



Climate Change Awareness for Komperi Women

Conservation Education Program (CONED) has again embarked on another new challenge in its quest to facilitate environmental education training and awareness by running a climate change awareness workshop specifically for women in Komperi Reforestation Project, Henganofi District in the Eastern Highlands Province. Facilitating a *women only* workshop has given the program staff a new scope to address different groups of people at the community level to actively participate in decision making and information dissemination regarding environmental issues. The theme of the workshop was *the Role of Trees in*



Participants listing down roles of trees as a group activity

Combating Climate Change and intended to create awareness among women on current global issues. The workshop also emphasised the significance of trees in species occupation, provision of fuel wood and timber for building materials.

Local experiences of how changes in the climate were affecting rural livelihoods were also discussed. One of the main issues that was identified as a direct impact of climate change is *food security*. The current changes in climatic conditions has greatly affected garden produce and participants expressed concerns that this will affect their families.

It was suggested during the discussions that RCF should liaise with an officer from Department of Agriculture and Livestock (DAL) to provide sessions on the future of agricultural activities in the light of climate change. Participants wanted to know how they can improve their garden crops to avoid destruction by fluctuating weather conditions. In addition, the workshop shed light on climate change and reforestation activities that were going on in Komperi.

The participants overtly discussed some hurdles that hindered their ability to make decisions to improve one's Integral Human Development. Paramount in these hurdles was cultural barriers that have undermined the potential of women in decision making. It is an empowering strategy to have involved women and promote opportunities for leadership and equal participation.



Workshop participants pose with facilitators for a group photo

Imperatively, information obtained must be disseminated to the communities and participants were encouraged to relay this in whatever little factions they were in. Participants were grateful to RCF for staging such workshop as it will help them make informed decisions on environmental issues. Another workshop for women will be staged in the near future.

The Conservation Education Program is proud to provide you with the updates on its activities for the first quarter of 2010.

Nearly all activities scheduled for this quarter has set off very well and on time, except for the UOG course which started late due to eight weeks of boy-cot staged by students. However, lectures have resumed with first sets of assignments given out to students.

This edition also features the progress of Komperi Reforestation Project. It is into the third phase of implementation. This was complemented with a recent workshop for women on climate change being the highlight.

We have included a section on culture and Environment and hope to continue providing updates and issues on the subject in the coming issues of TTLMG.

We would appreciate your contributions for publication in the next issue.

Happy Reading!

Spatulata Orchids, Papua New Guinea By Orchids Society of Papua New Guinea

Is a spectacular book about the Orchids of Papua New Guinea.

This book leads us through detailed descriptions of these dendrobiums and explains about their history discovery, distribution and habitat with an in-dept look at their culture. Throughout the body of work, you will admire outstanding photography of these dendrobiums that have been taken and put together over many years by photographer Rocky Roe. Most of these show you the real beauty and unique characteristics of these dendrobiums. The book not only promoting awareness of these magnificent species, but also PNG and its culture. The authors Mr. Justin Tkatchenko and Steven Kami have attracted some of the foremost leaders in their own respective fields to help present a book that will remain well into the future, and be a definitive reference on *Spatulata* dendrobiums from Papua New Guinea. This is the best book for students, teachers and researchers wanting to know more about Orchids and its distribution in PNG.

Environmental Issues, by Mark Manuel, Barrie McELORY and Roger Smith.

There has been a marked increase of interest in environmental issues over the past couple of decades. Certain environments, such as parks have captured our imagination for much longer. However, we have not been good at recognising the importance of those aspects of the environment with which we are very familiar such as our waterways, our soils, our atmosphere, and our oceans. Concern for the environment becomes an issue when some activity provides a potential conflict with the ongoing health of the environment. ***Environmental Issues*** encourages students to investigate environmental issues fully before making decisions about the best action to take. The authors encourages understanding of how an issue arises and how it was or could be resolved.

This is an outstanding text book for students studying environmental science, geography and of course social science. Teachers can utilize this book as a teaching resource in the classroom.

