

Sharing Agriculture's Genetic Bounty

Last November, the United Nations Food and Agriculture Organization adopted the International Treaty on Plant Genetic Resources for Food and Agriculture. To date, 53 countries have signed the treaty; 7 countries have officially ratified it. Forty are required to do so before it will enter into force. The treaty has the potential to become the principal international legal instrument governing transfers of crop genetic materials. As such, it would both underpin and shape crop-improvement efforts and, one might argue, agriculture itself. No trivial matter.

The acquisition, control, and exploitation of economically valuable plants has fueled international conflict ever since Queen Hatshepsut, the first Pharaoh, sent her army on a plant-collecting expedition to East Africa in 1482 B.C. Today's disputes are resolved through more diplomatic displays of power. This new treaty caps 20 years of acrimonious UN debate over the rules of access and benefit-sharing for one of the most important resources on Earth—the genetic materials used by plant breeders of wheat, maize, rice, and other crops. Genetic resources of specified crops are to be made available automatically to all contracting parties under the terms of a yet-to-be-finalized Material Transfer Agreement, which will mandate royalty payments into an International Fund under certain circumstances. The money—no one expects it to be much—will go toward conservation and breeding programs, primarily in developing countries where so much of the genetic diversity upon which agriculture is based originated.

In the closing session, weary negotiators bequeathed a number of difficult issues to the treaty's future governing body, including the level and form of payments to be made to the fund. They also confined the number of crops covered by the treaty to the 35 they decreed to be important to world food security. Their politically motivated cautiousness resulted in the nutritionally indefensible inclusion of asparagus and strawberry and the exclusion of certain globally important crops such as soybean and peanut. Most vegetables, fruits, and tropical forages, as well as all industrial crops, were excluded and are thus outside the scope of the agreement.

Mistrust between developed and developing countries also prompted negotiators to saddle the governing body with a cumbersome one-country, one-veto decision-making process, a decision that will constrain the "evolutionary" potential of the treaty itself, reducing the possibility that future deliberations might correct past mistakes.

Despite these shortcomings, the treaty is better than the alternative. Currently, access to genetic resources is by "prior informed consent" and on the basis of "mutually agreed terms" with "countries of origin" under the framework of the Convention on Biological Diversity. With the convention, the notion that plant genetic resources are the "common heritage" of humankind yielded to assertions of national sovereignty, visions of financial rewards, and restrictions on access. Countries saw themselves as sellers of genetic resources. The problem? Nobody's a buyer.

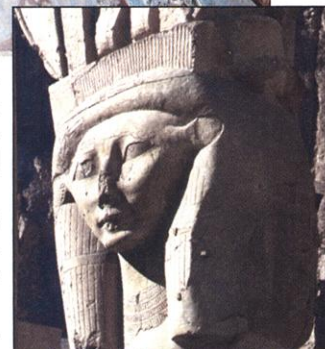
Countries still routinely deny access, even to plant-collecting missions organized to rescue unique populations from the threat of extinction. Recent efforts to collect and conserve wild relatives of peanuts in Bolivia and papaya in Colombia have been turned back, perhaps because these countries, like others, equate potential usefulness with current (and substantial) monetary value. Controversies over intellectual property rights and charges of "biopiracy" have fueled passions and convinced many countries that they are sitting on genetic gold mines. The value of a single sample in a long-term breeding program involving hundreds or thousands of crosses would be difficult to determine, however, and almost impossible before it is even collected. But the value, in dollars, is certainly small and well below the expectations of those who vigilantly guard against the threat of exploitation. Transfers of genetic materials for research and breeding have thus slowed to a trickle, arguably damaging future crop-improvement efforts as the planet races toward a population of 8 billion.

Plant genetic resources are more valuable, economically and practically, as a public good than as a commodity. As a commodity, they're a flop. Exchanged and used, they bring enormous benefits. Witness the contributions to productivity and food security for the poor made through deployment of these resources in the breeding programs of the Consultative Group on International Agricultural Research (CGIAR), as recognized by the Nobel and World Food Prize juries.

The new treaty will not end the millennia-long struggle over biological diversity, but it could bring some order and regularity to the transfer of crop genetic resources for most major crops. As every country's agricultural system is highly dependent on nonindigenous crops and their genetic resources, all countries could consider ratification to be in the national interest. The alternative most countries have is to engage in a historically unprecedented experiment: development without diversity. Or, enlist the Queen's army.

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Is this the way to collect plants?