




Article

Agricultural Heritage: Contrasting National and International Programs in Brazil and Italy

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Abstract: Agricultural systems comprise an interdisciplinary field that studies the complex dimensions of agriculture. They should not be characterized only by their agricultural value, as they are part of several social, cultural, geological, and historical domains. We carried out quantitative and qualitative research to present and compare the current state of agricultural heritage programs and their development in Brazil and Italy, contrasting with the Globally Important Agricultural Heritage Systems (GIAHS) by the Food and Agriculture Organization (FAO). To this end, the history and the extension of these programs and sites were recovered. Moreover, the agricultural landscape diversity, the development of the regions, research and outreach, along with the communities, entities and government bodies involved were identified. Through a combination and quality of technical assessment and communities' description, the analyzed agricultural heritage programs prove to be an endless source of useful information to the definition of policies aimed at rural areas, in addition to serving as a monitoring tool for many issues regarding biocultural diversity in landscape. Moreover, it shows where there is room for improvement while the countries are committed to engaging in national policies and entities on the promotion of agricultural heritage programs as major steps for investing in the "greening" of agricultural policies at different levels.

Keywords: agriculture; traditional and indigenous communities; GIAHS; NIAHS; IAHS; planning and management; landscape; public policies; biocultural diversity



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1. Introduction

The Neolithic Revolution elevated agriculture as the foremost economic activity for the constitution and maintenance of the societies as we know [1]. Presently, many of the rural and urban practices are still subordinated to the rural environment, with around 2.6 billion people on Earth drawing their livelihoods either partially or fully from agriculture [2,3] and leading different sectors to finally recognize all its multifunctional roles [4]. The efficiency, complexity, and robustness associated with local, traditional and indigenous agriculture are topics involved in current global discussions. The Food and Agriculture Organization of the United Nations (FAO) defines them as traditional agricultural systems (TAS), a combination of agricultural biodiversity and resilient ecosystems with valuable sociocultural heritage [5]. They are constituted by interdependent elements that are part of agricultural systems (AS), a term to refer to the broadly interdisciplinary field that studies the complex dimensions of agriculture [6–8]. That is, AS ranges from types of cultivated plants, livestock, management practices, and landscape to social networks, culture and food systems. Moreover, it interacts with many other components such as geological, political, historical and economic, constructing unique combinations of knowledges and practices that are commonly used by farmers, agricultural researchers, and policy makers (for example organic agriculture, agrifood systems, permaculture and ecologically based agricultural systems [8–10]).

By understanding AS through those variety of elements and not only by *stricto sensu* agricultural values, AS sheds light on distinct sociocultural, economic and environmental problems that rural areas and their communities are facing. There are 370 million indigenous peoples recognized in the world, constituting 15% of the people living in poverty, and in terms of land surface they are responsible for maintaining 80% of global biodiversity [2]. Nevertheless, biodiversity and ecosystem services related to traditional agricultural landscapes that support peoples' lives and livelihoods continue to be at risk of loss and degradation [11,12]. Those communities play a central role in ensuring the conservation and sustainable use of plant genetic resources for food and agriculture, emphasizing the historic and current role of TAS in generating innovation in AS, especially in terms of human health and well-being [13–15]. In addition, traditional and indigenous farmers guarantee conservation and adaptation of crops to numerous climatic and environmental conditions, creating a diversification of the genetic basis for agricultural production threatened by the advance of modern agriculture and/or rural exodus [13–15]. In this way, they protect pollinators in their landscapes, bringing multiple cultural, ecological, economic, and quality of life benefits either locally or globally [16]. In many ways, the close—and in many aspects dependent—relationship these farmers have with nature ranges from survival to cultural and spiritual attachment [16,17], developing a complex knowledge about ecosystems known as biocultural diversity [18].

In the last years, biocultural diversity started to understand the sociocultural layers involved in the demanding challenges related to AS, such as climate change, new technologies, pandemic scenarios, social and political transformations, food and livelihood security, among others for example [18–20]. These challenges are represented on the recent 2030 Agenda for Sustainable Development, an initiative that aims to ensure a more prosperous, equitable, and healthy planet by 2030 [21]. Given that 43.85% of the world's population (around 3.4 billion people) currently lives in rural areas across the globe—and they represent 80% of the people living in poverty—most of these rural populations live in what are considered economically developing countries [22,23]. These households face higher rates of food insecurity, unemployment, lower education, and limited services such as healthcare, recreation, and mobility [24]. Meanwhile, the youth living in rural areas travel to larger cities to study or work and often show no interest in continuing traditional practices related to the environment. These depopulation processes result in the abandonment of farmlands, land-use decline, loss of local communities and traditional knowledge, and creates an urgent need to educate the new generations to act towards the importance of local conservation and regeneration [25,26]. Furthermore, the COVID-19 pandemic has led almost the entire planet to a health and humanitarian crisis. It brings to the upfront questions related to the way goods and services are produced and consumed in the world, and the relationship humans maintain with different ecosystems. According to the United Nations [27], indigenous and traditional peoples depending on their lands for livelihood have become even more vulnerable during the pandemic, due to factors such as their food insecurity, lack of access to effective monitoring, early-warning systems issues, and inadequate health and social services. The World Bank [23] also expresses concerns for the upcoming years, whereby new generations living in poverty will be more involved with informal services and manufacturing, and even less in agriculture. They will also be attached to overpopulated urban settings, meaning that they will be working in the sectors most affected by lockdowns and mobility restrictions in possible pandemic scenarios.

Coping strategies aimed at vulnerability reduction and territorial development of those communities, in many cases, depart from assessment, valuation, and conservation of local resources—material and immaterial—anchored in culture and landscape, specific to a given region. Thus, initiatives or collective actions based on public policies, government programs, international agencies and, above all, social organizations are gaining relevance. One of the main strategies in supporting knowledge production activities of TAS shared between institutions and sectors is their integration into public policies and governmental initiatives, fostering the strengthening of the world's cultural and natural heritage. In this

case, visualizing TAS from a “heritage point of view”, means assessing the dynamics of production and reproduction of the several elements that constitutes AS, the knowledge and activities that encompass them, and the way that they are and have been constantly reworked, in time and space [9,10]. Through the Globally Important Agricultural Heritage Systems (GIAHS), a program created by FAO in 2002, TAS are institutionally part of a global heritage program, involved in a long-term international network of support, conservation, and survival of numerous traditional and indigenous communities, particularly interested in developing actions towards these Sustainable Development Goals’ 2030 Agenda: SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 8 (Decent work and economic growth), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), SDG 14 (Life below water), and SDG 15 (Life on land). As a result, they are globally identified and safeguarded, along with the landscapes associated with them and their biocultural diversity, promoting dynamic conservation and sustainable management. The communities that comprise the GIAHS have continually adapted themselves to the potentials and constraints of the environment, shaping their biodiversity and geodiversity to different degrees, and accumulating experience, practices and knowledge over generations [28].

As of May 2022, 62 GIAHS are recognized in 22 different countries around the world: 7 in Europe and Central Asia region (2 in Italy: Soave Traditional Vineyards and the Olive Groves of the Slope between Assisi and Spoleto), 3 in Africa, 8 in the Near East and North Africa, 40 in the Asia and Pacific region, and only 4 locations in the Latin American and Caribbean region, with Brazil having its first recognized GIAHS in 2020 (the Espinhaço Mountain Range TAS) [29]. Following this line, many countries adapted the agricultural heritage designation concept by developing their own Important Agricultural Heritage System (IAHS) or Nationally Important Agricultural Heritage System (NIAHS), which can receive a specific denomination according to the government bodies responsible for their adherence. These heritage programs are consolidated in Asian countries (China, Japan, and Korea) when compared to other places in the world in terms of research, acknowledgment, outreach, and dynamic conservation [30]. China is one of the countries which has shown impressive progress since 2005, and nowadays, 91 NIAHS have been designated by the Ministry of Agriculture and Rural Affairs of the People’s Republic of China, with 18 Chinese NIAHS designated as 15 GIAHS (GIAHS Rice Terrace in Southern Mountainous and Hilly areas systems consists of four Chinese NIAHS) [30,31]. Nevertheless, despite the positive and recognizable benefits and improvements that the GIAHS model brings to communities and landscapes through landscape conservation, food security, and strengthening and valuing local cultural identity and practices [32,33], many concerns and limitations are still being analyzed and looked up, for example, institutionalization of traditional sites and knowledge, differences between residents and tourists expectations, youth exodus, and limited participation of communities in decision-making processes [33,34].

All the same, considering the characterization and consolidation of IAHS and how they support adaptive management, providing achievements in conservation and sustainable development, we selected Brazil and Italy in this study, based on the similarities they share about their long historical background on agricultural practices, and at the same time, different territorial occupation and land-use. Italy, a country from the Global North, had in its territory several societies throughout the history of humanity. On the other hand, the Brazilian territory—located in the Global South—was occupied until 1500 A.D. by indigenous peoples, and only after that, with European colonization, the territory began to be occupied by other societies and presented different land-use. Furthermore, they also share similarities in their agricultural heritage timeline development.