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Conservation Education Program has a new staff this year. She is Ms Sheebah Mirisa, from a mix parentage of Gulf and EHP. A former student of RCF's Diploma in Environment and Conservation Studies at the University of Goroka, Ms Mirisa completed her training last year and joined the program in early January. The position was recently created to assist program staff with the teaching of UOG courses. Prior to that, Ms Mirisa was a secondary school teacher at Kainantu High School in EHP and taught Social Science and Expressive Arts. She also holds a Bachelor of Education degree from University of Goroka and has completed the HELP training through the university.



Intern Trainer, Ms. Mirisa in Port Moresby

Institute of National Affairs Resource Allocation Workshop

Conservation Education was privileged to have sent one of its officers to attend a three days workshop in Port Moresby hosted by the Institute of National Affairs. INA, an independent research organization in collaboration with the World Bank has engaged consultants to carry out surveys in selected districts.

The objective of the research was to better understand the resource allocation process at the local level in PNG, through both formal and informal mechanisms, which involves the activities of policy makers, administrators and communities. The purpose of the workshop was to take the research participants through different instruments that were going to be used in the survey. Intern Trainer, Sheebah Mirisa was selected to undergo this training. She is currently conducting surveys around Goroka.

Goroka CERC updates

After an awareness drive among teachers within Goroka, the CERC is beginning to receive request from schools visiting for classes and research on various topics.

Two schools made their visit to the centre in term one. Nineteen grade seven students from West Goroka primary school visited the CERC to research on the theme "Human Impact on the Environment" The teacher Ms Beverly Ururu who is in tune with the current OBE, arranged for her class out to the CERC not only to enhance understanding of the issues on the theme, but also develop and equip necessary library and research skills for her students. Students were indeed amazed at the set up of the CERC with wide range of materials on Environmental issues.

In another visit, thirty two grade eleven students from Goroka Secondary School visited the CERC for the duration of two hours. The grade eleven Geography students were researching on cause and effects of climate change. The group was fortunate to listen to a power point presentation on climate change by Alfie Kome, Resource Office & Trainer for the Coned program.

The Goroka Secondary School teacher, Mr. Huhuva Inapero was delighted to see his students immersed with information available on the topic, and said he would spread information to other teachers to bring in students when studying current issues relating to environment.



Ms Sheebah Mirisa assisting Goroka Secondary students with information on Global Warming

Introduction

Environmental Education is a multidisciplinary approach to learning. According to UNESCO, Tbilisi Declaration (1977) defines EE as a learning process that increases people’s knowledge and awareness about the environment and associated challenges, developing necessary skills and expertise to address the challenges and foster attitudes, motivations and commitments to make informed decisions and take responsible actions. EE teaches people to understand and appreciate the natural world around them.

The purpose of this mini survey was to find out if principles and practices in EE were integrated into the school syllabus in PNG and if there were guidelines and principles for implementing EE.

Methods/Sample

The survey was carried out using open ended questionnaires. As a mini survey, six (6) participants were randomly selected from a cohort of second year In service students of University of Goroka. Five of these were primary school teachers and one was a secondary school teacher. There was a gender balance in this mini study with three female and three male participants. The questionnaires were distributed and collected at different dates.

Results

Fig 1.1 Table showing results on whether EE was taught in schools

	YES	NO
Teaching EE in schools		
Approval of EE integrated into other subjects		

Fig. 1.2: Teaching EE in other Subjects

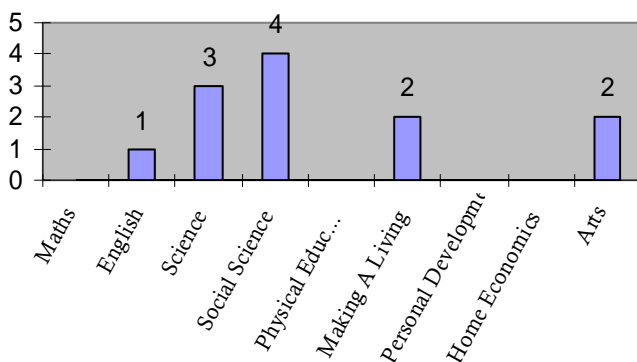


Fig 1.3: table showing responses on EE principles

	Yes	No	Not sure
Any EE principles/guidelines in place?			
Is such document necessary?	 		

