



SEEDING SUCCESS IN VANUATU

DEVELOPING SEED PRODUCTION IN VANUATU TO ADDRESS FOOD SECURITY

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AuSPICA is collaborating with an Australian charity to bring sustainable potato seed production to Vanuatu and address some of the key UN sustainability goals in the region.

Vanuatu Prevention of Blindness Project Inc (VPBPI) is a compassionate Australian charity, led by Don and Meg MacRaild who are based near Sale, Victoria. The project was initially dedicated to providing access to prescription glasses for the people of Vanuatu. Evolving from its origins, VPBPI has expanded its mission to encompass annual pop-up medical clinics (with doctors flying in from Australia), the shipping of donated goods, and advocacy efforts for the Ni-Vanuatians residing in Australia.

The journey of VPBPI into extensive medical and optometry initiatives revealed a pressing need for enhanced nutrition and food security among the population. Recognising the potential of potatoes as an ideal staple crop, VPBPI aimed to diminish dependence on imported white rice, simultaneously fostering improved overall health, and contributing to economic growth in the region.

In recent years, the Australian Seed Potato Industry Certification Authority (AuSPICA) has joined forces with VPBPI to collaboratively develop a sustainable and viable potato production system in Vanuatu. In October 2023, both teams visited Vanuatu to conduct workshops and training programs to advance potato production, marking another milestone in this collaborative effort.

This joint initiative aligns with the United Nations' 17 Sustainability Goals, symbolising a shared commitment to making meaningful strides towards a more sustainable and secure future for all. AuSPICA is dedicated to playing a crucial role in leveraging Australia's expertise to support the development of nations in our region, with a particular focus on addressing food security and alleviating poverty through impactful collaborations.

The significance of forging partnerships and collaborations to combat poverty and food insecurity, gained formal recognition in the Declaration of Dublin: Fostering Potato Partnerships for Food Security, published by the World Potato Congress Inc. Proudly, AuSPICA actively engages in fostering collaborations and partnerships within the region, contributing expertise and know-how to support developing nations like Vanuatu.

POTATO COLLABORATION: ADVANCING SUSTAINABILITY AND THE UN'S 17 GOALS

The strategic partnership between VPBPI and AuSPICA on potato initiatives signifies a concerted effort to contribute to the United Nations' 17 Sustainable Development Goals (SDGs). This collaborative endeavour serves as a multifaceted approach, addressing several key aspects of sustainable development, including:

- No poverty
- Zero hunger
- Good health and well-being
- Gender equality
- Decent work and economic growth
- Responsible production and consumption



Photo credit (including top banner): Vanuatu Prevention of Blindness Project

POTATOES PROVIDE NUTRITION AND A RELIABLE FOOD SOURCE

The VPBPI medical teams have identified iron deficiency, birth defects and a high rate of diabetes as concerning health issues.

Although fresh produce is accessible during periods of favourable weather, many key nutrients are lacking from the Vanuatuan diet. This is worsened during periods of cyclone damage and recovery. Potatoes in the diet could be a key factor in reducing some illnesses, as they are an easily accessible and low GI source of key vitamins and minerals.

Many of the nutrients in potatoes are readily absorbed by the body – most notably iron and zinc. Potatoes have a high bioavailability of iron and zinc when compared to other plant-based foods. This is due to high rates of vitamin C (which aids iron absorption) and low rates of phytates (which inhibit absorption of iron and zinc).

The International Potato Centre (CIP) based in Peru is leading a program which aims to selectively breed new potato varieties with a higher content of iron and zinc. AuSPICA is developing a partnership with CIP to access these biofortified potato varieties for future trial and evaluation in Vanuatu and other countries with the Oceania region. The use of such potatoes varieties will advance the dietary nutrition and, in doing so, will address concerns of birth defects and anaemia resulting from poor nutrition.

Mia Novakovic is leading this collaboration with CIP and has identified that there is a major benefit to establishing a genetic resource bank in Australia that could provide high plant health material to the Oceania region. There is potential to achieve major social and economic benefits in the region through the availability of high yielding and suitable potato varieties including those that have been biofortified. AuSPICA is currently exploring

linkages with other countries within the Oceania region that may be interested in enhancing local potato production with the production of good quality seed potatoes.

POTATOES PROVIDE FOOD SECURITY

Currently in Vanuatu, there is interest in growing potatoes as a potential staple crop. However, up until now the local farmers have been unable to do so due to the lack of a reliable source of high-quality, affordable seed of suitable varieties for the local conditions.

Potatoes are mainly grown in Vanuatu for the fresh market, with many farmers buying new seed each year. There have been previous attempts to save part of each crop as seed, however, immediate food shortages during cyclone recovery have forced this method to be abandoned. Certified seed potatoes have been imported into Vanuatu on several occasions, but this is expensive and there have been problems associated with shipping conditions. In one case a consignment of 10 tonnes of seed was inadvertently frozen and made non-viable.

