

Conservation and adaptive management of Globally Important Agricultural Heritage Systems

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Introduction

In many countries, specific agricultural systems and landscapes have been created, shaped and maintained by generations of farmers and herders based on diverse species and their interactions and using locally adapted, distinctive and often ingenious combinations of management practices and techniques. Building on generations of accumulated dynamic knowledge and experience, these ingenious agri-'cultural' systems reflect the evolution of humanity and its profound harmony with nature. They have resulted not only in outstanding aesthetic beauty, maintenance of globally significant agricultural biodiversity, resilient ecosystems and valuable cultural inheritance but, above all, in the sustained provision of multiple goods and services, food and livelihood security and quality of life.

Such agricultural and agro-silvo-pastoral systems can be found, in particular, in highly populated regions or in areas where the population has, for various reasons, had to establish complex and innovative land use/management practices, for example, due to geographic isolation, fragile ecosystems, political marginalization, limited natural resources, and/or extreme climatic conditions.

These systems reflect often rich and sometimes unique agricultural biodiversity, within and between species but also at ecosystem and landscape level. Having been founded on ancient agricultural civilizations, certain of these systems are linked to important centres of origin and diversity of domesticated plant and animal species, the conservation of which is of great global value.

Their ecosystem resilience and robustness has been developed and adapted to cope with change (natural events and social, technological and political context) so as to ensure food and livelihood security and alleviate risk. The dynamic human management strategies and processes that allow the maintenance of biodiversity and essential ecosystem services are characterized by continuous technological and cultural innovation, transfer between generations, and exchange with other communities and ecosystems. The wealth and breadth of accumulated knowledge and experience in the management and use of resources is a globally significant resource that needs to be preserved and allowed to evolve.

Globally Important Agricultural Heritage Systems

Context and definition

Globally Important Agricultural Heritage Systems (GIAHS) represent a unique subset of agricultural systems, which exemplify customary use of globally significant agricultural biodiversity and merit to be recognized as a heritage of mankind. GIAHS are defined by the FAO (2002) as:

Remarkable land use systems and landscapes which are rich in globally significant biological diversity evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development.

Given this definition of GIAHS, caring is not only ideal to the systems, land use or landscapes and biodiversity, it is an integrated idea and approach to look at the well-being of the community while aiming for sustainable development. GIAHS introduce the need for efforts to promote public understanding and recognition of the agricultural legacy, in which the multiple goods and services provided to family farming communities are distinct in many ways. It provides food sovereignty, health and nutrition of many poor, helpless and isolated people, maintenance of globally significant biodiversity and genetic resources for food and agriculture, ecosystem services through functional diversity, products and services diversity, collective and individual knowledge systems and cultural diversity.

Examples and types of GIAHS

GIAHS are classified and typified based on their ingenuity of management systems, high levels of agricultural biodiversity and associated biodiversity, and biophysical, economic and socio-cultural resources that have evolved under specific ecological and socio-cultural constraints and opportunities. Examples of GIAHS types could include the following:

1. *Outstanding terraced mountainsides with rice and complex agro-ecosystems.* This type includes remarkable terraced systems with integrated forest use (swidden agriculture/agro-forestry and hunting/gathering), such as rice terraces and combined agro-forestry vanilla system in Pays Betsileo, Betafo and Mananara in Madagascar, the Ifugao rice terraces in The Philippines. This type also includes diverse rice-fish systems with numerous rice and fish varieties/genotypes and other integrated forest, land and water uses in East Asia and the Himalayas.
2. *Maize and root crop-based agro-ecosystems.* Developed by Aztecs (Chinampas in Mexico) and Incas in the Andes (Waru-Waru around lake Titicaca in Peru and Bolivia), with ingenious micro-climate and soil and water management, adaptive use of numerous varieties of crops to deal with climate variability, integrated agro-forestry and rich resources of indigenous knowledge and associated cultural heritage.
3. *Taro-based systems.* These are the unique agricultural systems and endemic genetic resources found in Papua New Guinea, Vanuatu, Solomon Islands and other Pacific small island developing countries.
4. *Specialized dryland systems including the remarkable pastoral systems.* These are range/pastoral systems based on adaptive use of pasture, water, salt and forest resources through mobility and herd composition in harsh non-equilibrium