Discussions

The results indicated that all respondents taught some EE in schools (see Fig. 1.1). It also showed that EE has relevance in specific subjects but is not common in others. Science, Social Science, Making A Living, Arts and English for primary and secondary levels were subjects that EE was well integrated into. Maths and Physical Education were difficult subjects for teachers to integrate EE (see Fig 1.2). The study results also indicated integration of EE in school syllabus as approved by appropriate authorities.

When asked if respondents have come across any principles and guidelines for EE in schools, four participants indicated not seeing any while two were uncertain (see Figure 1.3). However, all respondents indicated that such a document was necessary for PNG.

Implications

According to the response, there were several implications that can be drawn.

- (i) EE is relevant and should be taught in schools because students must be educated on the importance of the environment so they can conserve and protect the natural environment.
- (ii) EE must be taught regularly in relevant subjects
- (iii) EE principles and guidelines must be in place to guide teachers. Such documents will strengthen the implementation of EE in school syllabus.

Conclusion

Environmental Education should be taught frequently in schools. It must also have guidelines in place to help administrators and teachers integrate EE effectively in school syllabus. EE guidelines will provide a series of tools that might help educators develop effective, locally relevant environmental education programs resulting in environmental literacy.

Reference

UNESCO, (2002) UN Decade for Sustainable Development. Ret: February 27, 2009 from <http://www.unesco.org>.

University of Goroka classes for 2010 have finally commenced. Lectures and tutorials for the courses in Diploma in Environment & Conservation Studies and the accredited course HGEO 410: Environment & Conservation Studies in Melanesia began swiftly after the prolonged boycott was lifted in March. Though it was a slow start for the academic programs toppled with reduced weeks for the semester and late registration, the program is determined to cover most of its course content as scheduled.

Current enrolment for RCF courses stand at 17 for the Diploma in Environment & Conservation Studies and 39 for the HGEO 410: Environment & Conservation in Melanesia.



First year diploma students attending their first lecture at RCF lecture room

First quarter visit to WHP/Simbu

First quarter monitoring visit for the Western Highlands and Simbu Provincial CERCs was conducted by the Program Assistant, Julien Pochimel, and Awareness/Graphics Officer, Igsie Jimike from 23rd -25th March.

The visit revealed two vital facts – (i) Simbu CERC has a high attendance from various members of public ranging from elementary school children to government officers, and; (ii) WHP CERC has only been visited by Hagen Park Secondary School students to do their assignments and research. It is evident that WHP CERC officer will have to improve her awareness strategies to include more visits to schools around Mt Hagen if they cannot come to the CERC.

On a good note, comments from visitors at both CERCs acknowledge RCF for providing a useful centre that is stocked with up-to-date materials.

RCF acknowledges the support of Division of Education in Simbu and Hagen Park Secondary School.

Reforestation activities in Kremu, Henganofi District are progressing very well with high enthusiasm shown by all villages involved at the onset of this project. There has been step by step awareness carried out about this project and its long term benefits for the local people in the long run. People from all walks of life within the communities have assisted



Omakoi performing at Zuri market

in anyway possible to having a nursery built for their villages in time for seedlings to be delivered to them.

Recent awareness drama staged by the Goroka based Omokoi drama group on the importance of reforestation and the risks associated with bush fires at Zuri junction where a big crowd converged. The actors did a fantastic job on disseminating information through drama performance to the public. Continuous awareness has certainly paid off as a number of other villages are showing interest in the project.



Igsie puts final touch on the bill boards

Recently, two billboards have been designed by the Awareness/Graphic Officer for the Project sites and will soon be erected along the highlands highway.

RCF acknowledges the funding support from PNG Sustainable Development Fund in this project.

