



Technical Report for Biodiversity Conservation Teachers Training in Rarotonga, 2013

Venue: Rarotonga Cook Islands [Ministry of Education – The Rainbow Room]

Date: 30.04.13 – 02.05.13

Purpose: Teachers Professional Development in Biodiversity Conservation

Officers Present: Makereta Takaliavuna & William Young

Time: 8.30.am – 3.20pm

Participant Present: Males: 5 Females: 13

Abbreviations :

LLEE : Live & Learn Environmental Education

MoEd : Ministry of Education

NES : National Environment Service

SPREP : South Pacific Regional Environment Programme

UNEP: United Nations Environmental Programme

Executive Summary

Live & Learn Fiji was approached by the National Environment Services (Conservation Biodiversity Unit) in partnership with the Ministry of Education to conduct a 3 day consultation training session for teachers from primary & secondary schools around Cook Islands. This consultation process took the form of a Professional Development for Teachers from the 30th April – 2nd May. The main purpose of this consultation in Cook Islands was to facilitate learning/understanding sessions on Biodiversity Conservation through utilising of a resource developed by Live & Learn “Discovering Biodiversity” and adapting this to the context of Cook Islands.

The workshop had been broken down into three different themes linked to Biodiversity Conservation; **day one:** Discovering & Valuing Biodiversity, **day two:** Culture & Biodiversity and **day three:** Taking Action.

The objectives and expected outcomes for this training were as follows:

Objectives:

- Developing positive attitudes and values on biodiversity conservation.
- Sharing participative approaches for promoting Biodiversity Conservation using the Discovering Biodiversity Educations Guide.
- To identify sustainable actions that are relevant and measurable at school level
- To provide opportunities to establish networks amongst teachers

Expected Outcomes:

- Participants being able to link how values and positive actions can contribute to Biodiversity Conservation.
- Participants are able to adapt lessons from the guide into school curriculum.
- Sustainable Action Plans developed by participants and are able to take ownership while implementing actions in schools
- Formation of working cluster groups

Activities Undertaken

Opening & Key Note address Overview

The keynote address and opening of 3 day workshop was done by Mr Joseph Briber from the National Environment Services in Cook Islands. In his address he mentioned that the training with teachers was key for planting the seeds for the next generation into taking action for Conservation Biodiversity around Cook Islands. He acknowledged the important contribution of SPREP, UNEP, Ministry of Education, National Environment Services, and Live & Learn Environmental Education in ensuring that this 3 day workshop would help teachers from around Cook Islands come together to address key issues arising from Biodiversity Conservation. [refer to annex 2]

Before the workshop began proper with presentations and the facilitation of activities with participants, the facilitator presented the overview of the organization, Live & Learn Environmental Education and quickly ran through the program with everyone ensuring that for the 3 days the objectives and themes were clarified with the teachers. Participants introduced themselves and highlighted their expectations for the workshop. 3 key things captured which participants wanted to grapple with were:

- Waste Management
- Sustainable Plans which would help change the mindsets of people into understanding Biodiversity Conservation
- Strategies to implement within class

Activity Overview

Facilitation of hands-on training sessions for the 3 days (30th April – 3rd May) for the training of teacher's workshop on Biodiversity Conservation as suitable for Rarotonga

Day 1: Discovering & Valuing Biodiversity 30th April, 2013

Activity 1: Shaping Our Environment

Activity type: Participatory & Interactive

Objective:

- To allow participants to see the value in working as a team
- To allow participants to understand the importance of communication
- To capture a snapshot of their current understanding of Biodiversity.

Synopsis:

This ice breaker activity helped start the session with teachers forming the different shapes and objects that were present in different ecosystems and finally concluding with their depiction on what Biodiversity meant to them. It was important to gather the teachers perspective of what Biodiversity meant to them and how important it was to all. With this information it helped the team assess as to how much information needed to be disseminated accordingly to where they were at.



Comments/ Observations:

- With such an activity it was imperative that participants understood how many lesson learnt from one activity can be linked to different subjects, which again would link on to the activities which would later follow through in the remaining days into developing SMART action plans in their schools.
- This activity however broke the ice amongst the teachers and the facilitators, summarizing the nature of the three day workshop.

Activity 2: Biodiversity Presentation**Activity type:** Information Sharing/Discussion**Objective:**

- To allow participants understand the value of Biodiversity
- To allow participants identify invasive species within their country
- To allow participants to hear and learn of examples of around the Pacific that address

**Synopsis:**

The presentation on Biodiversity looked at how important it was understand the concept of Biodiversity, what were the vulnerabilities and threats present in our island nations and how we could address these problems in our schools, communities and families. Pacific and Local examples were used in the presentation and this allowed participants to be able to share some of the examples and situations that were prevalent in their surroundings. As part of presentation there were breakout sessions for participants to interact with one another and get to identify some of the local invasive species in the country. The sessions provided a feedback as well for the team in assessing teachers understanding on what were invasive species and the depth of understanding of local species.

Lesson Learnt & Comments:

Participants were identifies key invasive species which they saw as a threat to their island ecosystems, these included:

Animals	Plants	Insects	Aquatic
Mynah Birds	Mile – a – minute	Coconut Moth	Crown of Thorns
Rats	Wooden Rose	Sand flies	
Cats	Red Passion fruit (Mauke)	Rose beetle	
Dogs	Balloon Vines	Black bug	
Goat	Tikika'a – smothering weeds		

Teachers begun to create an open discussion themselves after the presentation and it was a great opportunity to have the National Environment Services present to share some of the invasive species names in relation to the context of Cook Islands, the vernacular names, uses and where they could be found in the country, along with prevalent species in the country and programs being facilitated by the Ministry if Environment.