environments with high animal genetic diversity and outstanding cultural landscapes. These include highland, tropical and sub-tropical dryland and arctic systems such as yak-based pastoral management in Ladakh, high Tibetan plateau, India and parts of Mongolia and Yemen; cattle and mixed animal-based pastoral systems, such as the Maasai in East Africa; and reindeer-based management of tundra and temperate forest areas in Siberia, such as Saami and Nenets.

5. *Ingenious irrigation and soil and water management systems.* These are the agricultural practices in drylands with a high diversity of adapted species (crops and animals) for such environments: ancient underground water distribution systems (Qanat) allowing specialized and diverse cropping systems in Iran, Afghanistan and other central Asian countries with associated homegardens and endemic blind fish species living in underground waterways; and integrated oases in deserts of North Africa and the Sahara, traditional valley bottom and wetland management, for example, in Lake Chad, Niger river basin and interior delta (such as the floating rice system) and other ingenious systems in Bamileke (Cameroon), Dogon (Mali) and Diola (Senegal).
6. *Complex multi-layered homegardens.* Agricultural system featuring complex multi-layered homegardens with wild and domesticated trees, shrubs and plants for multiple foods, medicines, ornamentals and other materials, possibly with integrated agro-forestry, swidden fields, hunting-gathering or livestock, such as homegarden systems in China, India, the Caribbean, Amazon (Kayapó) and Indonesia (for example, East Kalimantan and Butitingui).
7. *Hunting-gathering systems.* This features unique agricultural practices such as harvesting of wild rice in Chad and honey gathering by forest dwelling peoples in Central and East Africa.

The multi-faceted nature of GIAHS

Socio-ecological landscapes

GIAHS throughout the world testify to the inventiveness and ingenuity of people in their use and management of biodiversity, interspecies dynamics, and more importantly, utilizing the physical attributes of the landscape where they live, codified in traditional but evolving knowledge, practices and technologies. Ingenious agro-ecosystems reflect human evolutionary transitions, intimately linking socio-cultural systems with biophysical systems. They use traditional knowledge systems, 'trial-and-error' and experiential learning, insights and innovations. Their ingenuity has resulted in well-balanced agro-ecological systems in marginal, extreme or very specific ecologies, which could not otherwise have sustainably supported human life and agrobiodiversity. These systems are organized and managed through highly adapted social and cultural and customary practices and institutions. These agricultural 'landscapes' typically evolve in parallel with their associated 'lifescapes'. They are characterized by continuous technological and cultural innovations, as well as adjustment of management practices and uses of resources and ecosystems, through their transfer between generations, exchanges with other communities and ecosystems and in response to natural events and to changing social, technological and political context.

A body of traditional knowledge

GIAHS are based on a set of practices, knowledge, institutions, technologies, skills, traditions, beliefs and values proper to a farming community. The traditional and indigenous knowledge systems employed in GIAHSs are the foundation and basis of managing the agroecosystem, including processes and functions, to keep maintaining the general ecosystem and landscape integrity. As such, agricultural systems evolved, coevolved with the human communities, handed down from one generation to another generation, refined and continuously fine tuned, primarily as a response to specific natural environment change in places where humans needed to gain their livelihood. Thus, agricultural systems in many parts of the world have led to landscape-scale ecosystem variation, and provided mosaics of micro-habitats that support associated plant and animal communities, which now depend largely on continued management for their viability. In many regions of the world, especially where natural conditions of climate, soil, accessibility and human presence militate against intensification, there still persist agro-ecosystems and landscapes that are maintained by traditional knowledge and practices developed by generations of farmers, forest dwellers and herders.

