

31 United States of America

Native Seeds/SEARCH

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Purpose and core operations

The southwestern United States and northwestern Mexico (the 'Greater Southwest') form an arid region of immense natural and cultural beauty, rich indigenous agricultural traditions and among the greatest food security challenges in North America. Recognition of the accelerating erosion of the region's unique cultural and agricultural diversity led to the formation of Native Seeds/SEARCH in 1983 by a dedicated team of private citizens. A nongovernmental organization (NGO) based in Tucson, Arizona, Native Seeds/SEARCH works to improve regional food security and sovereignty through the preservation, documentation and promotion of the Greater Southwest's adapted crop diversity and associated cultural knowledge, using a combined strategy of ex-situ and in-situ conservation and targeted public education.

At the heart of the organization's work is an active programme of ex-situ conservation, anchored by its seed bank and a 24ha conservation farm. The seed bank collection holds 1,900 accessions of domesticated crops and wild relatives, representing the agricultural and ethnobotanical legacies of over 50 indigenous peoples from the region as well as Hispanic communities and Anglo settlers. With their unique adaptations to the harsh conditions of the arid southwest, the crop varieties conserved and distributed by Native Seeds/SEARCH are characteristically tolerant of drought, heat and poor soils. In this era of climate change and desertification, such varieties will take on ever-increasing global importance. Many of these varieties, along with their unique genetic traits and the cultural roles they embody, were on the verge of extinction before Native Seeds/SEARCH began its collection.

The majority of the collection consists of landrace or local varieties and is dominated by maize and multiple species of beans (*Phaseolus*) and squash (*Cucurbita*). In total, over 100 plant species are represented, including some promising but neglected crops such as Sonoran panic grass (*Panicum sonorum*). Seeds are stored at the seed bank in a 56m² cold room (7°C and 25 per cent relative humidity) for short-term storage or in an 11m² freezer (-18°C) for long-term storage. They are regenerated periodically at the conservation farm using standard techniques to maintain genetic diversity and purity. The Native

Seeds/SEARCH farm has also traditionally been the source for most of the seed stock that the organization has distributed and fulfills important research and education functions.

Recognizing that crop diversity has little value if it is not used and that the evolutionary processes that promote continuous crop diversification and adaptation are essential to the long-term resilience and sustainability of any agricultural system, Native Seeds/SEARCH actively distributes seeds from the collection to farmers and gardeners throughout the Greater Southwest and beyond. Currently, over 50,000 packets are distributed annually, in addition to limited bulk quantities for farm-scale operations. The distribution of landrace material from the collection is supplemented by heirloom varieties of crops that are not traditional to the southwest but are frequently sought by growers in the region. This strategy results in additional revenue to support the organization's conservation work, an increased diversity of crop species available locally and enhanced opportunities for public outreach.

Native Seeds/SEARCH distributes seeds through several channels. They are sold through a retail store in Tucson (which also serves as an important interface between the organization and the public), through an online store, a catalogue and via wholesale distribution through local grocery stores and nurseries. One of the most important programmes operated by Native Seeds/SEARCH is the Native American Free Seed Program, in which seeds are provided free of charge to Native people in the region to support indigenous agriculture and share the benefits of the broader use of the region's indigenous crop diversity. Approximately 5,000 seed packets are distributed annually through the Free Seed Program. Native Seeds/SEARCH also donates seeds to educational, nutritional or community development projects throughout the region via its Community Seed Grant programme.

Access to diverse seeds is not sufficient in itself to build a robust regional seed system. Another prerequisite is knowledge of how to grow and use the crops and how to save seeds and apply simple breeding practices to promote crop adaptation and improvement. Native Seeds/SEARCH, therefore, devotes a great deal of its energy to public education. The organization's flagship educational programme is Seed School, a week-long course in strengthening individual and community capacity for building resilient seed systems (Plate 21). Native Seeds/SEARCH also provides public education through a free lecture series, public tours of its seed bank and farm and presentations at a diversity of venues.

Governance and support

Native Seeds/SEARCH is governed by a volunteer board of directors that provides direction to the executive director, who is responsible for overseeing the fulfillment of the organization's mission and for supervising staff, which at the time of this writing includes 16 people spread across conservation, distribution, development, education and administrative functions. In addition to paid staff, the organization relies heavily on volunteer support from the

community. Volunteers assist with many aspects of farm grow-outs, as well as seed cleaning and packaging at the seed bank and various tasks at the retail store and elsewhere.

Native Seeds/SEARCH draws its financial support from many directions. It operates as a member-supported NGO, and contributions from members (currently numbering about 3,000 households) and non-members alike account for about a third of its revenue. An additional third of the revenue is derived from sales of seeds, southwestern food products, Native crafts and related products. The remainder of the organization's financial needs is met by grants from private or corporate foundations, tribal communities or government entities.

Successes and future directions

Native Seeds/SEARCH has had many notable successes in its first 30 years of existence. Perhaps most obviously, the creation of the seed bank collection resulted in the preservation of a substantial number of unique crops, many of which were on the verge of permanent loss and would likely otherwise be extinct today. Not only was this diversity buffered from loss, but it has been documented, made more broadly accessible and, in many cases, returned to the communities from which it originated. Perhaps less tangible but no less important, the pioneering work of Native Seeds/SEARCH is an example of a regional seed model that has provided inspiration for efforts elsewhere and has brought the importance of crop diversity to increased public attention in the southwest and beyond.

Several successful past and current projects demonstrate the breadth of Native Seeds/SEARCH's activities and impact. Through its Sierra Madre project, it worked closely with the Rarámuri people of the Sierra Madre Occidental of northern Mexico to support their traditional livelihoods, including their rich agricultural systems. Native Seeds/SEARCH was also instrumental in establishing a botanical reserve in Arizona dedicated to the in-situ preservation of wild chilies (*Capsicum annuum*), the first reserve of its kind in the United States. It also founded the Traditional Native American Farmers' Association, which networks and supports the work of Native farmers in the United States. The Desert Foods for Diabetes project provided education on the benefits of wild and domesticated desert foods from the southwest for people suffering from obesity or diabetes, and the Diné Cultural Memory Bank produced an educational programme to teach Diné children about their people's traditional agricultural crops and practices. Native Seeds/SEARCH recently established the first 'seed library' (a small community seed bank with free exchange of seeds) in Arizona and provided seeds and education to help get others started in the region, including a sophisticated network in eight public libraries in Tucson. Native Seeds/SEARCH has also been instrumental in the recent revival of a local heritage wheat variety called White Sonora, which is contributing to the re-establishment of a local grain economy in southern Arizona.

In many ways, the model for regional seed security that Native Seeds/SEARCH developed has proved to be successful, but much remains to be done. The organization has operated under a centralized model of seed production and distribution, which, while efficient and effective in some respects, fails to fully engage the entire community in the management of the region's crop diversity and, therefore, does not achieve the full potential for adaptation and resilience. Furthermore, the increasing demand for the desert-adapted seeds stewarded by Native Seeds/SEARCH is putting a strain on the ability of the organization to produce an adequate quantity and diversity of seeds. In combination, these and other considerations stress the need for a more decentralized, community-driven approach to regional seed production, distribution and education, with robust mechanisms for seed backup and exchange. We envision an integrated network of community seed banks and seed libraries in the region, with Native Seeds/SEARCH providing a valuable supporting role, and with a strong community of empowered custodian farmers forming a solid foundation.