Thus, this study aims to (i) contrast the current state of agricultural heritage programs and their development in Brazil and Italy, respectively, and compare them to the GIAHS by FAO. More specifically, we dig into the main documents and registers involved, considering their selection criteria and administrative and designation features; (ii) to identify and describe the type of strategies and procedural tools that were suggested and applied in

each country, as which barriers they addressed, and (iii) to highlight knowledge gaps and priorities, as the basis for future assessment and application by the communities, providing contribution to different regions, sites, entities and governments.

2. Materials and Methods

2.1. Study Area

2.1.1. Brazil

The TAS of Brazil are interconnected landscapes composed of rich biodiversity, geodiversity and sociocultural aspects, where farmers—in many cases members of traditional and/or indigenous communities—manage and conserve a significant variety of ecosystems, used in different ways as goods, services, and functions [35]. Currently, Brazil has more than 300 indigenous peoples and approximately 4000 *quilombola* (maroon) communities identified [36]. In addition, more than 20 traditional peoples and communities are recognized by government bodies, such as traditional fishermen, river-dwellers, and people of the countryside, forest, among others [37].

The recognition of a TAS at the national level (Brazilian NIAHS or B-NIAHS) is conducted through the National Institute of Historical and Cultural Heritage (IPHAN) in partnership with the Brazilian Agricultural Research Corporation (EMBRAPA) and include these systems in the category of intangible heritage. Currently, only two TAS are recognized as B-NIAHS: *Rio Negro* (Black River, designated in 2010) and *Vale da Ribeira* (designated in 2018). In 2019, the IPHAN, EMBRAPA, FAO, and other entities, rewarded and registered 26 different TAS in a catalog called “The Brazilian traditional agricultural systems” (Figure 1).

The catalog recognizes them as good practitioners when it comes to the safeguarding and dynamic conservation of cultural and immaterial assets associated with biocultural diversity, present on Brazilian TAS (see Table A1 for the complete list). For instance, the *Rio Negro* TAS is known to domesticate various edible plants, in which pepper species are one of the most remarkable. Peppers are widely distributed throughout the Amazon [38] and the basin is considered the center of domestication of the genus *Capsicum* (Solanaceae family, the same one of tomatoes and eggplants). Traditionally, pepper occupies a prominent place in the social and spiritual life of the indigenous communities living in the area, and especially the Baniwa people, because in addition to cooking and cosmetic use, it is fundamental in initiation ceremonies, rituals for healing, and protecting the body and soul [39]. Nowadays, Baniwa pepper is commercialized, and the product is the result of the traditional knowledge of the Baniwa woman whose cultivation, processing and consumption practices are anchored in ancestry [40]. Baniwa pepper is considered by some authors to be a total social fact [41], an entire system that is related to a diversity of political, religious and cultural events.

After decades of extraordinary growth due to the availability of natural resources, important public policies, the competence of farmers and the organization of production chains, Brazil is now a major player in the production and export of agricultural products. The agricultural movement of the rural areas has contributed significantly to the country’s economic, social and environmental development. The Brazilian Institute of Geography and Statistics (IBGE) describes urban and rural environments based on population density at the municipal scale, where 45% of the country’s municipalities display low degrees of urbanization, 28% are considered rural, and 8% remote areas. The farmers living in these areas are considered the true guardians of Brazilian agrodiversity, living on the margins of public policies that barely recognize their territories and their traditional strategies for living with ecosystems [42,43]. However, the rural areas of Brazil can be summarized by continuous episodes of struggle for land, and the efforts in maintaining their traditional agricultural practices, their historical and cultural heritage. These territories are often the scene of social and environmental issues (for example, climate change, social and administrative conflicts) and those related to land ownership. The destruction of its natural resources and environmental degradation by deforestation, illegal fire, and pollution are

associated with different levels of environmental crimes and federal neglect [42,43]. As an example of territorial dispute, it is cited the *Movimento dos Trabalhadores Rurais Sem Terra* (Brazil’s Landless Workers Movement, MST; <https://mst.org.br/>; accessed on 20 March 2022), a Brazilian political and social activism movement, which fundamentally seeks the redistribution of unproductive lands (agrarian reform). The MST points to the fact that agribusiness has depended on artificially favored conditions—strong subsidies and government credits—to produce frequently in environmentally unsustainable, ecologically harmful and socially excluding conditions. In contrast, this movement is a great supporter of family farming [44], which carries with it the premise that food is memory, culture and affection, which in its trajectory produces life, equality and justice, revealing identities and people’s ways of life.

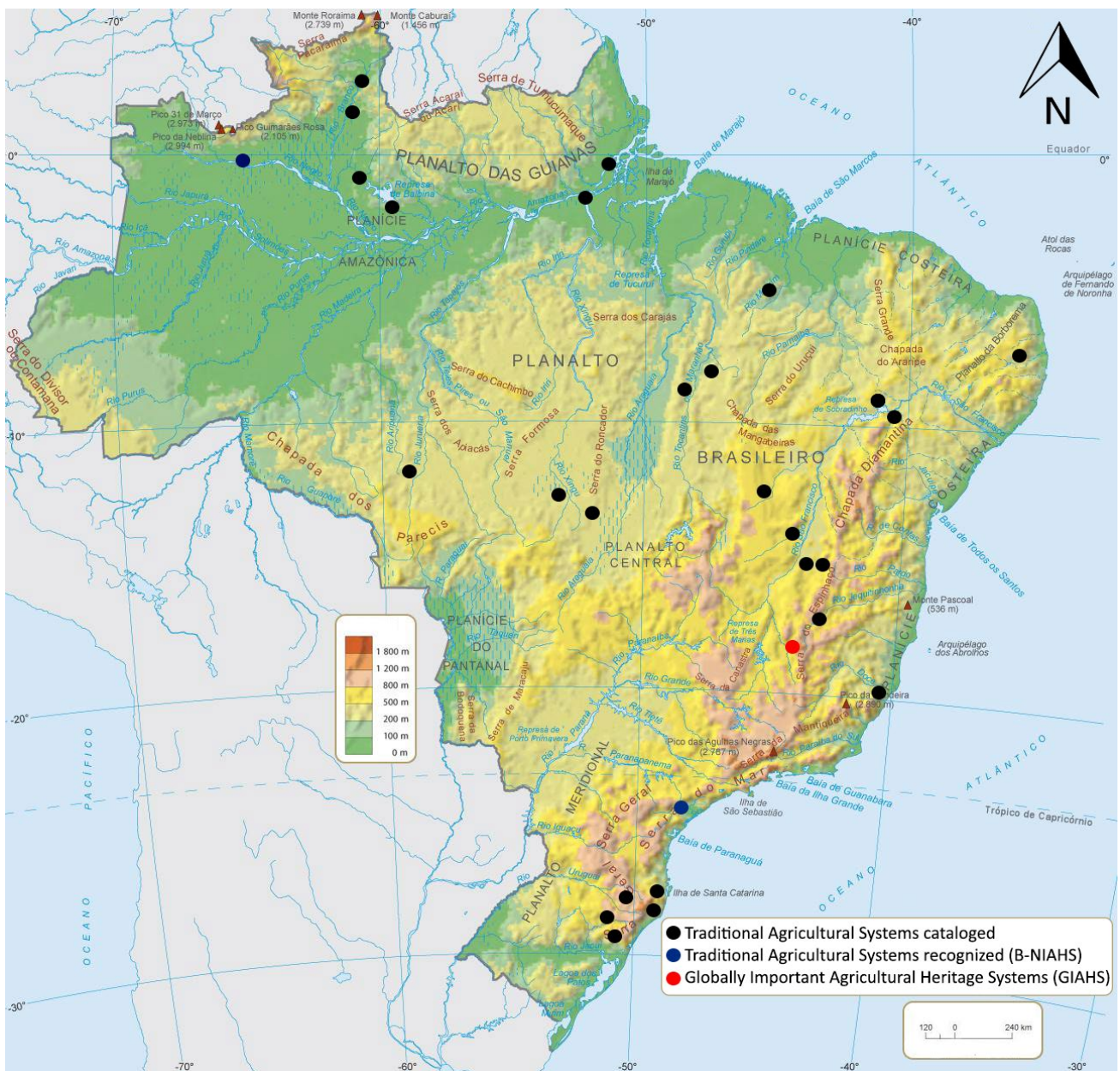


Figure 1. Topographic map of Brazil in respect to the location of all 29 different types of designated traditional agricultural systems (red, black and blue dots).

2.1.2. Italy

Over the centuries, the Italian agricultural landscape has been molded by an incomparable number of farmers representative of different societies that have been in its territory (e.g. Romans, Arabs), thus, developing infrastructure and agricultural technology that are notorious elements in Italy's history, cultural identity, and heritage [28,45]. After the Second World War, Italian agricultural landscapes were submitted to strong national and European policy-driven interventions, supporting agricultural intensification to the detriment of the less productive traditional farmlands [46]. The rural areas of Italy, especially on marginal territories, also faced a decrease in the communities engaged in traditional practices related to agriculture, followed by the closure of some public services, private businesses, and investments in rural areas [47].

An assessment from 2013 [48] classifies the Italian territory as composed of the following landscapes: 8.8% of peri-urban, 20.3% of specialized agriculture, 29.1% of intermediate rural areas, and 41.8% of areas with rural development problems. Furthermore, they classified forested/wooded areas—mostly placed on mountains—as remote areas, considered not less important as they provide livelihood to different ranges of communities and are associated with a variety of products such as cheeses, nuts, mushrooms and truffles.