A reservoir of biodiversity and associated biodiversity

A growing body of scientific evidence demonstrates that indigenous and traditional agricultural systems feature a high degree of plant and genetic resources for food and agriculture. GIAHS often reflect rich and globally unique agricultural biodiversity within and between species, but also at ecosystem and landscape levels. For instance, tropical agro-ecosystems composed of agricultural and fallow fields, multi-storey farming practices, complex homegardens, and agro-forestry plots commonly contain well over 100 plant species per field. These biodiversity products are used for construction material, firewood, tools, medicines, livestock feed, and more importantly, for human food consumption. This is through practicing traditional agriculture, such as multiple-cropping systems that supply food and livelihood to about 1.4 billion subsistence families and communities. Most of the traditional agriculture and agro-ecosystems are located in centres of crop diversity, and they contain populations of variable biological resources, both domesticated and adapted landraces, as well as wild and weedy relatives of crops. The richness of biodiversity in any form and given condition, however, can only be effectively maintained, adapted and conserved with the human management systems that have created it, including indigenous knowledge systems and technologies, specific forms of social organization, customary or formal law and other cultural practices. Having been founded on ancient agricultural civilizations, GIAHS are linked to important centres of origin and diversity of domesticated plant and animal species, the *in situ* conservation of which is of economic importance and global value.

A natural landscape with aesthetic beauty

Over time GIAHS have evolved specific and highly adapted forms of social organization through which ecosystem and landscape management takes place, and cultural identity is preserved. These indigenous and traditional agricultural systems have resulted in outstanding landscapes with remarkable aesthetic beauty. Some of these GIAHS landscapes appear to satisfy the objectives of the UNESCO Convention

on the Protection of the World, recognized as world heritage sites. The Ifugao rice terraces of The Philippines are one example of GIAHS and a world heritage site. This system is an epitome of an agricultural legacy dating from more than 2,000 years ago. The spectacular rice terraces' landscape allows protection and conservation of significant and important agricultural biodiversity and associated biodiversity, features marvellous engineering systems and innovativeness, promotes tourism, as well as expressing the conquered and conserved harmony between humankind and the environment. The systems is also dubbed as 'living cultural heritage'.

Cultural diversity

GIAHS have other values beyond production of foods, fibres, maintenance and conservation of plant and genetic resources for food and agriculture, and other provisioning services. These living and evolving systems and communities have kept their distinct identities intact on the strength of unifying values such as nature, family, community, history and a sense of belonging to their natural habitats. What sets apart the agricultural heritage systems from the UNESCO world heritage sites is a unique feature of outstanding universal value, that GIAHS are not static or frozen in time or space. They represent a living, dynamic, socio-economic, cultural and institutional mosaic of how man has adapted over the centuries to the demands of dramatic advances in human civilization, while preserving and conserving to this day a rich heritage of customs, livelihood patterns and landscapes. Their cultural diversity is also a factor that reinforces the heritage characteristics of GIAHS. These systems are bonded by a common thread of distinct identities, language use, ethnicity, aesthetics and a respect for nature and ecosystem. GIAHS is an agricultural legacy, of not only important agroecosystems, landscapes or landmarks of historical value but also living and evolving family farming communities, institutions and ecological and cultural heritage.

Threats and driving forces

Industrial agriculture and the focus on increasing agricultural production through price subsidies, intensive farming, specialization, rapid technological change and internationally marketed commodities and associated neglect of externalities, has led to a generalized neglect of integrated agricultural systems that are often adapted to extreme ecologies. The lack of promotion of diversified and environmentally friendly farming and integrated management practices, and the neglect of research and development and rural services for indigenous and ingenious systems threatens the foundation of agricultural culture and associated biodiversity. Moreover, urbanization and the rapidity and extent of today's technological and economic changes threaten many of these agricultural heritage systems, including the biodiversity on which they are based, and their societies. These threats are: erosion of rural values and adoption of unsustainable practices, overexploitation of resources and declining productivity, as well as imports of exotic domesticated species, leading to severe genetic erosion and loss of local knowledge systems. These pose the risk of loss of unique and globally significant agricultural biodiversity and associated knowledge; land degradation, poverty and threats to livelihoods and food security are undermining many unique farming systems. In some areas, there are spill over effects from marginalization and

increasing poverty in productive landscapes onto wild biodiversity. The social and environmental integrity and resilience of such livelihood systems, and their associated biodiversity, depend on the adaptive capacity of concerned communities but also on the enabling environment provided by policies and development strategies.

