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Bioprospecting Samples Database
Launched



A Tribute To The Late Professor Bill
Aalbersberg



Read the attached RESCCUE
NEWSLETTER for the latest RESCCUE
project news

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IAS Congratulates Graduating Staff Members



IAS staff that graduated with Masters of Science in the second USP graduation ceremony in September 2018 (L-R) Ilaisa Kacivakanadina, Anjila Raghuwaiya and Iliesa Koroï

It was a September to remember for four staff of the Institute of Applied Sciences (IAS) as their hard work was paid off when they received their awards at the University of the South Pacific's (USP) Graduation ceremony on 20 September 2018. The ceremony saw three of the staff graduating with a Masters of Science and one with a Postgraduate Diploma.

Scientific Officers Ms Anjila Raghuwaiya of the IAS Laboratory Services and Mr Iliesa Koroï of the IAS Herbarium received their Masters of Science in Biology. Graduate Assistant Mr Ilaisa Kacivakanadina received his Masters of Science in Chemistry while Graduate Assistant Ms Mere Vere received her Postgraduate Diploma in Environmental Management.

Mr Ilaisa who works at the Pacific Natural Products Research Centre (PNPRC) of IAS commended the support of the PNPRC management toward his Master's thesis research work. "In our line of work we always need to plan well but a lot of times, circumstances can turn things south since the research done in the lab deals with bacteria whose growth is affected by the environmental conditions" says Ilaisa. The idea of juggling work and school may be daunting to some but Ilaisa found that in creating a clear line of communication between project managers and supervisors, he was able to balance the workload. He also acknowledged the guidance and support given by his family and friends.

Ms Mere Vere stated that the work she does with the IAS Environment Unit can at times be very demanding as it involves a lot of field work and time away from the university. However, in her experience, discipline, perseverance and making certain sacrifices to balance her studies and work paid off. She also allowed time for relaxation and fun to enable her to cope with her studies.

Dr Isoa Korovulavula, the Manager of the Environment Unit at IAS, in congratulating the graduates said that the development of staff knowledge and skills is one of IAS's overarching goals in its Strategic Plan 2017 – 2021. He further added that upskilling of staff knowledge allows IAS to better define its purpose in serving the region in the areas of applied sciences.

The Region's first ever Bioprospecting Samples Database launched: A success for GEF Nagoya ABS Project stakeholders



Permanent Secretary for Environment Mr Joshua Wycliffe, UNDP Environment Leader Dr Winifereti Nainoca, Permanent Secretary for iTaukei Affairs Naipote Katonitabua and the Institute of Applied Sciences Director Dr Johann Poinapen together launch the Bioprospecting Samples Database Source: Fiji Village.com

The South Pacific Region's first ever Bioprospecting Samples Database (BSD) was launched on the 20th of July 2018 at the Pearl Resort. Created by the Institute of Applied Sciences (IAS), the BSD was jointly launched by the Chief Guests UNDP Environment Team Leader Dr Winifereti Nainoca, Permanent Secretary for Environment Mr Joshua Wycliffe, the Permanent Secretary for iTaukei Affairs Mr Naipote Katonitabua and the IAS Director, Dr Johann Poinapen. The BSD was funded by the Global Environment Facility (GEF) - Nagoya Protocol Access and Benefit Sharing (ABS) project, implemented in Fiji by UNDP with project partners Ministry of Environment (MoE), the Ministry of iTaukei Affairs (MTA) and the Institute of Applied Sciences.

The GEF Nagoya ABS project brings more focus to the value of genetic resources that are accommodated in Fiji's biodiverse areas. It also elucidates the means by which benefits for ecosystem services could be used to stimulate conservation at the local level, while providing avenues for improved livelihoods. This project assists in addressing gaps and barriers to scientific research, particularly the lack of bioprospecting policy and guidelines, and technological and human capacity development in Fiji. It also addresses the limited national capacity to implement, institutionalise and operationalise ABS agreements and the Nagoya Protocol which was signed by Fiji in 2014.

As a result of this joint collaboration between project stakeholders, international partners and the communities of Yasawa, Beqa and Kadavu, IAS through its Pacific Natural Products Research Centre has with the permission of the landowners collected a wide variety of marine samples that have been sorted, analysed and recorded into the Bioprospecting Samples Database. This database is a momentous achievement for bioprospecting research as it is

the first of its kind in the Pacific.

The database houses biodiversity and screening information about marine samples collected in Fiji. Specific information include preliminary taxonomic details, location where samples were collected, scientific results and information such as DNA and voucher collections.

IAS Director discusses Hazardous Waste Management in the Region at the Second Clean South Pacific Roundtable



Dr Johann Poinapen addressing the audience on the need to enhance human capacity in Waste Management in the Pacific region

The Institute of Applied Sciences (IAS) Director Dr Johann Poinapen recently spoke at the second Clean Pacific Roundtable that was held from the 20 - 22 2018 August at the Pacific Islands Forum Secretariat (PIFS). The event was coordinated by the Secretariat of the Pacific Regional Environment Programme (SPREP) with the support of Japan International Cooperation Agency (JICA), the European Union (EU) and other partners and brought together relevant partners, government officials and stakeholders from around the region to discuss challenges, solutions and actions to address waste management across the Pacific.

