ACCESSING GENEBANK DIVERSITY

Under the International Treaty on Plant Genetic Resources for Food and Agriculture, we share the crop diversity conserved in our genebank with users from across the world. Germplasm requests will soon be possible via the genebank's website and are currently possible via Genesys: **www.genesys-pgr.org/wiews/GHA091**, an online platform that allows users to browse information about crop diversity conserved in genebanks worldwide. For details on how to request germplasm via Genesys, please scan the QR code on the back of this brochure.

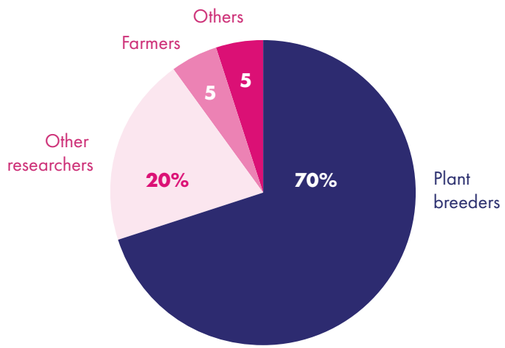
Requesters in Ghana can also obtain samples of seed and planting materials from the genebank by sending a letter to the Director of the Institute, stating what they require and what they will use it for.

Requesters from outside Ghana must use the Standard Material Transfer Agreement developed by the Plant Treaty. Handling and shipping costs are charged to the requester.

USER OUTREACH

The genebank works with a wide range of users to better understand and use the crop collections it holds. By adopting a proactive approach to sharing this wealth of materials, the genebank is making a difference in people's lives. Today, the genebank identifies, produces and disseminates seeds of farmer-preferred varieties —including leafy vegetables, Bambara groundnut and rice— that will diversify cropping options and help mitigate climate change.

Breakdown of users



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Link to Genesys:

Naransaag community bambara groundnut user group tilling the soil in the bambara farm. Photo: the CSIR-PGGRI.

CSIR is part of the Seeds for Resilience project, supported by:

CSIR Plant Genetic Resources Research Institute

Keep the past, feed the future

More than half of the population of Ghana is engaged in agriculture. Ghana's farmers cultivate a wide range of crops, including cereals, legumes, vegetables, roots and tubers, fruit trees, spices, medicinal plants, and forest plant species. However, the country is facing the rapid loss of crop diversity due to land-use changes and replacement of local landraces by improved varieties.

OUR GENEBANK

The history of the Ghana genebank dates back to 1964, when the Plant Introduction and Exploration Section was established as part of the Council for Scientific and Industrial Research's Crops Research Institute. This subsequently became the Plant Genetic Resources Unit in 1985, the Plant Genetic Resources Centre in 1994 and, finally, the Plant Genetic Resources Research Institute (PGRRI) in 2005.

OUR ACHIEVEMENTS

Since 2018, the Institute has multiplied and distributed more than 160,000 samples of taro planting materials that are tolerant of taro leaf blight, helping to revive taro production in Ghana. It has also distributed nearly 8,000 samples of other crops to plant breeders, researchers, farmers and students within and outside the country since 2010.

Since 2015/2016, the Institute has collected and conserved 84 accessions of wild relatives of cereal, legume, and vegetable crops and acquired 250 accessions of stress-tolerant orphaned legumes.

What is a crop genebank?

Crop genebanks are facilities that collect, conserve and manage large numbers of samples of crops – usually as seeds, tissue or living plants – to make available the genetic diversity that underpins the present and future of our food supply. This diversity is the essential resource farmers and plant breeders need to develop resilient, productive and nutritious crops to feed the world's growing human population, especially in the face of challenges such as climate change.

CONSERVATION

The genebank keeps its seed collection in freezers at either −20° C (long-term storage) or −5° C for its short-term or active collection. Vegetatively propagated crops such as cassava and yam are kept in vitro under controlled conditions, while tree crops – such as nutmeg and rambutan – roots and tubers, spices and medicinal plants are kept in field genebanks.

OUR COLLECTIONS

The Institute holds some 3,000 accessions of a wide range of crops, including maize, cowpea, rice, eggplant, groundnuts, cassava and yam, and tree crops include nutmeg, African butter fruit, African bitter bush mango, African star apple, miracle berry, cashew, rambutan, pomegranate and bitter kola. About 25% of the collection has been characterized for useful traits, enhancing the value of the collection to users.

Crop Spotlights

Cowpea is used in a wide range of dishes in Ghanaian cuisine. It is also used as animal feed. Cowpea is a staple crop in northern Ghana, where it is grown under a wide range of conditions. The genebank holds more than 500 accessions representing this diversity – a vital resource for breeding climate-resilient varieties for the future.

Indigenous Leafy Vegetables. A wide range of indigenous leafy vegetables are used in Ghanaian cuisine, and the genebank holds important collections of these. They are a vital source of vitamins and minerals and complement the starchy ingredients that form the basis of many meals. A good example is palava sauce, made from a variety of leafy vegetables and pumpkin seeds.

OUR COLLABORATORS

The genebank has extensive collaboration with plant breeders and other researchers in other CSIR institutes and universities, both in Ghana and elsewhere, ensuring that its crop diversity collection is used to the benefit of farmers. It also has a long history of collaboration with international organizations, including the Global Crop Diversity Trust and the International Institute for Tropical Agriculture. The Institute works closely with farmer-based and non-governmental organizations and the agricultural extension services in both collecting crop diversity and in developing and sharing diversity and associated knowledge to farmers.

At this evaluation plot in Kumasi, Ghana, local farmers work alongside scientists from the CSIR-PGRRI to select preferred varieties of indigenous African leafy vegetables. October 2023. Photo: Neil Palmer/Crop Trust.

With the financial assistance of the Modernising Agriculture in Ghana Project, CSIR-PGRRI has distributed 160,000 planting materials of new taro varieties and promising accessions to more than 800 farmers in the Eastern and Ashanti Regions. This has led to a resurgence in taro cultivation in Ghana, boosting both food security and farm incomes.