The driving forces of the adoption of unsustainable practices, overexploitation of resources, genetic erosion, loss of local knowledge, and associated risks of impoverishment, non-viable livelihood systems and socio-economic instability, vary from one system to another. They essentially include population pressure and poverty, inappropriate policies and legal environments, especially insecure land tenure and external market forces, and lack of capacity to adapt land use and livelihood systems to the rapidly changing environment, while preserving cultural and natural heritage. The root causes may include *inter alia*:

- Market incentives and economic policy environments that focus exclusively on short-term economic goals rather than long-term socio-economic and environmental goods and services and sustainable agricultural and rural development;
- Reduced community involvement/empowerment in landscape/resource management decision-making processes;
- Inadequate attention to local knowledge and experience, and inadequate valuation of GIAHS and their associated biodiversity by research and development services and policy and strategic frameworks;
- Inadequate support for the conservation and sustainable use of significant agricultural biodiversity (within and between species and at ecosystem level);
- Lack of marketing expertise and incentives to ensure that adequate value is placed on local cultivars and races and local produce, and benefit-sharing mechanisms and so forth;
- Delegitimization of local, customary institutions for the management of natural resources, particularly the normative frameworks for access, use and benefit sharing of natural resources. Such trends occur in the context of land reform, individuation of common property systems, and policies that promote national cultural homogeneity.

Globalization is exacerbating pressures on small-scale agricultural systems. The penetration of global commodity-driven markets often creates situations in which local producers in GIAHS have to compete with agricultural produce from intensive and often subsidized agriculture in other areas of the world. Among these pressures, policies inducing increased inputs use and lowering of farm prices for staples and cash crops are significant ones, which often may directly transform the overall economic viability and biodiversity basis of these systems. Another important pressure is the increasing demand for quality and quality control, which also has consequences for biodiversity. The convergence of such pressures is accelerating the adoption of high yielding varieties (HYV) and exotic breeds, which results in the loss of agricultural biodiversity, and biodiversity-based and risk averse management systems.

To halt the rapid degradation of GIAHS, their dynamic nature must first be recognized. Their resilience depends on their capacity to adapt to new challenges without losing their biological and cultural wealth and productive capacity. This requires continuous agro-ecological and social innovation, combined with careful

transfer of accumulated knowledge and experience across the generations. Trying to conserve GIAHS by 'freezing them in time' would surely lead to their degradation and condemn their communities to poverty. The GIAHS approach will centre on the human management and knowledge systems, including their socio-organizational, economic and cultural features that underpin the conservation and adaptation processes in GIAHS without compromising their resilience, sustainability and integrity.

Mobilizing worldwide recognition and support

Work is ongoing worldwide to promote sustainable agricultural and rural development, and through a few specific projects promoting the *in situ* conservation of genetic resources by working with local and indigenous communities and their specific resource management systems. Existing projects and programmes include support for shade coffee, fishing practices that allow restocking, reducing off-farm pollution, protecting ingenious technologies for on-farm soil conservation, and conserving wild relatives of cultivars and races. However, only *ad hoc* support has been directed to sustaining such ingenious agricultural systems as there is inadequate recognition of, or attention to, their global importance and the important knowledge and agricultural biodiversity they maintain. Such support is often considered as a fringe activity by governments, and little is done to mainstream its principles, lessons learnt and successes, despite a project's best efforts. This situation and increasing pressures, including, in some cases, opposition to tradition, are resulting in serious gaps in transmission of this important global heritage, constraining farmers and herders' innovation, and potentially blocking the *in situ* evolution of domesticated species. Some ingenious agricultural systems have already been lost and there is a serious risk that many more of these systems and their heritage will soon disappear. Without modest but critical global attention and interventions that promote the maintenance of these systems and maintain their viability, it is likely that losses will accelerate.