Dr Poinapen was a panel speaker on the Hazardous Waste Management discussion held on the first day of the talks. He shared the experience and capabilities of USP on the Chemical Management Training, conducted by IAS in 2016, which covered 14 Pacific Island Countries (PIC). USP's experience involved the development of the relevant topics, training manual, best practices, toolkits and other resources to empower practitioners in the chemical industry across the Pacific. He highlighted on key learning including best practices that are necessary, relevant and most applicable to the Pacific region. Follow this link to read the full article: <https://www.usp.ac.fj/ias>.

New Learning in Management of Marine Protected Areas



Professor Mark Hay gives his presentation at the Research Seminar held at the University of the South Pacific

Healthy and successful small Marine Protected Areas (MPAs) that harbor healthy coral assemblages become attractive to large coral consumers that could threaten MPA stability and contribute to the dramatic global decline in coral reefs. These were part of the findings that were presented in a seminar organised by the USP Research Office and the Institute of Applied Sciences (IAS) on 2 July 2018 at the USP Lower Campus Lecture Theatre. The presenters Professor Mark Hay, the Teasley and Regents Professor at the School of Biology and Aquatic Chemical Ecology Centre at Georgia Institute of Technology (GIT), Atlanta, USA and his Postdoctoral Fellow Dr Cody Clements have been conducting research in Fiji for the past 14 years. The seminar was also held in memory of the late Professor Bill Aalbersberg, the former Director of IAS who is fondly remembered as the founding father of the Locally Managed Marine Areas (FLMMA) and who had supported the collaborative research done between IAS and GIT for over 14 years.

Audience members which were comprised of the Fiji Government officials, Fiji LMMA, USP academics, technical staff, researchers and students learned that the Pacific had a recorded 50% loss of coral reefs from the 1980s to 2000 period and another 50% loss in some areas during the 2016 bleaching event. It was also noted that between the 1980s to 2000, there were four good reefs providing juvenile fish and corals to save one degraded reef but post 2003, there is now only one good reef to save six degraded reefs.

The research strongly suggested that it is critical that proper management of MPAs is conducted to avoid critical “tipping points” from healthy to degraded reefs. The research findings also included the following:

- That once macro-algae become abundant, they not only suppress fish and coral recruitment, but also suppress herbivory, suppress chemical defenses against pathogens and enhance seaweed growth and survival.
- As seaweeds suppress coral growth, the study found that herbivorous fishes that feed on these seaweeds are in decline and there needs to be increased awareness to avoid overfishing of these herbivores.
- Where it was generally assumed that healthy MPAs were producing and distributing larvae to help damaged reefs recover, it was determined through the use of molecular biological tools that most of the larvae from healthy reefs may return to parental reef rather than to damaged ones – which need these larvae to recover.
- That when small MPAs succeed and harbor healthy coral assemblages, they become especially attractive resources for large coral consumers like the crown-of-thorns sea stars. These sea stars selectively migrate to MPAs and threaten the MPA stability.

The presenters added that in light of the conservation and establishment of MPAs in Fiji and the region, reviewing the management of the MPAs and manipulating certain species to achieve desired effects can increase reef resilience.

Dr Katy Soapi, the Manager for the Pacific Natural Products Research Centre at IAS, in thanking the presenters stated that these types of collaborative research findings provide crucial evidence for policy and decision makers to take actions to ensure the health of MPAs and also that these findings are relayed to the locals and custodians of the MPAs.

The Institute of Applied Sciences holds its first Advisory Board meeting



IAS Advisory Board Members with IAS Management

The Advisory Board of the Institute of Applied Sciences held its first meeting on 17 April 2018 at the USP ICT Conference Room, USP. Comprising of high level representatives of the Fiji Government, European Union, IUCN, SPREP and USP, the Board's main role is to provide guidance and advice on the strategic directions of the Institute.

In opening the meeting, the Board Chairman Mr Robin Yarrow, a former Permanent Secretary in the Fiji Government under various ministries and current Chairman of the Nature Fiji, emphasised on the importance of the Institute's role in Fiji and the region. He added that IAS's major areas of expertise underpins the many conservation, renewable energy and conservation issues in the region and it is crucial that proper advice and guidance is provided to ensure that IAS fulfills its purpose. He welcomed all members and noted that with their background and current roles; IAS will benefit from their contributions to strengthen its position in the region.

The Director of IAS, Dr Johann Poinapen shared with the members the goals of IAS as stated in the Strategic Plan 2017-2021 and also presented a video showcasing the services offered by the Institute. He highlighted the three main roles of IAS which are:

1. Training and capacity building
2. Services – Laboratory & Consultancies
3. Implementing Development Projects (implementing projects with or for partners, funding bodies or other stakeholders).

Members were also briefed on the achievements of the Institute and the status of collaboration work undertaken with various Government ministries and regional organisations. In particular, IAS along with its project partners is developing the Access Benefits Sharing concept for the use of marine resources for research purposes. IAS had also set up the Biofuel Laboratory as supported by the Fiji Government's Ministry of Infrastructure in light of the need to reduce usage of fossil fuel. In climate change mitigation, IAS has developed expertise in Socio-economic Environmental Strategic Assessments. IAS had also developed and offered short courses in Chemical Management and Conservation in responding to the training requirements in the region. IAS also recognizes the contributions of its funding organisations, regional governments, strategic partners and stakeholders in the successful implementation of its projects.

