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SAFT supports USAID's sweet potato research initiatives

he growing relationship between the Ministry of Agriculture and Fisheries (MAF) of Samoa and the School of Agriculture and Food Technology (SAFT) of USP paved the way for collaboration on sweet potato research. The United States Agency for International Development (USAID), through the Secretariat of the Pacific Community (SPC) and MAF of Samoa is implementing the project "Enhanced Climate Change Resilience of Food Production Systems in PICTs" of which comparative research on drought tolerant sweet potato is a major component in the work plan.

The collaboration will be through a research by PhD student Taniela Kepa Siose, entitled "Adaptability of selected sweet potato varieties to adverse soil conditions and their response to soil amendments under a scenario of climate change in Samoa". The research will be supervised by SAFT's Soil Science expert, Dr. Danilo Guinto, Senior Lecturer of SAFT.

IRETA

Sweet potato is not a new root crop in the South Pacific. It is regarded both as a resilient crop and a famine crop due to its adaptability to different climatic zones and lower nutrient requirements relative to other root crops. Despite the crop's value-adding potential, it is not widely planted by Samoan farmers because of their preference for taro. In order to address the issues of climate change and food security, there is a need to test the adaptability of this crop under different soil and climatic conditions before widespread adoption by farmers become possible.

The PhD research will involve testing the adaptability of three introduced sweet potato varieties under adverse soil conditions (acidity, infertility, alkalinity, etc.) that represent current and future soil conditions under a scenario of climate change; and assess the growth and yield response to various soil amendments under adverse soil conditions, i.e. chicken manure, mucuna and biochar.



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SAFT sees opportunity to bid projects for the Pacific-American Climate Fund Program

T n a pre-bidding workshop held in Apia, Samoa on the 16th July 2014, the Pacific-American Climate Fund Project implemented by the US Agency for International Development encouraged non-government organisations down to the community level to propose projects which will provide benefits to increase resilience to climate change. The funding assistance is open to 12 Pacific Island countries - Fiji, Kiribati, Palau, Federated States of Micronesia, Marshall Islands, Nauru, Papua New Guines, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

The funding assistance is flexible for any sector , i.e agriculture, water, forests and grasslands, fisheries, infrastructure, disaster risk management, health, education, ecosystem protection, etc. The program is targeting communities to become resilient to climate change by building institutional capacity. Projects funds are initially granted in manageable amounts but the project implementers will be trained to improve financial control and delivering quality project outcomes so they can qualify for bigger funds.

USAID Coordinator for Asia and the Pacific, Winston Bowman says they are expecting good distribution of climate change adaptation projects across the 12 participating Pacific Island countries. "The challenge is enormous as the program is regional in scope.", he further said. "We will ensure that administration of the project is properly monitored". The capacity of the project implementers will be put to a test particularly their human resource and financial management skills. It is hoped that at the end of the first cycle, the communities will be better equipped with good project management skills.

The objective of Pacific-American Climate Fund program is not limited to climate adaptation. USAID also recognises the need to boost food security in the PICs.

With these, the School of Agriculture and Food Technology (SAFT) represented by its Head of School Associate Professor Mohammed Umar sees the opportunity to increase the research capability of the school by proposing projects that will fulfil its mandate of helping PICs address food security, climate change adaptation and increased rural income. SAFT has qualified researches with a range of expertise on Soil Science, Crop Science (production and protection), Animal Science and Agricultural Economics and Extension).

SAFT sets up an Animal Sanctuary

The two Animal Science experts of USP SAFT, Dr. Siaka Diarra and Dr. Poasa Tabuaciri went all the way to have an animal pen established within the campus teaching premises. The "Animal Sanctuary" as they call it is located by the Animal Science Building on campus and will serve several purposes.



The sanctuary will enable better access for students to learn the practical skills of raising livestock during their laboratory classes. It will also allow visitors to see for themselves the animals raised on campus

during special events like the Open Days and SIDS Parallel Event which SAFT is hosting this year. By showcasing the animals and how they should be raised right at the heart of the campus, the profile of the Animal Science as a field offered by SAFT will be raised.

Breadfruit Institute giving back benefits to Samoa

I n a visit of Dr. Diane Ragone, Director of Breadfruit Institute, to the USP Alafua Campus on the 23rd July 2014, she humbly recognised the contribution of Samoa in establishing the Breadfruit Institute, which is globally renowned for its extensive research and distribution of breadfruit planting materials. Dr. Rogane has been working on breadfruit since 1985 when she took interest on the crop while doing her Masters degree at the University of Hawaii.