The Melanesian Worldview by Sangion Appiee Tiu

“The Melanesian people of PNG view the world in its totality whereby there is cosmic harmony between the human person, the spirit world as well as the plant and animal world” (Narokobi 1980, p.6). In Narokobi’s view, this human person does not perceive him/herself as the absolute master of the universe but as an important component of an interdependent world and believes that even trees, rocks and other natural life had souls and entities to which life can be attributed. The human person learns and understands the ways of nature through silent observation of the natural world and thus uses the power of silent language to interpret what he/she hears and sees with less verbal communication.

The above view portrays how our ancestors saw the world in which we live today. Every thing seen and unseen, living and non living was interdependent and formed the web of life that surrounded their environment. Even the tiniest of insects or the largest of birds all had a significant role in this web of life. For example, cassowaries, cockatoos and tree kangaroos were sacred to different cultural groups as each portrayed the origin and history of the people who treasure it. These sacred animals as well as plants and other taboo areas are threatened by the increasing environmental destruction in the name of development and leave a lot to be answered.



A barn Owl is a typical of a sacred animal in Highlands of PNG. This bird is associated with spirits of ancestors.

As a people and nation, there is a need for us to revisit our cultural inheritance. This will enable us to review what has happened in the past and what we can do now to protect and conserve our cultural and environmental heritage.

Reference:

Narokobi, B. (1980). *The Melanesian way : total cosmic vision of life*. Boroko, PNG, Institute of Papua New Guinea Studies.

Tiu, S. (2007). *The role of Indigenous Knowledge in biodiversity Conservation: Implications for Conservation Education in PNG*. Master of Science Thesis, University of Waikato, New Zealand. (Unpublished).

The striped possum, scientifically known as *Dactylopsila trivirgata* is found in the rainforests on the island of New Guinea and in the north-eastern part of Australia. It is one specie of possums that belong to the marsupial group. The striped possum is a very conspicuous animal and the most beautifully marked of all possums. The body has an overall pattern of black and white stripes from the head right down to the bushy tail. It can emit a foul penetrating odour like the skunk .

Like most marsupials, the striped possum has a forward opening pouch like that of a kangaroo. The striped possum is an arboreal animal i.e. it is mostly a tree dwelling marsupial who is less specialized for locomotion on the ground and it rarely descends to the ground. Moreover, striped possums are nocturnal animals and forage along tree branches to feed and mate during the night. Although, a mixture of food is eaten, the striped possum is almost exclusively insectivorous. It has sharp chisel-shaped incisors with which it tears open the bark of trees and then insert its extra long claw on its front fourth toe specialized for that purpose into the crevice to extract insects or larvae. In search for its food, it constantly tap on its fingers on the bark as though to echo-sound for grubs or termites beneath. The striped possum is an amazingly supple climber so at ease in its different movements up and down the tree or from tree to tree.

Striped Possum

- **Scientific name:** Dactylopsila trivirgata
- **Kingdom:** Animalia
- **Phylum:** Chordata
- **Class:** Mammalia
- **Order:** Marsupialia
- **Family:** Petauridae
- **Genus:** Dactylopsila
- **Species:** Dactylopsila trivirgata
- **Common name:** striped possum
- **Habitat range:** widespread in lowlands and foothills of New Guinea at altitude between 800m and 1100m
- **Diet:** insect larvae, termites, leaves, fruits, small vertebrates, nectar, and honey