Activity 3: Kids to Forest initiative [DVD session]**Activity type:** Information Sharing/Discussion**Objective:**

- To allow participants understand the value of Biodiversity
- To allow participants to see children led initiatives in Fiji
- To allow participants to generate ideas on how "Biodiversity Conservation" efforts could be localized using technology

Synopsis:

The team showcased an initiative taken on by children in [Mataso and Nakavu] in Fiji under the “**Kids to Forest**” project. This 5 minute video helped generate discussions on the need for children to merge the ideas of modern day science and technology with past traditions and practices of Biodiversity Conservation. Innovative ideas were birthed out of this discussion whereby the idea of having Grandparents Day in school can be included in their programmes. The schools have parents day in their schools but now they can organize “Grandparents Day” It was imperative that teachers play that bridging role in ensuring that this is done in schools, families and in the community.

Activity 4: Exploring Structures

Activity type: Participatory & Interactive

Objective:

- *To allow participants to understand the independent structures that exist around them*
- *To allow participants to reflect on their role as educators within these structures and identify where they come in*

Synopsis:

Participants were divided into 4 different groups to look into 4 different structures that existed around them. These included the Ministry of Education, The Community, The School and The Family. It was within these structures that teachers were to develop/create what these structures looked like according to their perceptions and to look at where they felt they fitted in these structures. The facilitators provided them with different objects to develop their structures; cups, glues, string, tape, wrappers and paper. The activity itself was quite interactive and allowed everyone to share and appreciate everyone's thoughts and ideas. Creativity skill was shared amongst the teachers, allowing them to learn from each other.

The importance for teachers to be able to identify where they fitted in was crucial because it would help them identify strategies they would take to be able to pass on the message of Biodiversity Conservation.

Feedbacks from the activity were as follows:**1) Ministry of Education**

The group which focused on the **Ministry of Education** looked into the structure its setup and key people who were responsible going up the hierarchal placement. They were able to identify that in this structure they were at the bottom of the hierarchy. Teachers were the implementers out in the field. In further explanation of the structure the teachers looked at how they as educators even though at the bottom of this structure could help filter the message of Biodiversity Conservation up to the head.

Strategies which they as educators could incorporate into getting the message of Biodiversity Conservation within the Ministry included:

- Inviting Minister to the Schools [to see the actions which children are undertaking within their schools and how the MoEd could follow up and support the initiatives].
- School students present to the Minister [having children visit the MoEd and have them present to the Minister on initiatives that they were implementing in their schools, this trips would serve two purposes 1) to help the children see how things are done in MoEd and 2) being able to meet the person responsible in the country for Education.
- Schools get together to make a video, play song, dance to the Parliament as well (to all other ministries)
- Advisors to be part of development program – Teachers/Students to be included
- Schools Conference for kids across the country and inviting various stakeholders to be present to hear from kids in schools
- Social network/promote activities [utilization of social media: facebook, emails etc..]



2) The Society

The group which looked into society highlighted key people that and ministries that they wanted to work with. These included the elders from the community, the different governmental ministries, NGO's and CSO's and key people in different communities – utilizing both the modern and traditional structures and institutes present. As educators they had identified themselves as the link which could make connections with different stakeholders who could help their children by teaching the relevant skills and providing information to make informative decisions about Biodiversity Conservation. Within the community educators had also looked into working with the churches in the island as a response to reaching the greater community – this was important as it showed that the discussions taking place allowed participants to not restrict the awareness programs to only the formal education programs but “thinking outside the box”.



3) The Schools

The group which looked into the schools looked at practical actions they could implement in schools to help spread awareness and educate their children and themselves on Biodiversity Conservation. Note: for some of the teachers which attended the workshop they were principals/head teachers of schools in the Cook Islands, this made a greater impact in terms of implementing actions in their schools. As mentioned by the participants the first thing in which they would undertake, is to conduct professional development training in their schools with their teachers and encourage them to carry out initiatives which help support Biodiversity Conservation in their school.



4) Family

The group which focused on the family touched on the generational gaps between the older and younger generations. It was imperative that the family structure be looked into as teachers played a role in the child's life, and if family structures were not conducive to supporting a child's development they as educators could help ensure that whilst in school their children weren't missing out. Communication between intergenerational groups within a family was very crucial, in terms of the traditional knowledge which had key techniques that portray Biodiversity Conservation.

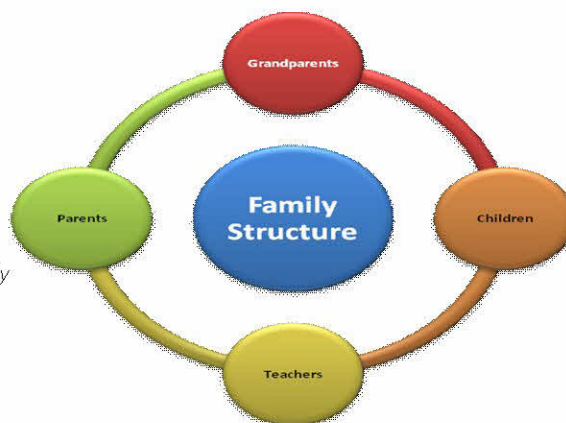
Communication if it had to work would be from:

- Family – school
- Parents – Grandparents
- Parents – Children
- Grandparents to All



- Good role models – lead by example
- Recycle, Reuse and Reduce and use money wisely

The cycle on the right shows the relationship between all the members of the family including the teachers who are the 2nd parents to children in school



Comments/Observations:

- In identifying the structures within the different contexts of the country, this activity helped participants slowly think about strategies they would like undertake in their schools and sharing these ideas with others in a working group would provide the best channels others could undertake in their schools when dealing with the different structures they come across: Family, Schools, Community and the Ministry of Education.
- Participants from day 1, by doing this activity shared a lot of ideas and learned from others on different strategies they as Educators could implore [if they chose to implore them].
- When the environment for learning is fun and interactive, concepts are easily absorbed and remembered.