Her over 30 years of research and extension efforts

on breadfruit resulted in growing 120 varieties extensively from a total of 400 varieties collected around the Pacific. She is very grateful to USP Alafua Campus which paved the way for her extensive research on breadfruit in 1996.

The Breadfruit Institute which was established in 2003 exclusively looks at breadfruit production for distribution of planting materials. They use micro propagation which has the benefit of being not labour intensive. They have revolutionised the propagation of vigorous planting materials after extensive agronomic trials.

The institute also promotes conservation of breadfruit and provides royalty to conservationists for every breadfruit planted. Recognising the value of acquiring huge collection of breadfruit from Samoa, an agreement was forged between the Breadfruit Institute and the Government of Samoa for a 50/50 share of sale of the plants. The royalty will be redirected to the Ministry of Agriculture and Fisheries of Samoa for their use in breadfruit research particularly in value-adding opportunities, e.g. flour production, use as insect repellant, in local cuisine, etc.

This contribution of Samoa is recognised in other countries and Dr. Rogane kept on thanking everybody in Samoa for this huge contribution to the breadfruit industry in the world. On Mr. Mohammed Umar's question on availability of planting stocks for massive propagation, Dr. Rogane assured that the institute will not run out of planting materials. They are promoting five good varieties. The Scientific Research Organisation of Samoa (SROS) is already starting to grow breadfruit.

Breadfruit Institute is also actively doing some awareness campaigns on promoting value-added potential of breadfruit. She recognises that Samoa, though blessed with excellent conditions for breadfruit growing, takes the crop for granted. Her wish is for Samoa to follow the initiatives of Hawaii who reported great demand for breadfruit so is revitalising their breadfruit industry.



Dr. Rogane emphasised the opportunities to substitute potato with breadfruit in terms of gluten-free nutritional value so countries in the Pacific will not rely on potato importation. And, there is a huge potential for flour production using breadfruit, according to her.

A book of breadfruit recipes, "Ho'oulu ka 'Utu" is now available for people wanting to try breadfruit cuisines developed in Hawaii. Dr. Rogane gladly shared a copy of the cookbook as well as the Breadfruit

Production Guide which she co-authored to the USP Alafua Library.

Mr. Umar assured SAFT's interest in undertaking breadfruit research through the Pacific American Climate Fund and collaboration with the University of Hawaii where negotiations are already underway. He also encouraged the lecturers to get students to undertake research on breadfruit. Dr. Rogane expressed interest to collaborate on these.

SAFT's preparation for the SIDS underway

The participation of USP SAFT in the upcoming 3rd Small Island Developing States Conference is seen to promote the merits of undertaking agricultural research for sustainable development of the Pacific Island countries, thus the theme chosen for the parallel event "Agricultural Research for Sustainable Development and Intensification in Small Island Developing Countries". The parallel event will be hosted by SAFT at its USP Alafua Campus on the 2nd of September 2014 from 1 to 3:30 pm. Some 70 participants registered for the event.





The event will showcase the school's completed and ongoing researches undertaken by staff and students with funding mainly from the USP Faculty Grant, Graduate Student Assistanceship and the Australian Centre for International Agricultural Research

SAFT has highly (ACIAR). qualified lecturers and researchers in the areas of Soil Science, Crop Production, Plant Protection, Animal Science (Monogastric and Ruminant), and Agribusiness (Economics and Extension). The team of SAFT researchers are aligning their activities to address the food security, climate change adaptation and increased rural income of the PICs.





SAFT will deliver poster presentations, demonstrations and field visits in four sessions focusing on Soils, Crops, Animals and Agribusiness.

Paragrass found to be a good litter material for laying hens in Samoa

n a study conducted by SAFT students, Sairusi Neiubi, Juteci Lesumairotorua, andLimiva Verau, it was found out that paragrass hay which grows well in Samoa can be a viable substitute for expensive wood shaving as litter material for laying hens.

This substitution has both economic and environmental benefits. Comparable results were obtained using chopped and whole paragrass hay and wood shaving in terms of feed intake, hen-day production, mean egg weight, egg mass feed conversion ratio, and feather pecking. The higher cost



of using wood shaving compared to paragrass which abounds in Samoa yet underutilized would justify the economic benefits associated with the substitution. In addition, it is apparent that the use of naturallygrowing paragrass offers environmental benefits compared to wood shavings from cut trees. Different particle sizes of the hay however, need to be further investigated to determine the optimum benefit.

The study was ably supervised by SAFT's Monogastric Animal expert, Dr. Siaka Diarra.

Fiji-Tuvalu hold talks about agricultural commodities trade

Talks on the Rotuma - Tuvalu agricultural commodities trade progressed this week as officials from both governments met in Funafuti.

