



# The Campus

## This Week

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## UNRE contributes to Blue Carbon National Policy

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PNG UNRE has contributed to the formulation of a National Policy on Blue Carbon in PNG.

UNRE Vice Chancellor Professor Aisak Pue and two academics - Daniel Waldi from the School of Natural Resources (Forestry Department) and Jason Paliu from the School of Environment & Climate Change represented the University at the recent National Stakeholders Blue Carbon Workshop at the Hilton Hotel in Port Moresby.

The objectives of the Blue Carbon Workshop were to:

- assess Papua New Guinea's current status on Blue Carbon Activities
- inform decision makers on the challenges and the opportunities of addressing blue carbon activities in PNG
- strengthen coordination roles amongst stakeholders and
- re-affirm key action priorities and guidance from stakeholders for Government consideration.

Mr Waldi explained that Blue Carbon refers to the role of coastal ecosystems particularly mangrove forests, seagrass meadows, and tidal salt marshes and estuaries in reducing greenhouse gas emissions due to their capture of



▲ Mr Daniel Waldi responds to a question during the National Blue Carbon Policy Panel Discussions as a Panel Member.

organic carbon dioxide.

Papua New Guinea (PNG) has a diverse area of these ecosystems that have played a vital role in storing carbon over the years. These ecosystems have also helped communities in PNG to adapt to severe storms, flooding, and other climate-related threats.

Blue carbon activities are a type of nature-based solution that aim to restore, protect, or sustainably manage mangroves, seagrass meadows, and tidal marshes. There are several blue carbon activities that are currently taking place in PNG. Such activities have contributed to reducing PNG's Greenhouse gases (GHG) emissions.

The National Government through the Climate Change and Development Authority (CCDA) recognizes the importance of blue carbon

as well as blue carbon activities in PNG and as such plans to develop a blue carbon policy to provide an enabling framework for blue carbon activities.

Mr Waldi said to develop a blue carbon policy, it was important for CCDA to know the kind of blue carbon activities currently taking place in PNG. And more importantly,

the challenges, gaps and barriers that are preventing the implementation and progress of blue carbon in PNG.

"As such CCDA (hosted) that workshop with the purpose of understanding current blue carbon activities taking place in PNG as well as the challenges, gaps, and barriers. The outcomes of that workshop would assist CCDA and its stakeholders to develop a framework that may lead to developing a blue carbon policy," said Mr Waldi.

He added that CCDA invited organizations that are currently involved in implementing blue carbon activities in PNG to share their experience during the workshop. CCDA also invited key organizations that will be playing an important

## OUR VISION

Advancing Knowledge for Sustainable Development

## OUR MISSION

To develop into a sustainable University through delivery of innovative research, quality teaching and learning, developing staff and students as alumni agents for positive change.

### THE CAMPUS THIS WEEK

is the news bulletin of Papua New Guinea University of Natural Resources and Environment.

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**Executive Editor:**  
Vice Chancellor

**Head (PR Office):**  
Lythia Suitawa

**Journalist:**  
Veronica Manuk

**Graphic Artist:**  
Irai Del

**Office Administration:**  
Vacant

### CONTRIBUTIONS OR QUERIES SHOULD BE DIRECTED TO:

► Mailing Address  
Public Relations Office,  
PNG UNRE,  
Private Mail Bag,  
**KOKOPO**,  
East New Britain  
Province,  
Papua New Guinea

► **Telephone Numbers:**  
(+675)987 1213/214/215

► **Email:**  
publicrelations@unre.ac.pg

# PNG UNRE graduates address PNG's development issues - VC Pue

**PNG UNRE is focused on addressing development issues of PNG's low socioeconomic status with entrepreneurship in focus for capacity building to mould graduates.**

University Vice Chancellor Professor Aisak Pue presented this in his speech during the Students' Orientation Welcome.

"I thank you for having the confidence in UNRE as your University of choice to prepare you for the lifetime journey, for your family, your village, your district or your province and your country. You are so fortunate to have won a space at UNRE, a young university. Treasure it and make the most of this once in a lifetime opportunity," said the VC.

He added that transforming the university into a fully-fledged university, has not been without major challenges that continue to shape its uniqueness as a rural development focus institution addressing the needs and issues of 80% of PNGs population.

From 2019 the university started experiencing increases in student and staff population above 10% with the introduction of new programs. This trend has continued in recent years with the demand for education in the Natural Resources and Environment sector with emerging global agendas of sustainability, food security, energy, carbon footprint and temperature reduction, sea level rise, climate change, carbon marketing and business become important.



