Pastoral and agro-pastoral systems in the Mediterranean region: potential, challenges and perspectives

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Pastoral ACTORs, Ecosystem services and Society as key elements of agro-pastoral systems in the Mediterranean
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Matches/mismatches between pastoral communities and social expectations

The Mediterranean agropastoralism as a complex socio-ecological system.

Specific objectives:

• to identify key bottlenecks for the viability of Mediterranean agro-pastoral communities by targeting best practices under policy, socioeconomic and environmental considerations, and
• to inform key audiences of the actual capacity of Mediterranean agro-pastoralists to provide multiple societal benefits.

The particular socio-political and economic adjustments required to enhance the continuity of agro-pastoral communities in the Mediterranean region.
The Mediterranean has a special claim to our interest [...] It is the place where mankind’s exploitation of the land began and where it has run its full cycle. What has happened here during the past millennia is elsewhere on earth just beginning.

SIR DAVID ATTENBOROUGH
The Mediterranean basin

BLONDEL (2006): Two schools of thought when looking at the human pressures on Mediterranean ecosystems

THE LOST EDEN THEORY

POSITIVE/NEGATIVE FEEDBACK CYCLES BETWEEN CULTURAL PRACTICES AND NATURAL CYCLES THAT HAVE KEPT ECOSYSTEMS ROBUST AND RESILIENT

Human actions:
A surrogate for natural sources of ecosystem disturbances.
A high degree of resilience of Mediterranean ecosystems resulted in a dynamic coexistence of human and natural systems which in some cases provided stability while fostering diversity and productivity. Complex coevolution.
The Mediterranean basin

Domestic pastoral systems traditionally took different forms, depending on resource availability, local physical factors, and cultural traditions (Blondel 2006):

(i) sedentary livestock raising, involving a combination of stall feeding and free grazing
(ii) seminomadic pastoralism whereby the whole household moved with the herd
(iii) transhumance where only individual herders moved with the stock

The high plateau and mountainous areas → seasonal ‘escape zone,’ during the hot and dry summer.

Transhumance dates back to at least the Bronze Age → migration routes of wild animals
The Mediterranean basin

500,000 years
The Mediterranean basin

Aragoniente medio-superior (*Puente de Vallecas*)

Vallesiense superior (*Torrejón de Velasco*)

Quaternary (*Ponton de la Oliva*)
The Mediterranean basin
The Mediterranean basin
The Mediterranean basin

BUGALHO et al. 2011

Mediterranean cork oak savannah requires human use to sustain biodiversity and ES
Mediterranean rangelands and grasslands as SES

Pastoralism is a culture that cogenerates services. Conservation efforts should also recognize the need to maintain the human activity to sustain the services (Hutsinger and Oviedo, 2014).

Livestock grazing as the key element (Cosentino et al. 2014) for its dual role in maintaining these ecosystems and strongly driving its dynamics (Perevolotsky, 2005).

Social and ecological systems are tightly linked. Their separation is more a sort of mental artefact than a real world observation (Berkes and Folke, 1998; Nelson and Serafin, 1992).
Pastoral systems in the Mediterranean

Marginal systems of low productivity and high impact narratives of desertification invoked to facilitate and justify policies that erode resilience and damage environment → sedentarization, cultivation

vs.

Complex socio-ecological systems able to produce high quality protein from human-inedible forage with minimal environmental impacts & provide multiple ES to society

FAO (2020)

In spite of their social, economic, and environmental contribution to their communities, pastoralists are often misunderstood and excluded from policy processes affecting them.

Better suited that other land uses to do well under changing environmental conditions (Davies and Nori 2008)
Trends, drivers of change and challenges ahead

CLIMATE, ENVIRONMENTAL

• Climate variability
• Livelihood security threatened by changing climate and recurrent droughts
• Affects more to those poorly endowed with resources and compromises the viability of these farming systems.
• The depletion of pastoral resources as a result of frequent drought and decrease of grazing area.

PASTORAL PRACTICES

• Land grabbing, other uses competing for pastoral areas
• Intensification, increased dependence on external inputs
• Sedentarization: from pastoralism to agro-pastoralism from nomadism to short distance transhumance
• Polarization: wealthy pastoralists with large herds and small farmers
• Low economic profitability, reliance on remittances
• Sociodemographic changes affect their mobility and use of rangelands: generational relay
• Erosion of TEK and collective management
• Erosion of genetic pool of local breeds that may reduce the opportunities for adaptation
• Supplementation that allows increasing herd sizes at the cost of rangeland degradation
• Alternative/rival land uses
Challenges

POLICY and GOVERNANCE

• Management of collective rangelands and pastures: chaotic and unsustainable, despite their flexibility to adapt (Rignall and Kusunose 2018 en el Bilali 2020)
• Rangelands degradation attributed to pastoral use
• CAP: Not enough to guarantee the reproduction of these systems. Not able to halt biodiversity losses
• Failure of policies → ending in “rigidity traps” (Hausner 2014)
• Perception as an economically unproductive activity, ecologically damaging and culturally backwards → no public investments or innovation (Harris, 2010)
• Difficulties in delivering public services to the pastoral communities
• Lack of political representation
• Encouragement of privatization and cultivation of steppe
• Access to land
Challenges

MARKET- TRADING
• Product differentiation and regulations that hinder small entrepreneurship and differentiation of products.
• Values not captured in markets
• Price-acceptant

HERITAGE
• Cultural identities linked to these practices → integral part of their communities → separate examination is inadequate

RESEARCH
• Innovation focused on technical investments not always well adapted to the context and needs
• Social innovation and social dimensions are under-represented/addressed
• To produce sound evidence to inform policies.
• Innovation is largely absent from pastoralism
Opportunities

FAO (2020) stresses that:

To increase pastoralism’s recognition, data production is crucial for evidence-based policy-making.
The collection of data is essential to understand the importance of pastoralism, its contribution to local and national societies and to better inform policies.

INCREASED ATTENTION AND RECOGNITION OF LOW IMPACT PRODUCTION SYSTEMS

CIRCULAR ECONOMY, INCREASED CONSUMER/CITIZENS AWARENESS

• APS encompass many elements of circular bio economies

• New Agenda for the Mediterranean adopted by the EC to enhance regional cooperation

• Less dependence on capital. Fixed capital requirements are lower → an asset in shaping resilience over time

• Complex adaptive systems, suited to changing environmental and climatic conditions

• Role in climate change mitigation/adaptation and achievement of food security (Rivera-Ferre & López-i-Gelats, 2012).
Opportunities

INCREASED ATTENTION AND RECOGNITION OF LOW IMPACT PRODUCTION SYSTEMS

CIRCULAR ECONOMY, INCREASED CONSUMER/CITIZENS AWARENESS

- Pastoralism protects rural livelihoods in marginal and remote areas where productive activities are limited.
- APS produce high-quality products, valorise marginal rangelands, protect biodiversity, control soil erosion and land degradation, and preserve long-standing.
- Pastoralist have been able to adapt to rainfall variability and droughts, especially mobile pastoralists.
- Promoting mobile pastoralism in semi-arid area as a valuable option to increase resilience against climate change: less vulnerable to droughts and precipitation than sedentarize (Freier et al. 2014) and also performs better financially speaking (Fernández-Giménez & Ritten, 2020).
- HNV systems increasingly recognized.
References


- Rivera-Ferre, M.G., López-i-Gelats, F. (2012) The role of small scale livestock farming in climate change and food security. VSF-Belgium, SIVTRO, AVSF and VSF-CZ, Barcelona
Thank you!