

SUSTAINABLE CITIES AND COMMUNITIES

CONTRIBUTIONS OF EMBRAPA

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Technical Editors



**Brazilian Agricultural Research Corporation
Ministry of Agriculture, Livestock and Food Supply**



Sustainable Development Goal 11

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Chapter 4

Cultural and natural heritage of Brazil

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Introduction

Culture is who we are and what shapes our identity. Placing culture at the heart of development policies is the only way to ensure human-centered, inclusive and equitable development. Safeguarding and promoting culture are ends in themselves and, at the same time, contribute directly to many of the Sustainable Development Goals (SDG) – safe and sustainable cities, decent work and economic growth, reduced inequalities, environment and gender equality. The indirect benefits of culture result from culturally conscious and effective implementations of development goals (Hosagrahar, 2017).

SDG 3 and SDG 4, which seek respectively to ensure a healthy life with well-being and an inclusive, equitable and quality education, will also be more effective if the cultural context and the local characteristics are taken into consideration. In addition, due respect for cultural diversity promotes peace, which is addressed in SDG 16 (promoting peaceful and inclusive societies), as it avoids unnecessary confrontation while seeking to protect human rights irrespective of cultural origins and differences.

Culture also relates to climate, as addressed in SDG 13, because there are activities based on local knowledge of the environment, that is, people exploit natural resources based on this traditional knowledge.

In this sense, the Brazilian Agricultural Research Corporation (Embrapa) has gathered some important efforts to strengthen the protection and safeguarding of Brazilian cultural and natural heritage, which relates to target 11.4 of SDG 11. These actions relate directly to the recognition of inclusive, safe, resilient and sustainable human settlements. They are inclusive because they recognize ways of life maintained for centuries and some for millennia by several peoples around the world, safe because their essence involves security and food sovereignty of traditional peoples and communities, so that agrobiodiversity is maintained

mainly by the inherent resilience of distinct social, ecological, cultural and agricultural systems that contribute greatly to sustainability.

Protection and safeguarding of world cultural and natural heritage

Indigenous agricultural systems and some foods derived from them (Figure 1) can be seen as intangible cultural goods, as social functions and cultural meanings have been attributed to them through historical, social and symbolic processes. Traditional farming practices constitute the social, cultural and environmental identity of a particular group, indigenous people or traditional community.



Photo: Paulo Luiz Lanzetta Aguiar

Figure 1. Sample of agrobiodiverse foods.

Knowledge involved in a particular agricultural practice is usually created and shared as part of processes of survival, appropriation and transformation of natural resources that take place where these peoples live and coexist. Events such as celebrations, feasts and rituals associated with selecting, planting, harvesting, preparation methods and consumption of agrobiodiversity involved in a given system stand out.

In this way, these traditional farming systems belong to cultural and symbolic systems associated with knowledge and practices that are transformed and adapted, so as to keep the dynamic conservation to maintain these systems. Below we present some actions related to the recognition of these unique systems, with which Embrapa is involved by contributing to activities of planning, dynamic conservation, dissemination and due recognition of their contribution to agrobiodiversity.

Embrapa actions

Participation in the registration of Traditional Farming System of Rio Negro

The Sistema Agrícola Tradicional do Rio Negro (Traditional Farming System of Rio Negro – SAT-RN) was registered by the Instituto do Patrimônio Histórico e Artístico Nacional (Institute of Brazilian Historical and Artistic Heritage – Iphan) as Intangible Cultural Heritage of Brazil in December 2010 (Dossiê, 2010). The SAT-RN registration dossier describes the traditional farming system as a set of unique knowledge of space management, cultivated plants, associated material culture and related ways to eat food. The term system reveals that the domains of knowing and doing are interdependent. It includes several processes at different ecological, biological, sociocultural and temporal scales that transcend the domains of material, social and economic life and that serve symbolic and productive functions.

For the ethnic groups that inhabit the Rio Negro area (23 ethnic groups that speak 19 different languages), *manivas* (cassava seedlings) are part of the goods that the bride takes when she goes to live with the groom's family. Thus, with the *manivas* (Figure 2) originating from other ethnic group, the women (mother-in-law and daughter-in-law) carry out a complex cross-fertilization process, culminating in the generation and germination of botanical cassava seeds. Plants that grow in these small cultivated areas, as the result of such care, are called *donas da roça* (area owners) and are carefully treated, because they bring renewal. *Dona da roça* is a plant with fully differentiated genotype and phenotype, which is very relevant in the case of plants such as cassava, which are usually propagated by vegetative means (part of plant – seedlings – clones). The aforementioned action started in 2011 and is related to the appreciation of indigenous peoples knowledge about

expanding and conserving agrobiodiversity of different crops, especially *brava* cassava (*Manihot esculenta*), which is considered the heart of this cultural heritage.



Photo: Sigilia Regina dos Santos Souza

Figure 2. Manivas sample.