▲ Students at the 2023 Orientation Welcome.

"The university is focused on addressing development issues of PNG's low socioeconomic status with entrepreneurship in focus for capacity building imparting applicable practical skills and knowledge to mould and prepare graduates into competent, presentable, readymade employable or self-employed persons through interactive learning. Your training at PNG UNRE is both face to face teaching and self-learning through online interaction, research exploration and interaction with staff, students, and experts in various professions. Your quest to become what you desire is in your own self being an active participant with staff, the practical environment and facilities, and the online interactive environment," said the VC.

He welcomed the students and challenged them to make the most of this opportunity at PNG UNRE.

## UNRE participation at Blue Carbon workshop important

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role in implementing blue carbon activities in PNG in the future to attend the workshop.

UNRE participation at the workshop was important because:

- the institution is directly involved in contributing to information gaps in the formulation of the National Policy on Blue Carbon in PNG;
- it is strategically positioned geographically to undertake and explore the opportunities in research in the Blue Carbon in the region and regionally.
- the University must



◀ Mr Waldi (left) receives his certificate from the CSIRO Country Project Coordinator Mr. Freddy Aleai and Acting General Manager MRV and National Communication CCDA Ms Deborah Sungi.

establish network and collaborative research with institutions and industries in the business of Climate Adaptation and Mitigation.

• of the need to expose UNRE's programs and

research potential in our Biodiversity or Environment, Fisheries, Agriculture & Livestock and Business; and well as our efforts in Climate Change Adaptation and Mitigation Actions.

## VC urges staff and students to look after facilities

**UNRE Vice Chancellor has urged staff and students to look after university facilities and announced that a ban on alcohol, betel nut chewing and smoking will be imposed on campus.**

During the dedication of a four-office building and three new classrooms on Monday, the VC announced that following directives from the Minister of Higher Education, Research, Science and Technology, Hon. Don Polye, to all state institutions, he will issue a circular to advise staff and students on the “three strikes” policy. Failure to adhere to this policy can result in disciplinary action, including suspension or termination.

The dedication of the new buildings was witnessed by Pro Chancellor Mr Martin Maden, staff and students.

The VC has reminded



▲ (l-r) Pro-Chancellor Mr Martin Maden, 2022 SRC Vice President (Female) Jacinta Anderson and Vice Chancellor Professor Aisak Pue.

staff and students on several occasions that the University's priority is students' learning. Therefore, to make the environment more conducive, under his leadership, the Planning Office has worked tirelessly using the limited resources available to improve existing facilities.

In addition to the three new classrooms and four-office building, all dormitories have been renovated; and

six classrooms are now air conditioned and equipped with multimedia projectors and wifi access. A new office complex in Kokopo has been completed and is awaiting official opening.

Professor Pue said as the only University focused on sustainability of natural resources, UNRE has captured the Government's attention and will play an important role in new initiatives by the

Government on Climate Change especially the Blue Carbon and Free Trade Zone or Special Economic Zone.

Last week UNRE participated in the National Workshop on Blue Carbon in Port Moresby. The workshop was purposely to assist CCDA and its stakeholders to develop a framework that will lead to developing a blue carbon policy.

UNRE is also actively participating in providing technical advice to the Gazelle Agro-Industrial Special Economic Zone. Professor Pue is the Chairman of the technical team.

The VC said staff and students must embrace the changes and developments that are coming and actively participate and ensure that students are practically competent and able to fit into industries.

He said there is no exception, there are facilities and programs already in place to add more value to students' learning such as the Kairak Guest House, Kairak Centre for Sustainable Rural Development, the University Farm and the Fisheries and Marine Resource Program.

He commended Pro Vice Chancellor Planning Development Dr Livingstone Tavul, the contractors, University's Planning Department and all those who work tirelessly to improve UNRE.

## Wungen-Sani publishes in Journal of Applied Phycology

**A PAPER co-authored by a UNRE Fisheries lecturer was recently published in an international journal.**

Titled *Identification of Rhodosorus marinus isolated in Taiwan and study on its optimum culture conditions*, the paper co-authored by Jane Wungen-Sani, was published in the Journal of Applied Phycology.

Ms Wungen-Sani is currently studying in Taiwan for her PhD.

This study aimed to identify a local red microalga in Taiwan through morphology and molecular phylogeny. Then the optimal culture conditions, as in temperature, light intensity and light quality, for the mass production of B-phycoerythrin using the microalga, growth and pigment content of the microalga under different cultivation conditions were studied with two-factor experiments.

