



Biodiversity Conservation Awareness

Report on Teachers Professional Development Training 8th – 10th April, 2015, Raratonga, Cook Islands.

Biodiversity conservation is intrinsically linked with the culture and identity of the Cook Islanders. Live & Learn Environmental Education was engaged by National Environment Services in partnership with the Ministry of Education; Cook Islands, to provide a training of the trainers' session for primary and secondary school teachers on biodiversity conservation education; exploring creative application and various learning tools to encourage biodiversity conservation and awareness. This report accounts for the toolkit used, various strategies and lesson plans developed by the teachers; and discusses the outcomes of the various activities carried out.

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Background Information

Live & Learn Environmental Education was engaged by the National Environment Services (NES) partnered with the Ministry of Education (MOE) to plan and conduct a training of trainers with teachers from the primary and secondary schools to integrate biodiversity conservation into the school lesson plans and to strengthen the awareness on the importance of the concept amongst the children through the existing curriculum.

Live & Learn Environmental Education (LLEE) was previously engaged in 2013 to conduct a consultation training with the teachers from the primary and secondary schools to develop positive attitude and values on biodiversity conservation, share participative approaches for promoting biodiversity conservation, to identify sustainable actions relevant and measurable at school level and to provide opportunities to establish networks amongst teachers.

Building on the previous training delivered, the program for 2015 took a participant focused approach to share lessons learnt and to explore strategies identified in Biodiversity Conservation Teacher's Guide developed by Live & Learn Environmental Education and distributed to school by Ministry of Education.

The program activities were designed along the following objectives:

- 1) Developing positive attitudes and values on biodiversity conservation
- 2) Sharing participative approaches for promoting Biodiversity conservation using the *Discovering Biodiversity Education Guide*
- 3) To identify sustainable actions that are relevant and measurable at school level
- 4) To provide opportunities to establish networks amongst teachers

The expected outcomes of this training to achieve the above objectives were for:

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

This report will not provide the details of the tools used because they are in the Tool Kit (annexed). It will only provide a brief of the sessions as they were delivered and the outcomes. The focus is on the summary of deliverables and lessons learnt for future trainings.

Pre-Activity Preparation:

The design of the program was based on the feedback provided by National Environment Services (NES) and Ministry of Education (MOE). Feedback and adjustments was made based on the request for a more participant oriented program to allow teachers to share lessons learnt and to incorporate a field-trip. Research was also carried out on the Cook Island's biodiversity database to provide local examples of endemic and invasive species. A pre-brief meeting was carried out with NES and MOE to review the lesson plans and program for the event. All changes made during the program were done in consultation with NES.

Training Schedule:

Day 1 – Theme : Discovering & Valuing Biodiversity			
Time	Activity	Objective	Resources/ Responsibilities
8.00am	Registration		NES/MOE
8.30am	Workshop Opening – Address made by Chief Guests	<i>NES and Ministry of Education</i>	<i>NES MOE</i>
9.00am	Overview of LLEE & Workshop Objectives	<i>Brief power point presentation on the work LLEE does followed with a background of what the 3 day workshop would encompass.</i>	<i>EC</i>
9.20am	Introductory Activity	<i>Fun introductory activity to help participants understand the importance of Biodiversity & introduce themselves.</i>	<i>EC, participants</i>
9.50am	Evaluation	<i>Noting Teacher's expectations, rules for the Workshop and Self-assessment tool</i>	<i>EC</i>
10.30am	Morning Tea		NES
11.00 am	Module 1 & 2	<i>Discovering & Valuing of Biodiversity Power Point Presentation, Focus Group Discussion, Participatory Activities</i>	<i>EC</i>
1.00pm	Lunch Time		NES
2.00pm	Module 3	<i>Biodiversity & Culture: Understanding the threats to Biodiversity PowerPoint Presentation and Focus Group Discussion</i>	<i>EC, Group Representatives</i>
3.00pm	Recap & Homework	<i>Sharing of Lessons Learnt and Homework</i>	<i>EC</i>
3.30pm	End of Day 1		
Day 2 – Theme : Valuing Biodiversity			
8.00am	Arrival Time		
8.15am	Recap and Homework Group exercise	<i>Recap of Day 1 Activities and focus group discussion on Homework exercise</i>	<i>EC</i>
9.30 am	Relevance of Biodiversity	Group Activity and presentation	EC, Group Representatives
10.15 am	Video and Field Trip Prep		EC
10.30	Morning Tea		NES
10.45am	Field Trip	Visit to Takitumu Conservation Area Exercise: Inventory of Biodiversity in the established reserve for Raratonga Flycatcher	NES
1.00pm	Lunch Time		NES
2.00	Module 5	<i>Biodiversity in Schools Open Discussion: Teachers experience in teaching biodiversity (Sharing best approaches, challenges and</i>	Participants

