



Newsletter KARAI BILONG SOLWARA

DEC 2017 – MAY 2018

RESEARCH AND CONSERVATION CENTRE

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USAIDPACAM GRANT

The project "Youth as Agents of Change: Marine Environmental Awareness in Kimbe Bay", undertaken by Mahonia Na Dari thanks to the generosity of the American People is progressing well despite challenges. The Pacific-American Climate Fund (PACAM) team overseeing the project grant completed a support visit in late February and will be with MND again in late May and July for further support reviews.

The USAID PACAM support team have been very understanding in regard to the unexpected obstacles facing MND efforts to reach project milestones. The Pacific Games in November caused disruptions to the project schedule as did a VERY wet season, road closures and internet service issues.
PNG – expect the unexpected!

MILESTONES COMPLETED

1. Outreach MEEP and Climate Change presentations have been completed to 10,000+ primary & elementary students in 3 districts (Hoskins, Bialla & Talasea).
Congratulations to the hard-working team; Education Officers, Somei Jonda, Geoff Bai and Marine Educators; Sammy, Godfrey, Naomi and Albertina.

2. Intensive MEEP and Climate Change presentations completed for Talasea High (9 graduates) and underway for Kimbe Secondary (21 candidates) and Kimbe International (30 candidates).
Talasea High MEEP was disappointing as only 9 graduated from 20 candidates. Maybe continuous wet weather dampened enthusiasm?

INSIDE:

1. USAID GRANT
2. USAID PROJECT PROGRESS
3. MAHONIA SAVED!
4. JUNIOR MEEP
5. HIGH PROFILER
6. JCU RESEARCH



MAHONIA NA DARI FACEBOOK PAGE IS NOW ACTIVE AGAIN. CHECK US OUT!

www.facebook.com/MahoniaNaDari

CALLING ALL MEEP GRADUATES 1997 - 2013.

PLEASE CONTACT MND BY EMAIL TO UPDATE YOUR CONTACT DETAILS & COMPLETE A SHORT SURVEY (SEE 5. BELOW)

3. A draft **MEEP Primary Teachers Guide** has been completed. Design artwork (by artist Juliet Corley) for both the Primary Teachers Guide and 6 supporting marine environment posters is underway. The Guide will be soon be “tested” in several local schools prior to a final review. The draft Primary Teachers MEEP Guide already has the support of the local Department of Education office. MND is indebted to past staff Brenda Senior for her input and current Education Officer, Geoffrey Bai who drafted the initial concept version.

4. A 2-day **Curriculum Conference & Workshop** was hosted 10-11th April to develop curricula incorporating climate change & marine biodiversity in PNG elementary & primary schools. The workshop organized by Somei Jonda & Geoffrey Bai, produced a thorough review and redraft of the Primary Teachers MEEP Guide thanks to input from attending teachers and Education Department officers. Most of these teachers will soon “test” the Guide in their respective schools after which their feedback will be used for review before the final version is produced.

5. A **MEEP Past-Graduates Database** has been designed, tested and an awareness campaign started to make contact with MEEP alumni beginning with 1997 - 1998. Related articles featured in the Post Courier and The National newspapers and items are appearing on MND’s Facebook. MEEP alumni are asked to make contact with MND via email, help MND update alumni contact details and complete a short survey. The aim is to evaluate the long-term impact of MEEP on marine environment conservation attitudes. **PAST MEEP GRADUATES please contact MND by EMAIL.**



Photo: Max Benjamin Elementary School students at MEEP Outreach session

The **3rd OUTREACH MEEP** which should be completed by mid-May included a visit to the Max Benjamin Elementary School. These students live close to Mahonia Na Dari and enjoyed a Climate Change presentation and puppet show.



USAID
FROM THE AMERICAN PEOPLE



The April 10 -11 **Curriculum Conference / Workshop** sponsored by USAID involved 21 attendees:
2 secondary school teachers,
3 Education Dept officers and
14 primary school teachers.
Their professional input, suggestions, ideas and constructive feedback have been extremely valuable in determining the marine biodiversity and Climate Change curriculum content to be included in the draft MEEP Primary Teachers Guide. Thanks to Walindi Resort for catering and organisers - hosts Geoffrey Bai and Somei Jonda.

Photo: Participants in the 2-day Primary School curriculum conference / workshop made possible through the generosity of the American People and the USAIDPACAM project grant for Mahonia Na Dari.

MAHONIA NA DARI SAVED !