Activity 5: It's Your Choice

Activity type: Participatory & Interactive

Objective:

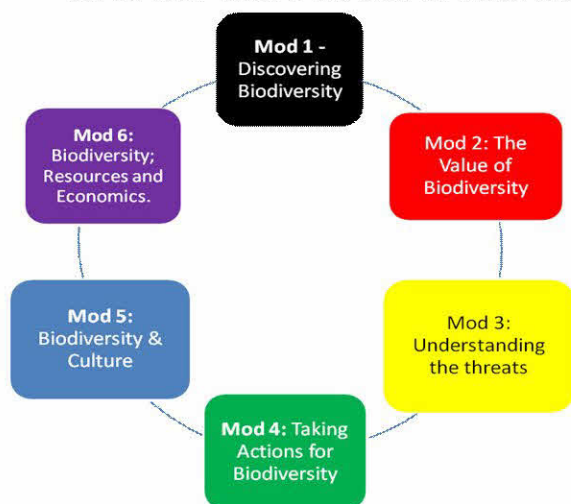
- To allow participants to explore and link activities in the Discovery Biodiversity booklet to the Cook Islands context
- To allow sharing and utilization of creative categories brainstormed during the session.

Synopsis:

The team facilitated a session which looked into modules 1 - 3 in the Discovering Biodiversity booklet. These modules were specifically chosen as they linked well with the theme of day 1 discovering and valuing Biodiversity. Participants



were then divided into four groups and which they were to look at the different sections within the modules, they were to choose a particular activity from the module of their choice, work as a group and facilitate a 30 – 45 minute session with the rest of the participants the following day. The groups then spent about 1 hour discussion and developing their lesson plans for the following day.



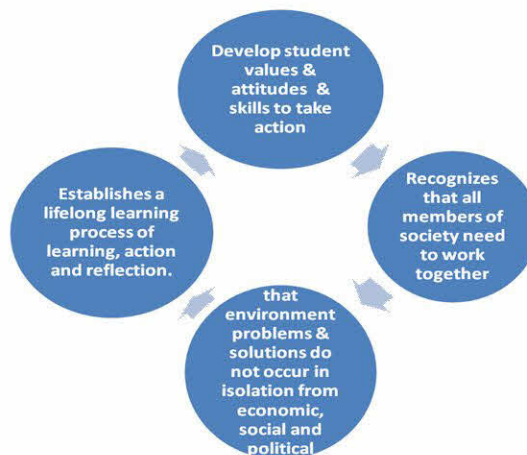
The diagram on the right outlines the six different modules that can be found within the Discovering Biodiversity Booklet.

- **Module 1: Discovering Biodiversity**
- **Module 2: The Value of Biodiversity**
- **Module 3: Understanding the Threats**
- **Module 4: Taking Action for Biodiversity**
- **Module 5: Biodiversity & Culture module**
- **6: Biodiversity; Resources & Economics**

By understanding the booklets modules, the participants were able to see its link to Education for Sustainable Development shown in the diagram on the left.

Comments & Observations

Through the brainstorming activity facilitated prior to everyone working on the modules given, it allowed participants the opportunity to share some of the creative strategies they had already been undertaking within their classrooms. It also provided an opportunity for participants to learn from some of the strategies that were undertaken in Fiji. The mixture of both Primary and Secondary school teachers allowed participants to adapt informative lesson plans from the booklet to their relevant context. This was something which teachers weren't told to do, but was seen as an outcome from facilitating this activity.



Activity 6: Strength Cards

Activity type: Participatory & Interactive

Objective:

- To allow participants to share using the strength cards what they had learnt throughout the day.
- To conclude the sessions for the day one

Synopsis:

Participants were asked to choose a card “strength card” which best depicts something that they had learnt from the whole days activity.

Comments from the participants:

- **Encouraging** – the sessions were encouraging to me and useful as I picked up new ideas
- **Responsible** : this card best describes that we are all responsible for our actions, in trying to care for the environment we all have a duty to play and we have to start to think about the past and for the future
- **Enthusiastic** – I chose this card because I love Biodiversity
- **Flexible** – The sessions today were enjoyable and I noticed was very flexible , which we as teachers needed to learn how to sometimes go with the flow
- **Caring** – I chose because the sessions helped me and us as teachers to care for the environment
- **Respectful** – I chose this card because for me of the knowledge which is already there is something that we must respect and acknowledge and build on or strengthen
- **Hopeful** – I chose this card because from the lessons learnt today we can be more hopeful for a better brighter tomorrow.
- **Relaxed** – I noticed today the atmosphere was very relaxed and interesting , we as educators should ensure that in the classrooms we ensure that there is a relaxed environment , because learning would be more fruitful for our children
- **Adventurous** – I chose this card because when I introduce what I learned today in the school it would be an adventurous time for me.
- **Co- Operative:** we all need to co-operate something that stood out strong for me today, and was very much present in the sessions. We can't do it on our own.
- **Happy** – I am no longer afraid with the word Biodiversity, something which I didn't know about and avoided teaching but after today's session I am more confident with the presentations and ideas.
- **Humorous** – we had laughter since morning something that I thought was different, laughter but also learning, something that we must ensure happens in our classrooms.
- **Friendly** – Biodiversity is friendly to everyone and that is what the classroom should all be
- **Curious** – I was curious when I came to learn about this workshop focusing on Biodiversity but now I am a lot less curious about it
- **Creative** – I have learnt today that as an educator I have to be creative in class to implement this “Biodiversity Conservation” in class
- **Reliable** – We need to be good and honest , and we have to be reliable teachers to our children

- **Practical** – They are all relevant and appropriate, practical I'm very much of hands on, and the sessions today provided that for me. Instead of the norm that children should look into their books
- **Understanding** – Each and every one of us have to understand what Biodiversity is all about

Conclusion of Day One sessions

The session ended with teachers being reminded of the major activities in which they would be facilitating the following day, this included the lesson plans from the booklet, collection waste materials and the curriculum inventory for Rarotonga which was to be conducted in the afternoon.

Day 2: Discovering & Valuing Biodiversity –1st May, 2013

Activity 1: Story Catching

Activity type: Participatory & Interactive

Objective:

- *To allow participants to see the value of working together*
- *To allow participants to understand how everyone has an important role to play*

Synopsis:

Participants were invited to choose a card that was spread out on a table near to them and they were instructed that this activity was to allow them into telling one continuous story, linking their cards to person who spoke before them.