The Ministry of Agrarian and Forestry Policies established the National Register of Historical Rural Landscapes and Traditional Agricultural Practices (Italy-NIAHS or I-NIAHS), identified and cataloged 123 traditional rural landscapes or landscapes of historical interest connected to traditional practices and knowledges [48,49] (Figure 2).

The catalog is used by national entities, UNESCO, and FAO as a source of important reference and support for the development of Italy's national landscape conservation policy, with the sites' extension varying from 218 ha to 5750 ha [49,50]. As of May 2022, besides the 2 already mentioned GIAHS recognized in Italy, there are 2 I-NIAHS part of UNESCO World Heritage Sites (Low-growing Terraced Vineyards of Tramonti and The Itria Valley), and one part of an UNESCO Man and Biosphere Reserve (Sheep-tracks in the Upper Molise), see Table A2 for the complete list of sites.

Furthermore, these AS are characterized by a remarkable variety of cultural landscapes and aesthetic values, within the relatively small Italian territory, where geomorphological and geographical aspects combined with a rich history and culture have favored their emergence [47]. In general, the GIAHS sites in Europe are not recognized by their high biodiversity and polyculture systems such as others GIAHS have shown around the world, and in fact, the main products derived from TAS in Italy are wine and oil [47,48]. Nevertheless, the landscapes are strongly associated with society and culture, acknowledging local and traditional knowledge, social organizations, and their evolution, since they stage the several networks that strengthen, promote, and preserve knowledge systems and practices, as well as the tools and infrastructure they use to keep the sustainable management of natural resources [51]. Positively, these aspects have shown vital results in Italian agricultural systems, creating new opportunities for agritourism and organic farming, frequently coexisting in farms (e.g., the combination of family farming and aesthetic values) [47,51]. These exceptional assets linked with agricultural heritage are gaining recognition and becoming of great interest to tourists, institutions, and companies related to agricultural business, but at the same time being subject to multiple threats [51–54].



Figure 2. Topographic map of Italy in respect to the location of all of the areas selected for the National Catalog of Historical Rural Landscapes and the Globally Important Agricultural Heritage Systems (black and red dots, respectively).

2.2. Methodology

In order to present and compare the contrasting situations of current agricultural heritage programs and their development in Brazil, Italy, and the global one by FAO, we used qualitative literature analysis and archival research, providing a basis for elementary questions, establishing debates on forms and mechanisms, and allowing for new perspectives on how shifts on social, historical, and political aspects are affecting different programs [55,56]. We considered the application documents from: (i) the Brazilian agricultural heritage program by IPHAN; (ii) the National Register of Historical Rural Landscapes and Traditional Agricultural Practices by the Italian Ministry of Agrarian and Forestry Policies; and (iii) the GIAHS by FAO. Along with the official documents provided by each part, several TAS applications, peer-reviewed papers, articles, and journals were considered in the comprehensive review as well. To this end, the history, extension, and development of these programs were recovered, the agricultural landscape diversity, as well as strategies, tools, entities and government bodies involved were also identified. In addition, we examined how the use of these strategies and tools addressed the contextual global changes, in particular the COVID-19 pandemic, and have evolved to adapt the different governance contexts.

All data was tabulated under the following categories: (i) main summary, (ii) sub-items related to the main criteria, and (iii) administrative actions, and then compared and analyzed for similarities and complementarities across programs. If the selection fails to address one specific item, and it could not be verified nor substantiated with other official sources, then it was considered a “no” in the table and addressed specifically in the text. All findings related to the analysis are presented in Section 3 and the tables are discussed in-depth throughout the text.

Furthermore, for a quantitative approach on mapping educational, research, and innovative development related to agricultural heritage in both countries (Brazil and Italy), we used a bibliometrics analysis [57] on the Web of Science database, ranging from 1993–2022, in English language. The first analysis verified in the database the general number of publications on agricultural heritage by searching the keyword “agricultural heritage” on all fields. Secondly, we combined the keywords “agricultural heritage” plus “Brazil”, and then “agricultural heritage” plus “Italy” on both “title” or “topics” fields, respectively. Therefore, we established the publication trend about the subject in both countries in the years analyzed.

3. Results and Discussion

3.1. Registry, Application, and Administrative Actions

To begin, it is necessary to understand the specificities on how the countries established their NIAHS and implemented in different ways. In relation to how the areas and TAS are selected to be included in the agricultural heritage programs, Italy presents a work through—a collaboration of Italian universities and international research bodies—a comprehensive catalog that started the I-NAHS. The implementation stage of the I-NIAHS was based on a top-down model, which is consisted of only two subjects that interfered in this process (developers and enablers), thus excluding other political subjects that may be impacted by this policy. This type of model is controversial for certain public policies since it can be considered hierarchical, as it results from the demands of a certain organized group, excluding others from the process [58]. Nonetheless, the I-NIAHS provided a detailed description of the characteristics, with several studies, historical background, and production related to each rural landscape. The nationwide assessment took into account three criteria: (i) historical value, (ii) typical products, and (iii) critical issues and threats. Brazil went on an opposite direction, only after the creation of the B-NIAHS that the federal institutions involved decided to create a catalog. Meanwhile, in order to be included in both the Brazilian catalog and/or B-NIAHS it is necessary to undertake an application process. This can be considered a bottom-up model, where the implementation stage depends intimately on the interaction between government bodies and stakeholders

involved in the application. This model seeks a more harmonious relationship during the implementation of public policies, taking into account the subjects and variables involved as fundamental parts of the process, setting public policy creation at the actual level of its execution [58]. In this stance, the implementation of NIAHS throughout the advances in public policies, should be understood as the result of a process of interaction between its context and the organizations responsible for its implementation. In Brazil, five criteria are considered in the selection of the best TAS practices: (i) community participation, (ii) social organizations, (iii) cultural and landscape identity, (iv) agrobiodiversity dynamic conservation, (v) establishment/strengthening of community network. For the GIAHS, the program is established under five criteria in their application process: (i) food security, (ii) agrobiodiversity conservation, (iii) traditional knowledge, (iv) social organizations, and (v) cultural landscape. Nowadays, the GIAHS program only takes applications and does not have a list or screen for possible new areas. However, it is under discussion the development of a list by FAO, targeting globally important agricultural heritage areas from the entire world. A summary compiling all elementary information about the three programs can be found in Table 1.

Table 1. Summary of Brazilian, Italian, and FAO heritage programs. * Total numbers, including all types of designation.

Name	The Brazilian Traditional Agricultural Systems (B-NIAHS)	The Italian National Register of Historical Rural Landscapes (I-NIAHS)	Globally Important Agricultural Heritage Systems (GIAHS)
Number of criteria	5	3	5
Start	2010	2012	2002
Numbers	29 *	123 *	62
Report	N/A	N/A	Once in 4 years

Unraveling the main criteria, the subitems subjected to evaluation in the selection process also vary from program to program. Each IAHS analyzed here uses their own subitems to translate their criteria into more pragmatic measures related to context and elements that support and incentive actions/programs for biocultural diversity conservation in their rural landscapes. The main criteria for each program are treated in detail in the complete list of items (Table 2). In general terms, all three programs have most of the information required for a base study of the area, in relation to practices, tools, practitioners, products, and biocultural diversity involved, as the items in Table 2 confirm. The following items are the ones differentiating in each IAHS. For item 2, Italy does not have a requesting agency due to the fact that they are not taking new applications for their catalog. For item 7, besides being very detailed in terms of structure, not all rural landscapes of Italy provided a summary of the activities taking place. As for item 13, GIAHS and Italy do not require specific information or actions regarding the involvement of new generations in traditional agricultural practices. A recent study [59] from Sado Island in Japan has shown that 77.3% of traditional farmers feel uninvolved in or unsure about the GIAHS designation; moreover, that the program does not promote youth involvement. It is important for IAHS to understand the demands and future trends associated with new generations in TAS. They need even more training to be able to compete in an increasingly disputed market. The development of permanent and continuous educational processes must be aimed at training rural youth, as a way of promoting their maintenance in rural areas, promoting quality of life and the development of TAS' communities. Items 14–17, are treated separately in the next section (see Section 3.2. Dynamic conservation and action plan). Items 18–23 are related to the people, practitioners and organizations included in communities related to TAS. Brazil requires very detailed information (even more than FAO) on the quantity of people, their information and specific roles, the same for all organizations/groups directly and indirectly involved in all TAS activities. Finally, for Item 25, even though there are cases of traditional knowledge being addressed in focus by the catalog, Italy is still behind

when compared to the other two programs in the level of details. As discussed before, one of the main challenges for IAHS in general is the elevation and conservation of traditional knowledge and heredity, for example, conservation of genetic resources or practices to overcome natural adversities (such as seedbanks and mountainous agriculture in hilly regions, respectively).

Table 2. Comparison of the items included in each selection process of the analyzed agricultural heritage program in Brazil, Italy and FAO. Abbreviations—B-NIAHS: Brazilian Nationally Important Agricultural Heritage Systems; I-NIAHS: Italian Nationally Important Agricultural Heritage Systems; GIAHS: Globally Important Agricultural Heritage Systems. Note: Differences between the programs are highlighted in red.

