

Home gardens – treasure troves of diversity



Photo: G. Uluntunqok

What are home gardens?

Home gardens are agro-ecosystems located close to the area that serves as a permanent or temporary residence. Within a very small area one can find a combination of trees, shrubs, vegetables, root crops, grasses and herbs that provide food, spices, medicines and construction materials. Domestic animals are often integrated into the system too.

The produce from these gardens not only secures food and income; it will often have an important cultural significance too. For example, indigenous communities in the Amazon Basin use the red seeds of *Bixa orellana* as a body paint at traditional festivities, or the psychoactive *Brugmansia sp.*, or Angels' trumpet, for shamanistic rituals.

Home gardens undergo a constant development process, since the composition and use of crops changes according to the circumstances and needs of the gardeners. Material acquired by means of barter will be tried out, or efforts will be made to domesticate wild plants. Conserving horticultural crops in cultivation (*in situ*) – as opposed to conserving them in gene banks (*ex situ*) – has the advantage that varieties are constantly continuing to develop. This means that new utility values of plants may emerge as a result of evolutionary adaptation.

Anything but wallflowers

For centuries, small farmers and indigenous communities have developed and conserved a great variety of crop plants. Adapted to their location, climate and cultivation practices, traditional horticultural crops provide a yield and an income throughout the year, even without external agricultural inputs. In developing countries, they therefore make a major contribution to the food supply and to securing the livelihood of the population.

At the same time, continuing use of crop plants, passed down from one generation to the next, makes home gardens important sites for conserving plant genetic resources and sustaining a vibrant diversity.

In most cases, women determine what plants are grown in the home garden, because in many societies they are mainly responsible for food and healthcare within the family. In terms of choice of species and varieties, the priorities they set are often different from men's, and in their small, highly productive, but often largely disregarded gardens, they cultivate the plants they need for culinary, medicinal or cultural purposes, or for the market. They experiment with species and varieties and develop them further. The women preserve knowledge about cultivation practices that are suited to the local environment, about local species and how they are prepared for use in traditional dishes or for other purposes. In many countries, therefore, women are the custodians of agricultural biological diversity.

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Two Shuar women standing next to an *Xanthosoma* sp. Araceae ripe for cutting



Photo: S. Reinhardt

► Greater diversity – higher income

In the context of a research project funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), the International Plant Genetic Resources Institute (IPGRI) conducted a study involving five countries to assess the role of home gardens in terms of conserving plant genetic resources. Another objective of the study was to examine whether promoting horticultural diversity has a positive impact on sustainable development. The results were conclusive: the greater the diversity in the home garden, the better the food and income situation of the households. At the same time, the study emphasized the key role played by rural communities in terms of conserving agrobiodiversity.

On the basis of the results of the country studies, home gardens were categorized according to agro-ecological zones and the types of vegetation present. This has provided a framework that can now be used by other countries. The findings of the IPGRI study have already been used in a number of national programmes aimed at conserving plant genetic resources.

In Viet Nam, for example, where there is a long tradition of home gardens, IPGRI conducted a survey of 100 different home gardens in conjunction with national institutions. The outcome demonstrated just how productive home gardens can be. Some households derive as much as 50–60% of their income from the sale of garden produce. On these plots, averaging around a quarter of a hectare in size, a total of 646 plant species and varieties were identified. Key species, represented by a broad range of varieties, included banana (*Musa* sp.), jackfruit (*Artocarpus* sp.), papaya (*Carica* sp.), longan (*Dimocarpus* sp.), cassava (*Manihot* sp.), taro (*Colocasia* sp.) and sweet potato (*Ipomoea* sp.).

Since the 1970s, state-promoted structural change in the agricultural sector and resettlement measures have brought about a sharp decline in traditional agro-ecosystems in Viet Nam. Many crop plant varieties have been lost as a result. The IPGRI study enhanced our understanding of the complementary nature of *in situ* and *ex situ* conservation, with the result that state development activities are now specifically aimed at promoting sustainable use of home gardens with agroforestry approaches in Viet Nam.

Cuba provides us with another example: the IPGRI study proves that home gardens are well suited to protected areas, because they make a major contribution to conserving biodiversity. Cuba increasingly views home gardens as a key component of its national *in situ* conservation efforts and supports the inclusion of agroforestry-based home gardening activities in the management of protected forest areas and their buffer zones. In Cuba's national programme for protected areas ("Man and the Biosphere Reserves") and ecological reserves, products from home gardens are being promoted explicitly as a local source of income.



Photo: S. Reinhardt

Sweet potato species



Photo: K. Probst

Achote (*Bixa orellana*)

Beyond the garden fence

Whether farmers (of either gender) maintain traditional cultivation practices and broad genetic diversity depends largely on the conditions in the country concerned. Is there an infrastructure and access to markets? What sort of land rights and laws are in place? What is promoted under the national agricultural policy? These are questions that have to be addressed if home gardens are to be promoted in a sustainable way.

The socio-cultural environment, too, has considerable influence on what is grown in home gardens. If living and eating habits change, for example, this can hardly fail to have an impact on the home garden. A change in lifestyle always has a direct effect on the genetic diversity of both plants and animals used in horticulture or agriculture. Cultural losses in indigenous communities always go hand in hand with a loss of agrobiodiversity.

In order to counteract progressive genetic erosion, more attention must be devoted to home gardens in future. They should be included specifically in international and national rules and action plans. Furthermore, the significance of traditional knowledge and practices for the protection and sustainable use of biological diversity must be acknowledged. This includes ensuring that the local population and indigenous communities have long-term access to the genetic resources developed by them – despite increasing calls at international level for intellectual property rights for new varieties of plants.

Foto: v. Lossau



Further promotion measures include:

- Better access to land (title deeds)
- Technical support for local communities, e.g. in obtaining, exchanging and further developing seeds and planting material
- Identifying new products and markets. This could create incentives for sustaining home gardens and their diversity.
- Promoting home gardens in zones on the fringes of protected areas, among other things to compensate for restrictions relating to protected areas
- Introducing agrobiodiversity monitoring
- Participation of farmers and indigenous communities in the process of developing policy and scientific programmes
- Promoting research projects relating to biodiversity in home gardens
- Promoting the transfer of knowledge among communities and between communities and research institutions
- Awareness-raising and sensitization of the population and policy makers



Shuar woman harvesting manioc in her home garden, Ecuador

Photo: S. Reinhardt

Two birds with one stone

On the one hand, home gardens are an important component of national strategies for sustaining agrobiodiversity. On the other, at local level, they contribute to securing livelihoods and incomes. Both these aspects should be reinforced in the context of development cooperation. In doing so, it is important to ensure that indigenous communities and local municipalities are actively involved in planning, executing and evaluating measures and programmes of this sort and that they are empowered to represent their interests themselves.

Home gardens can make a significant contribution to the *in situ* conservation of plant genetic resources. Efforts to promote this form of cultivation are still in their infancy, but there are already some encouraging examples. In Guatemala, for example, promoting diversity in home gardens is part of a broad-ranging municipal development strategy. In Ghana, public interest in agricultural diversity grew when new income opportunities were created through the sale of traditional foods. Home gardens are ideally suited to raising public awareness of the significance of diversity in the agricultural and horticultural context as part of cultural heritage.

Further information

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The document is a working paper. We will improve it in a step-by-step process, building upon your comments and experience.

Imprint

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Sector project "People and Biodiversity in Rural Areas" (Unit 4411)
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GTZ was commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) to implement the Sector Project "People and Biodiversity in Rural Areas".



Commissioned by



Bundesministerium für
wirtschaftliche Zusammenarbeit
und Entwicklung