		lessons learnt)	
2.30pm	Module 5 Cont'd	Creating an enabling environment for biodiversity awareness in students Group Activity1 : <i>Curriculum inventory: Identifying subject/topics that addresses biodiversity</i> Group Activity 2: Integration of Biodiversity Awareness and Conservation in lesson plans Group Activity 3: Role play - <i>Using expressive art as a medium of learning -Introduction to Biodiversity Guide</i>	EC/ Group representatives
3.20pm	Recap and Homework	<i>Sharing of Lessons Learnt</i>	EC/Participants
3.30pm	End of Day 2		
Day 3 – Theme : Taking Action			
8.00am	Arrival Time	Registration	NES
8.30am	Overview of Day 3 Objectives	<i>Brief power point presentation on day 3 objectives</i>	EC
9.00am	Module 6	<i>Taking Action for Biodiversity: Group Discussion</i>	Participants
10.00am	Module 6 Cont'd	<i>Roleplay: Advocacy in Schools and the community</i>	Participants
10.30am	Morning Tea		NES
11.00pm	Developing Action Plans	<i>Sustainable /Measureable actions to be undertaken in schools</i>	Participants/MOE
12.00pm	Group Presentation	<i>Presentation of Action plans</i>	Participants/MOE
12.30pm	The way forward	<i>Networking and communication</i>	EC
1.00pm	Lunch		NES
1.50pm	Energizer	<i>From the participants</i>	Participants
2.15pm	Presentation of Final Networking Plan	<i>Teachers.</i>	Participants
2.50pm	Presentation of Certificate /Gift – Art work	<i>NES and Ministry of Environment</i>	NES/MOE
3.00pm	Evaluation of Day 3	<i>Gathering groups perceptions on group dynamics</i>	EC
3.15pm	Closing Address	<i>Ministry of Education and NES</i>	
3.30pm	End of Day 3		

Toolkit and Outcomes:

The activities for the program were designed to inspire the trainers in building lesson plans for creative application in understanding the importance of biodiversity conservation within the existing curriculum and school activities to strengthen outcomes achieved in 2013. This was delivered through the following tools:

- Presentation
- Participatory activities/discussion
- Focus groups discussion
- Creative arts: Role Play, poetry and song, storytelling, drawing
- Individual work
- Field trip
- Activity and lesson planning sessions
- Participant led facilitation
- Pre and post evaluation (Traffic lights indicators)

The detailed lesson plans of the activities and the presentations facilitated are annexed to this report. All presentation copies, resources and lesson plans were stored in a storage disk that handed out each participant.

Presentations:

The presentations provided direction for discussion on various tools and strategies used by Live & Learn Environmental Education in the various education programs to engage student interest and meaningful participation. The presentations also briefly introduced the concept of biodiversity and the importance and relevance of biodiversity conservation.

Presentation 1: Introduction to Live & Learn Environmental Organization, Structure and Processes, guiding principles; linking to the three day program and objectives for the workshop.