The Board members expressed their appreciation for the clarity of the provided information. They also made valuable recommendations on the strategic directions of the Institute of Applied Sciences to solidify its position as the leading scientific services provider in the region.

IAS Scientists contribute to Access to Genetic Resources and Benefit Sharing (ABS) Project National Consultation workshop



Key stakeholders of the GEF- Nagoya Protocol Access Benefit Sharing Project attend the National Consultation Workshop at the Pearl Resort

Scientists from the Institute of Applied Sciences (IAS) presented at the National Consultation Workshop on the Access to Genetic Resources and Benefit Sharing (ABS) project for which IAS was a partner. The workshop, held on April 24 - 25, 2018 at the Pearl Resort, Pacific Harbour was attended by key stakeholders involved in the ABS project including the United Nations Development Programme, Ministry of Environment, Ministry of iTaukei Affairs, Fiji Locally Marine Managed Areas and IAS.

The project “Discovering nature-based products and building capacities for the application of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (ABS) in Fiji” is funded by the Global Environment Facility (GEF) and implemented at the national level. The National Consultation Workshop on the Access to Genetic Resources and Benefit Sharing (ABS) project aims to address issues affecting national capacity to implement, institutionalise and operationalise ABS Agreements and the Nagoya Protocol which was signed by Fiji in 2014. The project workshop focused on:

- analysing feedback on the different policies and processes that are currently undertaken in Fiji in relation to ABS and identify gaps;
- reviewing and validating recommended permitting processes for genetic resources; and
- reviewing and validating recommended ABS policy framework for Fiji

Dr Katy Soapi, Manager for the Pacific Natural Products Research Centre (PNPRC) at IAS presented IAS’s research outcomes of the project which focused on the search for antibacterial, antifungal as well as anticancer activity from

marine and terrestrial samples. She highlighted the importance and urgency of formalising the national ABS policy and guidelines on bio-prospecting research. This will also address the current gaps, barriers and streamline bio-prospecting and other related scientific research while ensuring that owners of resources obtain tangible benefits from the use of their resources in Fiji and the region.

Water Quality Tests

WATER QUALITY

<p>Physical</p> <ul style="list-style-type: none"> — Chlorine — Conductivity — pH — Residual Free Chlorine — Total Dissolved Solids — Total Suspended Solids — Turbidity 	<p>Chemical</p> <ul style="list-style-type: none"> — Alkalinity — Ammonia — Biological Oxygen Demand — Cadmium — Calcium — Chemical Oxygen Demand — Chromium — Copper — Hydrocarbon — Lead — Magnesium — Manganese — Mercury — Nitrate — Nitrite — Oil & Grease — Potassium — Reactive Dissolved Phosphorus — Silica — Sodium — Sulphate — Total Hardness — Total Phosphorus — Zinc 	<p>Microbial</p> <ul style="list-style-type: none"> — <i>Enterococci</i> — <i>Escherichia coli</i> — Faecal Coliforms — <i>Faecal Streptococci</i> — Heterotrophic Plate Count (Total Plate Count) — <i>Pseudomonas</i> — <i>Salmonella</i> — Total Coliforms
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WATER TYPES

- **Drinking Water**
- **Recreational Water**
Pool, Rivers, Sea Water
- **Wastewater**
Effluent

SAMPLING AND COLLECTION OF WATER SAMPLES CAN ALSO BE ARRANGED

This is the **ONLY** Internationally Accredited Food, Water, Environment and Biofuel Samples Testing Laboratory in Fiji and in the South West Pacific. It is internationally accredited to NZS/ISO/IEC 17025.

CONTACT US
 Manager Laboratory Services, Dr Vincent Lal, Tel: 323 2965 / 323 2967; Email: vincent.lal@usp.ac.fj

Kava industry stakeholders trained by IAS on kava species testing

In an effort to improve the quality and quantity of Kava currently being exported from Fiji, the Institute of Applied Sciences (IAS) conducted a training on 21 and 25 April for kava industry stakeholders on identifying different types of Kava. With the support and endorsement of the Ministry of Agriculture (MoA) Fiji, Biosecurity Authority of Fiji (BAF), Fiji Exporters of Kava and in collaboration with the Pacific Horticulture and Agricultural Market Access (PHAMA), the training focused on Colorimeter Testing on Kava species. The IAS Laboratory Manager Dr Vincent Lal and Scientific Officer Jeremaia Koroijjuta facilitated the training and the participants were from the MoA, PHAMA, FEK and BAF.

The Kava industry is generating millions of dollars for the Fijian Economy and with the re-opening of the European market for Kava and the existing markets in other countries, there remains a strong need to protect the Kava cultivated and processed in Fiji. Most data from Kava publications confirm that varieties of Kava were classified into two types - Noble Kava and Two-day kava. Further research suggests that lethargy and nausea may not be the only harm of Two-day cultivars but Flavokavain B (FKB) a chalcone from kava root has been proven to be toxic to some liver cells (hepatotoxicity). Under normal preparation and consumption of Noble Kava root the amount of FKB is negligible or non-existent. Once kava is dried and ground, Noble and Two-day varieties are indistinguishable and can only be differentiated through High Performance Liquid Chromatography (HPLC) analysis of chemotype, of FK/KL (Flavokavains/Total Kavalactone content) or Acetonic colour testing.

