

POLICY BRIEF

Towards Sustainable Rangeland Management and Strengthened Governance in South Tunisia

Aymen Frija,^{1*} Boubaker Dhehibi,¹ Mariem Sghaier,^{1,2} Mondher Fetoui,² and Mongi Sghaier²

¹ International Center for Agricultural Research in the Dry Areas (ICARDA) – Beirut, Lebanon.

² Institut des Régions Arides (IRA) – Medenine, Tunisia.

* Corresponding author E-mail: a.frija@cgiar.org.

Rangelands represent one of the most important socio-ecological systems in Tunisia (Box 1). However, since independence (1956), despite the Tunisian Government's efforts in rangeland development, results and impacts in terms of efficiency, sustainability and governance of rangelands remain below the expectations of rangeland end users, donors and development agencies.

As part of an in-depth evaluation of rangeland governance challenges and opportunities, a series of targeted investigations were conducted by ICARDA-Institut des Régions Arides (IRA), based on a scoping conceptualization and analysis of rangeland governance in south Tunisia (Sghaier et al., 2018; Frija et al., 2019; Fetoui et al., 2020).

The objective of this policy brief is to contribute to a better framing of rangeland governance, including how it is defined and outlining effective approaches for the assessment of rangeland governance in a practical way that can be easily communicated to policymakers and other pastoral development agents.

We build on the results of our governance analysis to highlight lessons learned and provide recommendations for policymaking. Specific objectives include identifying:

- the land tenure systems, which are the most constraining for rangeland governance in south Tunisia;
- different levels of rangeland governance failures at various levels: national, strategic, and local.
- the scope of ongoing agro-pastoral challenges and the trend towards private agricultural exploitation of rangelands on good governance and sustainable development;
- prospects for stakeholder's cooperation and alliances for effective implementation of enhanced rangeland

Highlights

- There is a strong need to redefine the actors involved in rangeland management and identify their respective responsibilities and intervention capacity. Enhancing coordination mechanisms by government agencies across different management levels (local and national, and strategically within government agencies themselves) and appropriate public facilitation would help all stakeholders to build strategic alliances for effective and transparent collective rangeland restoration.
- Private land ownership, embedded into larger collective rangelands, is the most challenging land tenure system for enhancing governance. Nevertheless, improving rangeland governance under these constraining conditions can be achieved through appropriate capacity development of farmer's organizations.
- Local farmers' organizations for rangeland management have heterogeneous performances and only a minority have good organizational and managerial performances.

restoration techniques (rangeland resting known as *Gdel*¹) in Tataouine.

Keywords: *Rangelands, governance, stakeholder analysis, land tenure systems, sustainability, strategic framework, Tunisian arid zones*

1. *Gdel* is a traditional technique. It consists of leaving part of the rangeland to rest (without grazing) for a definite period of 2–4 years depending on the ecosystem's capacity to recover and on climatic conditions, with the aim of allowing plant cover to recover, which can result in increases in fodder production, soil organic matter and biodiversity, and reduction in soil erosion (Gamoun et al. 2018).

I. Why rangeland governance in Tunisia matters?

Research literature has increasingly recognized that governance is a cornerstone of pastoral policies and sustainable rangeland development. In the context of good rangeland governance, all stakeholders involved in rangeland management and use should be *individually and collectively acting* in a way which enhances sustainability of resources, as well as livelihoods.

However, from a practical perspective, rangeland governance is usually confused with performance in rangeland management, due to a lack of clarity in their respective definitions. This consequently leads to a lack of appropriate policies for enhancing rangeland governance. A lot of the management tools and instruments that are implemented are not used in a complementary way, which results in scattered overall management.

Governance is a multidisciplinary (social, economic, environmental, institutional), multi-actor (private, public, decision-makers, community-based organizations, non-governmental organizations, practitioners, development agencies, etc.) and multiscale (local, regional, national) concept, which makes it difficult to analyze in a comprehensive way. Available frameworks for analysis of natural resources governance are usually based on analysis of different governance dimensions and smaller governance components (known as institutional arrangements) to better understand and determine institutional and governance failures.