This presentation introduced the underlying principles that guided the development of the Biodiversity Conservation Guide produced by Live & Learn Environmental Education and the guiding handbook for the three day training. There are many approaches for transfer of knowledge; and to link knowledge to change, the process to reach the overall outcome is equally important as the outcome itself. The presentation included examples of various projects carried out recently by Fiji LLEE team, outlining the various approaches to engage target groups. Also shared with the participants were links to resources available on the LLEE website that were products of various programs delivered in the region.

The feedback highlighted the need for careful consideration to processes to achieve the desired outcome in action plans. Interest was indicated by participants on the resources produced by LLEE; noting that the resources were available for free download online to support environment and conservation education; and was based on the activities carried out with the school the organization (LLEE) had engaged over the last decade.

Presentation 2: Introduction to Biodiversity, Relevance of Biodiversity, threats to Biodiversity, Biodiversity Conservation

This interactive presentation covered the basic concepts of biodiversity; portraying the inter-connectivity links between genetic diversity, species diversity and ecosystem diversity. Interactive discussion was carried out using a ridge to reef scene for a discussion on ecosystem links and potential threats that impact an ecosystem and its ripple effects to its surrounding environment.



Participant presenting on group presentation (pictured right)

Group discussions and presentation explored creative methods, through song, poetry and role play, showing how prominent invasive species have become in the recent years and the threat they pose to native flora and fauna.

The presentation also covered local policy and government's commitment for biodiversity conservation linking discussion to the national commitment and the role of teachers as trainers of the future leaders.

Threats to Biodiversity & Mitigation Strategies Group Work Feedback			
Group	Why	How	Methods
1	<ul style="list-style-type: none"> Overfishing De-population Over-population of certain species (e.g plants, animals and people) Invasion Protection and preservation Survival Endangered Extinction Natural Resources Identity 	<ul style="list-style-type: none"> Conserve Preserve Protect Prevent Educate Maintain Be active Change mindset Adaptation Re-produce Media Nursery 	<ul style="list-style-type: none"> Education Conservation practices e.g Raui, marine park, blue laws 4 R's Consultation of other ministries/landowners Awareness programs De-sexing Family planning Boarder line control Replanting Action Reintroduce

2	<ul style="list-style-type: none"> • Duty of Care • Beauty • Survival • Existence • Future generation • Sustainability • Economy • Preserving • Control Identity • Native Knowledge and practices • Heritage 	<ul style="list-style-type: none"> • Raui • Replanting • Recycling • Fish feeding • Managing resources • Keeping the environment clean • Reduce invasive species • Reduce contamination • Everybody taking responsibility 	<ul style="list-style-type: none"> • Raui • Campaign – Visibility • Educational Awareness for all • Role Modeling – Walk the Talk • Networking • Bridging gaps • Communication (Media etc) • Replanting • Agriculture • Nursery • Continuity and consistency • Ongoing practice and advocacy of the 3 R's
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Presentation 3: Group Presentation: Methods of Biodiversity Conservation, Biodiversity and Culture, Ethnobiobiodiversity and Traditional Environmental Knowledge

This presentation was participant oriented and participant led. The groups were given the opportunity to think about aspects of the culture that where traditional conservation methods were practiced. The presentation covered the importance and relevance of biodiversity conservation to the traditional way of life and cultural identity and the monetary loss the identified biodiversity threats have created.



The group work feedback depicted the significance of biodiversity in the Pacific Islander's cultural identity and allowed for discussion of traditional methods of biodiversity conservation. Homework exercises were also distributed around this presentation. Discussion was carried out of various uses of flora and fauna for traditional costumes, medicinal treatments and livelihood. Group work identified the various tools that can be used to raise awareness and strengthen the appropriate processes.