Kava stakeholders had consistently raised the need for a rapid assessment to distinguish the so called “Good Kava” from the “Bad Kava” here in Fiji. IAS was to adopt the method developed by a leading Kava specialist Dr Vincent Lebot who also had worked on selected Vanuatu varieties. IAS screened through selected Fiji varieties for method development, presented its findings and conducted the laboratory-based training on how to use the simple colourimeter kava kit for the participants.

The participants at the training collectively agreed that the quality of the content and delivery were very satisfactory. The Talanoa session that followed highlighted for more quality data to be gathered to capture the entire Fiji varieties for formulation of the Fiji Kava Quality Control policies. In addition more scientific research and development programs for Fiji Kava in other related scope is needed to develop the Kava industry.



Training facilitator IAS Scientific Officer, Jeremaia Koroijjuta collecting samples of kava for testing



Kava Colorimeter Training facilitator Jeremaia Koroijjuta explains the procedure of kava colourimeter testing to participants



IAS training facilitator assists a participant in the Kava Colorimeter testing demonstration

Kava Quality Testing Available

**Is The Kava That You Are Selling Or
Consuming Safe?**



KAVA CAN BE TESTED FOR:

CONTAMINATION: Yeasts and Moulds & Mesophilic Aerobic Plate Count

QUALITY: • Moisture Content • Kava lactones • Kava Chemotype



Be a responsible exporter and get your kava or kava products tested at the Institute of Applied Sciences, Laboratory Services.

This is the **ONLY** Internationally Accredited Food, Water, Environment and Biofuel Samples Testing Laboratory in Fiji and in the South West Pacific. It is internationally accredited to NZS/ISO/IEC 17025.

CONTACT US

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In loving Memory of Professor William “Bill” Aalbersberg

The Institute of Applied Sciences (IAS) staff were saddened by the passing of Professor William (Bill) Aalbersberg, the former Professor of Organic Chemistry at The University of the South Pacific and former long-term Director of IAS. Bill had passed away peacefully in his sleep in February this year and was surrounded by his family and friends.

Professor Bill as he is commonly referred to had been with The University of the South Pacific for more than 27 years. He served as the Lecturer, Senior Lecturer, Reader in Chemistry and Professor of Natural Products Chemistry before becoming Director of the Institute of Applied Sciences from 1999 to 2014.

Professor Aalbersberg's passing away is a significant loss to USP. He made huge contributions over his long tenure with us. We remember Bill as a fellow academic, as a staff member and as someone who worked under the Vice-Chancellor and President for Institutes. Bill was passionate about his work, very committed to building the capacity of regional staff, and totally committed to USP. One of his defining characteristics was his ability to always view things from the institutional perspective - he was a strong institutional person, always willing to go the extra mile. Bill also combined his strengths as an academic with his strong management and engagement from which USP benefited enormously.

His innovative ideas changed the Institute of Applied Sciences into an internationally recognised and respected entity in the field of conservation, improving the quality and reliability of test results data, with the IAS Laboratory achieving international accreditation, ensuring an Access Benefit Sharing (ABS) process is in place for bio prospecting, in marine and natural products research, and in the capacity building of professionals and communities in the area of conservation and environmental science. His passion was in community work, especially community-based management and integrated coastal management. For his work in these areas, he was awarded the Walter B Jones Memorial and National Oceanic and the Atmospheric Administration Excellence Awards for Coastal and Ocean Resource Management in 2005 and, as part of the Fiji LMMA network, the United Nations Equator Initiative Award in 2003.

Professor Bill had acquired funding to the tune of millions of dollars and was the recipient of many awards which enabled IAS to expand its scope of services and increase its employees and research students. His research work



spanned a number of research disciplines such as Natural Product Chemistry, Food Nutrients and Contaminant Analysis, Environmental Chemistry, Climate Change, Natural Resources Management, the results of which have influenced national policy development, trade and standards regulations and pioneering of framework that are currently being utilised in the areas of climate change and conservation.

A leader, lecturer, supervisor, mentor and a friend, Professor Bill was known for his determination to develop capacity in the areas of applied sciences, with many of his students and mentees benefitting from his wealth of knowledge to become leaders in their own areas of work. Professor Bill has over 230 publications in key scientific research areas and has mentored and supervised various Masters & PhD students. He was also on the Editorial Board of numerous publications journals and Head of numerous Government committees on Biodiversity, Trade and Standards & Food and Nutrition.

Professor Bill walked the talk; a man committed in both words and action. One of his many gifts was his ability to converse in a number of languages and local dialects. He showed concern for the environment and especially the people, and is known for sharing 'kava' with local community members, staff and family members and academics. One of the radical contributions he made in the discourse of resource management in Fiji and the Pacific is the emphasis on gender, specifically the involvement of women and their capacity enhancement in leadership and management in the traditional customary structure.

Professor Bill will be remembered by his former students, colleagues and friends for his selfless and generous personality. He has left behind an outstanding legacy that we can further build on and he will be dearly missed. May he rest in peace.