Comments/Observations

Throughout this activity, it was observed that some participants had a challenge with linking some of their cards to the story, mainly because their card had a description which did not seem to match the way the story was being told. However this did not limit the participant's creativity. A strategy which they incorporated to overcome this was by adding different twists to the story which made it both enjoyable and exciting.

The activity ended with participants seeing how this activity could be used in their classrooms and also participants had made the connection that everyone had a role to play when it to Biodiversity Conservation. There would be "highs and lows" but in all that, everyone must not lose focus of achieving their goals.

Activity 2: Teachers Facilitation [It's Your Choice]

Activity type: Participatory & Interactive

Objective:

- *To allow participants to explore and link activities in the Discovery Biodiversity booklet to the Cook Islands context*
- *To allow sharing and utilization of creative categories brainstormed during the session.*

Synopsis:

The modules which participants had worked on in their groups the day before were facilitated as a lesson during this activity. There was a total of 4 groups. This activity allowed participants to utilize the strategies they had



identified namely: role plays, poetry, songs, excursions, group work, debates, open discussions, resources [cards], artwork, model making and research. In facilitating the activity from the modules with their peers, it allowed for three important things to happen: **1)** practice in adapting activities from the booklet "Discovering Biodiversity" **2)** receive feedback from their peers on ways of alternating the activity to better suit different levels within the Primary and Secondary levels and **3)** enable participants to identify which subjects taught in the class linked well to Biodiversity Conservation.

Group 1 Facilitation: Module 1 – Food chains, Food webs about biodiversity.

Outline of Activity	Learning Activities:	Comments/Lesson Learnt
<ul style="list-style-type: none"> Target Group: Year 5 & 6 Number of Students: 25 Subject: Science Essential Learning Areas: Language, Math and Art A.O: Describe types of relationship between n the different species of animal & plant in the local area L.O: Create a "food chain" model Duration: 30 – 45 minutes Resources: card board, glue, scissors, mark pens, pens, A4 paper, captivity, time and flash cards Target Group: Year 5 & 6 Number of Students: 25 Subject: Science Essential Learning Areas: Language, Math and Art 	<ol style="list-style-type: none"> Form a food chain, sing a song [Bind us together Lord] Class discussion on the importance of a food chain Flash Cards Create a food chain model Friend Activities <p>Conclusion:</p> <ul style="list-style-type: none"> Group presentation and comment from the producer Student and teacher discussion 	<ul style="list-style-type: none"> <i>The activity focused on the food chain and discussion was facilitated and concluded with hands - on activity.</i> <i>Starting with a chain and finishing with a chain was very effective.</i> <i>Producers , was really not the focus.</i> <i>Looking at the level is very effective for our students, hands on learning and I kind of liked it</i> <i>If it was done with more junior grade , we can use lesser complex</i> <i>Interactive discussion with class was very good, as some might come up with very unusual ideas and if we as teachers don't know we can admit it. Asking the children to ask their parents giving the children the chance to get research and asking them (if their parents can come together)</i> <i>Allowing children to come up and</i> <i>Teachers have to be flexible</i> <i>Math – Geometry [coming to know of shapes]</i> <i>Computing – could have been included for children to go and search and find out what millipedes are using the En'carter.</i> <i>Health Curriculum and Social studies, Maori language, inclusion of vernacular</i>

- **A.O:** Describe types of relationship between in the different species of animal & plant in the local area

Group 2 facilitation: Module 2: The Value of Biodiversity – Systems and processes that support life

Outline of Activity	Learning Activities:	Comments/ Lessons Learnt :
<p>Classes 7 & 8: L3</p> <p>Number of students: 20</p> <ul style="list-style-type: none"> • Objectives: To understand the process of Photosynthesis and why it is in supporting life • Learning Objective: Definition of Photosynthesis <p>Demonstrate on understanding of the inputs and output of this process using a diagram</p> <p>Discuss the importance of photosynthesis in supporting life.</p> <ul style="list-style-type: none"> • Essential Learning Areas: Language, Art, Math, Health, Literacy and Comprehension, Key words. Word finding – a good way of defining what the word means • Time: 30 – 45 minutes • Materials: White board, cards (input/output diagram) information sheet 	<p>Activity 1: Photosynthesis Word find activity – allowing the participants to brainstorm as many words possible form the process: Photosynthesis</p> <p>Activity 2: Group Discussion: Discuss the statement: “without green plants we’d all go hungry” [5 minutes] – participants were to discuss whether they agreed or disagreed with the statement and to justify your answer.</p> <p>Activity 3: Class discussion: objective to get agreement</p> <p>Activity 4: Guided reading of information sheets</p> <p>Key words from the reading – energy, eat, photosynthesis, hungry, fuel, sun, insect, plants</p> <p>Activity 5: Brainstorm – inputs and outputs of the process [record in table on whiteboard]</p> <p>Activity 6: Complete photosynthesis leaf diagram</p> <p>Activity 7: Evaluation /Consolidation /Reflection</p>	<ul style="list-style-type: none"> • <i>The use of synthetic food from plant extracts made in the laboratory was an important aspect to explore, as children in this modern day and age had access to internet.</i> • <i>By breaking the big word up into smaller words was a good</i> • <i>Some people are more visual rather than reading</i> • <i>The pictures were very good as it would be more</i> • <i>Accept points that are given off students – it was imperative to respect and reward the suggestions given by the different people</i> • <i>Children who already know a lot, we might have to include this child with the lessons as well to relate well.</i> • <i>Prior knowledge in the room it helps, as students were able to communicate.</i> • <i>We as teachers need to pay attention to students who are bright, and include them.</i> • <i>Welcome challenge, someone who is a fast finisher – they would be able to share this information with others.</i> • <i>As they get older the kids get more quite as they find it to be more cooler, and sometimes it is so hard to get anything out of them.</i> • <i>In discussion with teachers – the facilitating group had already identified how the activity could be adapted to the context of different classes.</i>

Group 3 facilitation: Module 1 - Biodiversity provides food, medicine and shelter [priority focus – food]