Group Work Presentation:

Relevance of Biodiversity Conservation			
GRP	Topic	Relevance	Example
1	<ul style="list-style-type: none"> Culture 	<ul style="list-style-type: none"> Traditional law Identity 	<ul style="list-style-type: none"> Raui Language Values/beliefs Art and craft
	<ul style="list-style-type: none"> Economy 	<ul style="list-style-type: none"> Fishing Planting Resources 	<ul style="list-style-type: none"> Netting Family supplement Art and Craft (sold at the market (income))
	<ul style="list-style-type: none"> Medicine 	<ul style="list-style-type: none"> Variety of plants, and animals humans 	<ul style="list-style-type: none"> fish, or food nutrition (local) rich atmosphere maniva (compost)
	<ul style="list-style-type: none"> Family/Community/livelihood 	<ul style="list-style-type: none"> At home, everywhere Individualism Resources <ul style="list-style-type: none"> - Church - Community - School - home 	<ul style="list-style-type: none"> Our interaction with each other (traditional) Interaction (modern) Land usage
2	Culture	Traditional Modern Practices	Conservation (Raui) Culture Entertainments
	Medicine	Local remedies	Leaves of plants, roots, stems, fruits...etc (parts of plants) Weight Watcher's Program
	Economy	Eco-tourism Products Natural resources	Handicraft Pearls Medicine Nodules
	Physical health & Nutrition	Healthy body – Healthy Mind	Cleansing 5+ Day Water for life
	Family Community Livelihood	Shelter, food, protection Culture	Traditional way, wedding, funerals and various ceremonies

Presentation 5: Developing and planning Action Plans, lesson plans and school activities to encourage biodiversity conservation; Discovering Biodiversity Educator's Guide

This presentation covered the thinking processes taken by the organization when planning annual strategies or activities. The presentation briefly covered various resources that have been developed by Live & Learn Environmental Education (LLEE); namely the *Discovering Biodiversity Educator's Guide*.



Participants were given guidelines to develop strategies address biodiversity threats within their school community. Also provided were guidelines to prepare lesson plans similar to those present in the resources developed by LLEE. With the support of the Ministry of Education, teachers were asked to link plans and activities developed to the curriculum and official school activities. This presentation supplemented the below focus group discussions activity that was carried out in Day II and Day III of the training program:

- 1) Curriculum Inventory
- 2) Developing Lesson Plans

Fieldtrip:

Synopsis:

A field trip was organized by National Environment Services. The fieldtrip was made to Takitumu Conservation Area, a protected national heritage for the endemic Cook Island flycatcher. The fieldtrip also provided an opportunity for awareness of various invasive plants.

Pictured right: Group two with NES guides

Analysis:

The fieldtrip took an ‘*outside the classroom*’ learning experience approach to learning and appreciating the living things in our community. The activity enlightened the group to exploring outdoor activities with students for learning experiences within the curriculum. This is evident in the lesson plans developed.



Based on the comments and feedback from the participants, it is noted that this session also raised awareness on the extent of domination the invasive plants had within a habitat such as the “strawberry guava” plants, “African tulips” and “balloon vines” which were prominent in the conservation site.

Awareness was also raised on why certain measures had to be taken to protect native species; such as the establishment of the conservation site for the native fowl “*Rarotonga flycatcher*” to ensure their survival and how biodiversity conservation; if taken seriously at school level, can prevent the need for costly measures in the future; to protect the heritage of the Cook Island culture.