The World Summit on Sustainable Development (WSSD) plan of action calls for a balanced approach to ensure the economic, social and environmental pillars of sustainable development and specifically requires the promotion of integrated and diversified farming systems. Thus, in 2002 FAO with the United Nations Development Programme, Global Environment Facility and in close collaboration with other UN systems, interested governments, NGOs and indigenous peoples, launched the GIAHS programme to safeguard the world's outstanding agricultural heritage systems and their associated landscapes, biodiversity, knowledge systems and cultures. The GIAHS programme aims to establish the basis for the recognition, conservation and sustainable management of agricultural systems worldwide. Agricultural heritage systems, which have evolved over millennia as a result of farmers' adaptive and innovative management strategies, continue to contribute greatly to the food security of traditional farming communities and provide essential goods and services and quality of life beyond their borders. The programme will promote national and global policy and incentive structures that will be conducive to their sustained functioning and economic viability.

Programme goal

The overall goal of the GIAHS programme is to contribute to the implementation of Article 8j of the Convention on Biological Diversity (CBD) to 'protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements', specifically within agricultural systems. The programme will also contribute to the United Nations Convention to Combat Desertification (UNCCD), by targeting in particular dryland agro-ecosystems that have demonstrated outstanding resilience and adaptation to extreme climate variability, and to the World Heritage Convention of UNESCO. Likewise, it will foster the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and will participate in the assessment of the State of the World's Animal Genetic Resources. It will also contribute to the implementation of Agenda 21 and to the Johannesburg Summit 2002 (WSSD) Plan of Action as part of the international Partnership Initiatives. The programme promotes a 'dynamic conservation' approach that:

- allows farmers to nurture and adapt the systems and biodiversity they have developed while still earning a living;
- supports protective government policies and incentives while working for *in situ* conservation of biodiversity and traditional knowledge;
- recognizes cultural diversity and the achievements of local community members and indigenous peoples;
- crystallizes the need for the approaches that integrate the *in situ* conservation of genetic resources with related traditional knowledge and local technologies as a way to ensure continuous co-adaptation to a changing environment and human pressure by maintaining the evolutionary dynamics of agricultural species in the human and agro-ecological sites in which they have evolved.

National and sectoral context

The GIAHS programme will contribute to the key global sustainable development agenda through: first, enhancing the benefits derived by local populations and indigenous peoples from the management, conservation and adaptive management of agricultural heritage systems, agricultural biodiversity of economic and global significance, natural resources and environmental sustainability; second, adding economic value and sharing derived benefits from these systems; and third, enhancing food security and alleviating poverty in accordance with the Millennium Development Goals (MDGs), the World Food Summit Plan of Action and the National Poverty Reduction Strategies (PRSPs).

Programme strategy and approach

In order to provide systematic support to the conservation and adaptive management of GIAHS, the overall project strategy is to make interventions at three distinct levels through improving understanding of threats that such agricultural systems face, and identifying ways to mitigate risks of land degradation and desertification. In this sense, to halt the rapid degradation of GIAHS, their dynamic nature must first be recognized. Their resilience depends on their capacity to adapt to new challenges without losing their biological and cultural wealth and productive capacity. This requires continuous agro-ecological and social innovation combined with careful transfer of accumulated knowledge and experience across the generations. Trying to conserve GIAHS by 'freezing them in time' would surely lead to their degradation and condemn their communities to poverty. The programme emphasizes that 'GIAHS is not about the past but GIAHS is about the future', referring to a GIAHS approach that is centred on the people, human management and knowledge systems, including their socio-organizational, economic and cultural features that underpin the conservation and adaptation processes in GIAHS without compromising their resilience, sustainability and integrity. The programme works on three distinct levels of intervention, these are:

- *Global level* – it will facilitate international recognition of the concept of GIAHS wherein globally significant agro-biodiversity is harboured, and it will consolidate and disseminate lessons learned and best practices from programme activities at the pilot-country level.
- *National-level work in pilot countries* – the programme will ensure mainstreaming of the GIAHS concept in national sectoral and inter-sectoral plans and policies.
- *Site-level in pilot countries* – the programme will address conservation and adaptive management at the community level.