Outline of Activity	Learning Activities:	Comments/ Lessons Learnt :
Topic: Biodiversity provides food, medicine and shelter Level 3 (year 8) Subject: Science / Social Science Objective: Students are able to explore the importance of Biodiversity to them in their daily lives L/Outcome: Students will: examination humans derive their food Time: 35minutes Resources : Charts & Pens	<ul style="list-style-type: none"> Introduction (5 minutes) Group Work (5 minutes) Grouping of the different food given into their assorted groups, all of which were written into vernacular Group Presentation (25 minutes) Where do we get it, and how do we get it? Conclusion 	<ul style="list-style-type: none"> The activity incorporated local names of plants and animals which was good in reference to the context of the country. It is a good activity in that it allows children to see the importance of understanding Biodiversity and local knowledge. Students will be able to understand where their food comes from and where it can be found – root crops and animals Students need to come to the outer islands to see these things, as many of them here in the main island would only know them to come in the market but in the outer islands they will have a better experience. A good activity to do with all levels and test children's understanding of the environment – good opportunity to bring elders to come and explain to the children and share traditional knowledge. Good activity for all levels.

Group 4 facilitation: Module 1 - Biodiversity provides food, medicine and shelter [priority focus – Uses of flora on the island]

Outline of Activity	Learning Activities:	Comments/ Lessons Learnt :
<ul style="list-style-type: none"> Target Group: Years 5 & 6 Number of Students: 20 – 25 Link to other ELA: language, Math, Health, Maori AO: Importance of Biodiversity in our everyday lives 	<ul style="list-style-type: none"> Brainstorm Plants (usage) Share with everyone Allocate a students in groups of 3- 4 Distribute and explain task sheet 	<ul style="list-style-type: none"> Biodiversity and its everyday use in our lives local plants is something we should all know I personally found this activity very interesting in terms of understanding the medicinal properties of plants, I have learnt a lot and wish to conduct a similar activity like this with my children in the class. I learned a lot of form this short and interesting activity, and enjoyed the outside walk to identify the plants and their uses. I did not know about the uses of Coconut tree, different parts for medicine, I thought it was important for the children to understand this as well, especially the part about medicinal properties of plants. Our children in classes should know at least some of the basic local

medicines so that they know how to attend to themselves when out in the bush.

- **LO:** Explore the importance of Biodiversity
- Identify and describe the importance of plant
- Classify uses of plant e.g. Food, Shelter and Medicine
- Present Findings
- **Time Allocation:** 30 -45 minutes
- **Materials:** Task Sheets, Pencils Pens Natural Environment
- Target Group: Years 5 & 6
- Students go outside (10- 15minutes) to complete task-sheet
- Share completed task sheets and compile group findings as a whole class
- Display information and sharing session [open group discussion]
- **Extension Activity:** Research on the web on other uses of the plants identified by the different groups.

Observation/Comments

- This activity brought out a lot from participants during the sharing/open discussions part of the activity. Many participants commented on the facilitation of the activities from their peers and how they could undertake it in their classes with their children and most importantly adapt it in their schools. The information from the Discovering Biodiversity booklet provided participants with the insight into other Pacific island countries biodiversity, which they could adapt and utilize the same activities for local contexts.
- From this activity the teachers were ecstatic and truly enjoyed and learned from one another. They used the guide to draw out information and ideas, but each group developed their own lesson plans to how they felt would work with the level or grade they chose. The joy and enthusiasm observed during the facilitation of the activities gave the facilitators an indication that they had understood how to adapt the book in their own island contexts within Cook Islands. Information that was not relevant was left out or taken and changed accordingly.



Activity 3: You got Mail

Activity type: Participatory & Interactive

Objective:

- To gather participants understanding on how they perceived Culture & Biodiversity

Synopsis:

Participants were instructed in this activity that they would be writing a letter to their friend in another country. The main purpose of this letter was to explain their views on the topic **"Is Culture important for Biodiversity Conservation? And if so why /why not? "**. After participants had completed writing their letters the facilitator collected them in a container and gave it out to a participant, who would



then select a random letter, read it and pass it on to whom they chose. They were advised if they had chosen their own letter, to reshuffle and pick again.

This activity served two purposes; **1)** it allowed participants a teaching strategy of incorporating into their classrooms and **2)** it allowed the facilitators an insight into what participants felt about the topic posed.

Comments/Observations

- All the participants as they read their peers views all agreed that Culture was indeed an important aspect of Biodiversity Conservation. This was highlighted from day 1 open discussions and also during the open group discussions of the activity facilitated prior to "You got Mail". It was very good to see that participants were all on the same page as it linked well to the presentation that followed "Culture & Biodiversity".

Activity 4: Culture & Biodiversity Presentation

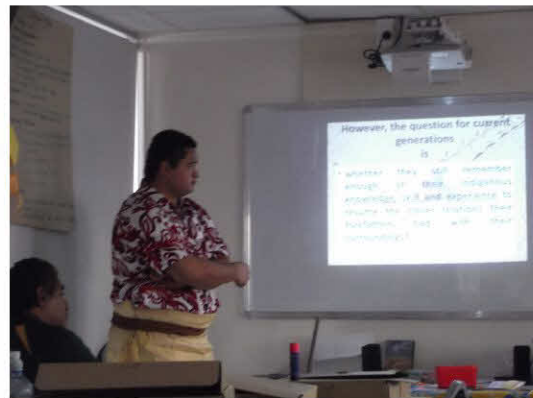
Activity type: Information Sharing/Discussion

Objective:

- To allow participants understand the value of Culture in Biodiversity Conservation
- To allow participants identify traditional strategies used by ancestors that worked with Nature
- To allow participants to hear and learn of examples of around the Pacific that people are incorporating within their countries.