Feedback from the Participants on the Fieldtrip
<i>"There are a lot of invasive plant species. Two types of kava plant: one is potent and the other poisonous. I also noted the native plants and species and learnt that landowners were working in partnership with National Environment Services. It was peaceful and physically refreshing"</i>
<i>"Very tiring, a lot of over-grown plants and unsafe tracks. It needs a good clean-up."</i>
<i>"There was more invasive plant coverage. Noted the epidemic plans and the different varieties of plants. Saw that most plants have similarity herbal uses across the Pacific."</i>
<i>"1) Saw the birds (endangered species) but most of the plants were familiar to me.</i> <i>2) Bangan (Ava tree - Mato, Anae fern?)</i> <i>3) Shampoo plants - leaves are medicine and buds used for shampoo</i> <i>4) It will be a good place for the children to go and visit"</i>
<i>Filed trip evaluation:</i> <i>1) Looking at different plant species that had been introduced are very useful (medicine, food, habitat shelter for birds) so it is very important to learn the roles of different plants</i> <i>2) It is very interesting to know the importance of plants to the community</i> <i>3) It gives an idea that conserving the forest can save other species (like the flycatcher birds...) to survive and will never go extinct.</i> <i>4) It is a long walk, a bit tiring or scary to climb the mountain</i>
<i>"The plants that were conserved were very useful. Some plants are used for medicine, shampoo and food etc. Students would enjoy the nature walk and discovering different plants on the conservation area. The small birds on the site were beautiful"</i>
<i>Field Trip Evaluation:</i> <i>- Erosion of soil</i> <i>- African Tulip: found out that it was an invasive species</i> <i>- King Ferns: not only found in the Cook Islands but also found in New Zealand and French Polynesia</i> <i>- Pua Neinei: Invasive species, naturally found in Cook Islands but was also found in Hawaii</i> <i>-Mato Tree: found only in the Cook Islands</i> <i>Some plants have become invasive due to birds spreading the seeds. A lot of overgrowth of bush found.</i>
<i>"Rubbish and branch debris really covered the road"</i>
<i>"Most of the plants are common to other islands with the exception of the king fern and pua neinei. Learnt that a lot of the trees that I knew growing up were actually invasive; like the African Tulip. Seeing the Kakaori (Flycatcher) - last time we went we never saw any. There were a lot of strawberry guava - its invasive."</i>

Activities:

Various interactive activities were also used through the three day training as examples of approaches to engage students' interest to advocate for biodiversity conservation.

Activity: Expectations interview

This is an introductory activity where participants were paired and were asked to interview each other. The interview was to be conducted around profiles and initial concept of biodiversity. Results were to be noted down in diagrams. Participants were asked to introduce their partners based on their interviews. The objective of this activity was to have participants interact with each other and for sharing of perceptions on biodiversity in a fun interactive way.

Initial Perceptions of “biodiversity” concept expressed by the participants:

“Gift from God”

“Like a seed, planted, it grows and it gives us food, shelter, air. It is something for us to plant into all our children to appreciate and nurture biodiversity”

“ One big umbrella under which nature works under”

“Like a lake, which everything inside is growing and working together to keep the cycle”

“Basically its relationships between living things”

“ Interaction of all living things through the foodchains”

“Inter-relationships between all living things”

“Biodiversity is everything living in the world”

“Biodiversity is nature”

“The land, the air we breathe and everything in between”

“Paradise on earth”

“Like a circle, representing the world and all living within it”

“the world, life and the sun”

“Capturing information of all living links”

Activity: Diversity:

This is an activity where participants were to pick any material/object within and/or outside the classroom and share how the object chosen was relevant in their lives and the significance it has in their lives. The objective of this activity was to explore perceptions on the term ‘diversity’ and understand how while equally valid and significant, our thoughts and perceptions vary from those around us.

“Its creative and different and something I’ll use”

“It allows us to think about what we pick up. Also will be interesting what the students will think about what they pick up.”

“I really like this activity. I think I’ll use it as a ice-breaker between classes and can link it to the lesson.”

“Generic activity that can be easily adopted into various units”

“These are the type of activities I would like to learn to develop, outside the classroom teaching that easily links to any subject and encourages open thinking for the children”

“No cost activity, materials can be inside or outside the classroom and we can easily connect it to any subject”

Participants feedback on Diversity activity

Activity: Biodiversity Connection: Each participant played a role of a plant or animal and using a ball of string, created links between the different plants, animal, insect on dependency for food, shelter and competition. At the end of the session, the participants had created a comprehensive web that gave a visual to the linkages within an ecosystem. Further illustrations on the importance of biodiversity were highlighted when a pair of scissors was used to show what happens to the web if a species were to disappear from the biodiversity cycle. This activity portrayed the level of dependency on the survival of various organisms within an ecosystem.