In each country it will play a key role in strengthening collaboration between line institutions in the environmental and agricultural sectors, including national CBD mechanisms and integrated approaches, through contributing to:

- National actions to implement National Biodiversity Strategies and Action Plans (NBSAPs), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (PGRFA) and for improving information on the status, management, trends and threats to domestic animal diversity and wildlife through the ongoing assessment of the State of the World's Animal Genetic Resources;
- The development and application of the ecosystem approach and understanding of indigenous and local knowledge and land resources management practices that contribute to conserving and sustaining plant and animal genetic resources, ecological processes and agro-ecosystem services and resilient livelihood support systems;
- The identification and support to reform of policy and incentive measures and opportunities that allow populations to enhance their livelihoods through the conservation and sustainable use of resources and ecosystems in productive landscapes, through the development of methodologies and mechanisms for the

valuation of environmental and other livelihood services provided by these systems and the sharing of derived benefits.

- Adding economic value and generating income for local communities to enable them to access national and international niche markets, labelling opportunities and sustainable tourism and provide to the international community and world's citizens access to exotic and biodiverse food and diets, traditional medicine, products and artefacts.

An underlying strategy will be to avoid or reverse the loss or degradation of essential features and attributes of these agricultural heritage systems, especially their biodiversity features, while allowing their necessary evolution and at the same time enhancing the socio-economic development of resource users, giving them local and national benefits. This will require studies to improve our understanding of the evolution of these systems, using participatory approaches in the identification of ways and means to conserve such biodiverse systems while keeping them dynamic through the innovation of men and women farmers.

Opportunities for support

The programme is timely in view of the current national and international efforts for the conservation and sustainable use of biodiversity and combating land degradation and desertification, recognition of indigenous peoples' rights and increased attention to natural and cultural heritage. Notably:

- The CBD in regard to agricultural biodiversity, sustainable use of biological diversity, and the knowledge, innovations and practices of local and indigenous communities (Article 8j);
- The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA);
- The World Heritage Convention (WHC), in line with its designation of outstanding sites and protected areas and UNESCO's Man and Biosphere (MAB) Programme;
- The Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture;
- The ongoing assessments coordinated by FAO of the State of the World's Animal Genetic Resources;
- The implementation of Agenda 21 and the Conventions on Desertification and Climate Change (UNCCD and UNFCCC);
- The Land Degradation Assessment in Drylands coordinated by FAO.

Several countries have expressed interest in the programme and in designating potential sites and contributing to the conservation of agricultural biodiversity, local empowerment and food sovereignty and livelihood security. Currently, the list of the agricultural systems is as follows:

Asia and Pacific

- Traditional upland agricultural systems: alder-based rotation and inter-cropping, Yunnan, China
- Ifugao rice terraces, Ifugao, The Philippines
- Bali rice terraces, Indonesia
- Indigenous irrigation system, Indonesia
- Traditional agriculture and livestock management in Ladakh, India
- Raika pastoralists of the Thur Desert, Rajasthan, India
- Catamaran fishing system in Tamil Nadu, India
- Qanat (Karez or Foggara) irrigation systems and homegardens, Iran
- Rice-fish systems in China
- Mars Arabs (or Madans) and Marshland agriculture in Iraq
- Hunting gathering and trapping of non-timber forest products by the Udege people of Kamtchatka, Russian Federation
- Pacific Island taro-based homegardens, Vanuatu

Latin America

- Transect of the Inka Road/terraces/*qochas* (recessive artificial lakes)/Waruwaru/Aynoka agro-ecosystems of Cusco and Lake Titicaca, in Peru and Bolivia
- Chiloe agriculture, Chile
- Chinampa agricultural systems, Mexico
- Terra preta system, Brazil
- Milpa system, Yucatan, Mexico
- Kayapó agroforestry, Brazil
- Batea system, Choco, Colombia