It indicated that a temperature of

20–24 °C with 100  $\mu\text{mol photons m}^{-2} \text{s}^{-1}$  of white light can promote growth in *R. marinus* and produce cell number containing the highest phycoerythrin contents.

*Rhodothermus marinus* is a species of bacteria and was first isolated from submarine alkaline freshwater hot springs in Isafjardardjup, Iceland in 1988 and from other geothermal sites in Iceland including coastal springs from a borehole effluent in Oxarfjordur, Iceland, from borehole effluents from a powerplant at the Blue Lagoon, and from a salt factory in Reykjanes, Iceland.

The microalga was cultivated at four temperatures (16, 20, 24 and 28 °C) and under three light intensities (20, 60 and 100  $\mu\text{mol photons m}^{-2} \text{s}^{-1}$ ) to study the interaction effect of temperature and light intensity. The microalga was also cultivated at the mentioned temperatures under white,

red, green and blue lights to study the interaction effect of temperature and light quality. The cell number, relative index of chlorophyll, and relative index of phycoerythrin (RIPE) were analysed by flow cytometry. After morphological and molecular phylogenetic analyses, the species was identified as *Rhodothermus marinus*. When studying the effect of temperature and light intensity, the *R. marinus* cultivated at 20–24 °C under a light intensity of 100  $\mu\text{mol photons m}^{-2} \text{s}^{-1}$  produced high cell number and RИPEs. Using the optimal light intensity for cell number accumulation, *R. marinus* cultivated under white light at 20–28 °C produced high cell number and RИPEs.

In conclusion, this study showed that a temperature of 20–24 °C with 100  $\mu\text{mol photons m}^{-2} \text{s}^{-1}$  of white light can promote growth in *R. marinus* and produce cell number containing the highest phycoerythrin contents.

## MMS participants find Research Methods module helpful

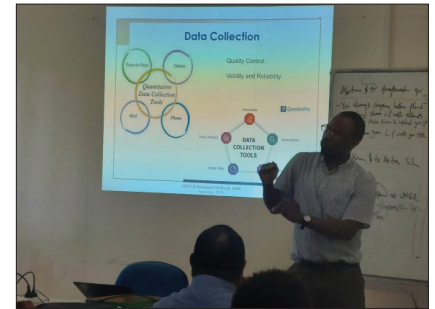
THE Research Methods Module delivered for the first time by the University's Postgraduate Management Program has helped participants understand the importance of doing research, data collection and writings reports.

The Module was taught last week by visiting lecturer Dr Tindi Seje Nuru of Notre Dame University in the United States of America.

The 30 participants that attended the training now have the ability to collect data relevant to a given problem, process and analyze those data to enable them to make independent judgments based on the analysis and to write clear reports.

They learnt that generally research helps to;

1. Generate knowledge - This implies that research help to generate new knowledge and bring something that have not been in existence for example coming up with a new method of teaching that has not been in use;
2. Validate knowledge - This means that research help to check on the existing knowledge to prove or disprove this validity for example a study can be carried out to discover whether a certain drug can cure a certain disease or whether a certain law can help to overcome a



▲ Dr Tindi Seje Nuru.

◀ Participants of the Research Module take a photo with Dr Nuru.

3. Refine knowledge - This means that research help to improve on the existing knowledge. The world improves through research for example a study can be carried out to improve the existing way of governance. Here the study uses the existing knowledge and / or practice and add something to improve it.

The participants were taught the steps followed in research. These include searching for a research problem type of variables and their role in research; introducing a research; reviewing literature pertaining to a research; proposing a methodology for a research; designing a research instrument, data analysis and

academic writing.

The participants were grateful that they have learnt many new things in the module.

UNRE lecturer Walain Ulaiwi said: As a lecturer I also teach and supervise students on research. By attending this course, it has enriched me as many of us lecturers do not master research methods. Having experts like Dr Tindi who not only has theoretical knowledge, but also practical experience is good experience for me.

Eric Haiara from Port Moresby said: "The Research Methods (module) has really helped me. The lecturer is knowledgeable and I believe after this, I feel empowered and ready to do my thesis."

## Many developments taking place at UNRE, VC tells students

**TWO new buildings were dedicated on Monday while another facility, the Takubar Office Building in Kokopo which will house the Centre for Self-Education (Matriculation Program) will be officially opened and dedicated at a later date.**

University Vice Chancellor Professor Aisak Pue highlighted in the Students' Orientation Welcome recently that many of the university's developments have been to ensure basic infrastructure is available and accessible through refurbishments, renovations and extensions

of existing infrastructure or building new infrastructures for a comfortable, clean and conducive teaching and learning environment.

