

Is desertification on the increase?

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Fighting desertification will require a better understanding of its drivers of this process, with a little help from a new tool to study how dry regions evolve

News of increased [desertification](#) has made headlines. Yet this process is not well understood. The term desertification itself, "is a bureaucratic word that appeared after the Sahel drought of the 1970s," explains Juan Puigdefabregas, emeritus professor at the Arid Regions Research Station (EEZA), located near Almeria in Spain. "[Desertification] has been associated with [soil loss](#) and degradation, but we now appreciate that there has never been a case in which desertification has been associated

with [climate](#) change. We now know that human impacts are always all or part of the story."

However, we do not know enough about how the world's [deserts](#) are evolving. Puigdefabregas has developed software to inject some evidence into this debate. The DeSurvey desertification surveillance system toolbox is designed to provide "tools to assess the status of desertification in a region or a country, at an appropriate spatial resolution," he tells youris.com. He hopes that ultimately, it will help develop a clearer and more ecologically-based idea of desertification

The system uses a wide range of data, from climatic to economic. It produces three types of output: maps of [land degradation](#) and land use, an analysis of the external forces that might be causing land damage, and a facility to allow future land changes to be examined. These outputs "have been validated successfully in the field in 15 areas around the world."

This tool makes it possible to see whether land is deteriorating, improving or staying unchanged. In turn, this allows policy and management of dry land to be better informed. In addition, it allows users to look at the history of desertification in specific areas.

Puigdefabregas explains that this work makes use of free, public data because of the shortage of useful local data on specific [desert areas](#). Phil O'Keefe, professor of geography at Northumbria University in the UK, who has worked extensively on desertification in the Sahel and elsewhere, confirms the poor state of data on the subject. He welcomes tools such as those developed by the project, but points out that in the past 15 years, "glaciers have been sexier than deserts." This explains, in his view, why the subject is getting steadily less attention.

So far, the tool's main users are government bodies with an interest in

drylands issues. NGOs are another user group. Puigdefabregas expects the user base to expand as it becomes more effective. It is being used in Inner Mongolia and its scope in Mozambique, Brazil and Morocco is being expanded with the addition of remote sensing data in a joint venture with the European Space Agency. In Europe, this project—which has been funded by the EU—has been applied in Greece, Italy, Spain and Portugal.

This approach is one step towards the ultimate goal of understand how desertification works. However, "it requires some time to develop quantifiable drivers for desertification and its impact on food security," comments Chandra Biradar, head of geographical information systems at ICARDA, the International Centre for Agricultural Research in the Dry Areas, in Amman, Jordan, which may provide remote sensing data for the project. He believes that this approach will be essential if the design decision support system (DDSS) derived from the project is to become a viable tool for high-impact decision-making.

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