It was proposed that the importation of G0 seed was more affordable and carried less of a biosecurity risk. By importing seed at G0, and then multiplying in-field, the initial import cost is lower than certified seed and the potato supply chain within Vanuatu is extended, creating more employment and prosperity. For the past few years, AuSPICA, through the business Toolangi Elite, has provided minitubers of various varieties to trial in Vanuatu. This has been successful and shown that varieties such as Sebago, White Star, and Toolangi Delight can be grown in Vanuatu.

Generally, one minituber planted can produce four tonnes of potatoes after only five crops. In Vanuatu, it is possible to have at least two potato crops per year, so within a couple of years there is the ability to produce a significant food supply using potatoes. The recently formed Tanna Potato Growers Association is well on the way to realising the potential for potato production in Vanuatu. They have planted G1 seed grown from last year's minitubers (to be harvested G2) and planted G0 minitubers, to be harvested G1.

The farmers on Tanna are leading the development of a local seed



Photo credit: Vanuatu Prevention of Blindness Project

production supply for Vanuatu. During the recent trip, AuSPICA worked with the Tanna Potato Growers Association to develop a short guide to promote the production of high-quality seed potatoes. The guide was translated into Bislama - a widely used official language of Vanuatu. The guide provides documentation for the development of an informal seed scheme, the primary goal being to ensure a consistent supply of seed potatoes to meet the demands of the market and, in addition, ensure that pest and disease issues are addressed and effectively managed.

POTATOES PROVIDE ECONOMIC GROWTH

A seed potato industry in Vanuatu has the potential to provide a significant economic opportunity for local farmers and communities.

Potatoes can be grown on many of the 83 Vanuatuan islands. While not all are suitable for potato production, many regions do have the right conditions. Potatoes can be grown to supply food to local communities, to markets including local wholesale markets, or to support commercial tourism operations including hotels, etc. In discussion with grower groups, the AuSPICA team were consistently reminded that potato production could be a reliable cash crop for local farmers.

The island of Tanna was identified as a potential seed potato growing region. Rich, volcanic soil and year-round warm weather give the island an advantage in terms of productivity, allowing for two growing seasons per year. Potatoes are considered by locals to be less labour intensive than other root crops, such as manioc, which can be heavy and difficult to harvest.

DELIVERING EDUCATION AND TRAINING TO ENHANCE LOCAL POTATO PRODUCTION

During the visit to Vanuatu, AuSPICA's Mia Novakovic and Dr Nigel Crump provided educational forums on seed potatoes, explaining the following concepts:

- Nutritional value of potatoes as a food source
- Background information on tissue culture and the production of G0 minitubers
- The production of seed generations to maintain high seed quality
- The importance of record keeping in producing seed potatoes
- Costs and profits of seed potatoes
- Ways to minimise the risk of potato diseases
- Seed potato storage conditions

The forums were complemented with practical advice and information from Mr Allan Condron, an experienced potato and vegetable producer from Stratford Victoria. Allan Condron provided technical advice on land management, machinery, and general farming practices.

Attending each of the forums were members of the recently formed Tanna seed growers' association and fresh market growers, as well as members of the wider community who were interested in learning about seed potatoes.

In addition to the educational forums, a practical training day was held, featuring a demonstration of minituber planting – focusing on correct depth

in relation to tuber size. Community members, including children, were invited to join in and have a go at planting three varieties of potato minitubers, supplied by Toolangi Elite, Sebago, White star, and Toolangi Delight.

KEEPING THE MOMENTUM

Long term success is dependent on continued dialogue and support to build capacity and capability.

Overcoming connectivity challenges:

Maintaining contact is difficult as internet access is limited on Tanna, which proves to be a challenge in maintaining contact through more formal means such as email. However as many people still use Facebook when they can connect, AuSPICA has managed to offer specialised guidance efficiently and successfully to the growers in Tanna.

High-level collaborations:

During the recent visit to Vanuatu, a fortuitous meeting with the Finance Minister unfolded, providing an opportunity to delve into discussions about the future of potato production and the critical importance of food security. Key topics included the potential development of tissue culture in Vanuatu and the imperative for heightened collaboration, particularly with government institutions. The high-level engagement reinforces the commitment to weaving potato production into the fabric of Vanuatu's broader agricultural strategy.

"It was exciting to see firsthand the passion and interest of farmers to grow potatoes in Vanuatu. There is a significant need for Vanuatu to enhance food security and address human health issues caused through diet. It is wonderful to witness the success the Tanna growers are having in producing quality potato seed that will be the foundation for widespread potato production in Vanuatu."

- Mia Novakovic