"Ongoing developments continue in all fronts in keeping up with growth, upgrading of infrastructure with major renovations and improvements in the academic and support facilities like the farm, water supply, student dormitories, staff housing, high speed internet connectivity, Standby gensets, improvements in safety and security on campus and so forth ensuring a conducive learning environment," said

the VC.

He highlighted that in 2019 the university introduced the four faculties or schools' system with the School of Natural Resources, School of Environment and Climate Change, School of Sustainable Resource Management and Business Studies; and the Centre for Research and Graduate Studies.

Three new departments and programs were also established. They were the Department of Animal Science with its Sustainable Livestock Production program; and Department of Forestry with

its Sustainable Forestry Management program. These two departments come under the School of Natural Resources. Department of Tourism with its Sustainable International Tourism program was also introduced. It comes under the School of Sustainable Resource Management and Business Studies.

Professor Pue added that in 2021 two new departments were established under the School of Environment and Climate Change, Department of Climate Change Health and

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## Farm harvests and mills 200kg of rice

**A TARGET set by the University Farm for rice seeds multiplication was achieved last week with over 200 kilograms of rice harvested and milled.**

UNRE Farm Manager Alex Nugi said from the 2kg seeds received, the crops section harvested and milled 200 kilograms. 150 kilograms were milled for consumption and sold for K4 per kg whilst 50kgs were kept as seeds.

The rice variety Taichung Sen 10 (TCS 10) was delivered by Taiwan Technical Missions last year purposely for UNRE Farm to set up a rice distribution centre to supply farmers throughout the country.

The seeds were delivered by Dr Caleb Manamik Breria, an alumnus of National Pingtung University of Science and Technology in Taiwan on behalf of the Technical Mission.

This variety is suitable for PNG, in terms of quality and taste. It is highly nutritious and the most successful variety in PNG that has been trailed by the National Agricultural Research Institute. The plan was for the University to cultivate that 2kg to multiply the rice seeds and replant so that by the end of the year up to a tonne can be cultivated.

Mr Nugi said the farm plans to grow 100 acres of rice to supply to students and staff for consumption. Seeds will also be supplied to farmers.

He thanked the Officer in Charge of Rice farming, Robin Darby, Dr Breria for the initiative and farm workers for managing the rice crop.

Meanwhile, the Farm welcomed the birth of two lambs while the work on farming tilapia fingerlings has also commenced.

The Farm Operations has also increase poultry production with the first 500 Saver Brown layer DOCs delivered at the beginning of this year. There are plans for another 500.

“(We are) looking to produce 100dozens of eggs daily for (the) students mess starting next month,” said Mr Nugi.

He also reported the purchase of superior bull semen from Australia to improve cattle stock.

“This was brought onto the campus through CPL, one of UNRE's collaborative partners. This is the first of its kind, thanks to UNRE Management and Nisala of CPL for facilitating,” he said.



■ Photos by Pending Soi, UNRE Farm Operations.

## Farm manager attends SIT meeting in Vienna, Austria

**PNG UNRE Farm Operations Manager Alex Nugi visited Austria last month to participate in a Sterile Insect Technique stakeholders meeting.**

Mr Nugi said Sterile Insect Technique (SIT) is an intervention that deals with the Sterilisation of insects, the actual process is called “irradiation” where male insects of the Lepidoptera species are sterilized.

Mr Nugi represented the University, other partners and PNG. Other countries that participated were Indonesia, Malaysia, Philippines and Vietnam. Experts from the International Atomic Energy Agency (IAEA) in South Africa, USA and Canada were present for the discussions.

“My going over to Vienna Austria was in the capacity of Technical Support for a weeklong meeting on

preparing a Thematic Plan document for the project rollout in the next two years,” said Mr Nugi.

IAEA is funding the research in partnership with Codex DAL on behalf of PNG Government. PNG focused on two main insects: Cocoa Pod Borer and Diamondback Moth (DBM).

PNG UNRE is a partner institution through the involvement of its Academic and Support Staff. Other partners are NAQIA, Cocoa Board, NARI, Uni Tech, Codex, DAL and others.

Mr Nugi said PNG UNRE's participation in the meeting will benefit staff and students through research, teaching and learning aspects during the program rollout via surveys, sampling, identifying species and sus species of the insects and analysis at the biotechnology laboratory for

molecular studies, etc.

“Both undergraduate and post graduate students can benefit from the research. The Farm has over 45 hectares of cocoa and 15 ha of vegetable farming to accommodate targeted research on the SIT work. There are already research activities underway that staff and students can be part of, for the fulfilment of the requirements,” said Mr Nugi.