An endemic tree planted and a plaque installed at the USP Lower Campus on 16 August 2018 for the late Professor Bill



USP Vice-Chancellor and President Professor Rajesh Chandra unrolling the memorial plaque for Professor Bill



L to R, Mr Robin Yarrow, Chairman of IAS Advisory Board, USP Vice-Chancellor and President, Professor Rajesh Chandra, Dean FSTE, Associate Professor Anjeela Lokhan and Director IAS, Dr Johann Poinapen with the memorial plaque

IAS Family and Friends Remember Professor Bill

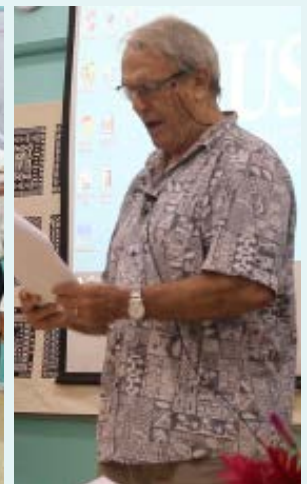
The IAS Family held a memorial function for the late Professor Bill on Friday 22 June 2018 where his close friends and former colleagues reminisced of the positive impact Professor Bill had on their careers and lives.



Mr Apisalome Movono, a close friend and former colleague of the late Professor



(From L-R): Dr Katy Soapi, Dr Bale Tamata, Dr Sereana Kubuabola, Arun Pande, Aisha Khan, Dr Isoa Korovolavula, Alivereti Tawake, Dr Johann Poinapen, Alivereti Naikatini, Professor Randy Thaman and Ashok Muni



Professor Randy Thaman delivers his tribute during the ceremony



Photo display of Professor Bill



Guests during the service



Mr Ashok Muni, a close family friend of the late Professor


The Institute of Applied Sciences pays tribute to Ratu Akuila Sovatabua, a true pioneer of Conservation in Fiji and the region

The Institute of Applied Sciences (IAS) extends its deepest condolences to the vanua Verata, the chiefly village of Ucunivanua, Tailevu and the family of the late Ratu Akuila Sovatabua, a pioneer of the community based marine resource management, now known as the Locally Managed Marine Area network (LMMA). A former Lead Trainer for IAS, Tu Sova as he was fondly referred to, was instrumental in the conception and inception of the community based environmental management and community governance in the early 1990s.

Tu Sova first engineered Fiji's first successful Access Benefit Sharing mechanism in bio-prospecting at the local level which has now developed into a wider-funded project by the Global Environment Facility with facilitation by UNDP and coordinated by IAS for Fiji. He had also conducted one of the first Leadership & Management Training for traditional leaders in the 14 provinces with Ministry of iTaukei Affairs between 2009 - 2012.

A softly spoken gentleman, Tu Sova was held in high regard by the Vanua's traditional leaders for his deep knowledge of traditional protocols, handling these with a high degree of sensitivity in recognising the bonds of the indigenous to their land and marine areas. He emphasised on treading cautiously with the leaders of the Vanua, observing the hierarchies and customs within a traditional village setting in introducing changes to benefit the Vanua, its resources and its people. This respectful approach had resulted in the maximising of participation and engagement of communities that he worked with, and contributed largely to the success of conservation measures initiated by IAS, government ministries and other NGOs involved in marine and land resources conservation and management in Fiji and the region.

The 12th century theologian and author John of Salisbury had noted "We are like dwarfs sitting on the shoulders of giants. We see more, and things that are more distant, than they did, not because our sight is superior or because we are taller than they, but because they raise us up, and by their great stature add to ours." This truly reflects the legacy of Tu Sova; who in his trail are a number of trained and successful conservation leaders. Amongst these are former IAS staff who have gone on to hold high positions in National and Regional organisations and current IAS Staff members such the IAS Environment Unit Manager, Dr Isoa Korovulavula and Community Liaison Specialist Ratu Pio Radikedike who are continuing to build on the conservation work in the region. A gentleman of chiefly status, an elder, a mentor, and a close friend, Tu Sova is sadly missed by the Institute of Applied Sciences staff and students who had worked closely with him.



The service that the Institute of Applied Sciences Analytical Laboratory has just provided you has been accredited by the International Accreditation New Zealand (IANZ). This means that our service complies with the international standard ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories. Accreditation of our laboratory by the International Accreditation New Zealand is of considerable value to you, our customer. We have achieved accreditation after undergoing rigorous initial and on-going assessments of our laboratory.

The assessment covers:

- The competence of our staff.
- The integrity & traceability of our equipment and reagents
- The reliability or validity of analytical results.
- Our compliance with the ISO 9002 management system requirements.

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For more information on the IAS Laboratory's current scope of accreditation, visit the IAS website on www.usp.ac.fj/ias or the IANZ website on <https://www.ianz.govt.nz/directory/>

Confidence
Accurate tests help protect our health and environment

Competence
Results that are recognised throughout the world

Reliability
Certainty of knowing the best technical standards have been followed

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Institute of Applied Sciences' Pacific Natural Products Research Centre (PNPRC) carry out third Free Prior and Informed Consent (FPIC) for research and marine sample collections in the Tikina of Ono, Kadavu



Villagers of Nabouwalu and Naqara, Kadavu with IAS staff and government stakeholders after the FPIC awareness

The Institute of Applied Sciences' Pacific Natural Products Research Centre (PNPRC) and Environment Unit recently held the third Free Prior and Informed Consent (FPIC) awareness workshop under the Global Environment Facility-Access Benefit Sharing (GEF-ABS) project with government stakeholders in the Tikina of Ono, Kadavu from 21-23 February 2018. The project is being implemented as part of Fiji's commitment under the Nagoya Protocol on Access to Genetic Resources and the fair and equitable sharing of benefits arising from their utilization. The government GEF-ABS project stakeholders included the Ministry of iTaukei Affairs (MTA), Ministry of Environment (MoE), and the Ministry of Fisheries (MoF).