Item	GIAHS	B-NIAHS	I-NIAHS
1. General information	Yes	Yes	Yes
2. Requesting agency	Yes	Yes	No
3. Map	Yes	Yes	Yes
4. Protected areas (PA)	Yes	Yes	Yes
5. Executive summary	Yes	Yes	Yes
6. TAS structure	Yes	Yes	Yes
7. TAS activities	Yes	Yes	No
8. Practices/technologies	Yes	Yes	Yes
9. Products/agrifood systems	Yes	Yes	Yes
10. Commerce/trade information	Yes	Yes	Yes
11. Historical background	Yes	Yes	Yes
12. Educational practices	Yes	Yes	Yes
13. Involvement of new generations	No	Yes	No
14. Threats and challenges	Yes	Yes	Yes
15. Action plan/dynamic conservation	Yes	Yes	No
16. Cultural practices	Yes	Yes	Yes
17. Communities' description	Yes	Yes	Yes
18. Collective actions	Yes	Yes	No
19. Number of people directly involved in TAS	No	Yes	No
20. Public policies available	Yes	Yes	Yes
21. Landowner issues	Yes	Yes	Yes
22. Institutions/groups involved	Yes	Yes	Yes
23. Social organizations (gender/age/groups)	Yes	Yes	No
24. Contributions to safeguard agrodiversity and sociodiversity	Yes	Yes	Yes
25. Contributions to strength traditional knowledge	Yes	Yes	No
26. Contributions to communities	Yes	Yes	Yes

Having more or less items in their criteria list does not necessarily mean that certain designation is better or worse. Even though Italy has less criteria compared to the other two, the landscape related issues of many areas are addressed in all their complexity. According

to the assessment conducted by Agnoletti et al. [48], most of the identified areas in Italy have the necessary characteristics to be included in the GIAHS program and in several other UNESCO designations, as they are, for instance, composed of a high number of different cultivations and land-use presenting universal values and good examples of adaptation to global changes.

Both countries offer a very solid base on which it is possible to see results that they have already accomplished and most probably represent some cases of other countries not involved in this study [60]. As for the rest of the administrative actions (Table 3), some conferences and seminars on TAS and GIAHS are gaining recognition in Brazil, especially now that the country is reopening again, little by little, after the pandemic. In Italy, the institutions and FAO kept in contact with the GIAHS and the historical rural landscapes. Even during the pandemic, most of the activities still took place through virtual meetings and conferences. More details on Action 2 and 3 can be found on Sections 3.3 and 3.5. Regarding Action 4, Brazil and Italy have no original logo to represent their designations as brands. In terms of sustainable development, branding is important because it represents the image of the program, how the public recognizes and identifies the actions related to NIAHS. For locals and tourists, the strength of the brand can engage emotions, evoke personal beliefs and prompt eco-friendly stewardship when the brand's core values are appropriately expressed [59]. This can also be expressed through Action 5. Besides both countries having their own specific website (Brazil: <https://www.gov.br/agricultura/pt-br/assuntos/agricultura-familiar/sipam/sistemas-agricolas-tradicionais-sats-de-relevancia-nacional>; accessed on 20 March 2022 and Italy: <https://www.agriculturalheritage.com/the-national-observatory-of-rural-landscapes/>; accessed on 20 March 2022), and provide to the public a few official data and documents, the information found on the menus are very generic, which could use a more user-friendly approach, studies and detailed information such as that proposed by the GIAHS' website (<https://www.fao.org/giahs/en/>; accessed on 20 March 2022). Details about Actions 6 to 9 are more disclosure in Sections 3.3–3.5.

Table 3. Comparison of administrative actions related to the implementation of each agricultural heritage program in Brazil, Italy and FAO. Abbreviations—GIAHS: Global Agricultural Heritage Systems. Note: Differences between the programs are highlighted in red.

Administrative Actions	Brazil	Italy	GIAHS
1. Catalog	Yes	Yes	No
2. Conference, symposium, seminar.	Yes	Yes	Yes
3. Educational program	Yes	Yes	Yes
4. Original logo	No	No	Yes
5. Website	Yes	Yes	Yes
6. Certificate program	Yes	No	Yes
7. International links	Yes	Yes	Yes
8. Funding (research, implementation)	Yes	Yes	Yes
9. COVID-19 response	No	Yes	Yes

The above-mentioned items and actions show the commitment of these countries in engaging national policies and entities on the promotion of agricultural heritage programs as major steps for investing in the “greening” of agricultural policies at different levels. Even though programs related to agricultural heritage systems are often excluded from land use management and planning [60]. In whatever way these programs were institutionalized, they can certainly be improved, altered and adapted according to their function, context, demands, and public machinery. Even so, it is necessary that they can verify and validate the data provided to be considered a solid and trustful instrument capable of differentiating between the systems and communities who are really engaging in actions and activities for sustainable management [60–62]. In this case, the right implementation approach, plus the combination of forces from different stakeholders and sectors can take these actions to the next level [63–65].

3.2. Dynamic Conservation and Action Plan

For Brazil and FAO, each TAS that went through the selection process and was established as part of the program was required to provide an action plan for dynamic conservation. The action plan is an important, feasible and economical tool included in these heritage programs that provides a general overview and framework on policies, strategies, actions and outcomes which are already under implementation or will be implemented in the area for monitoring the fluctuations of environmental conservation [66]. The I-NIAHS catalog only presented them as a source of identification and verification of the rural and historical landscapes. Even with a solid description of specific challenges and threats, the cultural aspects and the communities for a great part of the list, the content sometimes lacks essential information on how each area is (or will be) managing and tackling specific challenges and threats. Nevertheless, it is important to state that the Italian National Rural Development Plan (2007–2013) [48] has already developed guidelines and promoted actions in which some regions can rely on to address specific landscapes' issues. In this perspective, all work involved in agricultural heritage programs should combine a multidisciplinary task force, combining the spheres of agricultural, biodiversity, geodiversity, sociocultural, and heritage approaches in order to fully address contemporary threats to TAS [65–67].

Regardless, it is important to pay attention to catalogs that exist as merely “declaratory”, as it could be the case propagated by some government entities responsible for their implantation in national territories, in the sense that they are not anchored by qualification, verification, and validation procedures of the data inserted in it. Moreover, emphasize the importance of a dynamic conservation plan, that will prevent systems that are not qualified nor have structured a management system compiled to the formatives to function under the current designation frameworks. Adopting concrete qualitative and quantitative measures allows public managers to structure integrated policies based on enhancing the objectivity and feasibility of agricultural heritage values [65–67]. Due to the financial costs, time, human and natural resources involved, the instrument that allows for identifying the beneficiaries of the policy cannot be flawed in a way that differentiation becomes uncertain or questionable.

3.3. Research, Innovation and Education

For the first bibliometric analysis on the Web of Science, results were obtained for the frequency of each country (Brazil and Italy) in relation to the origin of articles indexed with the keyword “agricultural heritage” (Figure 3). In total, the Web of Science found 195 publications. Italy is placed second, with 26 entries (representing 13.33%), only after China with 76 (representing 38.97%). The prominent work coming from China can be explained by the numbers of the seminal author (Min QW) and many other authors who subsequently continued the studies are from China or are related to research centers in that region. Italy, as the birthplace of FAO, has great contemporary relevance to the theme—especially in the works of Agnoletti M. and Santoro A.

Brazil had 0 entries, which shows that despite some development linked with agricultural heritage, the country still lacks a commitment on participating in international research, assessment and monitoring related to agricultural heritage. However, when adding the word “Brazil” in the search field, it retrieves an article called “Heritage and urban agriculture in Recife: analysis and guidelines for the Varzea neighborhood” by de Carvalho & Branduini (2017), which was cited 23 times but it was published under the Polytechnic University of Milan, in Italy. The paper proposes the use of a framework developed by the COST Action—European Urban Agricultural Heritage for conservation and regeneration in tangible and intangible rural heritage sites in Recife, Brazil.

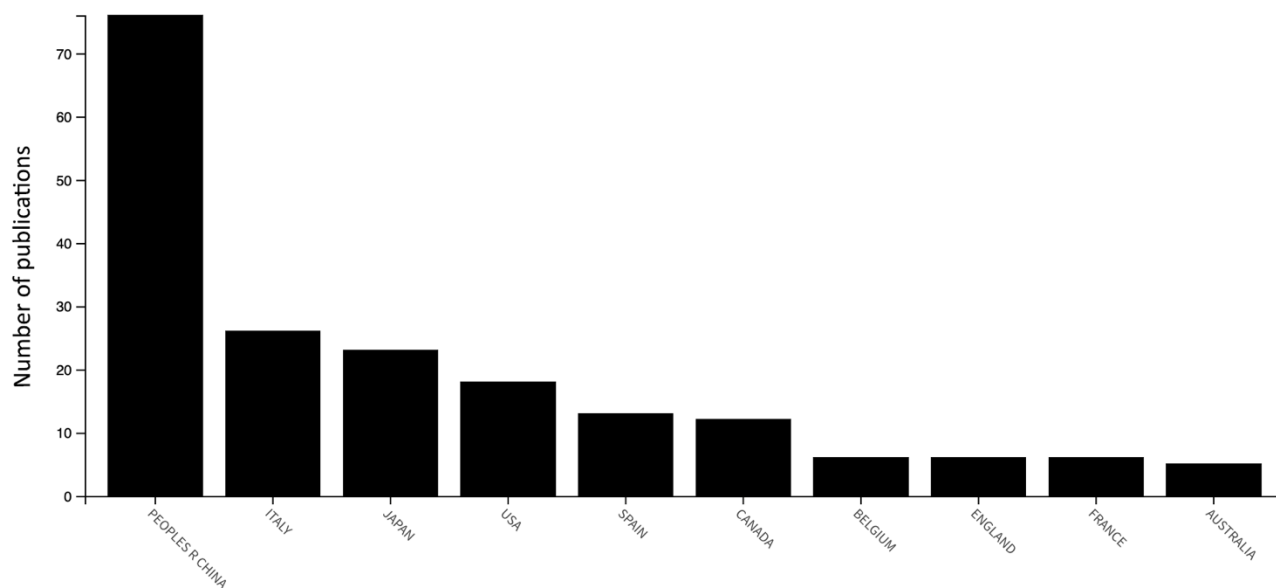


Figure 3. Total number of publications on “agricultural heritage” per country found on Web of Science (between 1993–2022).

