e6bc2a.pdf](https://ijer.ut.ac.ir/article_137_05a406852c974d0bb55d6eb1e8e6bc2a.pdf)

<sup>10</sup> IFAD. 2001. Strategies for institutional options for rangeland management in the NENA region: IFAD Experience. A Paper prepared for the International Conference on Policy and Institutional Options for the Management of Rangelands in dry Areas May 7 - 11, 2001, Hammamet, Tunisia

36. It is only in the few cases when the local rangelands uses were put at the center of these interventions and successes were achieved. In Tunisia, for example, success in rangelands management has been achieved under an IFAD funded project that focused on strengthening the capacities of the GDA and tackled rangelands management issues under a holistic rural development approach. A similar approach has led to successful cases of rangelands cooperatives in Morocco.

37. In Jordan, the piloted initiative for reviving the traditional Hema system has made remarkable success in rangelands management through securing rights and access to land tenure, improving governance of land and natural resources, enhancing income generation and promoting the active engagement of women.

## **VIII. TOWARDS ACHIEVING THE SUSTAINBLE DEVELOPMENT GOALS AND THE NATIONAL DETERMINED COMMITMENTS**

38. Rehabilitation of degraded rangelands in the NENA region is directly linked to target 3 of SDG number 15 (15.3) which states “By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world”.

39. Many countries in the region are currently engaged in the process of Land Degradation Neutrality (LDN) target setting under SGG 15.3. National targets for pasture/rangelands rehabilitation and/or for addressing overgrazing, land degradation and desertification are being set and will be monitored and reported on under the LDN target setting process. This brings a great hope for a paradigm shift in the way rangelands are perceived and managed in the region.

40. While many countries in the region have set clear mitigation forestry targets in their Nationally Determined Contributions (NDCs) under the Paris Agreement on climate change, none has considered rangelands in their mitigation targets. This is mostly attributed to the lack of evidence-based data on the carbon stocking potentials of rangelands.

41. Some countries have made direct reference in their NDCs to rangelands management-related issues under their adaptation goals. In other cases when reference is made to desertification control and sustainable land management, it could be understood that this will include, one way or another, actions for rangelands protection and management.

## **IX. CONCLUSION**

42. A better understanding of the socioeconomic and environmental benefits of rangelands in the NENA region is a prerequisite for a better recognition and visibility of the rangelands sector and would allow that its multiple contributions are maintained and improved.

43. Bringing rangelands management issues at the forefront of countries' national priorities will require documenting the economic importance of rangelands through the valuation of the range of goods and services that they provide. This includes, among others, documenting the contribution of pastoralism to food security and jobs creation (along livestock value chains); the role of rangelands in carbon sequestration; the importance of rangelands for wildlife, conservation of biodiversity, herbal and medicinal plants; the importance of rangelands for eco-tourism and recreation; and importance of rangelands as gene banks for feed and plant crops of global significance.

## X. POINTS FOR CONSIDERATION

44. The Commission may wish to invite countries to:
- Develop policies and legislative frameworks that support the recognition of customary rights of rangelands users to land, promote their collective actions in the management of the range resources and strengthen their community-based institutions.
  - Undertake studies and assessments to valorise the goods and services provided by rangelands, including through their contribution to food security, poverty reduction, reducing rural migration, conservation of biodiversity and to carbon sequestration, and request FAO's support in this regards.
  - Consider mainstreaming rangelands management issues in the national development priorities and positioning rangelands development at the center of the national programmes/actions for achieving the SDGs, in particular under the framework of the LDN process for halting land degradation, combating desertification and achieving land degradation neutrality.
45. The Commission may wish to request FAO to:
- Assist countries in developing a harmonized definition for rangelands and strengthening their capacity in rangelands monitoring.
  - Support country efforts for halting rangelands degradation through implementing large scale rangelands restoration programmes with full involvement of local communities.