II. Challenges faced by rangeland socio-ecological systems

Despite their ecological, economic, and social importance (Box 1), during the last five decades, rangelands have faced many significant challenges, which have significant economic and ecological implications. These challenges can be highlighted as follows:

- **Land degradation and desertification**, which are mainly due to excessive exploitation and grazing of vegetation.
- **Territorial fragmentation of rangelands** as a common consequence of land use change due to increased transformation from communal to private ownership driven by land demand for agricultural and other economic activities. Consequently, there has been an increase in cultivated arable area at the expense of highly productive rangelands.
- **Climate change threats, severe droughts events, and water scarcity** that present real problems for rangeland sustainability in south Tunisia, especially when accompanied by the reduced capacity of rangeland users to adapt to changes and mitigate effects of climate variability, mostly due to weakened institutions and low technology intensification.
- **Loss of traditional knowledge about rangeland management practices** (i.e. *Gdel* resting technique) due to the break up of traditional institutions and changes in actors involved in rangelands use and management.
- **Low level of investment in rangeland ecosystem services**, which is mainly due to a lack of appropriate public development and investment strategies for pastoral development.
- Insufficient strategies and funding mechanisms to support **building strong alliances and enhancing coordination mechanisms** among different stakeholders involved in rangeland management and restoration.
- **Regulatory frameworks for land tenure and property rights remain very restrictive**. In fact, the strength of land tenure rights is positively correlated to good community governance of common land. Protected land rights induce higher accountability and sustainability. However, this is

Box 1: Socioeconomic importance of rangelands in Tunisia

Almost all of the collective lands in the arid regions in Tunisia are classified as rangelands. About 80% of forest ecosystems and rangeland areas are collective lands, which in total cover 35% of the country. Although the rangeland area has decreased by 30% over the last 30 years, they still cover nearly 4.3 million ha (Kailene et al., 2020). Rangelands contribute significantly to the livelihoods of livestock keepers in south Tunisia. Rangeland areas in these regions currently provide between 10 and 20% of livestock feed (grazing and fodder) requirements (Frija et al., 2021). Overall, forests and rangelands in Tunisia generate an estimated economic value of US\$500 million per year, equivalent to 14% of agricultural GDP in 2012 (DGF & The World Bank, 2015).



Photo 1. A rangeland landscape from South Tunisia
Photo credit: IAR – Mednine, Tunisia, 2017.

Box 2: Pastoral development achievements

In the last 10 years, governance-related interventions in Tunisia resulted in: i) the resting of 17 sites covering a total area of 133,000 ha of collective rangelands (see Photo 3); ii) establishment of forage shrub (atriplex, acacia, cactus) plantations of 370 ha under the Douz sub-program and the Tataouine settlement, iii) re-seeding 9,080 ha of rangelands; and iv) efforts to organize pastoralists and farmers into farmers' organizations and cooperatives, and investments in enhancing their respective management capacities.

These interventions contributed to: i) increased fodder production (from collective rangelands) to 5.7 million units of forage (UF), with additional feed intake of private rangelands estimated at 990,000 UF (IFAD, 2012); ii) reduction of recurrent costs of livestock feeding by about 39%; iii) improvement of small ruminant fertility from 10 to 12%, and prolificacy from 10 to 15%; iv) reduction of breeders' transport costs by about 50% (due to development of roads), reduction of watering costs of sheep from 2 Tunisian dinar (TND)/head/year to 1.2 TND/head/year.



Photo 2a and 2b. The region of Tataouine is dominated by pastoral and agro-pastoral production systems

Photo Credit: Photo 2a ICARDA, 2017. Photo 2b IRA, 2017.

not the case for collective rangelands where governance is qualified as poor.

- **Inadequate policy, institutional and legal frameworks for rangeland systems management:** Low organizational and institutional resources of local administrations coupled with a lack of management and technical skills of farmers' organizations are reversing some of the gains made by investments meant to enhance rangeland governance.

III. Actions undertaken to enhance rangeland governance

Tunisia has been investing in rangelands through national and/or internationally-funded public investments in agro-pastoral development programs (in three southern governorates: Medenine, Tataouine, and Kebili). These include: (i) investments in pastoral water points; (ii) rehabilitation, extension, creation of irrigated areas and intensification of irrigated development systems located in pastoral areas; (iii) implementation of soil and water conservation programs; (iv) extension of fruit tree plantations (especially olive trees); (v) improvement of herd

management and livestock health; and (vi) support for the labeling of local products in the area (Box 2).

IV. A strategic analytical framework on rangeland governance

A strategic framework on "[Frameworks, tools, and approaches for the assessment of rangeland governance](#)" has been developed by the ICARDA-IRA team to frame the institutional analysis of rangeland institutions to highlight weak linkages and coordination of policies on rangeland development actions by stakeholders (Frija et al., 2019). This analytical tool for rangeland governance analysis considers different governance levels (Box 3).