A chance meeting in Port Moresby in October 2017 has resulted in a timely lifebuoy being thrown to save a drowning Mahonia Na Dari. Since 2009 the extensive infrastructure left to MND has deteriorated because of lack of funds available for repairs and maintenance. Education program grants cannot be used for infrastructure. **The China Navigation Company** and **Swire Shipping** have generously offered a three-year sponsorship agreement which will provide funding for repairs and maintenance of the non-commercial MND buildings which includes staff houses, utility sheds and the main office/classroom. The recent wet season required tarpaulins on almost every roof but these rotted within 3 months. The sponsorship agreement has literally saved Mahonia Na Dari.

Many thanks to Penny B., Cecilie B., Neil C., Chris DV., Simon B., and Peter M.



CHINA NAVIGATION



SCHOOL EXCURSIONS: Kimbe International School has shown great faith and support for the **Junior MEEP** with 9 student excursion days scheduled in 2018. So far Mahonia has welcomed KIS Foundation, Preparatory, Grade 1, Grade 2 and Grade 4 class groups. The students undertake a classroom presentation followed by a hands-on field trip. Topics so far in 2018 have included; Living & Non-Living Things in the Environment, Marine Ecosystems, How Sea Creatures Move, Habitats and Mini Beasts. Supportive parents seem to enjoy the experience as well.

Photo: Kimbe International School Prep 1 class day excursion Junior MEEP student group at Mahonia Na Dari with teachers, parents and high profile MND Education Officer, Somei Jonda. Topic- How Sea Creatures Move.



Photos: Kimbe International School Grade 4 students plant mangrove seedlings at Mahonia Na Dari shoreline during their Junior MEEP day excursion – topic Marine Ecosystems. The mangrove rehabilitation project and seedling nursery is generously sponsored by New Britain Palm Oil.

HIGH PROFILER



Somei teaching fish dissection and checking the MND mangrove nursery



Q: What is the greatest moment of your career so far?

A: My proudest achievement would be engaging with New Britain Palm Oil for a huge project to rehabilitate the coastline. The sea is eroding the coastlines alongside Kimbe, and other places, a lot. It is quite damaging. We are going to try and save it. We are planting mangroves, as well as other coastal plants that can provide nutrients for the mangroves to help them thrive. Mangroves have certain properties that help slow down the effects of erosion, and they act as a buffer for the plantations and the land so the sea doesn't erode too much inland. In the next few years we should be able to see the results of this project, fingers crossed.

High profile MND Education Officer, **SOMEI JONDA** has recently appeared in the Air Niugini in-flight magazine & also newspapers, The National and The Post Courier. A radio interview special (BBC) is also being prepared.

From January 2018 issue PARADISE MAGAZINE – Air Niugini. Article & photo – Kathleen Prior

Q: What is Mahonia Na Dari and what does it set out to achieve?

A: The name comes from the local Bakovi language of the Talasea Peninsula in West New Britain Province. It translates as 'guardian of the sea'. We try to be *mahonia na dari*, and we get others involved to be guardians as well. That's the aim of our organisation.

Q: What is the biggest environmental concern you are trying to address?

A: Probably the worst thing that is happening here in Kimbe is overfishing. There are too many people on the coast and not enough fish in the sea to feed them. At least 50 per cent of Papua New Guineans live in coastal communities, and this problem is universal. So marine environmental education is very important for all of these communities. We outline concepts to help people find different avenues to get their food and sustain their livelihoods.

Q: What does your role of community conservation and education officer entail?

A: My duty is to reach out to at least 10,000 people a year with a message of marine environmental conservation. More recently, I have shifted over to the education officer's role. We work with four high schools and teach students everything we can to turn them into conservationists. Hopefully they'll then take that back into their communities or schools.

Q: Why is it important that young people learn about marine conservation?

A: Some people just see the sea as a place to get fish. Having people understand the ecosystems helps them appreciate it more and, in turn, they can learn to look after it more.

It's important because young people are the future of the province. The young people we train and educate can have a bold new outlook, and can make changes when they get into positions of power in their own communities or households.

Q: Where do you see Mahonia Na Dari in the future?

A: This year will be the 20th of our existence. I want to expand and reach more schools. Our learning methods are very useful for the people of PNG and can be applied anywhere. The same sort of threats threatening Kimbe, are being experienced elsewhere in PNG.

JCU RESEARCHER REPORT

In late April the first group of 6 **James Cook University** researchers visited MND lead by Prof. Geoff Jones who has been studying the marine biodiversity of Kimbe Bay from the Mahonia Na Dari base since 1997.