The FPIC workshop aims to establish participation and consultation with resource owners prior to using or having access to the resources in their coastal waters. Resource owners were provided awareness about the impending research work to be conducted particularly the collection of marine samples for bioprospecting and drug discovery research. Awareness was also raised about the Nagoya Protocol on Access and Benefit Sharing and for communities to manage their biological resources to ensure that there is fair and equitable sharing of benefits arising from the use of their genetic resources.

The project team first visited the island of Dravuni for a workshop with the communities of Dravuni and Biula under the Tikina of Ono. Having spent one night on Dravuni Island, the team then went on to Nabouwalu village where they conducted the same FPIC awareness for the villages of Nabouwalu and Naqara before travelling by boat to Narikoso village where

another workshop was held. The third day of the trip was spent in Narikoso village where the FPIC delegation had the opportunity to rest and indulge in the beauty of Kadavu. By Friday evening, the team travelled by boat to the village of Vabea, where Nawaisomo representatives also joined in the FPIC awareness. The Kadavu FPIC concluded in Vabea village and the team spent the night there and departed for Kavala village the following morning to return to Suva.

The PNPRC manager Dr. Katy Soapi acknowledged the key partners of the project, the Ministry of Environment, the Ministry of Fisheries and especially the Ministry of iTaukei Affairs for their support in facilitating and organising access to the communities. She added that the outcomes of the GEF-ABS project will directly impact scientific research work undertaken by IAS, particularly for bioprospecting and drug discovery research. She further added that IAS has been sharing the types of research undertaken with both the government and the communities as part of the national ABS discussion so they are aware of the long process of drug discovery. During the workshop, consent forms were distributed and explained in the Fijian vernacular. Communities were then given time to digest the information and to return the forms with their consent when ready. The feedback from communities has been positive as the government works towards formulating ABS guidelines for Fiji under the Nagoya protocol.

The IAS Pacific Natural Products Research Centre has since 2001 been involved in bioprospecting work on marine and terrestrial organisms and plants and has been a recipient of a number of grants due to its success in past and present collaborative research.

The Pacific Natural Products Research Centre (PNPRC) holds Taxonomy Training Workshop at the Institute of Applied Sciences

A Training Workshop on Taxonomic Identification of Marine Invertebrates was held from the 14-15 February 2018 by the Pacific Natural Products Research Centre (PNPRC) of the Institute of Applied Sciences (IAS). The workshop focused on developing skills in Taxonomy and also the identifying specimens recently collected under the Global Environment Facility-Access Benefit Sharing (GEF-ABS) Project trip to Beqa in January 2018.

The workshop participants included representatives from the Ministry of Fisheries, Ministry of iTaukei Affairs and IAS.

PNPRC Assistant Project Manager, Klaus Feussner who facilitated the workshop, began with a general introduction into marine invertebrate taxonomy, particularly soft corals from the Phylum Cnidaria and sponges from the Phylum Porifera. He further discussed the common sponges and soft corals that the PNPRC team finds and collects in the field and highlighted the various challenges faced by divers when extracting some specimens. He also stressed to the participants the importance of knowing the diagnostic features of soft corals and sponges, as this would aid the species identification process in the labs.



Group photo of Taxonomy Training Workshop participants with the Pacific Natural Products Research Centre (PNPRC) Manager Dr Katy Soapi (far left)

Although there are few experts in marine sponges and soft corals in Fiji, Mr. Klaus believes that the study of marine benthic infauna is vital for bio-prospecting purposes and hopes that through the GEF-ABS project, there will be more interest groomed to take on the study of sponges and soft corals.

IAS Appoints New Lab Manager



Newly appointed IAS Laboratory Manager, Dr Vincent Lal

The Institute of Applied Sciences (IAS) is pleased to announce the appointment Dr Vincent Lal as the new Manager Laboratory Services. With his expertise in Environmental and Analytical Toxicology and passion in improving human health and wellbeing, Dr Lal will focus on improving the IAS laboratory services. This includes adopting the latest developments in laboratory analysis, reviewing results turn-around time, and staff training and development.

Having recently returned from the University of Queensland upon the completion of his PhD on Human Health Risk Assessment, Dr Lal is not new to IAS. He first joined IAS in 2007 as a Graduate Assistant where he completed his MSc in Monitoring for Persistent Organic Pollutants (POPs) in Fiji's environment under the guidance of the former IAS Director, Professor Bill Aalbersberg. Dr Lal was also a recipient of the 2017 Greg Urwin Award which enabled him to gain specialist skills from experts in the field of Environmental Toxicology and Health Sciences and contribute to building networks and further knowledge on issues related to cancer and human health risks affecting the Pacific region.

Dr Lal added that returning to IAS has come full circle for him, as this is where his interest and passion in the field of POPs began and he hopes to further IAS involvement and research in this field and others.

Dr Johann Poinapen, Director IAS said that Dr Lal's appointment is timely as he brings a new energy and creative ideas to IAS Laboratory Services, while at the same time he will be contributing to the POPs projects where IAS is the leading implementing organisation in the Pacific region.