The second analysis, in which we verified the number of publications on “agricultural heritage” in the last 10 years found on Web of Science (Figure 4), shows an increasing trend year on year, showing the highest figure in 2021 (34 in total). As of May 2022, the database already found 8 publications for this year alone.

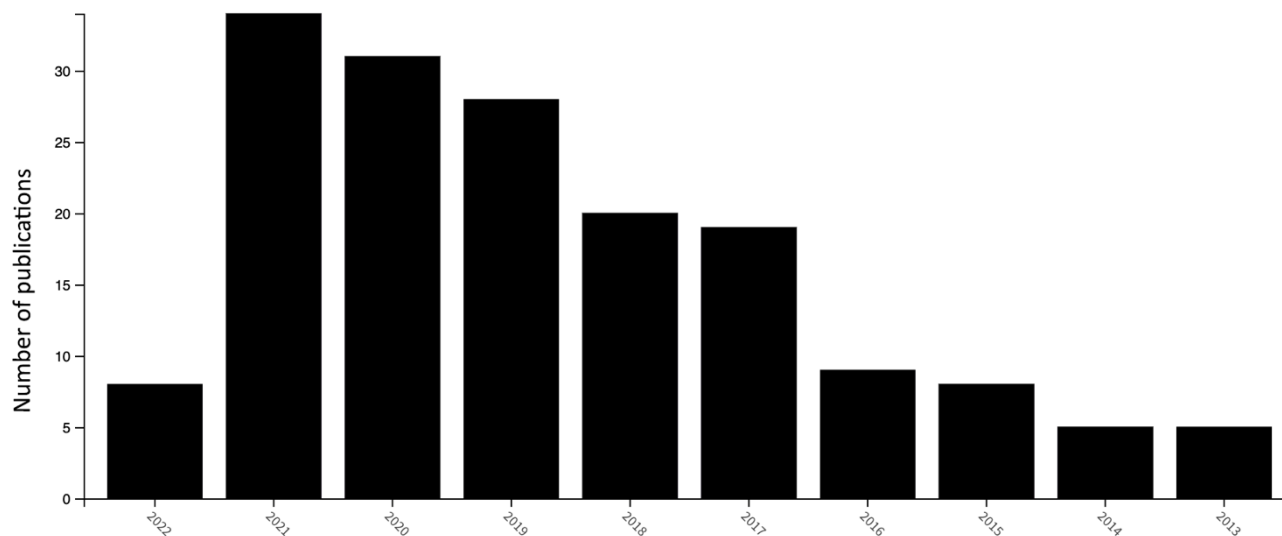


Figure 4. Total number of publications on “agricultural heritage” found on the Web of Science, per year (in the last 10 years).

For Italy, the years with most of the publications were concentrated in 2021, with 7 publications (representing 26.92% of their total) and 2020 with 10 publications (representing 38.46% of their total) (Figure 5). The most cited Italian publication is “Multi-Sensor UAV Application for Thermal Analysis on a Dry-Stone Terraced Vineyard in Rural Tuscany Landscape” by Tucci G. et al. (2019) with 31 citations. It addresses thermal characterization of a dry-stone wall terraced vineyard in the Chianti area (Tuscany, Italy), detecting possible microclimate dynamics induced by dry-stone terracing.

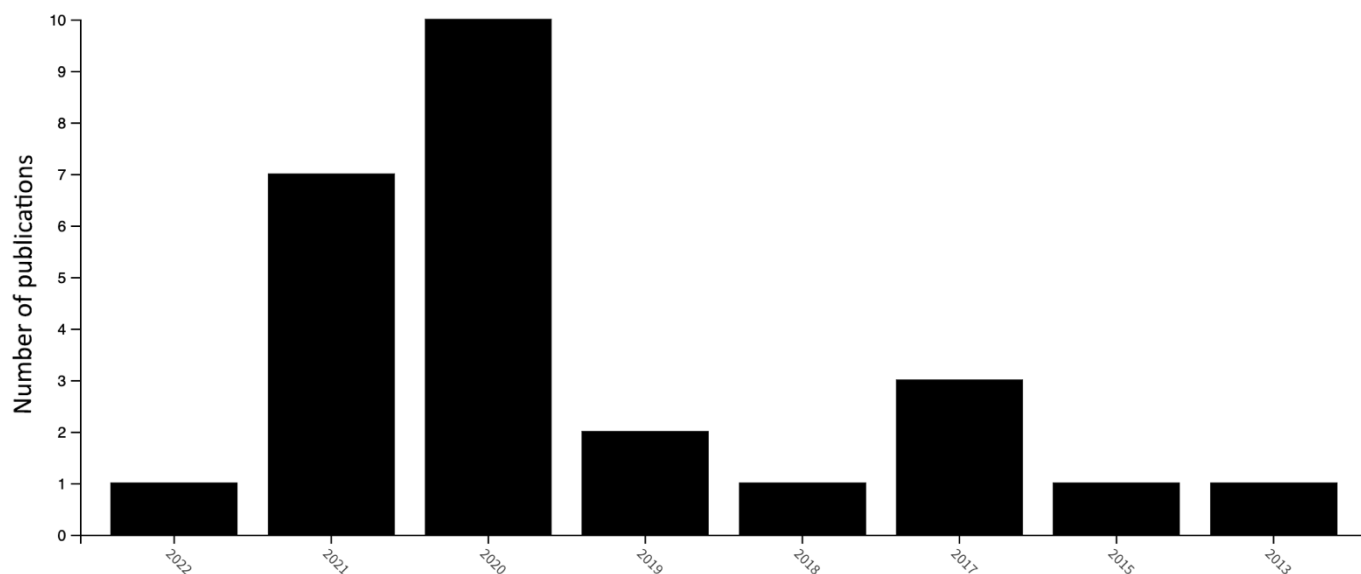


Figure 5. Number of Italian publications on “agricultural heritage” found on the Web of Science, per year (in the last 10 years).

In terms of education, many programs and initiatives have been integrated in local communities and schools in GIAHS sites all over the world [59,60,66]. The educational aspect brought in by GIAHS is known to promote healthy eating habits through the inclusion of the topic in local discussions and the engagement of different governments policies. In addition, it encourages traditional and local production, promotes family farming, and increases the potential of agriculture as an option for employment of the future generations. For the new generations, IAHS should focus on promoting educational aspects of AS related to biocultural diversity, for example, ethics, agroecology, social organizations, market, environment and food security, in addition to models designed for entrepreneurship, minorities and rural empowerment, and access/development of public policies.

In Italy, The University of Florence has a master’s degree program (<https://www.agriculturalheritage.com/giahs-international-master-course/>; accessed on 20 March 2022), where students have been working hand in hand with IAHS sites, studying agricultural heritage focused on the effective management and identification of agricultural heritage systems and landscapes. The interdisciplinary heritage aspect of AS is still a new topic in Brazilian educational systems, while most bachelor’s degrees and specializations dedicated to agriculture are still purely focused on production, economics and/or environmental processes of rural territories, which was reflected in the previous analysis of publications related to agricultural heritage. Another possible explanation for the low number of Brazilian’s outreach programs is that many academic publications are still closed to international publications, developing many publications in Portuguese and centered on national scenarios.

3.4. Report, Certification and Rewards

Distinct from GIAHS, both Brazil and Italy do not require that the TAS included in their NIAHS provide periodic official reports to the entities responsible in order to keep their designation. On the other hand, GIAHS does not provide information on how the sites should interpret and report their achievements, leaving to their own interpretation and assessment. The analyses and perspectives presented in this work could contribute in a future GIAHS’ general report development.

Moreover, the catalog created by EMBRAPA and IPHAN in Brazil rewards the best practices on TAS related to agricultural heritage with a monetary prize and work as a base

to encourage a comprehensive survey of potential sites and for the implementation in the country of future GIAHS (such as what happens in the I-NIAHS). Meanwhile, Italy does not offer any type of monetary or specific compensation/certification for the TAS included in their catalog. In terms of rewarding, TAS that are ready to be included as designated NIAHS should gain notorious certification and compensation for the same reasons. As more countries can convert these programs into the largest number of agricultural policies, the more effective they become, as the set of awards and incentives expands and more communities and institutions will feel recognized and encouraged to work together with the programs and networks, valuing above all those directly working and protecting AS [62]. Moreover, it can work to prevent the outflow in rural areas, especially farmers and the new generations, who move to larger cities looking for new opportunities.

