



The Vazante Traditional Agricultural Systems, Brazil (source: ASAMINAS).

## AGRICULTURE AS CULTURAL HERITAGE. A RESEARCH ON GEODIVERSITY IN ITALY AND BRAZIL

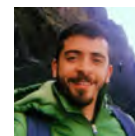
In my PhD research, I'm looking for innovative approaches for traditional agricultural systems to be designated as cultural heritage. How? Creating a toolbox of approaches made exactly for the local communities and stakeholders to work on their agricultural heritage processes, combining the assessment of geodiversity and ecosystem services. Indeed, agricultural heritage programs can become an alternative for traditional and indigenous communities to benefit from both the natural and sociocultural capital, especially in the post-Covid-19 era and the uncertainties of climate change.

As a human ecologist, one of my main tasks is to understand the deep relationship between environment and societies. Since we are still living in a world with authorities and governments denying climate change and other very basic aspects of science, I would say that it is still difficult to go deeper into these issues, whether due to lack of incentive, funding, initiatives, or mere questions of information.

Agriculture is an ancient practice that connects humans and environments and is responsible for the supply of food and raw materials all over the world. Following this line, scientists from different fields try to understand agriculture as holistic systems, characterised by biological, geological, economic, social, cultural, and historical domains.

The focus of my PhD research is the heritage dimension of agriculture, combining all the multifunctional roles involved in agricultural systems and the emergences the sector is facing, especially climate change, new technologies, social and political transformations, food and livelihood security, among others present on the recent 2030 Agenda for Sustainable Development from the United

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Nations. In general, the main objective of an agricultural heritage program is to identify and safeguard relevant traditional agricultural systems, since they are the combination of agrobiodiversity, geodiversity, and resilient ecosystems with valuable traditional knowledge and sociocultural heritage. It is thus important to establish a long-term network in order to support agricultural systems, bring benefits (national and local), and to promote their dynamic conservation and sustainable management. As a starting point, studying agricultural heritage programs, such as National Registers (national level) and the Globally Important Agricultural Heritage Systems (international level) from the Food and Agricultural Organisation (GIAHS/FAO) can reveal their current situation and development. I thus selected designation programs from Brazil, Italy, and FAO.

Since these programs are often excluded from land use management and planning, by the government, it is necessary to overcome the current weaknesses, depending not only on the fact that it is a new instrument, but mainly on the reality of the state environmental agencies and the ones responsible for its implementation. If these bodies are not strengthened with the necessary human, material and financial resources, the application and processes are compromised, unlikely to have quality and, what is worse, they will hardly be analysed and even less monitored. The more countries are able to insert designation initiatives into the largest number of agricultural policies, the more effective they become and as the set of awards and incentives related to heritage programs expands, more farmers will feel recognised and encouraged to work together with them as well.

Another approach I am applying is looking at agricultural heritage through the geodiversity lens. Usually, we mostly hear about biodiversity, and in fact geodiversity could be considered a new concept. Luckily nowadays, a growing attention has been paid towards the economic and environmental dynamics affecting geodiversity and cultural landscapes under climate change conditions. But what is geodiversity? It is the natural range of geological, geomorphological, soils, and hydrological features. It includes their assemblages, structures, systems and contribution to landscapes. In this way, geodiversity interacts with and affects biodiversity, they are inseparable, and they determine the diversity in nature. In order to understand ecosystems, we have to look at it as a whole, and not only fractions of them.

So here I am studying different areas of Brazil and Italy, respectively the Vazante Agricultural System and the Walser community, trying to understand the relationship of agricultural landscape distribution with a geodiversity-based ecosystem services approach, in order to boost these selection processes, collaborating to public policies, planning, management, and conservation linked to agricultural heritage systems.

For heritage programs to increase further, greater support is needed from scientists, communities, and governments bodies. Traditional and indigenous based agricultural systems that recognise the value of the producer and environment deserve even better support and promotion. Agricultural policies can work as a vector for environmental conservation through heritage programs, incorporating existing institutions and policies, guaranteeing the expansion of these programs and decreasing expenses. These are systems that do not just favour social and economic equity but they can also be a model for technological innovations in the sustainable future of agriculture and science.