Minister for Agriculture, Inia Seruiratu led a delegation of government officials and met with his counterpart and stakeholders from the Tuvalu Government.

The visit organized by the Government of Tuvalu allowed Seruiratu and his delegation to meet with Tuvaluan stakeholders on issues pertaining to the Rotuma-Tuvalu agricultural commodities trade.

Seruiratu was accompanied by officials and representatives of the Prime Minister's Office, Foreign Affairs and International Cooperation, Agriculture, Biosecurity Authority of Fiji, Rotuma Export Marketing Company Limited and the Secretariat of the Pacific Community.

The Minister also paid courtesy calls to the Prime Minister Enele Sopoaga and the Minister for Foreign Affairs and Trade Taukelina Finikaso.

The delegation returned to Suva on Thursday. (*Rita Narayan*, *Fiji Broadcasting Corporation*, 12 *July 2014*)

Scoping out Tongas agricultural riches

gricultural projects with promising potential were placed under the spotlight recently, when Brother International Ltd and Pacific Cooperation Foundation visited the Kingdom of Tonga, for the Brother Agricultural Project. PCF private sector funder Brother International (New Zealand) funded the project, a feasibility study to review agricultural projects in the Kingdom.

Brother International (NZ) delegates Executive Chairman Graham Walshe, Chief Financial Officer Tony Lenton, Business Analyst Michelle Efaraimo along with Pacific Cooperation Chief Foundation Board member Nicole Metzger and Executive Laulu Mac Leauanae, journeyed to Tonga in late June.

News Bits

Over three days they met with various project stakeholders, onsite at farms and at functions.

The party met with prominent True Pacific certified exporters and producers including Tinopai Farms, Tonga's largest overseas supplier of coconuts, Nishi Trading (various produce) and Tupu'anga Coffee.

Also included on the list of meetings, was NZ High Commissioner Mark Talbot and representatives from Growers Federation of Tonga Inc, Tonga Chamber of Commerce and Industry, Embassy of Japan, Hammah Exports, Tonga Export Quality Management Limited, Lita Trading Office, and Ministry of Finance and Planning, Minister of Agriculture, Fisheries and Forestry and the Ministry of Commerce, Labour and Tourism.

Although still in the 'scoping-out' phase, processing, strategies within organisations, barriers to trade - In particular within the agricultural sector, risks and opportunities in the agricultural sector were discussed, says Mac.

Last year, squash pumpkin, coconuts, fresh fish, root crops, Kava Tonga and handcrafts were Tonga's main exports, with markets including Japan, Hong Kong, United States, NZ and South Korea. (*Pacific Cooperation Foundation website*)





Plant more coconuts, says MAF

has prompted the Ministry of Agriculture to speed up its coconut replanting programme.

"At the moment, there are not enough coconuts to cater for the growing demand," says Misa Konelio, ACEO Nu'u Crops Division.

"Most of the coconuts are coming from Savaii. But the coconut plantations in Upolu are also recovering very well from Cyclone Evans in December, 2012."

One problem the ministry is encountering is the age of coconut trees.

"About 60 to 70 percent of the trees are old. More than 40 years old and are no longer in their prime."

The ministry recently secured a 200-acre property at Mulifanua from STEC - which Misa says - will be cultivated with coconuts.

"The stimulus package is also doing very well. Some 500 acres are currently being cultivated with coconuts under the programme. The farmers make available two acres of land and we provide them with the coconut planting materials."

The ministry continues to promote the Samoa Tall variety, which, Misa says, "is a high quality coconut and better yield than other coconut varieties.

"There are other coconut hybrids available but many of them are only good for drinking, not for producing coconut oil."

Coconuts have been in high demand in recent months for the growing virgin oil export market as well as the export of canned coconut cream and palusami.

Agriculture pushes for mucuna use

o combat weed problems in our farms, Agriculture is pushing for the use of the mucuna vine to control weeds.

"It is not new to Samoa," says Misa Konelio, ACEO Crops Division at Nu'u.

"The mucuna legume has been here in Samoa since 1980."

Misa says the good thing about mucuna is that it is fast-growing and quickly suppresses weed, it is easy to kill, it provides fertilizer to the farm and that it is not invasive.

"The difference between mucuna and other invasive vines is that, if you want to get rid of it, you just cut off the main stem you planted and the whole vine dies. The stems do not root like other vines. It also doesn't affect the root crops and fruit trees."

Misa says that mucuna is a very useful alternative to the use of pesticides that could permanently damage the soil and affect crops and vegetables.