IAS Pacific Natural Products Research Centre hosts GEF Project Stakeholders



Dr. Samson Viulu (centre) of the Pacific Natural Products Research Centre (PNPRC) Unit providing a demonstration to the United Nations Development Programme (UNDP) representatives

The Pacific Natural Products Research Centre (PNPRC) of the Institute of Applied Sciences recently hosted the Global Environment Facility (GEF)-Access Benefit Sharing (ABS) project stakeholders to a visit and tour of the PNPRC analytical facilities. IAS was awarded the GEF grant in 2015 and the visit held on Tuesday, 30 January 2018 was part of an outreach to donors and stakeholders to demonstrate the laboratory work carried out by PNPRC staff after samples are collected from the field.

The Global Environment Facility has provided funding for an Access Benefit Sharing project for Fiji entitled “Discovering Nature - Based Products and Building Capacities for the Application of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Fiji”. A major outcome of the project is to build capacity of Fijian institutions to perform natural product drug discovery and development activities in the country. In particular, the programme hopes to discover and develop new pharmaceuticals from natural sources and to conserve the resources from which these pharmaceuticals are derived. The GEF - ABS project builds on activities implemented by a bio - discovery initiative known as the International Cooperative Biodiversity Group (ICBG) in Fiji.

The project also addresses gaps in working with the local and national governments in securing access to marine samples and establishing benefit-sharing protocols and mechanisms that support in-country research activities.

The visiting stakeholders included representatives from the United Nations Development Programme, Ministry of Environment, Ministry of iTaukei Affairs and Ministry of Fisheries.

A brief presentation was delivered by the CDDC Manager, Dr. Katy Soapi on the basis of work offered by the Centre and the various stages of bioprospecting that are carried out in the PNPRC facilities. The guests were then taken on a tour of the PNPRC laboratory and viewed demonstrations of bioprospecting stages undertaken in the laboratory.

The stakeholders responded positively to the outreach and were pleased with the progress of the GEF-ABS project. The IAS Pacific Natural Products Research Centre has since 2001 been involved in bioprospecting work on marine and terrestrial organisms and plants and has been a recipient of a number of grants due to its success in past and present collaborative research.

IAS Graduate Research student attends Sakura Science Exchange Programme in Tokyo



IAS Graduate Researcher Mr Ilaisa Kacivakanadina receiving a certificate for the Sakura Science Exchange programme in Tokyo, Japan

Graduate Researcher with the Pacific Natural Products Research Centre of the Institute of the Applied Sciences was selected to be part of the Fiji delegation that visited Tokyo City University (TCU) from 26 November to 6 December 2017. Ilaisa Kacivakanadina, a Masters of Science student travelled with other students from the Faculty of Science, Technology and Education of the University of the South Pacific as part of the Sakura Science exchange programme.

The trip allowed students to visit the high-tech facilities at TCU, giving them hands-on training and experience on the use of some of TCU's sophisticated equipment. These include Scanning Electron Microscope, Differential Scanning Calorimeter, Supercritical Fluid Extractor and Gas Chromatography-Mass Spectrometry. As a result of the collaboration formed during the trip, Ilaisa's Masters research samples were analysed at the TCU laboratories

IAS Scientific Officer conducts specimens digitisation for the Fiji Field Guide at the Field Museum of Natural History, Chicago, USA

Scientific Officer Mereia Tabua from the Biodiversity Centre and South Pacific Regional Herbarium (BC & SPRH) of the Institute of Applied Sciences (IAS) recently visited the Field Museum Bryophyte Herbarium Chicago from 3-17 April 2018. The trip was aimed at working towards the completion of several ongoing projects revolved around documenting the diversity and distribution of bryophytes in Fiji and the South Pacific. This includes publication of new bryophyte records from Fiji, revised checklists of liverworts from Samoa and Cook Islands, a field guide to the common liverworts and hornworts of Fiji, as well as exchange of duplicate bryophyte specimens from Samoa between the Field Museum bryophyte herbarium and the South Pacific Regional Herbarium.

Mereia was a successful applicant of the Field Museum's highly competitive research scholarship and small grants programme, which offers short-term visiting scholarships to biologists and anthropologists worldwide, after being endorsed by two renowned bryologists, Dr. Matt von Konrat of the Field Museum and Professor Emeritus Tamás Pócs of Eszterházy Károly Egyetem, Hungary. A major goal of this visit was to digitise bryophyte specimens collected from Fiji for the Fiji field guide; this involved taking microscopic images using stacking software to capture the fine details of the specimens that are publication-worthy. More than 600 images of these specimens were taken.

This visit to the bryophyte herbarium and research facilities of the Field Museum is part of a continued collaborative effort

between IAS and bryologists from U.S.A, Australia, New Zealand, Norway and Hungary, in specimen-based research. This follows on from bryophyte collection expeditions done in Fiji in 2011 and 2012, in Samoa in 2016 and in the Cook Islands in 2017. Very little is known of bryophytes in the South Pacific and this joint research effort is paving the way to discovering more of these micro-plants that are of great biological and ecological significance.

The bryophyte research work and data compilation is an important component of the services offered by the Institute of Applied Sciences in ecological and biodiversity assessments.



A Porella liverwort specimen as seen under 40X magnification taken at the Field Museum Bryophyte Herbarium in Chicago. Credit: Margaux Fischer

FOOD TESTING

Are your food products and premises in compliance with the Food Safety Act & Regulations?