“This game is so easy to play. I can use this in the classroom to show relationship between species, habitats and ecosystems”

“Easy to manage, great outdoor activity for the children”

“A lot of lessons learnt from this activity. My favorite so far”

“It takes a short time, but there is a lot of things learnt in this short exercise”

“Enjoyable and the materials are accessible here in the Cook islands. I will be using this for my class”

“It is very visual and can bring great understanding”

Participants Feedback on the Linking Ecosystem Activity

Activity: Chinese Whisper: This game highlighted the importance of understanding concepts and how they are relayed where in the context of biodiversity conservation awareness; interest and advocacy engagement also depends on how the concept is ‘*pitched*’ to the communities and school management.

“Remembered why this game is fun and how it really emphasizes the importance of good communication”

“Fun and message clear, I’ll use this game with my class”

“I used this (game) a couple of years back, I forgot how fun and clear the different lessons we can teach to our kids with this game, definitely something I’ll use again”

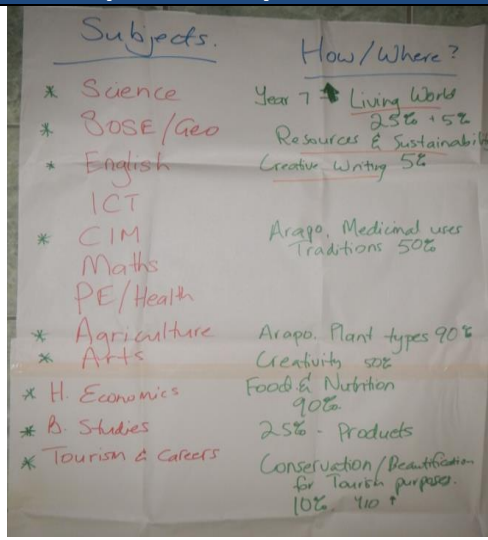
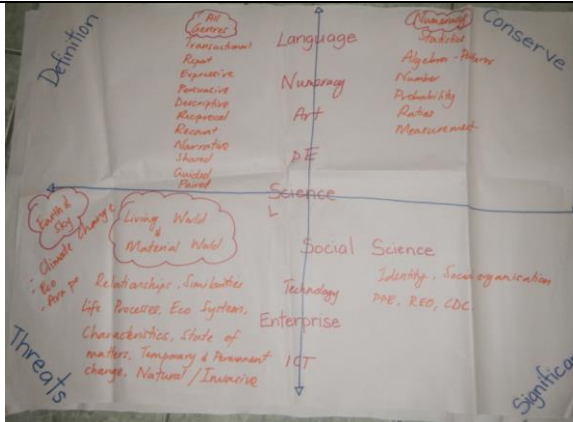

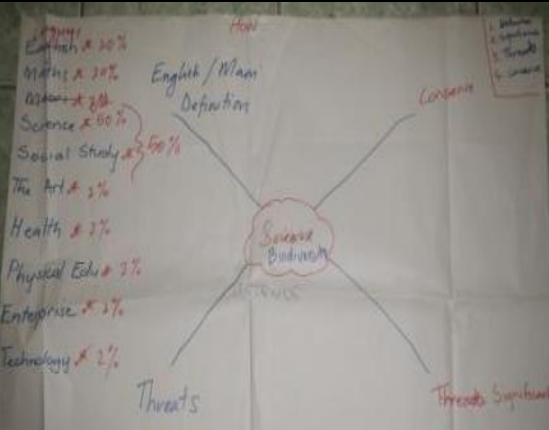
“This makes us think again about how we share on concepts to make them understood clearly”

Participant Feedback on Chinese Whisper activity

Activity: Curriculum Inventory: Following the presentation on the LLEE’s “*Discovering Biodiversity Educators Guide*” and with the support of the Ministry of Education, the trainers were divided into two groups: - high school and primary school; and carried out a curriculum inventory of all units where biodiversity conservation can be incorporated.



