

Facing food security risks: The rise and rise of the sweet potato in the Pacific Islands

4th July, 2019

Pacific Update



PACIFIC CENTRE FOR
ENVIRONMENT AND
SUSTAINABLE DEVELOPMENT

Private sector issues – Session 6C

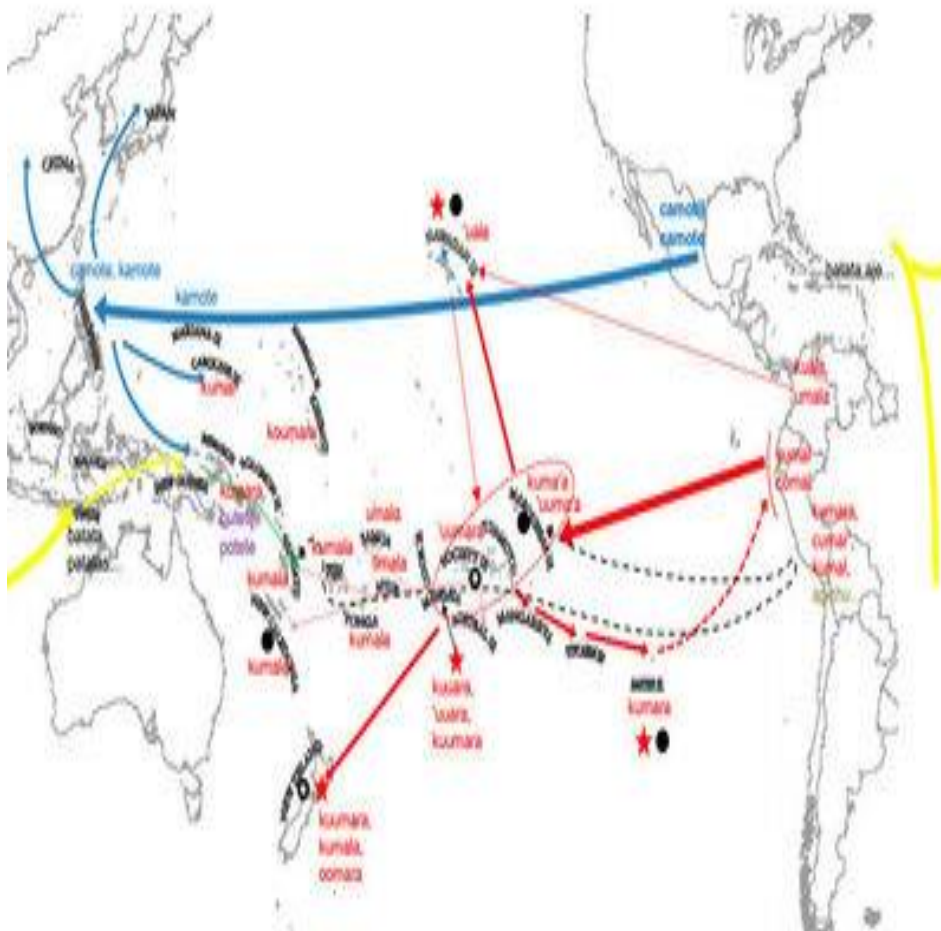
Viliamu Iesea,, Elisabeth Holland, Morgan Wairiu, Robin Havea, Soane Patolo, Minoru Nishi, Taniela Hoponoa, R. Michael Bourke, Annika Dean, Logotonu Waqainabete

“Climate change will adversely affect food systems in the region, including the supply of food from agriculture and fisheries, the ability of countries to import food, systems for the distribution of food, and the ability of households to purchase and utilize food” (Barnett, 2011).

Food security features of sweet potato

- **Availability** of food – ability to grow on both rich and poor soils, ability to grow non seasonal, good storage properties, high yield per hectare, level of tolerance against droughts etc
- Ensure yield is available when communities need food
- **Accessibility** – available all year, tolerant to some pests, can be easily grown on less lands, can be grown and harvested by anyone – inclusive crop
- **Utilization/nutrition** – very high in vitamin A, some varieties have low glycemic index and sugar content, easily cooked, can processed, less waste – use the whole crop – evidence of raw consumption
- **Stability** – can grow quickly – less exposure to hazards, increased level of tolerance to drought, cyclones, pests and diseases, temperature ranges, elevation (0m to 3000m)
- **Source of income**

Historical role of sweet potato



- Historically sweet potato has been the strength of food security in Pacific Island countries – PNG expansion of highlands, fill the “food security gap” produced by taro, yams etc; defines the movements of Pacific Island Countries and early explorers across the Pacific Islands
- **Ipomoean revolution – agent of change**
- **Oceanians – explorers, traders, missionaries, teachers**
- **Europeans – explorers, traders, missionaries, whalers**
- Disaster recovery roles – cyclone in Cook Islands (1830s), taro diseases in PNG and Solomon Islands, drought recovery

Roles at present: Superman to the rescue

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Fig. 1. Map of Pacific showing the countries where 166 varieties of sweet potato distributed by CePaCT between 2000 and 2014 originated. Drawn from data provided by the Pacific Community. NOTE: This map only shows the sources of varieties that are conserved at CePaCT germplasm centre in Fiji. It does not show many sweet potato varieties from Pacific Island Countries (PNG, Fiji) that are currently stored in other regional germplasm and research centres in the world.

