Seeds that give

USAID encourages the use of safe, proven and appropriate technologies to help sustainably feed a growing population

Despite over 70 percent of the workforce engaged in agriculture, one in three Nepalis is food insecure. Nepal's yields in all staple crops are significantly below international averages and a big question remains: What can be done to increase farmer productivity and incomes to help break the vicious cycle of poverty?

Partnering with Nepal

To address this question, USAID is building on a history of partnership in Nepal that began more than 60 years ago. In this time, we have helped create Nepali institutions that allowed the country to make remarkable strides in agriculture. The Nepal Agriculture and Research Council (Narc), which USAID helped to establish in the late 1980s, continues to serve as the country's primary agriculture research institute. The Institute of Forestry and Institute of Agriculture still continue to provide an important platform to research, disseminate information and respond to the agricultural workforce needs of the country. Similarly, the USAID-supported agricultural wing of the Federation of Nepalese Chambers of Commerce and Industry—the Agro Enterprise Center—has been instrumental in promoting and commercialising high-value vegetables, tea and coffee, along with many non-timber forest products, such as honey and essential oils.

These institutions have created a strong foundation on which to fulfill Nepal's food supply needs and to commercialise agriculture in Nepal. Through Feed the Future, the US Government's global hunger and food security initiative led by USAID , we are using this foundation to improve nutrition and spur broad-based economic growth to lift more farmers out of poverty through development of the agriculture sector.

Interventions include training farmers and providing them access to information so that they can make informed choices about crops, seed and farming practices. This is an approach we take in all of our Feed the Future focus countries. We encourage the use of safe, proven and appropriate technologies which can include agricultural biotechnology and in some cases genetic engineering (GE), to help ensure there is enough food to sustainably feed a growing population faced with challenges like climate change, conflict, and poverty. However, the use of GE is a decision made by our host country partners as one of many options to improve food security and is not a requirement for receipt of Feed the Future or USAID support.

Choice of seeds

In the case of seeds, we have supported the Government of Nepal (GON) in providing choices to farmers enabling them to select the best seeds possible given the conditions on their farms.

There are basically three types of seed available: Open Pollinated Variety seeds (OPV), which are improved through selection and traditional plant breeding methods used for centuries; hybrid seeds, which are developed by plant breeders through cross-pollination to have higher yields; and Genetically Engineered Seeds (GEs), which are produced by inserting genetic material into the germplasm of the seed. In Nepal, only OPV and hybrid seeds are used. It is important to be accurate about the types of seed available, how they are developed and how they are used.

An increasing number of Nepali farmers are demanding both improved OPV and hybrid seed varieties because of the higher yields, quality of the produce and the profitability that these seeds offer. To meet the demand, some farmers are purchasing seed brought into Nepal illegally. Therefore, USAID through Feed the Future is working with farmers to increase their access to registered hybrid and OPV seeds.

Hybrid seeds produced by multi-national companies that are imported into Nepal are tested by the National Agricultural Research Council per the Seed Act and Regulations and if they are found to meet the criteria, they are registered and listed by the National Seed Board. Of the 556 seed varieties of 60 crops currently registered, 215 were developed in Nepal and 341 belong to multi-national companies, of which 17 are rice, 32 maize and 292 vegetables.

Farmers in seed development

In cooperation with the GON and other development partners, USAID has invested in the development of OPVs. Through the Hill Maize Research project (HMRP), co-funded with the Swiss Development Cooperation, we support the development of community-based seed production groups in 20 remote hill districts of Nepal. These groups benefit from agricultural research on high-yield, climate-resilient maize varieties conducted by national Nepali research centers. The HMRP project empowers groups of farmers to produce the improved seed varieties themselves, helping to build sustainable local seed markets. The community groups receive training on all aspects of seed production, from field inspection to certification and post-harvest management. To date, the project has improved the capacity of 207 community-based seed production groups, 31 of which are in the process of graduating into cooperatives, and several groups have even grown to become full-fledged private seed companies.

As a result of this support, 20 districts have produced a cumulative 3,000 metric tons of maize seed, generating nearly one million dollars in sales. Since 2010, national maize yields in Nepal have grown by 36 percent, leading to improved livelihoods and better nutrition among rural households. The Government of Nepal and other development partners are now expanding this successful community-based seed production for greater crop diversity and broader national impact.

In 2012, USAID , in partnership with the GON, supported Nepal's first commercial production of hybrid seeds through the private sector. Hybrid vegetable seeds have been grown in this country for over two decades. It is estimated that more than 75 percent of all tomatoes, cauliflower, cabbage, chilies, and cucumber are grown with hybrid seeds imported from India, Thailand, South Korea and other countries. The Government of Nepal has also begun developing its own hybrid maize variety, Gaurav, through Narc. To date, the Research Council has made available 16 hybrids for legal use.

Benefits for farmers

Evidence from on-farm trials and years of project experience suggests that improved OPV and hybrid seeds can offer many farmers an opportunity to significantly increase yields, increase food security, and substantially improve profitability.

By increasing crop yields, Nepali farmers will be able to take advantage of market opportunities. Take the example of maize, which is a very important commodity both as a staple food and cash crop. The animal feed industry currently requires an estimated 270,000 tons of maize, yet is only able to purchase half of that amount here in Nepal—135,000 tons. The remaining 135,000 metric tons of maize is imported every year with a value of approximately 200 million Nepali Rupees. Those imports are a lost opportunity (also a huge potential) for Nepali farmers. Moreover, the country's transition to hybrids played a central role in the sustained increases in maize productivity achieved over the last decade after a long period of yield stagnation.

As Nepal's first and longest standing development partner, USAID is committed to help build the country's agriculture sector and ensure a thriving economy and will continue to support these efforts through Feed the Future. The discussion among all stakeholders—primarily the private sector, academia, the Ministry of Agriculture and Development and Narc, development partners, civil society and farmer groups—about how Nepal can increase its agricultural productivity to meet the needs of the country must continue. USAID , as always, will be guided by the Government of Nepal's policies and practices on increasing agricultural productivity in Nepal. By working collectively

towards unlocking the obstacles, Nepal's agriculture potential can truly be unleashed with accelerated growth, increased farm incomes, and conserved natural resources.

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