Africa

- Tapade cultivation system, Fouta Djallon Highland, Guinea
- Rice terraces and agroforestry, Mananara, Madagascar
- West African Sahelian floodplain recession agriculture, Mali
- Traditional Maasai rangeland management, Loita, Kenya
- Coffee agroforestry systems, Ethiopia
- Terraces in Dogon region, Mali
- Rice cultivation with mangrove forest in Diola region, Senegal

Europe

- Traditional agro-ecosystems in the Carpathian region, Slovakia
- Traditional reindeer herding, Arctic region
- The lemon gardens of Italy
- Terrace farming in Cevennes region of France

In addition to GEF/UNDP and the CBD Secretariat, a number of international organizations have expressed interest and support in being closely associated with the programme:

- UNEP/GEF through support in implementation at global/regional levels and through the People, Land and Environmental Change Programme (PLEC) executed by the United Nations University (UNU);
- The Christensen Fund (TCF), to support baseline information and underwriting assessments of agricultural heritage systems, traditional knowledge and cultural diversity;
- International Fund for Agricultural Development (IFAD), to eradicate poverty and sustained livelihoods of the small-scale and traditional family farming countries and communities of GIAHS;
- The Dutch Ministry of Agriculture and Fisheries (through Wageningen International), to co-implement the dynamic conservation practices;
- UNESCO, in collaboration with FAO's Commission on Plant Genetic Resources for Food and Agriculture (CGRFA), with a view to considering plant genetic resource initiatives and traditional agricultural systems as new categories of cultural world heritage sites;
- Bioversity International (formerly IPGRI), especially regarding specific systems of agricultural biodiversity heritage and land use, such as oases, and linking with the CGIAR System-wide Genetic Resources Programme (SGRP);
- The Equator Initiative of UNDP-UNOPS, through collaboration with FAO in sharing knowledge, experience and country networks and in the identification and assessment of GIAHS systems that could receive an international award during the World Summits on Sustainable Development (WSSD).

Conclusion

The GIAHS programme is an initiative that calls for safeguarding agricultural legacies and their associated landscapes, agricultural biodiversity and knowledge systems, by mobilizing worldwide recognition and support to outstanding traditional and family agriculture. The initiative also involves enhancing local, national and global benefits derived through their dynamic conservation and economic viability. The programme attempts to mitigate threats to the resilience of GIAHS by supporting rural farmers and their communities' capacities to continue to manage agricultural heritage systems, with the involvement of national governments, scientists and other stakeholders. It also seeks to support these communities and their local institutions by developing enabling and appropriate policy environments conducive to their continued existence and which allow their sustainable evolution and development. Over the last four years of developing the programme concept and project preparatory phases, GIAHS with its innovative, integrated and holistic approach, have created awareness, interest and enthusiasm from a wide audience of both local and international bodies. Several countries have expressed interest in participating in the programme to promote sustainable agricultural and rural development of unique traditional and family farming systems. The programme has gone so far as defining the concept, methodologies and

framework of intervention strategies, and how it will contribute substantively to the implementation of the various international efforts and multilateral instruments such as the CBD, MDGs and climate change conventions (UNCCD, UNFCCC). This includes strengthening collaboration between line institutions in the environmental and agricultural sectors to implement national strategies and action plans (NBSAPs, ITPGRFA and PGRFA). However, the experience of preparatory phases explicitly shows that matching priorities of governments and civil societies, funding mechanisms to support the national programmes, and the changing perceptions of agriculture and its place in sustainable development remain a challenge to conserving agricultural biodiversity and sustainable rural livelihoods.

Reference

FAO (2002) Globally Important, Ingenious Agricultural Heritage Systems (GIAHS). First Stakeholder Workshop and Steering Committee Session, Rome, 5-7 August 2002. <http://www.fao.org/sd/giahs>