Iberian Regenerative Farm Mapping

INTRODUCTION AND CONTEXT OF THE MAP

"No farm is ever done improving its systems and processes, just as no ecosystem is ever done evolving" (Soloviev and Landua 2016). Rather than the state of an agricultural production system, Regenerative Agriculture (RA) is a journey towards improving and regenerating ecosystems and societies, using the soil as the base and as the entry point[1]. It is increasingly recognised that healthy soil produces healthy plants that feed healthy animals and people, and that regenerative practices produce foods with better nutritional profiles (Montgomery et al. 2022).

Therefore, this map aims to showcase farms that are in a regenerative process in their own specific context. The main objective of the map is to give visibility to Iberian regenerative farms, so that those of us who produce, consume or support regenerative agriculture can:

- ➔ be inspired
- ➔ obtain information on regenerative agricultural practices
- ➔ understand the production processes of the products
- ➔ network and establish direct contacts between people
- ➔ know where and how much activity there is
- ➔ purchase and consume regenerative products

THE AIMS OF REGENERATIVE AGRICULTURE

The basis on which RA criteria are defined can be by processes, or by objectives (Newton et al. 2020; Schreefel et al. 2020). Some new certification schemes for RA aim to assure outcomes, rather than processes (most organic certification schemes are process-based) (Schreefel et al. 2020; Savory Institute 2019). However, processes can lead to very different outcomes in different ecological contexts, and therefore no process can be considered good or bad in itself, but always depends on its broader context (Climate Farmers & Akademie Schloss Kirchberg 2021; Schreefel et al. 2020). In general, RA wants to achieve the following:

AIMS[2]

- Regenerate, not just conserve
- Improve soil health
- Sequester carbon
- Enhance biodiversity
- Optimize resource management
- Improve water availability and quality
- Produce food that is healthy for people and the environment
- Ensure farm animal welfare

[1] Schreefel et al. 2020; McLennon et al. 2021; Soloviev and Landua 2016; Debankur Sanyal and Johnathon Wolthuizen 2021.
[2] Schreefel et al. 2020; Soloviev and Landua 2016; Debankur Sanyal and Johnathon Wolthuizen 2021; Asociación Agricultura Regenerativa; Newton et al. 2020; Giller et al. 2021; McLennon et al. 2021; Savory Institute 2019.

- Revitalise the economy and society
- Generate decent employment and opportunities in the rural world

MINIMUM AND DESIRABLE CRITERIA FOR A REGENERATIVE FARM

RA practices should meet all these aims, or at least not hinder them. The aim of this map is to inform, inspire and support RA rather than to certify specific outcomes. Therefore, we have defined some minimal criteria that a farm must meet and some optional selective criteria (suggested regenerative practices) to select the farms that are and will be included in this map. Farms must meet all of the following minimum criteria:

MINIMUM CRITERIA TO BE FULFILLED TO BE INCLUDED IN THE MAP[3]

- No use of biocides, chemical fertilisers or GMOs.
- Reducing or eliminating the use of external inputs, and those used need to be non-toxic and not contain GMOs.
- Reducing or eliminating soil tillage
- Keeping the soil covered for as long as possible with plant matter: cover crops, productive crops, grassland, spontaneous vegetation or organic mulch.
- Crop association and crop rotation for yearly crops
- Where herbivorous or omnivorous animals are present on the farm, they must be integrated through managed grazing: Holistic Management, PRV, Polyface systems, Rotational Dynamic Grazing or other systems in symbiosis with the physiological growth of plants, using high stocking rates for short periods of time followed by long resting periods, to avoid overgrazing or undergrazing.
- Developing economic and social models that promote cooperation, and place people, fair distribution and care of territories at the centre.

In addition to these minimum criteria, which lead to annual improvements in the sustainability of the farm and the regeneration of soil, water, air, biodiversity and life, regenerative farms apply different techniques and methodologies that can promote the desired aims. Farms are included in this map if they use one or more of the following techniques:

DESIRABLE BUT OPTIONAL CRITERIA[4]

- Keyline design and/or other landscape strategies that increase the water infiltration capacity of the land, such as ponds, infiltration canals, swales and other tools for water saving, capturing and distribution.
- Managed grazing: Holistic management, PRV or other systems in symbiosis with the physiological growth of plants, using high stocking rates for short periods of time followed by long resting periods to avoid overgrazing or undergrazing.
- 100% grass and forage feeding of ruminants

[3] Associación Agricultura Regenerativa; Newton et al. 2020; Giller et al. 2021; McLennon et al. 2021; Schreefel et al. 2020; Soloviev and Landua 2016; California State University.
[4] Associación Agricultura Regenerativa; Newton et al. 2020; Schreefel et al. 2020; McLennon et al. 2021; California State University; Soloviev and Landua 2016.

- Feeding and managing monogastric animals on grasslands
- Growing cereals on perennial grasses
- Polyface farms
- Chromatography
- Own manufacture and/or use of biochar, biofertilizers, native micro-organism reproductions or mineral broths to nourish, enhance and protect soil and/or plant life
- Integration of trees and shrubs (agroforestry)
- Increase in soil organic carbon
- Plant diversity and crop association
- Promoting circular economy
- Progressive reduction of carbon footprint and dependence on fossil fuels
- Yearly improvement of the sustainability of the farm and the regeneration of soil, water, air, biodiversity and life.
- Local, seasonal, Km0 production and commerce.

