Expedition: The Taro Tales – Ethnobotany of Fiji's Prestige Crop

Field Study: Carpology

Summary: Global crop diversity is being lost at a rapid pace due to ecological erosion – more than 93 percent of vegetable varieties have already been lost. However, seeds, if preserved, can be vital tools for adapting to changing climates and ensuring food security. As a Genebank Impacts Fellow for the Crop Trust, Sefra Alexandra was charged with conducting an ethnobotanical impact assessment that highlights the fundamental importance of safeguarding global diversity of seeds, particularly in the case of taro. Her work included collecting stories about how taro seeds that had been stored in a seed bank helped maintain taro as a staple food crop in Samoa, after the Taro Leaf Blight in 1993.

THE EXPEDITION

The ethnobotanical expedition in the South Pacific was focused on understanding the process and protocols of in vitro conservation strategies at the Centre for Pacific Crops & Trees and the distribution and germplasm accession pathways.

Sefra Alexandra with the WINGS flag

Understanding this process was a vital prerequisite to document the "Tale of Taro Leaf Blight," the South Pacific's version of the Irish Potato Famine, from devastation to resurrection. The hunt for global diversity of taro – *Colocasia esculenta* — that was resistant to the devastating blight was the impetus and core collection that started the genebank in Fiji. This parental material was then utilized by breeders to create hybrids that were both palatable and resistant to the blight, a successful process that took a decade. This germplasm has proven an invaluable global resource as other nations have faced the blight in their soils.

Fieldwork conducted during the expedition in the Cook Islands, Fiji, Hawaii, New

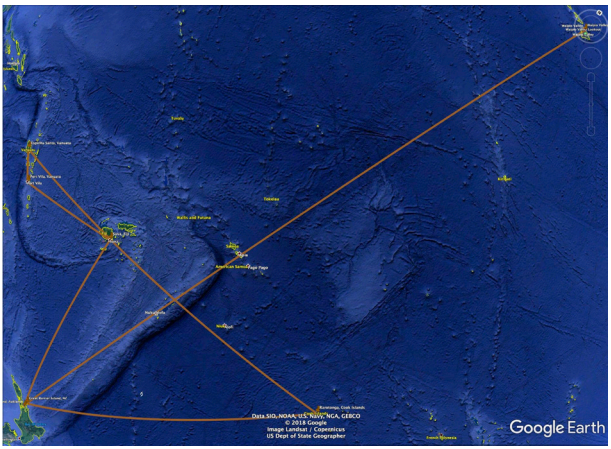
WHO
Sefra Alexandra

WHAT
Impact assessment of taro in Fiji

WHEN
Nov. 4, 2018 - Jan. 4, 2019

WHERE
The South Pacific: Cook Islands, Fiji, Hawaii, New Zealand and Vanuatu

WHY
To study and document how seed banks helped maintain taro as a staple crop after the Taro Leaf Blight in the 1990s



Sefra Alexandra's expedition route

Zealand and Vanuatu, brought Sefra's team to experts ancestral taro fields that demonstrated varying cultivation with culinary preparations from all parts of the edible plant. There is great pride in the stewardship of this sacred plant, considered the greatest ancestor of the Hawaiian people in their origin story.

Through in-depth interviews of scientists, economists, breeders and farmers involved in this disaster, the team was able to highlight the genebank's vital role in the recovery of the main export and staple of Samoa, as well as in fields around the world. They were also able to capture the cultural significance of this crop such as "giving dalos" (as taro is known in Fiji) at births, deaths, weddings and in conflict resolution. They witnessed the coronation of a king for the first time in 79 years in the Cook Islands, where the whole island brought taro as offerings and traditional preparations of the crop were a focal part of the ceremony. The fragility of losing this crop or any others on a global scale not only threatens starvation and malnourishment, but also a loss of cultural tradition and the roots that

Sefra Alexandra, The Seed Huntress

tie community and nations together.

EXPEDITION GOALS

The overall goal of the expedition was to convey a collective understanding of the crucial importance of the prestige, cultural totem and staple aroid taro, and how precarious our planet's crop cultivation system is without the reinforcements of the global seed banking system. The team sought to:

Taro conserved *in vitro* at the Centre for Pacific Crops and Trees / Photo courtesy Neil Palmer, Crop Trust

- Gather an impact story that highlights the vital importance of safeguarding global diversity of seeds
- Understand the *in vitro* conservation strategies at the Centre for Pacific Crops & Trees and distribution pathways of germplasm accessions
- Document the "Tale of Taro Leaf Blight," (the South Pacific's version of the Irish Potato Famine) from devastation to resurrection and highlight the genebank's role in the recovery
- Film the various cultivation methods & culinary preparations & techniques of *Colocasia esculenta* through an ethnobotanical lens

CHALLENGES FACED

There is negligible funding for the preservation, breeding and multiplication of taro – a critical staple in many subsistence farming nations around the planet, which is in fact among the 14 most eaten vegetables in the world. This crop only has a handful of aging breeders working on developing taro for the new climate challenges it faces and is severely exposed on the global market due to the lack of attention and support it receives. The nutritional and cultural importance of this prestige crop cannot be overstated.

The team also found:

- A great awareness had to be paid to "protocols" in the South Pacific. The Island nations are largely run as "chiefdoms" that have very strict hierarchies that must be followed. Sefra's affiliation with the Secretariat of the South Pacific and her seasoned team were able to navigate her through these delicate issues.
- Future funding may allow for a dedicated cameraman, as conducting interviews while filming created a less fluid conversation than could be facilitated with a larger team.

EXPEDITION RESULTS

This expedition provided a visceral understanding of the need to preserve global crop diversity. In one year, Samoa lost almost 100 percent of their staple crop, their main export,

and the most vital aspect of their cultural traditions. The clonal propagation methods of the ancient "plants of the canoe people," created a very narrow genetic diversity of taro in the South Pacific. The arrival of Taro Leaf Blight created a global impetus to re-gather diversity from other centers of origin forming the World Centre of Taro – Fiji. Through breeders' dedicated work, new lines were bred and an island was saved. Safeguarding the world's germplasm is imperative: our global food security lies in our ability to understand how vital this work is and how important it is to support it.

The team in the mountains of the Cook Islands at an ancestral taro field

EXPEDITION FUNDING

Funding from the "Friends of the Crop Trust," in support of the 2018 Genebank Impacts Fellowship of the Global Crop Diversity Trust and a Flag Carrier grant from WINGS WorldQuest.

ABOUT THE FLAG CARRIER

Sefra Alexandra, The Seed Huntress, is on a perennial ethnobotanical expedition to conserve the biodiversity of our farms and forests by safeguarding the world's seeds. As a Genebank Impacts Fellow for the Crop Trust, she has gathered stories of the importance of utilization and sharing of plant genetic resource to adapt to changing climactic conditions. She has established community seed banks on island nations after natural disasters to fortify a regenerative model of resiliency, which supports food security & nutritional diversity through seed sovereignty. In her home state of Connecticut she is reviving a once prolific allium heirloom to promote stewardship of the historic agrarian landscape. Sefra holds her M.AT. in Agroecological Education from Cornell University and is a member of the Explorers Club.

EXPEDITION TEAM

- Sefra Alexandra, Expedition Leader
- Dr. Michel Ghanem, Programme Leader of Genetic Resources at the Secretariat of the Pacific Community
- Elena Shishkova, Strategic Planning Monitoring Evaluation & Learning Specialist at the Land and Resource Division of the Secretariat of the Pacific Community

CONTACT INFORMATION

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