Synopsis:

The presentation on Culture & Biodiversity looked at how important it was to understand the concept of traditional knowledge and its link to Biodiversity conservation efforts. Pacific and Local examples were used in the presentation and this allowed participants to be able to share some of the examples and situations that were prevalent in their surroundings. Aspects of Traditional knowledge and practices were highlighted along with the importance of preserving these oral traditional & arts because they provide the basis for scientific research in many ways. Key highlights on disaster preparedness and recovery techniques used by ancestors are being studied, reached and documented by many in the scientific world due to its practicality and advantages both people and the environment in island communities.



In linking knowledge to change it was important that plans were holistic and were bottom up giving a sense of ownership to the people. This same principal could be done in schools with children engaging them with already what they know and building them from that level. In conclusion on the presentation a key question was asked - **If there is a gap, that we as Educators have identified, what can we do ensure our children don't lose out?** This question opened up the discussions between facilitators and participants on how to address gaps which were prevalent in schools, community, family and the ministry.

Comments /Lessons Learnt

The activity gave participants much to think about and provide a space for many of them to vet out what their thoughts were on the matter. Key points highlighted was the need to incorporate value based learning in lessons being taught in schools, along with the preservation, sharing and practice of languages and dialects in Cook Islands. Teachers believed that it was a crucial part of understanding who "we" as a people are gave individuals a better understanding of the need to practice biodiversity conservation seeing how it is imbedded in the culture. Medicine, Agriculture & Building techniques needed to be taught to children and they needed to draw this information from Elders in their communities. Participants saw themselves playing a vital role in ensuring that this got through to their children. Teachers from outer islands shared how they were trying to ensure their children didn't miss out on this important cultural knowledge.

Participants had come up with strategies of including the community and utilizing technological advances as a means of documenting and preserving traditional knowledge - which they all agreed held key strategies in promoting Biodiversity Conservation. The presentation on Biodiversity and Culture helped cement and affirm the things which were coming out from session prior to this with teachers, it seemed to touch on this issue of not being taken seriously in Cook Islands, but participants shared how crucial it was to address this issue of Culture & Biodiversity preservation. Similar sentiments were echoed by representatives from the National Environmental Services and the Ministry of Education representatives.

Activity 5: SEE the Links

Activity type: Participatory & Interactive

Objective:

- *To allow participants to explore the links between, environment, culture and economy*

Synopsis:

This activity involved the use of three different colored dices, green represented the environment, blue represented the economy and the yellow die represented the society. Participants were given a list of words which fell under those different categories and according to the number shown on the different dies after they were rolled; the participants had to form sentences which linked all the words together. This activity was facilitated in a group.

Comments/Observations

Participants were quick to identify where they could utilize such an activity in their class and for which subjects and topics. They were also able to identify skills which could be linked into this activity and ways in which it could be adapted.

Comments on the activity

- *Vocabulary building*
- *It can be done in the local language*
- *This activity can be used in any subject and in any level*
- *It is a very good activity*
- *Diagnostic test with the lessons [assessment tool in both literacy and language]*
- *Competitive spirit in making the activity as a game*

Skills identified which helped in children's learning

- *Listening*
- *Communication*
- *Group work [dialogue]*
- *Team work*
- *Math Skills – linking this up in the food chain*

Activity 6: Role Play

Activity type: Participatory & Interactive

Objective:

- *To allow participants to demonstrate, plan and facilitate a selected module from the booklet [modules 5 – 8]*

Synopsis:

This activity though short in nature, allowed participants to work closely in a group utilizing a teaching strategy amongst themselves and something which they could incorporate back into their classes. It was imperative that while the participants discussed the module lessons that they wanted to do [utilizing different strategies] to see that it was both enjoyable and educational.

The three role plays that teachers focused on were:

1. Population growth – a factor which influences the use of natural resources

2. Sustainable Fishing Practices – which looked at unsustainable fishing practices as a threat to marine resources and biodiversity of island ecosystems
3. Invasive Species – how introduced species by people brought in by accident can have a devastating impact on biodiversity of an island ecosystem

Comments/Observations

Participants enjoyed this short activity and mentioned how effective it can be in a classroom setting. Seeing that these types of activities built different types of skills for an individual, as not all students were book smart, this was a creative teaching strategy which could be used "hands on" for all generic groups.

Activity 7: Curriculum Links

Activity type: Participatory & Interactive

Objective:

- To allow participants to look into the Cook Islands curriculum and make links as to where their activity facilitated linked into the curriculum taught.

Synopsis:

This activity allowed participants to do an in-depth research of their schools curriculum, targeting both the science and social fields. Note: the Cook Islands science curriculum prescription was handed out to participants as a guide in formulating the links. However participants were able to link in other subjects which they felt could be suited to this theme of Biodiversity Conservation.



Curriculum Links for the 4 lessons take from the modules

Group 1

Learning to understand the important parts of the plant.

- Values: Respect, Responsibility, Honesty and Considerate [most of these instilled from home]
- Skills: Communication, Peer teaching, Interpretation results, Artistic and Creative skills (drawing and label) Co-operative learning
- Physical skills: learning to follow instructions, Grouping, reporting
- Information skills & field work

Group 2

- The living world: Level 2 & 3
- Using similarities and differences to group all living things.
- Distinguish of groups between all living things
- Skills: Communication, problem solving, cooperative learning
- Values Framework: Respect, Sharing, Caring and Learning

Group 3

- Links – Aim 3 and Aim 4
- Achievement objective are both linked together
- Grouping and describing different parts of the plants and all living things.
- Information gathering,
- Respect Traditional Customs, Respect the environment and

Group 4

- **Skills:** Communication Artistic, creativity, cooperative learning, self management, social cooperative
- **ELA:** Language, Art, Math and Health
- **AOL:** Lesson 3: Describing and discussing how different structures and functions allow plants and animals to survive.
- Scientific Skills to be brought out during the assessment
- All scientific skills within that level needs to be addressed

care for the environment well.

- Problem solving skills

Comments/Observations

In doing an in-depth study of the curriculum links it was apparent that participants were quick to identify areas which they felt Biodiversity Conservation meshed in well. Participants further went on to describe the skills and values for lessons and subjects in the curriculum where they felt stood out in the lessons that they had facilitated.

