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Conservation and Sustainability of Globally Important Agricultural Heritage Systems (GIAHS) Need Multi-disciplinary Research Strategies

Bachir Khezzani ^{1,2*}, Azzeddine Haddad ^{3,4} and El Amine Khechekhouche ^{1,2}

¹ Department of Biology, Faculty of Natural Sciences and Life, El-Oued University, P.O. Box 789, El Oued 39000, Algeria.

² Laboratory Biology, Environment and Health, Faculty of Natural Sciences and Life, El Oued University, P.O. Box 789, El Oued 39000, Algeria.

³ Department of Agronomy, Faculty of Natural Sciences and Life, El-Oued University, P.O. Box 789, El Oued 39000, Algeria.

⁴ Laboratory of Biodiversity and Biotechnology Applications in Agriculture Faculty of Natural Sciences and Life, El Oued University, P.O. Box 789, El Oued 39000, Algeria.

Corresponding Author: Bachir Khezzani, PhD *Department of Biology Faculty of Natural Sciences and Life*

University of El Oued, PO Box 789, El Oued 39000, Algeria E-mail: bachirkhezzani05@gmail.com

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Abstract—The globally important agricultural heritage systems (GIAHS) are traditional agricultural systems for food production that are highly harmonious with the surrounding environment and spread widely worldwide. They play an important role in ensuring food security for local communities. T

he scientific research on these heritage systems is progressing accelerated, but with an unbalanced approach between various scientific disciplines. This situation created many research gaps that prevented the discovery of more of the secrets of these systems and disrupted the conservation and development of this heritage. This letter is regarded as a call for the scientific community from a multi-disciplinary perspective to guide research and highlight some mysterious GIAHS sides that, until now, have not attracted researchers' attention

Index Terms—GIAHS; conservation; sustainability; biodiversity; research strategy; multi-disciplinary

Dear editor in chief,

The practice of agriculture helped the first human societies to settle, as they established various agricultural systems characterized by originality, permanence, and harmony with the surrounding environment. These systems have shaped high-value natural and cultural landscapes in many regions of the world. Also, it improves people's quality of life in many concrete and intangible ways (Guo et al., 2021; Khezzani et al., 2023).

The international community realized the importance of these traditional farming systems. Hence, the Food and Agriculture Organization (FAO) took the initiative to classify them as Globally Important Agricultural Heritage Systems (GIAHS) in 2002 (Zhang et al., 2018; Khezzani et al., 2023). The conservation process was expanded globally at the end of 2005 (Mi et al., 2014) after it was initially limited to focus on cases in developing countries (Kajihara et al., 2018). Until 2021, the FAO has classified 58 sites in 21 countries as GIAHS (Yotsumoto and Vafadari, 2020); six other sites have also been proposed for classification. However, the dynamic conservation and adaptive management of these agricultural systems have become complex challenges (Zhao and Huang, 2020), mainly because these heritage systems have widely been abandoned worldwide (Santoro et al., 2020), in addition to climate change, globalization, and land use change (Koochafkan and Altieri, 2016).

Zhao and Huang (2020) reported that GIAHS has become a hotspot for scientific research since the beginning of the 21st century because of its rapidly increasing number of sites. Yet, there is still much to discover about the mysteries of these traditional systems. On the other hand, this heritage is often offered as a lessons depot, which the current generation must learn for a more sustainable future in agriculture (Ferrario, 2021). A part of this agricultural heritage is located in the arid regions and plays a significant role in the stability and sustainability of its fragile ecosystems (Khezzani et al., 2016).

Although research in the GIAHS field is progressing accelerated, it is carried out through limited disciplines, such as agriculture, biology, the environment, and biodiversity. So, focusing on predefined and limited research fields causes a lame development. These systems arose in exceptional circumstances and developed over thousands of years, as they brought us so much knowledge and values about ancient human societies that may not even be found in history books.

Many cultural customs and traditions arose among the local communities in parallel with the developing their traditional agricultural systems. Adapting these societies to their environment led to accumulating experiences and their transmission across generations, expanding and deepening knowledge, and taking complex and diverse measures to preserve precious cultural, environmental, and social values. Prus et al. (2022) reported that abundant knowledge and experience in natural resource management had ensured decades of food security, reducing risks related to ongoing political and systemic changes.

It was evident that all these unique characteristics that define the GIAHS require the inclusion of several research fields. There must be a balance in scientific research related to the GIAHS. More attention should be given to other new research fields, such as sociology, culture, law, organization, anthropology, geography, and other specialties. Indeed, we can discover a lot, but we cannot find everything. The knowledge accumulated over thousands of years cannot be summed up in two decades. A study by Qingwen (2021) largely agrees with our point of view, pointing out that the agricultural heritage is a compound heritage; furthermore, it suggested 32 priority areas in research.

The bottom line is that we must expand the research field by including new disciplines that enable us to discover more secrets of GIAHS and learn more lessons for sustainable development.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this paper.

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