

Call for papers

Thematic issue

“Pastoral Ecology in the Sahel”

Monitoring tools, studies of the dynamics and services rendered by native vegetation in Sahelian and Sudanian zones

This thematic issue aims to present an inventory of current research on pastoral ecology in the Sahel and its fringe, in a context marked by climate change.

Context

The Sahel is a region of Africa defined by its ecological characteristics: it marks the transition between the Saharan desert in the North, and the Sudanian savannas in the South. This strip stretches for several thousand kilometers, from the Atlantic to the Red Sea. Classically, three Sahelian subareas are defined on the basis of climatic and ecological criteria: the Sahel-Saharan zone where rainfall is between 150 and 250 mm/year, the typical Sahelian zone, where rainfall varies between 250 and 500 mm/year, and the Sahel-Sudanian zone where rainfall varies between 500 and 750 mm/year.

Because of the low level of rainfall, pastoral livestock farming in the Sahel is very important, both in ecological term and from an economic, social and cultural viewpoint. This pastoral farming relies on the management of the native vegetation of the rangelands. In addition to providing forage resources for ruminant livestock, the vegetation provides many other services for local populations such as the production of wood, nonwoody forest products, medicinal herbs, or more global services such as climate regulation. The vegetation of these ecosystems is subject to many factors including, in the first place, climate variations and rainfall. The droughts of the 1970s and 1980s strongly impacted the vegetation in pastoral areas. Since the 1990s, a return of rains seems to have begun. This return of the rains would induce a greening of the Sahel. Other factors that may influence pastoral vegetation are livestock practices, changes in land use linked to rainfed or irrigated agriculture, management of forest resources, bush fires, or urbanization.

Objectives

The aim of this thematic issue is to review the results of recent work on rangeland vegetation in Sahelian countries. The issue seeks to be multidisciplinary in order to understand in their diversity the different factors that influence the dynamics of these areas. It will welcome works in plant ecology and pastoralism, as well as ethnobotanical, remote sensing or geography researches.

Through publications on various subjects, this issue will highlight the dynamics of rangelands and the monitoring tools proposed by research, in support of sustainable development processes in pastoral and agropastoral areas.

Themes

Any contribution will fall under one of the four themes detailed below.

Tools and methods for monitoring vegetation

In this theme, the objective will be to present methodologies for monitoring and characterizing plant cover. These methods could be based on the use of new technologies (near-infrared spectrometry, remote sensing, etc.), but they could also present datasets or collections of interest to study vegetation in Sahelian countries. Indeed, papers presenting datasets of interest (data papers) will be accepted provided that the data are made public and accessible to the community.

Vegetation dynamics

The objective of this theme will be to present works on the dynamics of vegetation in the Sahel. This work could cover both long-term dynamics studies and short-term studies (dynamics during the rainy seasons). The studies will show the impacts of different management practices (exclosures, pasture restoration, fire, fallow restoration, forest product management, etc.) on vegetation.

Services rendered by vegetation

This theme will present work on ecosystem services and 'dys-'services provided by vegetation and livestock in the Sahel. These studies could be based on measurements of ecosystem functioning (biogeochemical cycles, trophic network studies, etc.). Studies on climate change regulation and mitigation will be integrated into this theme. These studies may also be based on the assessment of ecosystem services through the use or development of indicators. Studies on the economic value of these services will also be welcome in this section. Finally, to understand better the diversity of these services, the section will welcome works on the role of native vegetation in agrosylvopastoral systems.

Viewpoint and use of vegetation by local populations

The objective is to present works related to the use of vegetation by local populations. These works may involve both diagnoses of resource use by agrosylvopastoral communities, and studies on the local knowledge of the populations for the use of this vegetation. In this spirit,

manuscripts on the study of collective natural resource management methods may be proposed (setup of a pastoral unit, selection of grazing lands, forest cover management, policies and projects for agrosylvopastoral resource management, etc.). Works on the perceptions of different types of vegetation by local communities can also be submitted in this section, whether they are ethnobotanical, anthropological, or sociological.

Submission information

This Call will consider different types of manuscripts. Manuscripts can be written in French or English. Preference will be given to short articles (3000 words) with original research results, but submission of longer articles (7000 words) are accepted. In addition, reviews of the literature on a given subject are encouraged; these reviews will be highlighted in the issue. Papers presenting datasets will also be accepted provided that the data is available free of charge.

The issue will be coordinated by Simon Taugourdeau (simon.taugourdeau@cirad.fr) and Tamsir Mbaye (tamsir.mbaye@isra.sn). As a first step, interested authors may contact the coordinators by sending a provisional title and a short summary (200 words maximum) before the September 15 2018. Full texts must be sent before October 15, 2018 as Word files by email. This special issue will be published in 2019.

Manuscripts must comply with the Journal's editorial policy and procedures defined in the 'Instructions for authors' ([link](#)).

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