The fact that agricultural heritage policies are a brand-new instrument for different communities in many countries is not the only weakness. The reality is that many state environmental and cultural agencies, the ones responsible for its implementation, are not strengthened with the necessary human, material nor financial resources. Therefore, the application and processes are compromised, unlikely to have quality and, what is worse, they will hardly be analyzed and even less monitored. Over the last years in Brazil, IPHAN has been harmed by the shortage of specialized workers, the lack of funding and resources and is under investigation for organized crimes [68]. The case has been aggravated under the recent Brazilian government, where intangible heritage assets such as the traditional agricultural heritage systems, and indigenous knowledge and landscapes issues are given less importance. Recent articles have shown that public policies and funding related to the affirmation of these values were deployed by the recent federal government [68]. Nevertheless, EMBRAPA and FAO Brazil are, in some way, still engaged with the communities in the activities related to the recognition and promotion of these landscapes and their heritage, as affirmed by the recent Brazilian approval in the GIAHS program.

3.5. COVID-19 Response

The COVID-19 pandemic situation in Brazil intensified during the past two years, interrupting all events and meetings related to the first Brazilian GIAHS, except for the certification meeting [69,70]. The effects on traditional and indigenous farming and the supply of local markets were stronger at the beginning when there were restrictions on trade and the circulation of people and products and were exacerbated in relation to pre-existing challenges and vulnerabilities [71,72]. That was because the responsible government bodies did not get involved in the creation of public policies and actions aimed at the consequences of the pandemic for those communities. Studies emphasized that measures concerning investments and strengthening of primary health care aspects and the Brazilian Public Health System (SUS) in these areas must be considered by government officials and health professionals, guaranteeing the rights of indigenous and traditional peoples [73,74]. Along with that, the creation and delivery of better tools for diagnostics, treatment and vaccines, are efforts IAHS designations can contribute for prevention and to detect outbreaks in earlier stages.

As Italy is also the host country of FAO, the two have been working closely during the COVID-19 pandemic, including the creation of the COVID-19 Food Coalition, with many countries joining the initiative and projects to safeguard food security, nutrition, and promote sustainable agri-food systems transformation. Besides those, many other challenges faced by GIAHS' communities in managing the impacts were discussed by FAO's representatives during several seminars and conferences, such as economic risks due to market uncertainty, shortage of agricultural inputs, equipment and machinery due to limited access and availability, the low number of visitors in GIAHS areas, traditional crafts and liquors sale drop, among others. Some of these factors may not necessarily be addressed as primordial, but it is important to discuss because GIAHS' communities in Italy are very economically dependent on their vineyards and the products they offer [74]. Furthermore, tourism based on ecological and cultural heritage represents only a small part

of the economy in most traditional and indigenous communities, such as in Brazil [26,75]. At the same time, Italy, China, and other Asian countries have demonstrated that tourism in GIAHS sites can play an important role for incomes and conservation [74,76]. Tourism can be a very useful mechanism in the preservation of agricultural heritage, without falling into the trap of converting its key elements—such as culture and landscape—into mere assets of tourism [76,77].

In general, the organization has been discussing how the resiliency of GIAHS, in such crisis, can foster opportunities for recovery and rebuilding. The idea of establishing global networks—based on heritage designations—for dealing with pandemics in a faster and more precise response should be integral part of these programs now. This aspect was addressed in-depth in a recent study from Agnoletti et al. [78], expressing the importance of understanding the different levels of the pandemic consequences based on each area and landscape, considering the type of development and intensity of rural activities. Most of the time, this level of research requires more specific data—which is something official authorities did not address at the beginning of the pandemic—and are essential to tackle all layers of the pandemic aftermath.

4. Conclusions and Future Perspectives

In this case study, through the combination of technical assessment and communities' description, the analyzed agricultural heritage programs proved to be an endless source of useful information to help defining new policies aimed at rural areas. This is also corroborated when mapping publications related to agricultural heritage, where one can see an exponential study development in the last years. Therefore, it is important to understand how agricultural heritage branches out within the layers of AS, since it is studied in different ways within the field and there is still much room for development [33]. In this case, the results highlighted many aspects of policy implementation and variables in relation to the Global North and South, but they should be replicated in other contexts and cultures, aiming a greater generalization. For example, many studies in agricultural heritage were carried out in the East, where biocultural diversity aspects and policies differ in several ways from those in the West.

Nevertheless, in order to make agricultural heritage instruments viable, there must be adequate ways of monitoring dynamic conservation in those sites. Biocultural diversity should be recognized as a key property in assessment of IAHS, as it does not just favor social and economic equity, but it reinforces, as shown in this study, their role as contributors to models for technological innovations, and knowledge conservation in the future of agriculture. It can serve as a monitoring tool for many cultural landscape challenges (e.g., food security, climate change, geohazards, deforestation), and with this respect, we highlight possible future improvements within AS assessment by introducing the neglected concept of geodiversity [79] for understanding its relationships of IAHS and abiotic ecosystem services [65,80]. We understand farmers made their livelihood on diversification of management practices also based on the physical properties of the landscape and their dynamics. The challenges of the present-day climate warming suggest a comprehensive approach to agricultural landscapes combining biodiversity and geodiversity matters [81,82], particularly for enhancing sustainability practices within TAS.

Agricultural policies can work as a vector for sustainable development through heritage programs, incorporating existing institutions, policies, and communities. The idea is that the recognition of these programs and the implementation of lists and catalogs kickstart the mapping of TAS throughout national territories, giving nations the opportunities to develop their own NIAHS, while giving the communities the rights to be nationally and internationally recognized by FAO or any other international model. Beyond a heritage approach, these policies can ignite discussions in many communities who are not safe with just heritage designations but also worried about their land rights and livelihood.

The so-called new regions for GIAHS—and especially the smallest one Latin America and Caribbean—need to insert themselves into the multifunctionalities and sustainability

related to IAHS, elevating to the next level the importance of keeping close ties to time, territories, knowledge, culture and biodiversity. That means IAHS networks can contribute using their extensive experience to aid the sustainable expansion and transformation of less favored regions, encouraging countries and their communities to adhere to new agricultural heritage policies, creating new support networks and maintenance forms. The existing networks today are not flawless examples, but their experiences are very useful for inspiring new formats and development of heritage programs at different levels. Assuming that biocultural diversity related to AS has indicated a path where there is an increasing need for public policies, it should be conducted with the direct participation of interested communities, recognizing and respecting their practices and them as protagonists in all stages, we propose two recommendations: (i) at the national level, the creation of a national program steering committee, with participatory management for the good performance and monitoring of these initiatives; and (ii) implementation of public calls for existing programs, at both national and international levels, taking into consideration that the work should not be restricted to these calls. Therefore, turning the process less bureaucratic to communities and creating new forms for the applications to be processed (presentation of projects by cooperatives, social organizations and universities).

Before the COVID-19 pandemic, the world was still struggling to achieve many of the Sustainable Development Goals, especially the SDG 1 (No poverty) and SDG 2 (Zero hunger). The diversity of products and opportunities presented in IAHS are very important for global food security and sustainable development, as it guarantees not only farmers autonomy, but also comprises a source of plant genetic material [83]. In order to enhance food security and economic growth, it is important to develop in society the consciousness that food is also an exercise of citizenship and an expression of social inequality. Through the combination of these values, agricultural heritage programs that promote and invest in goals of the 2030 Agenda for Sustainable Development—and especially the concept of biocultural diversity—provide an economically viable alternative for the post-COVID-19 era, preserving food heritage and contributing to healthy diets. If humanity is to thrive in the future, we need to make our food production systems more diverse, resilient and environmentally sustainable.

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Appendix A

Table A1. All current Brazilian designations on agricultural heritage systems.