Mr Nugi explained further that in the irradiation process, it sterilises the male insects in that it renders them sterile so they mate one without producing offspring and eventually large populations can be wiped out as a result. For CPB, insects will be reared in the lab and then put through irradiation using Gamma ray before releasing into the wild.

Volunteers and interested staff can also participate in the research.

# KCfSRD launches hire car service

The University's Kairak Centre for Sustainable Rural Development recently launched its new Hire Car Service.

The launching was done by University Vice Chancellor Professor Aisak Pue, witnessed by acting Pro Vice Chancellor Academic and Research Mr Peter Navus, Centre Manager Mr Hosea Turbarat and other staff of the University.

Mr Turbarat acknowledged the University under the leadership of Professor Pue for recognising the importance of KCfSRD and allowing the Centre to expand into the new business initiative.

He said the three main reasons of the hire car business is to address mobility especially for the guests of KCfSRD Guest House; partner with the tourism sector; and broaden the revenue base of KCfSRD.

Apart from the Integrated Agricultural Training Program, the Centre operates its own Guest House, provides Catering Service and now the Hire Car Service.

Mr Turbarat explained that these services not only bring additional revenue to the Centre but support the Tourism and Business course the University offers.

Professor Aisak Pue said though the event was small it signified a significant achievement and progress of KCfSRD.

He added that the Tourism sector will work closely with KCfSRD to build this facility to cater for the Tourism and Hospitality program of the



▲ Farm Manager Alex Nugi (left) congratulates KCfSRD Manager Hosea Turbarat while Vice Chancellor Prof. Aisak Pue and Acting Pro Vice Chancellor Academic Peter Navus look on.

University.

"This is an important sector that will train students to become entrepreneurs and a good revenue base for the University," said Professor Pue.

He acknowledged the University Farm for the similar role it plays.

The VC mentioned that UNRE will continue to upgrade existing facilities to support students' learning as well as revenue generation. On behalf of the University, he acknowledged Mr Turbarat and his staff for keeping the Centre in operation and outlined the expansion plan of the Guest House and the improvement to the current restaurant.

## Former students encourage new students

**NEW students to the University were encouraged by former students of the institution.**

Kairak Centre for Sustainable Rural Development Manager and former ENB Provincial Administrator Hosea Turbarat who graduated from the institution in 1973 when it was Vudal Agricultural College, presented the Keynote Address; while the Alumni Talk was given by Nicodemus Bokame who graduated in 2010. He is the Manager of National Agricultural Research Institute's Islands Regional Centre at Kerevat.

Mr Turbarat shared his experiences and told students that he had dreamt of becoming an agriculturist from a very young age. This goal kept him focused so he studied hard, was disciplined,

abided by regulations and policies of the institutions he attended and always made friends with the right people.

Mr Turbarat after graduating started his career with Department of Primary Industry as a Rural Development Officer and made his way to becoming one of the best Provincial Administrators in Papua New Guinea and the longest serving Provincial Administrator in East New Britain who successfully carried out the resettlement program of the 1994 Twin Volcanic Eruption victims.

Sharing similar sentiments, Mr Bokame said Agriculture, Forestry and Fisheries has become a demand in the world and PNG.

"The Government has also placed its vision around commercialising the

agriculture sector and the onus is on you students, take up the challenge and look at how you are going to be part of that. I must commend the academic staff of the University for preparing students to meet the challenges in the world," he said.

He said a main problem he identified in student interviews is that they are not focused and serious about their future.

"If you want to become an agronomist you have to start now and study hard to become one.

He advised students that getting a formal employment straight after completing studies is not a guarantee.

"Don't think that when you get out of there, you'll get a formal employment, formal employment has reached the bottle neck," said Mr Bokame.

## All programs are Bachelor level - VC

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Development and the Department of Renewable Energy and Environmental Engineering.

He explained to students that all seven programs are offered at Bachelor Degree Level and only using the Certificate, Diploma, Advanced Diploma or Associate Degree as exit points in Year 1, Year 2 and 3 under the PNG National Qualifications Framework pathway. The university also offers FODE and Extension training for farmers, together with a Masters in Management program.

"The university continues transforming its facilities and programs relevant to current times. It is Bench Marking against international standards with partner overseas universities under this initiative. It has signed MOUs signed with the National Pintung University of Science and Technology and the National Taiwan Ocean University in Taiwan, Atlinbas University in Turkey, and Oradea University in Romania for exchanges, trainings and other collaborations. The university also has several similar agreements with important national partners," said Prof Pue.