V. Pathways for enhancing rangeland governance in south Tunisia

The analysis of rangeland governance at different levels revealed many failures, which were determinant in helping us identify which policy options and actions to leverage. To enhance rangeland governance, management and sustainability,



Photo 3. Rested rangelands using fencing

Photo credit: Mouldi Gamoun/ICARDA (2018).

the best way forward overall is to implement integrated solutions. These include the improvement in performance of farmer organizations, intensification and diversification of on-farm and off-farm income sources, clarification of boundaries between neighboring rangelands, and the inclusion of rangeland sustainability into broader pastoral development and investment perspectives. More specific recommendations are listed below:

At local and strategic levels

- Rangeland restoration involves complex interactions among multiple stakeholders that can be effectively structured into potential strategic alliances and networking, which can thus facilitate good implementation of rangeland restoration in collective rangelands (Sghaier et al., 2018).
- Rangeland restoration processes are more likely to be successful when there is a process of continuous learning, jointly undertaken by policymakers, development institutions, research organizations, relevant civil society actors and users. Dialogue facilitators should consider the strength of relationships between these stakeholders in addition to their respective short- and long-term strategies (Fetoui et al. 2020).
- Considering short and long-term needs and strategies of local users in rangeland rehabilitation processes will sustain users' participation and interest.
- It is important to contemplate the flexibility, accountability and transparency between involved stakeholders for better performance of rangeland management (planning, implementation and monitoring of rangeland restoration activities).
- The improvement of the effectiveness and performance of operating community based organizations (GDAs) will strongly contribute to strengthening the implementation of collective action for rangeland restoration (Frija et al. 2020).

Box 3: Analytical framework for diagnostic of rangeland governance

The analytical framework used provides insights about major governance changes and drivers in the previous few decades, through qualitative and quantitative assessment of their effects on rangeland sustainability. It particularly identifies weaknesses at national administrative and regulatory levels; identifies pathways to enhance rangeland governance locally under different land tenure systems; and options to strengthen collective stakeholders' relationships and alliances for successful rangeland resting. We focused on the following aspects.

- identification of central administrations, and their respective priorities regarding rangelands (policies and related measures which have direct and indirect effects on rangelands);
- mapping of all stakeholders directly and indirectly involved at the local level in the use and management of rangelands, and their respective objectives and relationships.
- assessing the performances of rangeland community-based organizations (CBO) – such as agriculture development groups (GDAs) as these are the backbone of local rangeland governance.
- identifying possible options to enhance rangeland governance even under constraining land tenure systems.

At national levels

- The establishment of a new pastoral code in Tunisia, which is being developed by the forest administration to better regulate access and use of rangelands, may open new opportunities to improve the governance and the sustainability of rangelands and pastoral societies.
- Facilitate the creation and consolidation of multi-level nested governance patterns, which are highly strategic for facilitating exchange across governance levels. The prospects of consolidation needs to be promoted while considering constraints and opportunities imposed by land tenure systems.
- Creation of effective coordination mechanisms (or even additional coordination entities) to bridge the communication gap between all stakeholders involved in rangeland governance (through fluent information exchange, include feedback and interests of different actors into key rangeland strategies, action plans, and investments), and reduction of divergences across stakeholders objectives, etc.).
- There is an urgent need to clarify the confusions created by overlapping rights and responsibilities of some of the existing

institutions currently involved in rangeland management, such as GDAs and Land Management Councils.

- Governance systems must be more inclusive in terms of partnerships, with a better distribution of responsibilities, and higher levels of accountability. Secondly, leading stakeholders must enhance their coordination skills, and conflict resolution mechanisms should be explicit, and enforced. Finally, well-designed performance indicators for enhanced monitoring, evaluation and accountability should be implemented in pastoral areas. There is a need for stronger government involvement to facilitate the development and implementation of effective monitoring and evaluation for technical, managerial, and financial aspects related to local rangeland management (including GDAs).
- There is a need for careful design of pastoral development investment projects to enable innovation, overcome land tenure constraints, and avoid disabling good rangeland governance.

Acknowledgements

This work is elaborated in the framework of the research collaboration ICARDA/IRA (2017-2020). Funding from the CGIAR Research Program (CRP) on [Policies, Institutions and Markets \(PIM\)](#) (ICARDA agreement number 200178), in addition to CRP Livestock (Flagship 4) (ICARDA agreement number 200173) are acknowledged. The authors thank all donors and organizations which globally support the work of the CGIAR Research Program through their contributions to the CGIAR system. We also deeply thank all development and community-based organizations and their members who contributed to the success of this research program (see Box 4).

