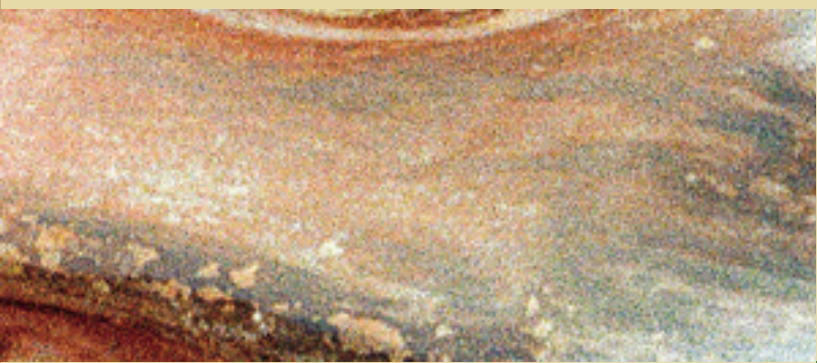


SHUTTLE SEED
PRODUCTION AIDS AFGHAN
POTATO FARMERS



CIP HAS PLAYED AN IMPORTANT
ROLE IN NUMEROUS HUMANITARIAN
RELIEF INITIATIVES. IN THE FACE OF
EMERGENCIES, THE CENTER STANDS
READY TO RELIEVE SUFFERING AND
PROMOTE LONG-TERM RECOVERY
AND ECONOMIC GROWTH THROUGH
TECHNICAL ASSISTANCE TO BOLSTER
AGRICULTURAL PRODUCTION

In 2002, these efforts extended to Afghanistan, one of Central Asia's largest potato producers. Immediately following the cessation of hostilities, CIP researchers began planning an emergency program that would speed up the supply of quality potato seed to Afghan refugees returning from Pakistan. Seed quality, especially the absence of diseases and pests, is one of the major factors that determines the success or failure of a potato crop. Operating under the umbrella of the Future Harvest Consortium to Rebuild Agriculture in Afghanistan—an initiative



funded by the United States Agency for International Development—and in cooperation with colleagues from national and international organizations, CIP scientists began working in January to produce large quantities of superior quality potato seed adapted to Afghan growing conditions.

“Our first visit to Afghanistan in March 2002 confirmed our worst fears,” says a CIP

researcher associated with the project. “The country’s potato seed stocks had not been regenerated in over a decade and there was no evidence of a seed supply system. In almost every field that we visited we found virus-infected plants, a sure sign that the country’s potato producers were replanting contaminated seed stocks harvested from their own fields.” Virus infection is a major yield reducer.

From the outset, the intention was to help Afghanistan’s farmers produce their own seed rather than import from abroad. CIP scientists had concluded that without local capacity to produce quality planting materials, Afghan potato production was unlikely to recover. To initiate the process, in September project staff received 22 tons of commercial “starter” seed—enough to plant 7 hectares. Ninety percent of the shipment was brought in by road from Pakistan through the Khyber Pass, with the remainder coming in as air cargo from India. To ensure that the imported starter seed would be well used, seed production training programs were initiated for staff from Afghanistan’s Ministry of Agriculture, local NGOs, and Kabul University. Course graduates, working alongside CIP scientists and researchers from Pakistan, in turn trained a small group of local farmers.

SHUTTLE SEED PRODUCTION

Producing high quality potato seed is an exacting process. Only the best farmers can do it and even then it can be an extremely arduous job. For every tuber planted, a farmer generates just eight seeds that can be planted during the following season. In contrast, a maize farmer planting a single kernel can easily harvest a hundred or more seeds. The answer to the problem is “shuttle” seed production, a process in which potato seed tubers produced in one area are taken to a new location where weather conditions are suitable for a second planting. The

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THESE FARMERS ARE PARTICIPATING IN SHUTTLE SEED PRODUCTION TRAINING IN JALALABAD, AFGHANISTAN. FROM THERE, STARTER SEED IS TAKEN TO THE HIGHLANDS FOR SPRING PLANTING.

SEEDS OF LIFE FOR EAST TIMOR

Over the past two years, CIP researchers have worked with government and private voluntary agencies to introduce improved sweetpotatoes to the newly independent nation of East Timor. Working with funds from the Australian Centre for International Agricultural Research under the Seeds of Life project, CIP scientists provided local agencies with a small but select group of promising lines, a number of which out-produced the best local variety and received high marks from consumers.

In East Timor, as in much of Oceania, sweetpotato is an important food security crop. In the future, however, it will likely also prove to be a major contributor to improved human health. Although accurate figures are not available, vitamin A deficiency is one of East Timor's most challenging public health problems, affecting the eyesight and immune systems of thousands of children under the age of five. Researchers believe that this deficiency can be addressed through the regular consumption of small amounts of orange-fleshed sweetpotatoes, which are high in beta-carotene, a precursor of vitamin A, which the body uses to sustain the immune system. To help resolve the problem, plans are being made to introduce a series of locally adapted, orange-fleshed sweetpotatoes early in 2003.

CIP scientists are building on a lesson learned in Mozambique, where orange-fleshed sweetpotatoes were introduced as part of a disaster relief effort to assist families who had lost all of their sweetpotato planting materials to flooding. Mozambique is now a full member of the VITAA partnership (see page 63) and over 120,000 families have benefited from the introduction of the new materials.

objective is to compress two or three production cycles into the time normally used to produce just one seed crop.

In the case of Afghanistan, the key to the shuttle system is planting in the Jalalabad area in the southeast part of the country where potato can be grown in the mild winter season, and then taking the harvested seed to the highlands around the city of Bamiyan for spring replanting. Bamiyan, located in the Hindu Kush mountain range, was the site of the two ancient Buddhas which were destroyed in 2001.

A critical part of the process is avoiding late-season frost in Jalalabad. Before participating in seed production training, local farmers didn't know they could manage frost by planting early and irrigating the crop. Taken together, early planting and irrigation help avoid frost while eliminating the aphids that spread virus diseases and generally toughening the tubers for transport and storage. Adel El-Beltagy, Director General of the International Center for

Agricultural Research in the Dry Areas (ICARDA), notes that shuttle seed production should go a long way towards developing a sustainable production system that addresses the seed requirements of Afghan farmers. ICARDA is the coordinating center of the Future Harvest Consortium to Rebuild Agriculture in Afghanistan.

"This is not a short-term effort," says El-Beltagy. "It is an example of innovative planning that will contribute to peace and security. I am confident that once a functioning seed production system is in place, Afghanistan's potato farmers will begin to see even bigger benefits in the form of better varieties, improved methods for controlling diseases and pests, and better harvesting and storage practices."

"The aim of the Future Harvest Consortium," he notes, "is to bring to bear the best that science has to offer in ways that will reduce poverty in rural Afghanistan, benefit consumers, and contribute to environmental well-being."