The visiting JCU researchers will be kept busy even after diving hours checking and verifying the content of the revised Intensive MEEP and Junior MEEP curriculum materials, an on-going task and a requirement of the USAID grant. Returning JCU resident researcher, Gemma Cresswell (nee Galbraith) will return to Mahonia Na Dari in late May to continue fieldwork for her PhD. Gemma has kindly provided the following interesting article.

Bathymetric Mapping of Kimbe Bay.

Less than 5% of the world's oceans have actually been explored. Given that 70% of our planet is covered by these oceans, this translates to roughly 65% of the entire earth's surface being relatively unknown to science!

Technology allowing us to map the deepest seas and oceans is rapidly expanding, with new sonar and satellite data showing us some of the most remote marine habitats. Such data and images are used in Bathymetric mapping, a method of producing terrain maps and models of marine habitats, much like the maps we use for terrestrial landscapes.

Bathymetry is the study of the sea floor and by gathering data which allows us to map the oceans we can see how the underwater landscape may need to be managed, protected, navigated or assessed for natural resources.

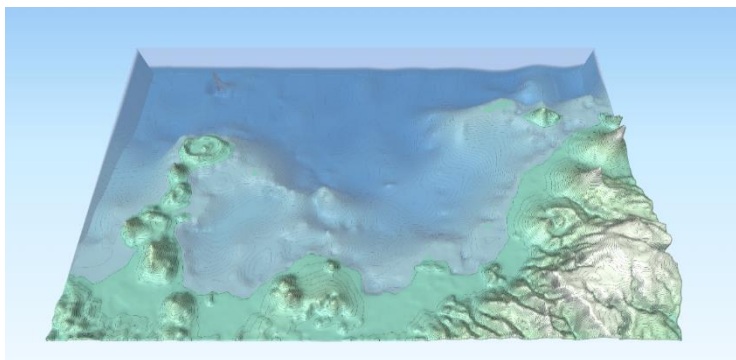
Google earth has recently added the "Google oceans" feature to the Google Earth online global map, which allows you to explore the deepest trenches and highest underwater mountains on the planet without even getting wet!

Data to create these maps can be collected by satellites, beaming sensors across the ocean surface, by ships using sonar to scan the water beneath them as they travel or even planes using airborne lasers as they fly to scan the waters.

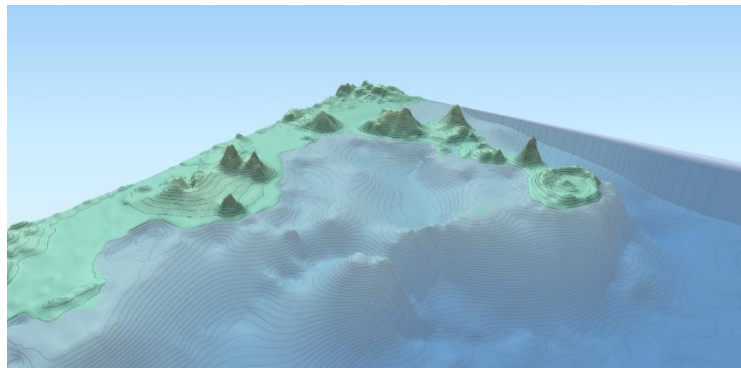
The underwater topography of marine ecosystems, that is hills, ridges and slopes that make up the overall depth and characteristics of the seafloor, can be very important for marine biological communities. Where some underwater features, like seamounts rise hundreds of meters from the sea floor, they may reach shallow depths with enough light for coral reefs to develop. These seamount or pinnacle type reefs are often highly abundant and diverse in terms of fish and coral communities, with many other large species like sharks and whales often visiting them.

Kimbe Bay has a fantastically diverse and rich seascape, include several pinnacle reefs and seamounts. Resident researcher, Gemma Galbraith, has been studying these systems and has just produced a new 3D bathymetric map of Kimbe Bay.

This map will help Gemma to answer research questions about the seamounts of Kimbe and study how they might be connected to coral reefs closer to the shore. The map shows us that there is definitely more than meets the eye to the reefs of Kimbe Bay and far more lies beneath the surface than we might think.



3D mapping of Kimbe Bay (G. Galbraith 2018)



Close up 3D bathymetry map of Kimbe Bay seamounts and pinnacles. A substantial spur and groove system extends from the coastal shelf into deep waters off the coast of Kimbe. (G. Galbraith 2018).