Ms Jane Tauraii [Ministry of Education] was present to help the participants identify and link these areas in the curriculum to the Cook Islands context. The importance of this activity was to help participants see that for Biodiversity Conservation this subject was usually limited to only the science subjects, however whilst participants reviewed the curriculum for the Cook Islands they saw that it could also fit in to different areas, which was important; because this helped them gain the confidence to incorporate this "knowledge" into other areas. Therefore in terms of sustainability, Biodiversity Conservation aspects could be integrated within a lesson and be taught across all subjects for students. This however, was an important aspect that the teachers had learnt in the workshop in the past two days.

Conclusion of Day Two sessions

The sessions for day two ended with a high note, as participants had learned and shared from the course of the day important links and strategies which could be incorporated into classrooms when teaching about Biodiversity Conservation. Important points noted in the sessions were tagged to how Culture [Traditional Knowledge] was crucial in Biodiversity Conservation and its preservation of this knowledge through the documentation or video recording of anecdotes from elders in the communities and getting the key informants from the society involved.

Day 3: Taking Action - 2nd May, 2013

Activity 1: Symbol Cards

Activity type: Participatory & Interactive

Objective:

- *To allow participants to recap on the things that they had learnt from the previous day*

Synopsis:

Participants were invited to choose a card that best represented something which they had taken back from the sessions that were facilitated the day before.

Comments/Lessons Learnt

- **Footprint:** I believe that we need to take things one step at a time so that we can make the changes that we want to see happen
- **Masked Faces [Happy & Sad]:** I learned that when we facilitate with our children we need to ensure that the learning environment is fun and enjoyable to help our students.
- **Key:** I have learnt that we as educators are the key and for children to understand complex things we need to open first our heart to understand before we teach them.
- **Lock:** Before this workshop I had no idea what Biodiversity meant, it sounded foreign to me, but from the sessions that were being taught I now have information that can unlock this lock shown here on the card.
- **Shoe:** I see this shoe, as do all of you a shoe of modernization. For me I believe that with new technology we can use this to help persevere and document parts of our cultural heritage which is important for Biodiversity Conservation.
- **Seedling:** This card represents new life and the start of new things, new ideas, and lots of things which I have learnt from yesterday's sessions.

- **Hand:** An important thing that I learnt from yesterday session and the reason why I have chosen this hand is because the responsibility is on us as teachers to ensure that our children don't lose out on all the things that we have learned here in this workshop, we must go back and implement these things back in our schools.
- **Cake:** I have chosen this card because it represents celebrations, and I believe that if we don't take biodiversity seriously, we will not enjoy what we have now, and our children and their children's children won't be having many celebrations as we do now.
- **TV :** This card represent modernizations and with the many inventions that we have now we can use it as a means to record and educate our children much similar to what the children had done in Fiji.
- **Tree:** This tree though it has no leaves represents the importance of nurturing and looking after the environment, taking an active stance to Biodiversity Conservation.
- **Anchor:** I have chosen this card because I believe from the presentations and sessions we had yesterday and the day before, Biodiversity is the anchor our lives.
- **Scale:** This picture represents the balance that is needed in our country for Biodiversity Conservation and we all play an important role in ensuring that that is met.
- **Time [Clock Face] :** I have chosen this picture because , it looks like time is running out , however I believe that time is not running out for us as educators as what we have learnt from yesterdays sessions can be implemented in our schools.

Activity 2: Art Work – Craft from Solid Waste

Activity type: Participatory & Interactive

Objective:

- To allow participants to utilize the waste materials that can be found around their environment.

Synopsis:

Participants were taken through a session on which they created crafts from waste. It was interesting to note that even that solid waste management was a challenge for the outer island schools in Rarotonga and by teaching ways, in which they could utilize the solid wastes into craft work, was one way of minimizing their solid wastes on the islands.

Crafts which the facilitators taught were:

- Creation of butterflies from old wrappers
- Creation of butterflies from old PET bottles with the use of a soldering iron
- Creation of friendship wallets from empty milk cartons
- Creation of flowers from old PET bottles with the use of a soldering iron
- Creation of cardboard planes from empty milk cartons

Small classroom projects:

- Creation of value trees
- Utilizing off cuts from wrappers to make stuffing for cushions
- Bottle fences – utilizing empty bottles to make boundaries around the school or Peace Gardens



Comments/ Observations

The participants thoroughly enjoyed this session and gathered new ideas in which they could incorporate in their classrooms. One participant who taught in the outer islands commented that *"this is a great way to keep our children occupied in the classrooms and also have them utilize the solid wastes that are found on the island. I am very glad that I know have learnt new ways in which we can make craft from wrappers and wallets from empty milk cartons"*. Another participant who taught in Rarotonga said *"I never knew we could create something so beautiful from rubbish, I think the idea of also utilizing the off-cuts from this activity to make cushions are a great idea, instead of having to buy bean bags we can get children to make this in their classes for the younger kids in the lower levels"*.



Generally solid waste management was a concern in the Cook Islands, but having participants engage in such activities allowed them an insight on what could be done in their schools to help manage the solid wastes and keep the environment clean – which in turn is directly linked to Biodiversity Conservation.

Activity 2: The Way Forward

Activity type: Participatory & Interactive

Objective:

- To allow participants to see the importance of teamwork & communication.

Synopsis:

Participants were divided into four groups and given a set of ten cups with a rubber band and pieces of string, accordingly to the number of members in their group. Their main task was to build a pyramid. This was a fun activity that focused on the importance of determination & cooperation toward success and importance of communication. Discussion held after all four groups had successfully constructed pyramids, included comments such as: *"Team work is vital for a completion of any task"* and *"Without communication we wouldn't know what the other person is thinking of doing"*.

Teams who communicated together through sign language were able to complete the task quickly compared to teams where everyone wanted to lead. Aspects of leadership and coordination were brought out by participants as well toward the end of the activity.

The activity was concluded with the participants sharing, that from a simple activity many things could be learned, and in these lessons when applied greatly to the work in Biodiversity Conservation it was imperative that in order to succeed everyone must work together and clear communication amongst all was needed.