Further reading

- DGF & The World Bank (WB), 2015. Project Information Document: Concept Stage. World Bank, Washington DC, <http://documents.worldbank.org/curated/en/762871468113330972/pdf/PID-Print-P151030-10-03-2016-1475515550080.pdf>
- Fetoui, M., Frija, A., Dhehibi, B., Sghaier, M. and Sghaier, M. 2020. Prospects for Stakeholder Cooperation in Effective Implementation of Enhanced Rangeland Restoration Techniques in Southern Tunisia. Rangeland Management and Ecology. ICARDA, Tunis, <https://doi.org/10.1016/j.rama.2020.10.006>
- Frija, A., Sghaier, M., Dhehibi, B. and Fetoui, M. 2019. Frameworks, Tools, and Approaches for the Assessment of Rangeland Governance. Tools & Guidelines. ICARDA, Tunis, <https://repo.mel.cgiar.org/handle/20.500.11766/10081>
- Frija, A., Sghaier, M., Fetoui, M., Dhehibi, B. and Sghaier M. 2020. Research Investments in Institutional Innovations: The Case of Rangeland Governance in Tunisia—Ongoing Rangeland Research and Outcomes of IFAD-ICARDA-NARS. Presented during a webinar series on land and natural resource governance, planning and management, July 2020. ICARDA, Tunis, <https://hdl.handle.net/10568/108850>
- Frija, A. Sghaier, M., Fetoui, M., Dhehibi B. and Sghaier, M. 2021. Governance Systems for Collective Actions in Agro-pastoral Systems

Box 4: Research and development partners

Many research and development partners have been involved in this CGIAR research programs on rangeland governance in Tunisia. A list of main supporting partners to whom, both ICARDA and IRA are highly grateful, can be found below:

- [ICARDA](#): International Center for Agricultural Research in the Dry Areas.
- [IRA](#): Arid Regions Institute (National/Research).
- [OEP](#): Livestock and Pasture Office (Development).
- [PRODESUD](#): Agricultural Development: Agropastoral Development and Local Initiatives Promotion Programme for the South-East - Phase II. Project funded by the International Fund for Agricultural Development (IFAD); Led by the Regional Commissariat for Agricultural Development (CRDA) of Tataouine.
- [PRODEFIL](#): Rural Development: Agropastoral Value Chains Project in the Governorate of Médenine. Project funded by the IFAD; implemented by the CRDA Medenine.
- GDAs (*Groupements de Développement Agricoles*), CG (*Conseils de Gestion des terres collectives*).
- [UTAP](#) (*Union Tunisienne de l'Agriculture et de la Pêche*), of Tataouine.

in Tunisia: Historical Trends and Future Perspectives. In Governance of Mediterranean Silvo-Pastoral systems (add authors of main book). Routledge (forthcoming)

- Gamoun, M., Werner, J. and Louhaichi, M. 2018. Traditional Grazing Management Practice Makes an Impact in Southern Tunisia. ICARDA Blog. <https://www.icarda.org/media/drywire/traditional-grazing-management-practice-makes-impact-southern-tunisia>
- IFAD. 2012. PRODESUD Project Completion Report, https://www.ifad.org/documents/38714182/39729408/tunisia_prodesud.pdf [accessed: November 2020]
- Kailene, J., Anater, I., Daly, H. and Ben Salem, L. 2020. Importance socio-économique et environnementale des territoires pastoraux. Revue des Régions Arides- Numéro Spécial- n°47 (2/2020)
- Neffati M., Sghaier, M. and Khorchani, T. 2020. Capitalisation de l'expérience tunisienne et valorisation des acquis dans le domaine du développement des territoires pastoraux. Revue des Régions Arides- Numéro Spécial- n°47 (2/2020)
- Sghaier, M., Fetoui, M. and Frija, A. 2018. Prospects for Cooperation Among Local Stakeholders for Rangeland Restoration. Arid Regions Institute (IRA), Medenine, <https://hdl.handle.net/20.500.11766/9412>

Disclaimer: The views expressed are the authors' own and do not necessarily reflect the views of the ICARDA, IRA, CGIAR or any involved research and development partners in this study on rangeland governance in Tunisia.