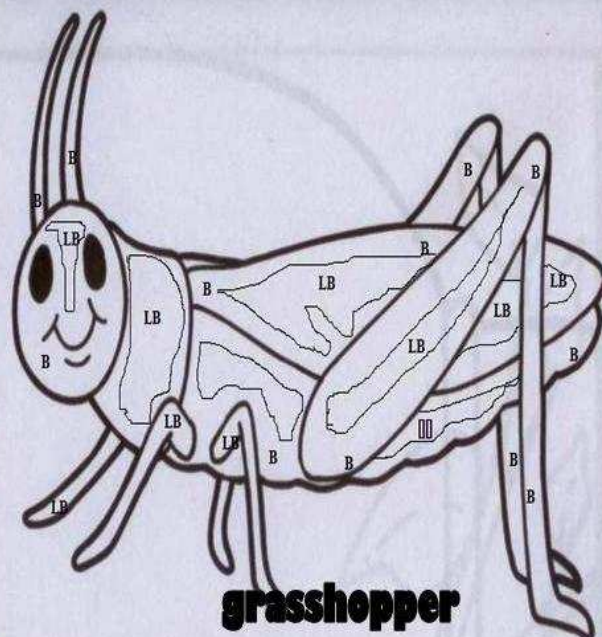


Source: Timothy F. Flannery, 1994, *Possums of the World*,

Australia

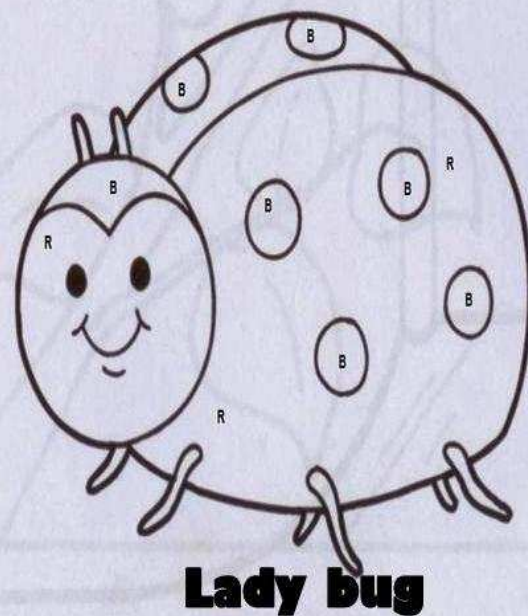
Hello Kidz...

This is Daddy Jay with a little Coloring exercise for you. All you have to do is pick up your color pencil, look at the color code on the left next to the lady-bug and just follow the instruction and you should be okay!



Color Code

- B = Black
- BR = Brown
- R = Red
- LB = Light Brown



Water and Mathematics

Safe, Drinkable Water: A Scarce Resource

This activity helps students visualize how much of the Earth's water is available for human use and is a scarce resource that needs to be conserved. This activity is intended for grades 6 to 8 students.

Water covers roughly 72 per cent of the Earth's surface and makes up 75 per cent of our bodies. However, when we consider that 97 per cent of the planet's water is in the oceans and 2 per cent is frozen in glaciers and ice caps, we can begin to appreciate that the amount available for human consumption is very limited.

The table below shows the different water sources on Earth and their total quantity represented in percentage.

Key Concepts: global distribution of water, water availability,

Water Source	Percentage
Oceans	97.2
Icecaps	2.0
Groundwater	0.78
Freshwater lakes	0.009
Inland seas and salt	0.008
Atmosphere	0.001
Rivers	0.0001

water scarcity

Skills involved: calculating, measuring, converting and evaluating

What You Need: Water, an aquarium/a big basin/drum with a volume of 20 liters (5 gallons), 6 plastic cups, 6 cut out cards, Measuring flask, Tablespoons and Markers

Instructions:

1. Fill the aquarium/basin/drum with water and explain to students that it represents the Earth's water. Have students calculate in millilitres or tablespoons, how much of the aquarium's water each water source represents. To do this, students should multiply the percentages by the volume of the aquarium (20 litres = 28,000 millilitres; 5 gallons = 1,280 tablespoons). Use the information given in the table above to do your calculation.

2. Have the students label the six cards, one for each of the following water sources: icecaps and glaciers, groundwater, freshwater lakes, inland seas and salt lakes, atmosphere, and rivers and stick each labelled card onto each plastic cups.

3. Have students measure the appropriate quantity of water into each cup, using their calculations from step 1 (Most of the water will remain in the aquarium representing the oceans.

4. Have the students draw conclusions about the availability of water.

5. Sum up by emphasizing on the importance of preserving drinkable water for consumption.

Reference: *The Middle Green, Hands on Learning in Grades 6-8*, Tim Grants & Gail Littlejohn, 2004

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