Ensuring food is safe from microbiological contamination is a priority and a legislative requirement at all stages of the food chain



IAS with its accredited laboratories and highly experienced staff & extensive range of microbiological tests, offers food safety and quality assurance tests.

Are your products safe for consumption?

MICROBIOLOGICAL TESTS INCLUDE:

Typical Enumerations

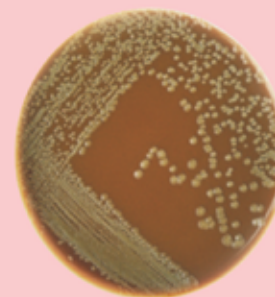
- *Bacillus cereus* (presumptive)
- *Clostridium perfringens*
- Total Coliforms
- Faecal Coliforms
- *E. coli*
- Enterobacteriaceae
- *Pseudomonas aeruginosa*
- *Staphylococcus aureus*
- Coagulase positive Staphylococci
- Aerobic Plate Count
- Yeast and Moulds
- *Listeria spp*
- *Listeria monocytogenes*

Pathogens

- *Salmonella spp*
- *Listeria spp*
- *Eschericia coli*
- *Campylobacter spp*

In addition to routine microbiological analysis of food samples, we also offer the following services:

- **Shelf-life Evaluation** with standard storage conditions (refrigerated or ambient) or bespoke trials to mimic consumer use with package opening and storage temperature changes as required.
- **Environmental Monitoring** – using swab samples and exposure plates
- **Hand Swabs** – monitoring for *S.aureus* and *E.coli*



The Institute of Applied Sciences Analytical Laboratory is the ONLY Internationally Accredited Food, Water and Biofuel Laboratory in Fiji and in the South West Pacific. It is internationally accredited to NZS/ISO/IEC 17025, which means that test results are internationally recognized and are reliable.

CONTACT US

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IAS Holds Strategic Plan Awareness Exercises for Staff Members



UNIT	OBJECTIVES	REASONS	STRATEGIC GOALS
1			
2			



Staff members during a strategic plan awareness exercise

Knowledge is Power and IAS recognises this by holding awareness meetings to increase its members' knowledge of the Goals and Objectives of the IAS Strategic Plan 2017 – 2021 with the understanding that:

1. When we inform our team members by clearly communicating the organisation's destination (Vision, Mission and Goals), they develop a sense of direction and focus.
2. When we inspire our team members by explaining why the destination is important, they develop the motivation and determination to see the journey through.
3. When we engage them in reaching that destination, they become more willing to make decisions, take appropriate risks and act in the best interests of the Institute and its stakeholders.

The meetings held with each IAS Unit members from May to September 2018 involved identifying performance indicators that staff can relate to and aligning these to their individual work plans for an improved sense of ownership of the Strategic Plan. Equally important was ensuring that evidences of achievements are clearly identified, quantified and monitored with proper records management in place.

In conducting the awareness exercise and actively obtaining staff feedback on its Strategic Plan, with all its members working towards a common Vision with passion and purpose, IAS including its stakeholders will collectively benefit and accomplish beyond expectations.

IAS Activities at a Glance



Mr Joape Ginigini of PNPRC with village members during the Free Prior Informed Consent (FPIC) consultation in Narikoso, Kadavu



Mr Ilaisa Kacivakanadina of PNPRC assists a workshop participant during a taxonomy training



Dr Katy Soapi of PNPRC with a village member at Nabouwalu Village, Kadavu



Ms Unaisi Vikumui of the Microbiology Laboratory analyses samples



Mr Alivereti Naikatini being interviewed during a video shoot for the SPRH Unit



Ms Mere Vere of the IAS Environment Unit after graduating from USP with a Post Graduate Diploma in Environmental Management



PNPRC Lab Technician Mr Talem Waqa collecting marine samples in Kadavu



PNPRC Assistant Project Manager Mr Klaus Feussner rests on the sea-floor in Kadavu waters before collecting marine sediment samples

IAS Staff Support Healthy Living Through Sports And Physical Activities

The Institute of Applied Sciences staff have involved themselves in various physical activities throughout the working week. The activities range from lunch hour gym sessions to afternoon Futsal training to name a few. This enables staff to invest in their health by taking part in an hour of physical activity that also develops stronger bonds among staff.



Staff members competing in an outrigger regatta



Zumba exercises for staff

IAS Holds Monthly Staff Morning Tea



Staff members during staff morning tea



Dr Johann addresses staff during the IAS morning Tea

IAS participate in another successful USP Open Day



IAS staff Ilaisa tends to students during the USP Open Day 2018

Bioprospecting Samples Database launch - A Success!



Staff prepare to garland the main guests at the Bioprospecting Samples Database launch

CALIBRATION OF LABORATORY TESTING EQUIPMENT



Equipment Calibration traceable to INTERNATIONAL STANDARDS for the following equipments:

- Thermometers-digital, alcohol/mercury & infrared thermometers
- Brix meters - hand held & bench-top meters
- Conductivity meters
- Turbidity meters
- Chlorine meters
- Incubators
- Water baths
- Muffle Furnaces
- UV-Vis Spectrophotometers
- Ovens
- Pipettes and dispensers
- Micrometers
- Vernier callipers
- Hydrometers
- Iron Testers
- Balances: top pan and analytical
- Masses: 1 g to 2 kg

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CONTACT US

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For more information on IAS Activities and latest updates

Visit our website: www.usp.ac.fj/ias

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