Representatives from the Headquarters of Embrapa and Embrapa Western Amazon joined workshops in which the conservation of agrobiodiversity was the main theme. They both reported techniques for ex situ, in situ and on farm conservation held at Embrapa and learned from indigenous people about techniques used for millennia for expanding diversity of cassava, the main Brazilian native plant, which is of fundamental importance for food security.

In a workshop held in 2015, in Santa Isabel do Rio Negro, indigenous people learned about in vitro (ex situ) conservation techniques used by Embrapa and requested a survey of the accessions of cassava germplasm from the Rio Negro in Embrapa herbariums and germplasm banks. The survey identified 26 accessions collected in the region and preserved in Embrapa distributed as follows: 2 accessions in Barcelos, 6 in Manaus, 3 in Novo Airão, 16 in Santa Isabel do Rio Negro and none in São Gabriel da Cachoeira. This reveals the enormous importance of working on cassava germplasm conservation together with indigenous populations that belong to this intangible cultural heritage, which is the Traditional Farming System of Rio Negro.

Giahs/FAO Program and technical cooperation between Embrapa-Iphan-FAO

International recognition of the role of traditional knowledge for innovation led the United Nations Food and Agriculture Organization (FAO) to launch an initiative for a global partnership on the conservation and evolutionary management of ingenious systems of global agricultural heritage ([Globally Important Agricultural Heritage Systems – Giahs](#)). Giahs are remarkable systems of land and landscape use characterized by a wealth of globally significant diversity and evolved as part of the adaptation of a community to its environment, needs and aspirations towards sustainable development.

Giahs became a FAO corporate program in January 2016. It was built on the goals of the 2002 World Summit on Sustainable Development and in response to global developments that undermine the foundations of family agriculture and traditional farming systems. This initiative seeks to identify and safeguard these systems and associated landscapes (representing an area of 5 million hectares in the world) as well as agricultural biodiversity and its knowledge systems, as they ensure to humanity a vital set of social, cultural, ecological and economic services.

According to Koohafkan and Altieri (2011), these traditional farming systems are associated with heterogeneous and unique landscapes that are managed by an estimated 1.4 billion people, mostly of which are family farmers, peasants, traditional communities and indigenous peoples. They are essentially sustainable systems that provide multiple goods and services, food and well-being for millions of poor, small-scale farmers. These authors estimate that 30% to 50% of household food consumed in developing countries come from these systems, thus ensuring local food security. The existence of numerous Giahs around the world testifies to people's creativity and ingenuity in using and managing finite resources, biodiversity, ecosystem dynamics and ingenious use of the landscape physical attributes, which are translated into traditional knowledge, practices and technologies (Koohafkan; Altieri, 2011). Whether they are recognized or not by the scientific community, these ancestral systems are the basis of contemporary and future innovations in agriculture. Thus, they can be considered repositories of intergenerational wisdom because of their high adaptability to change. Still according to Koohafkan and Altieri (2011), these more or less intensely managed farming systems, crops and associated herds are heavily protected or buffered against changes such as environmental disturbances and climatic storms due to the rich biodiversity maintained by human care.

Giahs has already recognized more than 40 sites in countries such as Bangladesh, China, Japan, Kenya and Tanzania. In Latin America, we have Chile and Peru. Brazil, as Mexico and Ecuador, does not have a Giahs site, but potential sites have already been identified. Some of these are: Traditional Farming System of Rio Negro and systems adopted by *veredeiros* (wet grasslands inhabitants), *pantaneiros* (Pantanal inhabitants), *vazanteiros* (floodplains inhabitants), *faxinalenses* (communal rural area inhabitants), *geraizeiros* (Minas Gerais Cerrado inhabitants) and evergreen collectors are part. The dynamics of production and reproduction of the various domains of social life within these traditional farming systems, along with personal and historical experiences, mold identities and contribute to biodiversity conservation, thus being part of the Brazilian intangible cultural heritage.

In order to open up spaces and to foster research and development on a theme that responds to the great global challenges of resource conservation and on traditional practices linked to agrobiodiversity, as well as to recognize the intrinsic value of related traditional knowledge and to create an institutional space to accommodate submissions and designations of Giahs sites in Brazil, the Embrapa-Iphan Technical Cooperation Agreement (ACT) was signed in May 2016. The ACT aims to strengthen and develop safeguard plans for systems related to agrobiodiversity, thus enabling the construction and necessary development of methodologies for inventories of traditional knowledge on agrobiodiversity, on environment use systems, on agriculture and food strategies and on peoples and traditional communities. The Embrapa-Iphan technical cooperation, besides providing the exchange of experiences, information and technologies, enables the improvement and technical training of the staff of both institutions, and contributes to the institutional development of public management by implementing joint or mutually-supporting actions in common interest activities.

Some initiatives arising from the work plan of this Embrapa-Iphan Agreement are worth highlighting in the context of Embrapa contributions to the recognition of traditional farming systems natural and cultural heritage. Among them is the initial selection of potential Giahs sites. Interviews were conducted with representatives of the Krahô indigenous people (state of Tocantins), fishermen/extractivists from Bailique (state of Amapá), *caiçaras* (inshore small-scale fishermen from the states of São Paulo and Paraná), *quilombolas* (rural African-Brazilian community farmers in the state of São Paulo), and evergreen collectors (state of Minas Gerais).