Activity 3: Action Plans – for taking Action!

Activity type: participatory and round table discussion

Objective:

- To engage participants on SMART approach [Simple, Measurable, Achievable, Relevant and Timely] in developing their action plans for their schools.

Synopsis:

In this activity participants brainstormed and reflected on all the discussions and activities they had gone through since day one. It was imperative that as they developed their actions they used the SMART approach in achieving their action plans in their island schools.

The main actions that teachers wanted to look into were:

1. **Education and Eradication of Invasive Species (keen focus on flora & fauna)** this to be done through inviting key stakeholders and key note speakers to educate their children and staff as well as organizing field trips for their students.
2. **Traditional Knowledge** (Ethno-biodiversity concepts being emphasized more in schools with the inclusion of the community and elders to make this happen). Teachers had highlighted organizing a grandparent's day and documenting these stories telling sessions for other students across the islands. [utilizing technology as means of preserving traditional knowledge & practices]
3. **Waste management** –better solid waste management through art. Participants had identified the need to provide mesh wire bins for the schools to be able see the solid waste been dumped into the recyclable bins.
4. The use of the **Biodiversity Book and adapting lesson plans** to make it more fun and creative in their classrooms.

Most of the actions that participants wanted to undertake in their schools were identified in the first and second days of the workshop; this made it easier for the participants to come up with most of their action plans. Another booster to the sessions was that the strong support from Ms Jane Tuaraii (MoE) and Mr Joseph Briber (NES) who were present to share how they could help in terms of Monitoring and Evaluation. This saw participants excited to share their ideas with stakeholder's their partners who would help keep these initiatives ongoing in their schools and develop into further initiatives.

The way forward for them then clarified after hearing the actions form the four groups, highlighting the need to send in reports after every terms, approximately three months, including pictures and footages. This however, will be looked into by the Ministry of Education and Environment which involves sharing of ideas, national events and strategies.



Lessons Learnt from mission in Rarotonga, Cook Islands included:

- 1. The need for formal support in schools, as participants had identified that actions developed in workshops had more weight to it if there was a letter of support from the MoE. Ideally this would help implement the actions back in their schools.** To this the Ministry of Education was keen on writing a letter for the teachers to take back with them to their schools to help back up their action plans [seeds from the workshop] ensuring that they were planted and looked after as the orders have come from the top in the MoE.
- 2. The need for Waste Management initiatives/Programs in schools which can help minimize the Solid Waste in the outer islands. An alternative way was to teach both schools and communities creative art from waste. Notably that this may be a temporary solution for small island communities and schools, however this move would greatly benefit island biodiversity and if done right, could lead to small income generation projects targeting the tourism industry.** To this Live & Learn had provided some strategies and ideas of creating art from waste.
- 3. Additional information on Invasive Species programs being undertaken in Cook Islands, so that teachers in schools were well informed of actions facilitated either by NES or MoE which their children could be part of.** To this the team was fortunate to have the NES facilitate a session on the links and data base that all participants could access in terms of identifying the Invasive species prevalent in the Cooks. This information would help them better facilitate Biodiversity Conservation initiatives in the schools.
- 4. The need for Monitoring and Follow up with initiatives in schools on the actions plans undertaken by participants.** To this both the stakeholder present, the NES and MoE were willing to collaborate and help facilitate this initiative.
- 5. The need for Ethno-biodiversity concepts as a means to promote and support Biodiversity Conservation efforts to be taught in schools, either through subjects identified in the curriculum or through extracurricular activities.** This was a key point highlighted by participants present at the workshop, and they as educators had identified that they themselves couldn't do it alone. It was only through collaborative work with NES & MoE along with other relevant stakeholders could this be achieved.

Recommendations

Some recommendations for future collaboration on Biodiversity Conservation Training

- As the trainer agency, sufficient background information should be provided in advance, on the country that will undertake the training. This will assist in the development of the programme and the activities that are specific for the country.
- Educators need to understand and make that link to Values, attitudes and skills development in children as a means to ensure that the head, heart and hands are all in sync towards Biodiversity Conservation and build on a child's set skills to help motivate them towards Biodiversity Conservation.
- It's imperative that educators understand the links in their curriculum to ensure that Biodiversity Conservation should not be limited to a specific subject or topic, but adapted to every subject as it was identified possible during the three day trainings.
- Setting up of child lead environmental groups in schools or communities which could help coordinate and monitor action plans in schools or communities could be beneficial. Having these "Biodiversity Champions" group in Cook Islands could help spread the news about actions being implemented to the public through talk back shows and local media.
- Utilization of audio and written media as a means to have ethno-biodiversity concepts preserved and shared across islands in the Cooks, as a support means to Biodiversity Conservation. This MoE and NES should consider working closely with the Culture & Heritage office in Cook Islands and other relevant stakeholders.
- Utilization of faith based institutions or organizations working in communities to help get communities more involved could be an approach to consider and discussion with inter-denominational heads should be an area to be considered.

Conclusion

Facilitating at this workshop provided Live & Learn with the opportunity to share with teachers in primary and secondary schools around Cook Islands our experiences with Biodiversity Conservation and formal education in general. Although country situations and islands biodiversities differ, we provided participants with relevant information, developed skills through creative teaching strategies in Biodiversity Conservation and encouragement to continue to make inroads with their target schools where greater environmental awareness and education for improved conservation efforts.

Information gathered from the evaluation forms showed that objectives for the workshop were met in:

- Developing positive attitudes and values on biodiversity conservation with the participants
- Sharing participative approaches for promoting Biodiversity Conservation using the Discovering Biodiversity Educations Guide.
- Allowing participants to identify sustainable actions that are relevant and measurable at school level using the SMART approach
- Providing opportunities for participants to establish networks amongst their peers and stakeholders

Though all these objectives were fulfilled, as the trainer agency the three day workshop for educators from primary and secondary schools couldn't have been possible without the overwhelming support and help from the participating partners namely the National Environment Society and the Ministry of Education in Cook Islands.