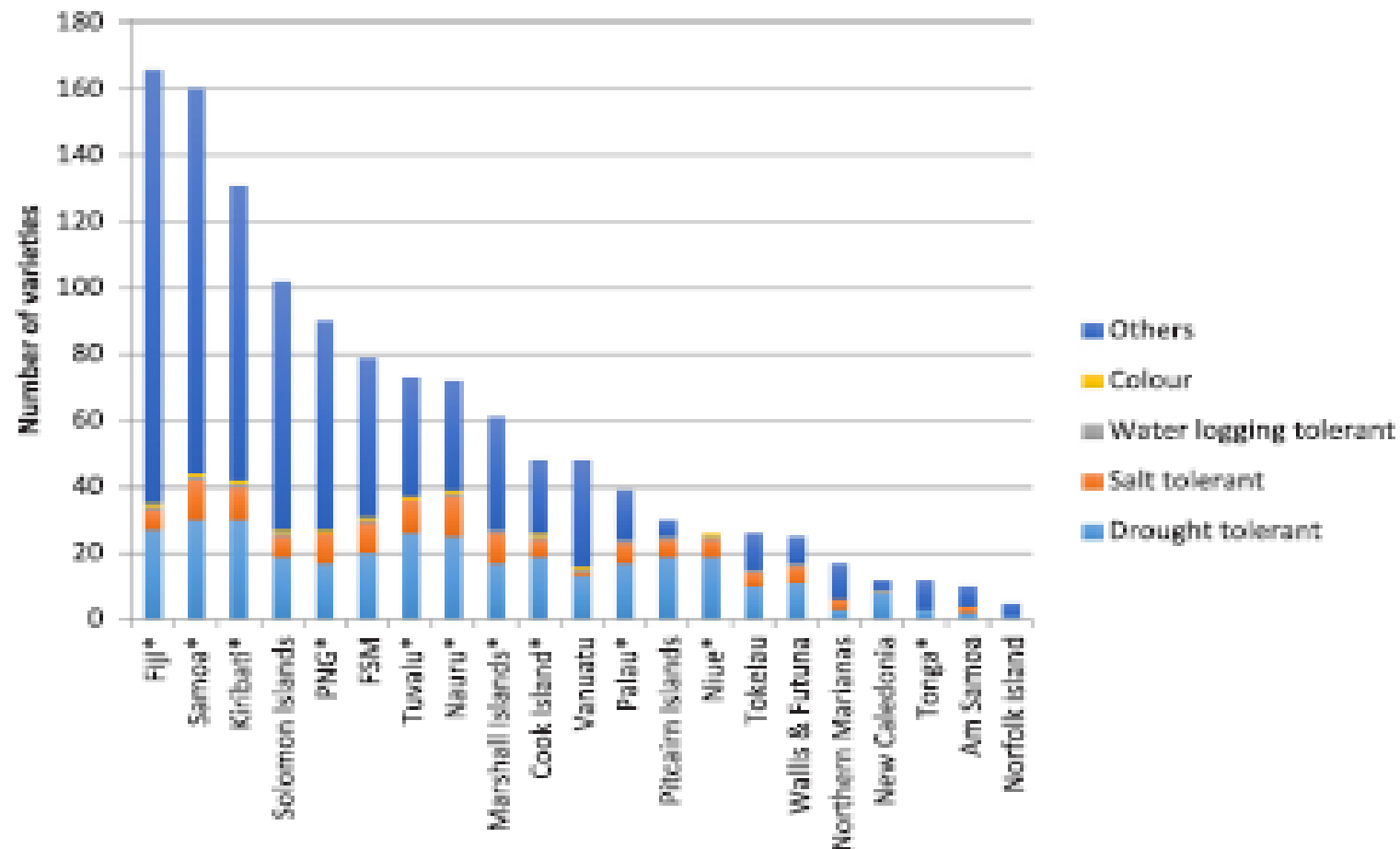


Fig. 2. Number of sweet potato varieties with resilient and other characteristics distributed by CePaCT to Pacific Island Countries between 2000 and 2014. NOTE: resilient characteristics are not the result of evaluations in countries but rather the characteristics recorded by country of origin. *Contracting party for the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) as of 5/08/2017.

Evaluation and impacts: Find superman's level of tolerance

"Acceptability depended on the willingness of the gardener to fit a new crop into his various plots and of the cook to fit a new food into the menu. The gardener needed to know how to propagate the plant, what spacing it required, its moisture needs and when it is ready for harvest. The cook had to know which parts were edible, and when, how to process them, and for how long." (Leach, 2005)

Need for partnership in research – evaluation, adoption, value adding, resilience

- Many varieties but lack RESEARCH on:
- What to plant; When to plant; Where to plant; Why to plant; How to plant?
- Kumala is also impacted by floods, droughts, salt water inundation; yield is unstable of 4 to 5 years – Limits to adaptation; Limits of tolerance
- Farmers can change their minds very fast – adaptation interventions become ineffective

Need

- Breeding programs – 1980s success and Samoa 1993
- Field evaluation – develop methods
- Sweet potato modeling research
- Value adding, storage, nutritional, sustainability
- Multi-partnership approach – participatory research

Positive story on roles of Tertiary Institutions – not all is dark!!!



Community food and health: Partners



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