Name	Designation	Location	Year of Designation
Black River Traditional Agricultural System	B-NIAHS	Barcelos, Santa Isabel do Rio Negro e São Gabriel da Cachoeira—Amazonas State	2010
Quebradeiras de Coco-Babaçu Traditional Agricultural System	Cataloged	Lago do Junco—Maranhão	2017
Vazanteiro Traditional Agricultural System	Cataloged	Matias Cardoso—Minas Gerais State	2017
Vale do Ribeira Traditional Agricultural System	B-NIAHS	Eldorado—São Paulo State	2017
Áreas da Ribanceira Traditional Agrifood Systems	Cataloged	Imbituba—Santa Catarina State	2017
Fecho e Fundo de Pasto Traditional Agricultural Systems	Cataloged	Pilão Arcado, Correntina, Campo Alegre de Lourdes, Canudos, Casa Nova, Remanso, Curaçá, Sento Sé, Uauá, Sobradinho, and Juazeiro—Bahia State	2017
Alto Xingu Traditional Agricultural System	Cataloged	Canarana—Mato Grosso State	2017
Roça de Toco Traditional Agricultural System	Cataloged	Biguaçu—Santa Catarina State	2017
Iery Behe Traditional Agricultural System	Cataloged	Novo Airão, Uruará, Presidente Figueiredo—Amazonas State; Rorainópolis, and São João da Baliza—Roraima State	2017
Arraioil do Bailique Agroforestry System	Catalogued	Macapá—Amapá State	2017
Gerazeira de Água Boa Agricultural System	Cataloged	Rio Pardo de Minas—Minas Gerais State	2017
Guarani Boapy Pindó Agroforestry System	Cataloged	Aracruz—Espírito Santo State	2017
Serra Catarinense Pinion Agroforestry System	Cataloged	Lages, São Joaquim, Paineil, Urubici, Bom Retiro, Bocaina do Sul, Correia Pinto, São José do Cerrito, Cerro Negro, Campo Belo do Sul, and Anita Garibaldi—Santa Catarina State	2017
Sobrado Community Traditional Agricultural System	Cataloged	Rio Pardo de Minas—Minas Gerais State	2017
Creole Maize Traditional Agricultural System	Cataloged	Pacaraima, Boa Vista—Roraima State	2017
Alto Jequitinhonha Seed Bank	Cataloged	Turmalina, Minas novas, Chapada do Norte, and Veredinha—Minas Gerais State	2019
Seara Agrifood Systems	Cataloged	Seara—Santa Catarina State	2019
Krahô Traditional Agricultural Systems	Cataloged	Itacajá—Tocantins State	2019
Porto de Moz Agrifood Systems	Cataloged	Porto de Moz—Pará State	2019
Borborema Family Farming Territories	Cataloged	Borborema—Paraíba State	2019
Ikioakakwa Traditional Agricultural System	Cataloged	Comodoro—Mato Grosso State	2019
Fecho de Pasto Traditional Agricultural System	Cataloged	Correntina—Bahia State	2019
Potreiros Traditional Agricultural System	Cataloged	Vacaria, Monte Alegre dos Campos, Ipê, São Francisco de Paula, and Campestre da Serra—Rio Grande do Sul State	2019
Southern Espinhaço Mountain Range Traditional Agricultural System	B-NIAHS GIAHS	Diamantina—Minas Gerais State	2020

Table A2. All current Italian designations on agricultural heritage systems.

Name	Designation	Location	Year of Designation
Sant'Antonio Woods	I-NIAHS	Pestocostanzo—Abruzzo Region	2012
The Open Fields of Baronia di Carapelle	I-NIAHS	Santo Stefano di Sessanio, Calascio, and Castelvecchio Calvisio—Abruzzo Region	2012
Terraced Fields and Hills of the Majella	I-NIAHS	Roccamorice, Lettomanoppello, and Abbatteggio—Abruzzo Region	2012
Olive Orchards of Loreto Aprutino	I-NIAHS	Loreto Aprutino—Abruzzo Region	2012
Fucino Plain at Ortucchio	I-NIAHS	Ortucchio—Abruzzo Region	2012
Plateaus of Aielli	I-NIAHS	Pizzoli and Barete—Abruzzo Region	2012
Chestnut Groves of the Vulture-Melfi Area	I-NIAHS	Atella, Barile, Melfi, Rapolla, and Rionero in Vulture—Basilicata Region	2012
Pastures of the Murgia Materana	I-NIAHS	Matera—Basilicata Region	2012
Olive Orchards of Ferrandina	I-NIAHS	Ferrandina—Basilicata Region	2012
Vineyards of Aglianico in the Vulture	I-NIAHS	Rionero in Vulture, Barile, Rapolla, Melfi, Ginestra, Ripacandida, Atella, Maschito, Banzi, Genzano, Forenza, Acerenza, Venosa, Lavello, and Palazzo San Gervasio—Basilicata Region	2012
Sila Plateaus	I-NIAHS	Spezzano della Sila, Spezzano Piccolo, and Serra Pedace—Calabria Region	2012
The Grass Fields of Isola Capo Rizzuto	I-NIAHS	Isola Capo Rizzuto—Calabria Region	2012

Table A2. Cont.

Name	Designation	Location	Year of Designation
Reventino Chestnut Groves	I-NIAHS	Cicala, Serrastretta, Gimigliano, San Pietro Apostolo—Calabria Region	2012
The Costa Viola	I-NIAHS	Palmi, Seminara, Bagnara, Scilla, and Villa S. Giovanni—Calabria Region	2012
Monumental Olive Trees at Gioia Tauro	I-NIAHS	Gioia Tauro, Rizziconi, and Taurianova—Calabria Region	2012
Bergamot Plain	I-NIAHS	Brancaleone—Calabria Region	2012
The Riviera dei Cedri	I-NIAHS	Diamante and Santa Maria del Cedro—Calabria Region	2012
Historical Terraced Orchards on Mount Somma	I-NIAHS	Somma Vesuviana—Campania Region	2012
Mixed Hill Cultures of Lower Irpinia	I-NIAHS	Montemiletto, Taurasi, Torre le Nocelle, and Lapio—Campania Region	2012
Terraced Lemon Orchards of the Amalfi Coast	I-NIAHS	Minori—Campania Region	2012
Terraced Hazelnut Groves of the Vallo di Lauro and the Baiano Area	I-NIAHS	Baiano—Campania Region	2012
Terraced Orchard-Gardens on the Hills of Naples	I-NIAHS	Naples—Campania Region	2012
Historical Afforestations in the Sele Basin	I-NIAHS	Bagnoli Irpino, Nusco, Lioni, and Caposele—Campania Region	2012
Vite Maritata of the Phlegraean Volcanic Plain	I-NIAHS	Giugliano in Campania—Campania Region	2012
Chestnut Groves of the Lavino Area	I-NIAHS	Monte San Pietro and Sasso Marconi—Emilia Romagna Region	2012
Valli Le Partite Reclamation District	I-NIAHS	Mirandola—Emilia Romagna Region	2012
Olive Orchards of the Lamone Valley	I-NIAHS	Brisighella—Emilia Romagna Region	2012
The Partecipanze Centopievesi	I-NIAHS	Pieve di Cento and Cento—Emilia Romagna Region	2012
The San Vitale Pinewoods	I-NIAHS	Po Delta Park—Emilia Romagna Region	2012
Diamantina Estate	I-NIAHS	Ferrara—Emilia Romagna Region	2012
The Hills of Polazzo in the Carso	I-NIAHS	Fogliano Redipuglia, Doberdò del Lago/Obcina Doberdob e Ronchi dei Legionari—Friuli Venezia Giulia	2012
The Plasencis Countryside	I-NIAHS	Mereto di Tomba and San Vito di Fagagna—Friuli Venezia Giulia Region	2012
Rosazzo Abbey Hill	I-NIAHS	Manzano and Corno di Rosazzo—Friuli Venezia Giulia Region	2012
The Ampezzo Forest and the Lumiei Valley	I-NIAHS	Ampezzo, Sauris, and Forni di Sotto—Friuli Venezia Giulia Region	2012
The Magredi of Vivaro	I-NIAHS	Vivaro and Maniago—Friuli Venezia Giulia Region	2012
Casette e Prati di Cottanello	I-NIAHS	Cottanello—Lazio Region	2012
The Chestnut Groves of Canepina	I-NIAHS	Canepina—Lazio Region	2012
The Farnesiana	I-NIAHS	Allumiere—Lazio Region	2012
Gorges of the Farfa	I-NIAHS	Sabina area—Lazio Region	2012
Terraced Olive Orchards of Vallecorsa	I-NIAHS	Vallecorsa—Lazio Region	2012
Cavaliere Estate	I-NIAHS	Rome (V Municipio) and Guidonia Montecelio—Lazio Region	2012
Chestnut Groves in the Alta Val Bormida	I-NIAHS	Calizzano, Murialdo, Bardineto, Osiglia and Massimino—Liguria Region	2012
Wooded Olive Groves of Lucinasco	I-NIAHS	Lucinasco—Liguria Region	2012
Terraced and Irrigated Chestnut Groves and Vegetable Gardens in Upper Valle Sturla	I-NIAHS	Borzonasca—Liguria Region	2012
Peri-urban Vegetable Gardens in the Valley of the Entella River	I-NIAHS	Chiavari, Lavagna, Cogorno, Carasco, and San Colombano Certenoli—Liguria Region	2012
Wooded Meadows and Pastures in the Santo Stefano Cheese Area	I-NIAHS	Santo Stefano d'Aveto—Liguria Region	2012
Terraced Hazelnut Groves of Tigullio	I-NIAHS	Mezzanago, Borzonasca, Ne, San Colombano Certenoli, and Leivi—Liguria Region	2012
Low-growing Terraced Vineyards of Tramonti	I-NIAHS UNESCO World Heritage	Cinque Terre National Natural Park, Porto Venere Regional Natural Park, and the Porto Venere-Riomaggiore—Liguria Region	2012
The baulati Fields of Casalasco	I-NIAHS	Piadena, Calvatone, and Tornata—Lombardia Region	2012
The Banina Hill	I-NIAHS	San Colombano al Lambro, Graffignana, Inverno, Monteleone, and Miradolo Terme—Lombardia Region	2012
Morenic Hills of the Lower Garda Lake	I-NIAHS	Ponti sul Mincio, Monzambano, Cavriana, and Solferino—Lombardia Region	2012
Lemon Houses on the Garda Lake	I-NIAHS	Salò, Gardone Riviera, Toscolano Maderno, Gargnano, Tignale, Tremosine, and Limone—Lombardia Region	2012
The marcite of the Irrigated Plain	I-NIAHS	Bernate Ticino, Morimondo, Vigevano, Albairate, Buccinasco, Calvignasco, Lacchiarella, Melzo, Noviglio, Peschiera Borromeo, Settala, and Zibido San Giacomo—Lombardia Region	2012
Bird-catching Sites in Lombardy	I-NIAHS	Colli di Bergamo, Val Seriana, Val Brembana, Val Gandino, and Val Cavallina—Lombardia Region	2012
Val Muggiasca	I-NIAHS	Vendrogno—Lombardia Region	2012

Table A2. Cont.