"It also addresses the continuing problem of a declining workforce in our farmland as young people move to town and seek other forms of formal employment.

The Crops Division has been inviting farmers to their headquarters at Nu'u to demonstrate how mucuna can be adopted and controlled in their farms. (*Tupuola Terry Tavita*, *Savali News*)



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AMA to buy nuts

HE Agricultural Marketing Authority (AMA) aims to buy 40,000 coconuts from farmers throughout Fiji every month.

This, as the authority has started its virgin coconut oil production in Nausori.

Authority sales and marketing manager Alivereti Yaya yesterday said they had started buying coconuts from Yacata Island in Cakaudrove, Moala in Lau and Rotuma.

"We have started processing virgin coconut oil and last month, we bought coconuts from farmers in Lau, Cakaudrove and Rotuma," he said.

"Our aim is to buy 40,000 coconuts every month at a cost of 40 cents per nut.

"So far, we have produced about 220 litres of oil and we are just waiting for the labelling and design works on the products.

"Once this is done, the oil will be ready for the market at a reasonable cost.

"Right now, we are just targeting our local markets as we are still working on promoting our products overseas. We will soon have a promotional tour to New Zealand and Australia and hopefully, we will extend our markets there."

At the same time, Mr Yaya has encouraged coconut farmers to plant and produce more nuts.

"Farmers don't have to approach us with their coconuts. Instead, we will go and buy from them.

"For us, this is one way of economically empowering the rural people and financially assisting them." (*Salaseini Moceiwai , Fiji Times Online*)

Plant more coconuts ... Continued from p6

The Agriculture minister recommends an average of 25 coconut trees to be planted on an acre of land, spaced out. A Samoa Tall in its prime can harvest up to 300-400 nuts a year. The tree can fruit in four years but peaks between 10-40 years.

There are no major diseases that affect Samoan coconuts apart from the coconut beetle which, the Ministry says, is very controllable.

"Farmers just need to burn old decaying coconut logs in their farms where the beetles breed." Under the stimulus package's mixed farming programme, the ministry also provides farmers with 750 cocoa and 250 coffee cultivars to be planted with among the coconut trees. (*Tupuola Terry Tavita, Savali News*)

SAFT supports USAID's sweet potato research ... Continued from p1

It is expected that the varieties that will adapt well to climate change conditions will be identified and that soil health and sweet potato productivity will be enhanced. The output, hopefully, can contribute to the promotion of sweet potato production for climate change adaptation and food security, human nutrition and health in Samoa.

What's On Campus

1st USP Savai'i Expo an astounding success

SP Alafua's 1st Savai'l Expo saw large number of students, business owners and community members trooping to the USP Savai'l Centre to learn what the university can offer to the people of Samoa. The event held on the 24th July 2014 was graced by the Honourable Minister of PSC and Public Enterprises, Lautafi Selafi Fio Purcell.





The Honourable Minister laid down his views on the great contribution of USP not only in Samoa but in the whole South Pacific region as well. He expressed delight on USP's effort to reach out to the Savai'i people who should also benefit from USP's mission of educating the

people of Samoa in the areas of Agriculture, Science, Law, Business, Environment, etc.



The students were provided with information materials to guide them in their pursuit of a professional career in the future. The main highlight of the displays is the demonstration of how a portable soil analysis works even in the remotest island.



The Savai'i students left the crowd in awe as they elegantly performed the traditional Samoan dance.

Agriculture resource base expanded

USP Alafua Library recently acquired new materials to expand the agriculture resource base of the campus. The following are now available for reference by staff, students and the external public:

	Title: Editor:	Sustainability of the sugar and sugar-ethanol industries. Gillian Eggleston	
		This book is about sugarcane industry and ethanol fuel industry and environmental aspects.	
	Title:	Animal husbandry regained: the place of farm animals in sustainable agriculture.	
	Author:	This is about livestock, animal food, sustainable and animal welfare.	
	Title: Editors:	Environmental impacts of modern agriculture.	
		This book examines the factors currently affecting agriculture on a global scale. Land use, soil qualify and the inherent production of greenhouse gases by agriculture each receive their own chapters.	
	Title: Author:	Rain gardens: sustainable landscaping for a beautiful yard and a healthy world. Lynn M. Steiner and Robert W. Domm	
		It includes planning your rain garden, building your rain garden, planting your rain garden, maintaining garden, and plant index.	
	Title:	The potato book Alan Romans	
		This book includes potato growing, history, seed potatoes, variety of choices, maintenance, harvesting, storage, second cropping, potato diseases, guide to potato varieties and rare varieties that may be available to gardeners.	
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