PRESS RELEASE—ALLIANCE FOR A GREEN REVOLUTION IN AFRICA

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Africa's Best-kept Secret: Beans, Peanuts and other Pods

Plant Breeders from Across the Continent Join Forces To Boost the "Poor Person's Meat," Raise Incomes and Combat Hunger

KIGALI, RWANDA (12 January 2009)—Beans, cowpeas, peanuts and other legumes are referred to as the "poor man's meat" and provide an essential source of protein for millions of Africans. Legumes are considered a "perfect food": rich in vitamins, minerals, oils and energy. Yet the production has stagnated to only about 600 kilograms per hectare while the real potential is 5,000 kilogram per hectare. The high demand for legumes has also been stirred up by the rising food prices for other sources of animal protein like meat, fish and eggs, and therefore there is a rising demand for legumes both for home use and for consumers in rural and urban markets.

Today, crop breeders, farmers and seed merchants from 12 countries launched a network aimed to target high-yielding, disease-resilient beans that taste better and cook in a shorter time to respond to the household needs. The discussions focused on the genetic improvement of legumes and improving the seed delivery systems in Africa through farmer groups or organizations and therefore combating malnutrition and hunger and raising the incomes of Africa's smallholder farmers, most of whom are women.

The crop breeders reported significant advances in the fight against a host of plagues—from root-rots to drought—and zeroed in on the most pressing challenges to legume production.

"Both science and society present challenges to increasing production," said plant breeder Dr. Jane Ininda, a program officer with the Alliance for a Green Revolution in Africa (AGRA). "The support for research has dwindled and some of these crops have received perhaps one-ten-thousandth of the research attention. But beans, cowpea and groundnut are meat for rural Africa."

The meeting was sponsored by AGRA, a partnership-based organization that targets rural poverty and hunger through improving smallholder farming. AGRA supports a comprehensive program to transform everything from seed development and distribution, to soil health and agricultural education, to markets and infrastructure.

Speaking at the meeting, the Hon. Agnes Matilda Kalibata, Rwanda's Minister of Agriculture, said, "We must work to realize the incredible potential of beans and other legumes in ending hunger and malnutrition. Rwanda has the highest bean consumption in Africa, but still our farmers are thwarted by pests and diseases that keep yield depressed well below global levels."

Participants pointed out that in addition to providing vital protein and calories, increasing legume production can benefit the environment.

“Legumes naturally enrich the soil by converting nitrogen in the air into soil nitrogen,” Ininda explained. “AGRA is also proposing use of legumes as an intercrop and also a cover crop to conserve soil moisture and also keep away the weeds. We find that in areas where drought is a problem, legumes’ leafy ground cover helps preserve moisture.”

The inaugural meeting of the Legume Breeders Network brought together crop breeders, researchers and seed companies from Burkina Faso, Ethiopia, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, South Africa, Tanzania and Uganda. The meeting highlighted efforts to develop improved legume varieties and to overcome the barriers that prevent those varieties from reaching farmers and improving food security.

Beans that Root out Rot

Beans provide vital protein and calories for over 100 million people in rural and poor urban communities in Africa. Grown mostly by women and known as a “women’s crop,” beans rank high in diets in Kenya, Tanzania, Malawi, Uganda and Zambia. They are also rich in iron and folic acid, which are important to pregnant women. But varieties grown in sub-Saharan Africa are low-yielding and subject to a host of stresses, from poor soils to disease to root rots.

According to Ugandan plant breeder Annet Namayanja, all commercial varieties of bean currently grown in Uganda are susceptible to root rot, while varieties known to resist the fungus have undesirable qualities. They do not have the taste that farmers require, are late to maturity, and have an undesirable small seed size. To increase yield, farmers need varieties that are both disease resistant and early maturing, and have the size, color and cooking qualities that consumers want.

In a breakthrough for bean breeding, the National Agricultural Research Organisation (NARO) of Uganda with support from AGRA has released three bean varieties that are now being promoted for farmers to grow. Farmers are very particular about the bean varieties they grow, and the improved varieties will require better soil fertility management, as poor soil can aggravate root rots and other problems like bean stem maggots, said Annet.