Name	Designation	Location	Year of Designation
Terraced Vineyards of the Valtellina	I-NIAHS	Sondrio, Montagna, Poggiridenti, and Tresivio—Lombardia Region	2012
The Plateau of Macereto	I-NIAHS	Ussita and Visso—Marche Region	2012
Hills of Maiolati Spontini	I-NIAHS	Maiolati Spontini, Scisciano, Monte Roberto, and Castelbellino—Marche Region	2012
Olive Orchards of Coroncina	I-NIAHS	Caldarola—Marche Region	2012
Piagge of Ascoli Piceno	I-NIAHS	Ascoli Piceno—Marche Region	2012
Polycultures of Loretello	I-NIAHS	Arcevia—Marche Region	2012
Sasso Simone and Simoncello	I-NIAHS	Piandimeleto, Frontino, Carpegna, and Pennabilli—Marche Region	2012
Cereal Farming in Melanico	I-NIAHS	Santa Croce—Molise Region	2012
La Pista at Campomarino	I-NIAHS	Campomarino—Molise Region	2012
The Olive Orchards of Venafro	I-NIAHS	Venafro—Molise Region	2012
The Springs of Monteroduni	I-NIAHS	Monteroduni—Molise Region	2012
Sheep-Tracks in the Upper Molise	UNESCO MAB	Collemeluccio and Montedimezzo—Molise Region	2012
Pastures of Raschera	I-NIAHS	Chiusa di Pesio, Punta Marguareis, Frabosa Soprana, Frabosa Sottana and Magliano Alpi—Piedmont Region	2012
The Plateau of the Vauda	I-NIAHS	Barbania, Front, Vauda Canavese, San Carlo Canavese, San Francesco al Campo, Lombardore, Rivarossa and Rocca Canavese—Piedmont Region	2012
The Baraggia Land in the Vercelli and Biella Area	I-NIAHS	Baragge Natural Oriented Reserve—Piedmont Region	2012
Wood of Sorti della Partecipanza di Trino	I-NIAHS	Trino—Piedmont Region	2012
The San Michele Farmhouse	I-NIAHS	Bosco Marengo—Piedmont Region	2012
The Wooded Pastures of Roccaverano	I-NIAHS	Olmo Gentile, Roccaverano, San Giorgio Scarampi and Mombaldone—Piedmont Region	2012
Historical Polyculture of Valle Uzzone	I-NIAHS	Castelletto Uzzone, Pezzolo Valle Uzzone, Bergolo, Levice and Gottasecca—Piedmont Region	2012
The Galarei Vineyard	I-NIAHS	Serralunga d'Alba and Diano d'Alba—Piedmont Region	2012
Monumental Turkish Oak Woods of Valle Ragusa	I-NIAHS	Monte Sant'Angelo—Puglia Region	2012
The Citrus-Grove Oasis in the Gargano	I-NIAHS	Rodi Garganico, Vico del Gargano, and Ischitella—Puglia Region	2012
Olive Orchards of the Serre Salentine	I-NIAHS	Alessano—Puglia Region	2012
The Pastures of the Upper Murgia	I-NIAHS	Gravina and Spinazzola—Puglia Region	2012
Terraces in the Gargano	I-NIAHS	Mattinata and Monte Sant'Angelo—Puglia Region	2012
The Itria Valley	UNESCO WHS	Martina Franca—Puglia Region	2012
The Vineyards of the Lecce Tavoliere	I-NIAHS	Salice Salentino—Puglia Region	2012
Olive Groves of Monte Oro	I-NIAHS	Sassari—Sardinia Region	2012
Rural Landscapes of Asinara	I-NIAHS	Porto Torres—Sardinia Region	2012
Planted Silvo-pastoral Systems of Monte Minerva	I-NIAHS	Villanova Monteleone, Padria, and Monteleone Rocca Doria—Sardinia Region	2012
The Citrus Orchards of Conca D'Oro	I-NIAHS	Palermo—Sicilia Region	2012
The Mixed Orchards of the Valley of the Temples	UNESCO WHS	Agrigento—Sicilia Region	2012
The Ficuzza Woods	I-NIAHS	Corleone, Godrano, and Monreale—Sicilia Region	2012
Enclosed Fields with Carob Trees on the Monti Iblei	I-NIAHS	Ragusa—Sicilia Region	2012
Manna Ash Woods	I-NIAHS	Pollina, Castelbuono, San Mauro Castelverde—Sicilia Region	2012
Pantelleria's "dry-stone" Landscape	I-NIAHS	Trapani—Sicilia Region	2012
The Pistachio Orchards of Bronte	I-NIAHS	Bronte and Adrano—Sicilia Region	2012
Polyculture on the Slopes of Etna	I-NIAHS	Maletto, Bronte and Randazzo—Sicilia Region	2012
The Fir Forest of the Monastery of Vallombrosa	I-NIAHS	Reggello—Toscana Region	2012
The <i>Biancane</i> of the Val d'Orcia	I-NIAHS	Pienza, Montepulciano, Chianciano and Sarteano—Toscana	2012
The Monumental Chestnut Groves of the Scesta Valley	I-NIAHS	Bagni di Lucca—Toscana Region	2012
Hill of Fiesole	I-NIAHS	Fiesole and Florence—Toscana Region	2012
The Montagnola Senese of Spannocchia	I-NIAHS	Chiusdino—Toscana Region	2012
Landscape Mosaic of Montalbano	I-NIAHS	Pistoia—Toscana Region	2012
Silvo-pastoral Landscapes of Moscheta	I-NIAHS	Firenze—Toscana Region	2012
Terraced Vineyards of Lamole	I-NIAHS	Chianti—Toscana Region	2012
The Fir and Spruce Woods of Val Cadino	I-NIAHS	Valfloriana, Castello-Molina di Fiemme, and Cavalese—Trentino Alto Adige Region	2012

Table A2. Cont.

Name	Designation	Location	Year of Designation
The vineyards of Val di Cembra	I-NIAHS	Cembra, Lisignago and Giovo—Trentino Alto Adige Region	2012
Alto Adige	I-NIAHS	N/A	2012
The Meadows and Wooded Pastures of Salten	I-NIAHS	San Genesio—Trentino Alto Adige Region	2012
Terraced Vineyards of Santa Maddalena	I-NIAHS	Santa Maddalena—Trentino Alto Adige Region	2012
The Plestini Plateaus	I-NIAHS	Foligno, and Serravalle di Chienti—Umbria Region	2012
Spelt Fields at Monteleone di Spoleto	I-NIAHS	Monteleone di Spoleto—Umbria Region	2012
The Hills of Montefalco	I-NIAHS	Montefalco—Umbria Region	2012
Plateaus of Castelluccio di Norcia	I-NIAHS	Foligno and Nocera Umbra—Umbria Region	2012
The Poggi di Baschi	I-NIAHS	Baschi and Montecchio—Umbria Region	2012
The Rock of Orvieto	I-NIAHS	Terni—Umbria Region	2012
Stepped Olive Groves	I-NIAHS GIAHS	Spello, Foligno, Trevi, Campello sul Clitunno, and Spoleto—Umbria Region	2012
High-Mountain Pastures at Dame de Challant	I-NIAHS	Brusson, Gressoney-Saint-Jean, Challand-Saint-Anselme, Challand-Saint-Victor, Issime, and Gaby—Valle D’osta Region	2012
The “Heroic Viticulture” of the Dora Baltea Area	I-NIAHS	Pont Sant Martin, Donnas, and Bard—Valle D’osta Region	2012
Plateau of Tretto	I-NIAHS	Tretto—Veneto Region	2012
The Forest of Cansiglio	I-NIAHS	Farra d’Alpago, Tambre, Cordignano, Sarmede, Fregona, Budoia, Caneva and Polcenigo—Veneto Region	2012
Wine Hills between Tarzo and Valdobbiadene	I-NIAHS	Tarzo, Refrontolo, Cison di Valmarino, Follina, Pieve di Soligo, Miane, Farra di Soligo, Vidor, and Valdobbiadene—Veneto Region	2012
The Fief of the Counts of Collalto	I-NIAHS	Susegana—Veneto Region	2012
The Palù of Quartier Piave	I-NIAHS	Moriago della Battaglia, Sernaglia della Battaglia, Vidor, and Farra di Soligo—Veneto Region	2012
The Ca’ Tron Farm	I-NIAHS	Roncade—Veneto Region	2012
The Vineyards of Fonzaso	I-NIAHS	Fonzaso and Arsiè—Veneto Region	2012
Soave Traditional Vineyards	GIAHS	Soave, Monteforte D’Alpone, Colognola ai Colli and Roncà—Veneto Region	2018

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