➔ *As RA is not a fixed set of practices, this list will be revised and adapted over time.*

➔ *We recognise, appreciate and honour that knowledge about regenerative processes and techniques comes from different sources and is not new, but often based on traditional or indigenous knowledge.*

THE IMPORTANCE OF CONTEXT, REFLECTION AND ETHICS

None of the above-mentioned tools can be individually described as good or bad in themselves as they are highly dependent on the ecological context, which may change over time. A regenerative tool that is beneficial in one ecosystem might be harmful in another (Soloviev and Landua 2016; Climate Farmers & Akademie Schloss Kirchberg 2021). RA tools should promote the natural ecosystem of a farm (McLennon et al. 2021; Soloviev and Landua 2016). Therefore, farmers included in this map are sure to be carrying out a process of

constant reflection on the suitability of the tools of regenerative agriculture in their individual ecological and dynamic context to ensure the desired regenerative development of the system

The Regenerative Agriculture Association does not take responsibility for the accuracy of the information contained in this map, but aims to support the growth of a community with a regenerative way of thinking (Soloviev and Landua 2016). We wish to continue to foster and serve a community that values and encourages open source knowledge, shared learning, evolving as a collective, supporting each other and caring for ethics. To build trust within this community, farms that want to be included in this map have to be validated by at least two regenerative farms already included in the map.

ON ORGANIC CERTIFICATION

Why does the criteria for regenerative farms not include ecological or organic certification as a baseline?

Although the practices of certified organic and regenerative farmers overlap to some extent, the starting point is different. Organic farming (OA) is based on the conventional system of food production and tries to reduce damage by eliminating harmful synthetic substances through specific regulations and standards. Regenerative agriculture (RA), without excluding OA, tries to go beyond the absence of damage to instead regenerate and accelerate the improvement of ecosystems, mainly the soil and the agricultural environment, restoring the landscape and its native flora and fauna through an integrated management of biodiversity, without losing the perspective of always doing "AGRICULTURE WITH COMMON SENSE" (Gómez-Tenorio et al., 2020).

IN CONCLUSION

As Albert Einstein said,

“We cannot solve our problems with the same thinking we used when we created them”.

RA is also about developing a new way of thinking (Soloviev and Landua 2016) that includes holistic awareness and social, ethical, economic and environmental criteria, that allow agri-food production to become a source of rational solutions with a huge positive impact at all levels. Given the historic challenges we face in terms of climate, biodiversity, health, economy, society, employment, social justice and well-being, RA provides motivating reflections and actions that are demonstrably effective, realistic and hopeful for present and future generations.

PUBLISHED BIBLIOGRAPHY REFERENCED IN THIS DOCUMENT

Asociación de Agricultura Regenerativa: Agricultura Regenerativa. Available online at https://www.agriculturaregenerativa.es/agricultura-regenerativa-2/.

California State University: Gabe Brown. Available online at https://www.csuchico.edu/regenerativeagriculture/demos/gabe-brown.shtml.

Climate Farmers & Akademie Schloss Kirchberg (2021): Manifesto Regenerative Agriculture, November 2021. Available online at https://www.climatefarmers.org/european-regenerative-agriculture-manifesto, checked on 5/9/2022.

Debankur Sanyal; Johnathon Wolthuizen (2021): Regenerative Agriculture: Beyond Sustainability. In *IJARES* 2 (1). DOI: 10.51626/ijares.2021.02.00007.

Giller, Ken E.; Hijbeek, Renske; Andersson, Jens A.; Sumberg, James (2021): Regenerative Agriculture: An agronomic perspective. In *Outlook on agriculture* 50 (1), pp. 13–25. DOI: 10.1177/0030727021998063.

Gómez-Tenorio, M.A., Magdaleno González, J., Tello Marquina J.C. 2020. Evaluación e implementación de técnicas regenerativas para la mejora de la fertilidad en el cultivo del almendro en las provincias de Granada y Almería. Ed: Portaltecnoagrícola. Madrid 132 pp.

McLennon, Everald; Dari, Biswanath; Jha, Gaurav; Sihi, Debjani; Kankarla, Vanaja (2021): Regenerative agriculture and integrative permaculture for sustainable and technology driven global food production and security. In *Agronomy Journal* 113 (6), pp. 4541–4559. DOI: 10.1002/agj2.20814.

Montgomery, D. R., Biklé, A., Archuleta, R., Brown, P., & Jordan, J. (2022). Soil health and nutrient density: Preliminary comparison of regenerative and conventional farming. PeerJ, 10, e12848.https://doi.org/10.7717/peerj.12848

Newton, Peter; Civita, Nicole; Frankel-Goldwater, Lee; Bartel, Katharine; Johns, Colleen (2020): What Is Regenerative Agriculture? A Review of Scholar and Practitioner Definitions Based on Processes and Outcomes. In *Front. Sustain. Food Syst.* 4, pp. 1–11. DOI: 10.3389/fsufs.2020.577723.

Savory Institute (2019): Ecological Outcome Verification (EOV). Available online at https://savory.global/wp-content/uploads/2019/12/EOV-manual-June-2019.pdf, checked on 9/5/2022.

Schreefel, L.; Schulte, R.P.O.; Boer, I.J.M. de; Schrijver, A. Pas; van Zanten, H.H.E. (2020): Regenerative agriculture – the soil is the base. In *Global Food Security* 26, p. 100404. DOI: 10.1016/j.gfs.2020.100404.

Soloviev, Ethan R.; Landua, Gregory (2016): Levels of Regenerative Agriculture. Available online at https://ethansoloviev.com/wp-content/uploads/2019/02/Levels-of-Regenerative-Agriculture.pdf, checked on 5/13/2022.