Other researchers reported on efforts to grow higher-yielding climbing beans. Rather than spreading out, these varieties grow straight up, requiring less land to produce a greater yield. Climbing beans could therefore greatly benefit areas with lots of people and little farm land. With AGRA’s support, breeders in Rwanda have identified new climbing and bush varieties with resistance to angular leaf spot, root rot and anthracnose. The bush beans will yield up to 2.5 tons per hectare, while the climbing beans can yield up to 5.0 tons per hectare.

Gains for Groundnut

Africa’s second-most important legume is peanut, commonly known as groundnut. It provides a good source of plant protein, vitamins and oil. But groundnut production in Africa suffered a devastating blow almost 35 years ago, when Rosette disease, transmitted by aphids—small plant-eating insects—wiped out regional trade worth about US$250 million. While exports of groundnut increased elsewhere, Africa’s export share declined by about one-third from the 1970s to the 1990s. Small-scale farmers still routinely lose up to 30 percent of their crop, and losses can be 100 percent when Rosette rages out of control.

In Uganda, farmers harvest about 800 kilograms per hectare, compared to a potential yield of 3,000 kilograms per hectare, a problem being tackled by plant breeder David Kalule Okello, with Uganda's National Agricultural Research Organization. Okello reported on progress in his work with farmers to develop Rosette-resistant varieties, some of which can produce a white peanut butter.

Cowpeas Coping with Heat

African farmers domesticated cowpea more than 3,500 years ago, and today it can be cultivated under a range of extreme agricultural conditions that would challenge most other crops. Some 200,000 million people living across half of sub-Saharan Africa depend on cowpea, making it a daily part of the diet whenever it is available. Yet in most cases it remains low yielding, limiting its benefit.

In Mozambique, cowpea production is a bare 300 kilograms per hectare, although the potential yield is 2000 kilograms per hectare, according to the breeder Rogèrio Marcos Chiulele. Intensified droughts pose one challenge. Noting the lack of high-yielding varieties able to grow in extremely hot, dry conditions, Chiulele has screened some 216 farmer-bred varieties known as landraces and already identified a number with increased drought tolerance. Meanwhile, on the other side of the continent, seed breeders in Mali are also adapting cowpea to thrive with high yield under the harsh conditions of the dry Sahel.

Scaling Up and Branching Out

Breeders are tackling production constraints in crops such as soybean in Tanzania, Uganda and Nigeria; pigeon pea in Malawi; cowpea in Burkina Faso and Uganda; and bean breeding across East Africa.

Many presenters noted that the breeding of improved varieties is just a first step. For new varieties to make a real difference in people's lives, they must both be widely disseminated and utilized in a variety of ways. For example, increased cultivation of soybean, combined with building domestic processing, could help African countries overcome their dependence on imported cooking oils.

Dissemination is also key. "It is not enough to develop new varieties; we must also be prepared to expand production and dissemination," Ininda said. "In some countries, government monopoly of seed production has become an obstacle to progress."

According to Ininda, governments must come up with policies that support delivery of quality seed to farmers and create an enabling environment for emerging seed companies and give seed producers the freedom to operate. The competition is healthy because this will lower the cost of seed. Bean prices, for example, are twice the price of maize across Tanzania, said a breeder from Tanzania. "Monopoly in seed supply tends to slow the release of new varieties, and this denies the farmers better seeds," Ininda explained.

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About the Alliance for a Green Revolution in Africa (AGRA)

AGRA is a dynamic partnership working across the African continent to help millions of small-scale farmers and their families lift themselves out of poverty and hunger. AGRA programs develop practical solutions to significantly boost farm productivity and incomes for the poor while safeguarding the environment. AGRA advocates for policies that support its work across all key aspects of the African agricultural "value chain"—from seeds, soil health, and water to markets and agricultural education.

AGRA's Board is chaired by Kofi A. Annan, the former Secretary-General of the United Nations. AGRA's President is Dr. A. Namanga Ngongi, former Deputy Executive Director of the United Nations World Food Programme. With support from the Rockefeller Foundation, the Bill & Melinda Gates Foundation, and the United Kingdom's Department for International Development (DFID) AGRA works across Sub-Saharan Africa and maintains offices in Nairobi, Kenya, and Accra, Ghana. For more information, go to www.agra-alliance.org