The traditional farming system of the evergreen flower collectors (Figure 3) was selected to receive a small financial contribution from FAO to prepare its first Giahs application dossier in Brazil.



Photos: João Roberto Ripper

Figure 3. Evergreen collectors, Serra do Espinhaço, state of Minas Gerais.

BNDES Award for traditional farming systems

Another relevant initiative to be highlighted within the Embrapa-Iphan Agreement is the [Prêmio BNDES de Boas Práticas para Sistemas Agrícolas Tradicionais](#) (BNDES Good Practices for Traditional Farming Systems Award) (Figure 4). It is an initiative of the Brazilian Development Bank (BNDES) in partnership with Embrapa, Iphan and FAO Brazil. This award recognizes the central role played by culture in maintaining traditional farming systems, since it is traditional knowledge shared by the communities and their respective cultural dynamics that sets the value of these systems and determine their possibilities for sustainability and reproduction (Banco Nacional de Desenvolvimento Econômico e Social, 2018).

The award recognizes 15 good practices of safeguarding and dynamic conservation of Traditional Farming Systems (SATs) either fully or partially completed. The award also aims to increase Brazilian SATs visibility; encourage and strengthen joint actions and community networks on SATs for its acknowledgement and maintenance of practices for knowledge transmission between generations; set the grounds for designing and implementing specific public policies, since award applications provide a sample of initiatives for

Prêmio BNDES de boas práticas para Sistemas Agrícolas Tradicionais



Figure 4. Banner of BNDES Good Practices for Traditional Farming Systems Award.

Source: Banco Nacional de Desenvolvimento Econômico e Social (2018).

the safeguarding and dynamic conservation of SATs within Brazil; and look for, recognize and record SAT good practices, in order to set the grounds for institutions to disseminate among the award audience and to encourage the development of public policies and international tools aimed at traditional peoples and communities.

In 2018, 15 actions to safeguard and preserve SATs in Brazil were awarded. The top five received a gross value of BRL 70,000, and the remaining ones received a gross amount of BRL 50,000.

An award ceremony and training event was held at Embrapa Headquarters in June of 2018. The winning SAT social groups/communities were granted funds to send one or more representatives to attend the ceremony and training.

Private Reserve of Natural Heritage

Some Embrapa Units have transformed their research centers into a Reserva Particular de Patrimônio Natural (Private Natural Heritage Reserve – RPPN), which allows preserving natural ecosystems. It is worth mentioning the [Reserva do Caju](#) (Figure 5), a RPPN that occupies part of the experimental field of Embrapa Coastal



Figure 5. Embrapa Coastal Tablelands experimental field, in Aracaju, state of Sergipe (A), and Reserva Ambiental do Caju, in Itaporanga D'Ajuda, state of Sergipe, on the edge of the Vaza-Barris River, partially within the experimental field of Embrapa (B).

Tablelands in Itaporanga D'Ajuda (Aracaju, state of Sergipe). This was the first Embrapa Unit to have a [federal RPPN](#).

It was recognized by the Instituto Chico Mendes de Conservação da Biodiversidade (Chico Mendes Institute for Biodiversity Conservation – ICMBio). After making this reserve official, this Embrapa Unit now has a 763.37 ha area – out of the total 910.81 ha of the farm –for permanent conservation.

Located on the edge of the Vaza-Barris River, near its mouth, the reserve holds a rich and exuberant essence of the Northeastern coast diversity, including several animal species and vegetation remaining of the Atlantic Forest, wetlands and coconut trees. In the surrounding area, there are traditional communities whose livelihood comes from activities such as artisanal fisheries, which rely on environmental preservation of the region.

Final considerations

Brazil has the largest biological diversity in the world, which is closely related to the processes and practices of traditional peoples, whether they are indigenous, riverine, *quilombola* or others, who are included among Embrapa clients.

In relation to nature conservation, natural resources sustainability is directly linked to the use of territories holding biodiversity, either to meet current needs or to keep a reserve for future uses. Sustainability comprises not only the protection of natural resources, but also the defense of interests and living conditions of social subjects that depend directly and/or indirectly on the protection of such resources (Silva; Souza, 2009).

The actions described in this chapter reveal the contributions of Embrapa to the global agenda in which recognition of, appreciation for and conservation of global natural and cultural heritage relative to traditional farming expressed in highly agrobiodiverse, dynamic and ingenious systems are key issues. Supporting and joining a program like Giah's in Brazil is an important step for Embrapa in facing the complex issues related to climate change, land use, the market, conservation of traditional farming systems, landscapes, agrobiodiversity, food and nutritional security and traditional knowledge. For this, Embrapa has established partnerships to develop research and technologies to strengthen traditional farming systems preservation and conservation and to guarantee cultural goods associated with agrobiodiversity.

There are various challenges related to target 11.4, and the actions described in this chapter provide a small range of possible paths and solutions developed by Embrapa to address the complex scope of this goal.

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