

Research initiatives and discoveries

Studies show that [a chemical mechanism operating in the roots of a tropical grass used for livestock feed holds enormous potential to reduce GHG emissions](#). According to scientists from the International Center for Tropical Agriculture ([CIAT](#)), the mechanism reduces the output of nitrous oxide, which has a global warming potential 300 times that of carbon dioxide.

The International Maize and Wheat Improvement Center ([CIMMYT](#)) has released [22 new maize inbred lines for the tropics and subtropics](#) that include resistance to drought, pest and disease, among other traits. Developed by multi-disciplinary teams of scientists, the lines are freely available to both public and private sector breeders.

By tapping the rich genetic diversity of beans, CIAT scientists have identified and are using certain traits in bean roots and shoots that contribute to [drought tolerance](#). They have also developed bean lines that perform well under low soil phosphorus and high aluminum toxicity.

Field trials of new [nitrogen use efficient \(NUE\) rice show increased productivity](#), leading to increased food security and reduced fertilizer dependence. At 50% of normally applied nitrogen fertilizer, NUE rice lines out-yielded the conventional [NERICA](#) varieties by 30% in some trials.

Two [extra early maturing maize hybrids](#) developed by the International Institute of Tropical Agriculture ([IITA](#)) are now available to farmers in Nigeria. With combined resistance to Striga, drought, and low soil-nitrogen, the hybrids promise to improve food security and incomes.

Tools and technology

[Smartphone apps](#) developed by the International Water Management Institute ([IWMI](#)) provide easy access to data, maps, success stories, publications, and project findings at a glance.

Developed collaboratively by the WorldFish Center with many partners, the [Coral Triangle Atlas is an online GIS database](#) that provides governments, NGOs and researchers with a view of spatial data at the regional scale. [CT Atlas aggregates for the first time decades worth of data](#) on fisheries, biodiversity, natural resources, and socioeconomics into region-wide layers.

Using the MultiProfiler concept, a revolutionary way of making information accessible, the International Crops Research Institute for the Semi-Arid Tropics ([ICRISAT](#)) launched a new website. [EXPLOREit @ ICRISAT](#) breaks information barriers by making large volumes of agricultural scientific knowledge and 40 years of research easily available to the public.

During a workshop in Nairobi, experts from ICRISAT and Cornell University trained Africa-based scientists in [genotyping-by-sequencing, a state-of-the-art genotyping tool](#), with the goal of employing the latest technologies to enhance cereal production in Africa.

Results and impact

Using locally-suited crop varieties provided by five CGIAR centers, small-scale farmers in East Timor learned about and acquired seed of improved varieties of key food crops, as well as improved cropping practices. [The hungry season for the major staple, maize, was significantly reduced](#) among the adopters.

Thanks to their partnership with the [World Agroforestry Centre](#), Chaudhry Sukhvir Singh and other [Indian farmers are reaping economic and environmental benefits](#)—including improved soil fertility, water retention, and incomes—from planting trees on their farms.

The International Food Policy Research Institute's new [Outcome Stories website](#) highlights the impact of work by [IFPRI](#) and its partners. The website features success stories and benchmarks progress achieved in building resiliency, facilitating markets, improving production, promoting nutrition, and strengthening governance, among other areas.

Impact slideshow: The Tropical Legumes II project implemented by three CGIAR Centers across Africa and Asia is [boosting yields and incomes and changing lives](#). With access to improved crop varieties, including those with drought tolerance, farmers are better able to support their children in schools, pay for medical expenses and buy the food they need.

As part of the Bangladesh Horticulture project led by the International Potato Center ([CIP](#)) and the World Vegetable Center, [innovative potato storage is enabling smallholder farmers to get a 50% increase](#) in price of potato relative to the price at harvest time.

Publications and videos

New book published by the CGIAR Research Program on Water, Land and Ecosystems ([WLE](#)) urges fundamental [re-think to unite farmers and conservationists](#) for sustainable development.

In the video ['Rambo' Root Packs New Vitamin A Punch](#), researchers from IITA and [HarvestPlus](#) discuss the development of more nutritious varieties of drought and heat resistant cassava.

The [CGIAR Annual Report 2012](#), Partnership for Impact, is now available online.

In a recent issue of [Nature magazine](#), scientists from the CGIAR Research Program on Climate Change, Agriculture and Food Security ([CCAFS](#)) share their perspectives on what governments should do to enhance sustainable agriculture and mitigate droughts.

A new IFPRI report, [From Subsistence to Profit](#), offers policy recommendations to help potentially profitable smallholder farmers meet emerging risks and challenges.

In the video [Gender in Maize Research](#), researchers argue that to close gender gaps in agriculture, we need to understand the different preferences of men and women farmers and the extent to which they have access to and adopt improved technologies.

A new report released by CCAFS and IFPRI suggests that [farmers in Kenya could potentially thrive even as climate changes](#), but their chances of successful adaptation will depend on supportive and flexible policies and forward planning.

Using sophisticated modeling and data to develop future scenarios and explore a range of climate change consequences for agriculture, food security, and resource management, a related book, [Southern African Agriculture and Climate Change](#), offers recommendations to national governments and regional agencies.

News and events

On behalf of partners, CCAFS and the Center for International Forestry Research ([CIFOR](#)) are jointly coordinating the [Global Landscapes Forum](#) to be held on the sidelines of the UN Climate Change Conference in Poland. The forum will focus on the role sustainable landscapes can play in providing food, shelter, income and ecosystem services and environmental goods.

In mid-September, Papa Abdoulaye Seck resigned as Director General of the Africa Rice Center to accept his [new post as Senegalese Minister of Agriculture and Rural Equipment](#). [Adama Traoré is the Interim Director General](#) of AfricaRice.

During the [Agricultural Transformation in Asia conference](#) in Cambodia, participants discussed how fertilizer subsidies can crowd out public spending on agricultural research, extension, and other expenditures that promote agricultural development, spurring the development of databases to bolster public-private partnerships and more efficient market operations.

Charity Mutegi won the Norman Borlaug Award for Field Research and Application for her work on the [IITA research team that achieved major breakthroughs by applying locally adapted and easy to use biological tools in combating contamination with deadly aflatoxin](#) mold that occurs in crops such as maize or groundnut, causing death, disease and economic damage.

Lindiwe Majele Sibanda, CEO of [FANRPAN](#) and chair and member of the Board of Trustees of the International Livestock Research Institute ([ILRI](#)) and CIMMYT, respectively, [won the Yara Prize for agricultural improvement in Africa](#).

In an editorial in *Science* magazine, the [Global Scientific Community Stands Up for Golden Rice](#) following vandalism of field trials in the Philippines.