Group discussion on aspects of the *Primary School* curriculum that has or can cover biodiversity conservation awareness and action

Group	Curriculum Links Feedback		Participant Group Presentation
1	Subjects: Science SOSE/GEO English ICT CIM Maths PE/Health Agriculture Arts H.Economics B.studies Tourism and Careers	How/Where Year 7: Living World - 25% Resources & Sustainability Creative writing – 5% Arapo Medicinal Uses and Traditions – 50% Arapo Plant types – 90 % Creativity – 90% Products – 25% Conservation Platforms for tourism purposes – 10%	
2	Subjects: Language Numeracy Art PE Science Social Science Technology Enterprise ICT		
3	Subjects: For Definition of Concept: Social Science – 50% Language – 20% Numeracy – 20% The Arts – 2% Health & PE – 2% Enterprise – 2% Technology - 2 % For Significance, Threats and Conservation: All the above subjects at various percentages		
4	Subjects: English – 20 % Maths – 20% Science – 50% Social Study – 50% The Art – 2 % Health – 2% Physical Education – 2 % Enterprise – 2% Technology – 2 %		

Activity: Developing Lesson Plans:

An individual exercise, using the resources provided as reference, the teachers were asked to develop lesson plans; similar to those present in the guides.

Synopsis:

This activity allowed teachers to critically think of strategies to engage the students interest and meaningful participation in Biodiversity and the importance of biodiversity conservation. In developing lesson plans, the teachers were able to think through each step of the lessons developed to identify best approach to create an enabling environment for child advocates for biodiversity conservation. With biodiversity conservation being a cross-cutting concern, the teachers were also given the opportunity to explore and identify the curriculum links where the lesson plans can be used.

Teachers were also provided a number of resources from Live & Learn Environmental Education and National Environment Services to draw inspiration and examples from.



Participants working on individual action plans for their schools.

Activity Guide:

1. Each group will have to develop a lesson plan using the tools on the topic that you have randomly picked/ chosen. (Topics-Invasive species, Climate Change, Biodiversity, Biodiversity and Culture, Threats to Biodiversity, Biodiversity Conservation,
2. Everyone in the group must participate.
3. Each group must conduct their activity in 30 to 45 minutes, imagining that the rest of the participants are students that you are targeting.
4. Also show the curriculum links and how relevant the activity to the level you teach in your school.

Lesson Plan Guide:

1. Activity Title
2. Noting the objectives
3. Identifying available materials needed
4. Determining the Method (Using Head, Heart, Hand Concept)
5. Deconstructive Questions and discussion to link to objectives

Resource reference:

- Discovering Biodiversity: An Educator's Guide to Exploring Nature's Variety
- Be the Future! Your guide to change
- Climate Change and Community –Based REDD+ Education Manuel
- Adapting to a changing climate: Training Guide

Activities Developed and Facilitated by Participants

Activity: Musical Chairs: This game lesson was developed and facilitated by the participants. It portrayed the competition between various species for niches and without local effort, how invasive species can dominate certain niches and lead to the extinction of local native flora and fauna.

Activity: Wink Murder: Developed and facilitated by the participants, this game was a fun way of portraying the importance of communication and action towards identifying the issue or the cause of threat in a community, emphasizing on the importance of early engagement and strategy planning to address the threat before all.

[Annexed: Lesson Plans developed by Teachers]



Participants playing “Wink Murder” outside the classroom.

Developing school strategies

Teachers who had attended the previous training shared how the activities were incorporated into the school activities and the challenges that they faced. Throughout the three day sessions, discussions were carried out on what can be done in school, relevant to the issues faced within the community to support biodiversity actions and biodiversity conservation education.

Discussions were carried out within groups on workable strategies for their school to address issues of threat to biodiversity and the environment and school action plans to be undertaken this year to address the threats and concerns within the school area. While compiling the plans, open discussion was carried out within groups identifying the relevant partners and suitable timeline to implement activities within the school action plans identified.

These plans are noted in the table on the following page.

School Issue	Action Planned	Partners	Timeline
Asbestos -poses health and environmental risks	<ul style="list-style-type: none"> Remove it by burying Engage third party expertise 	<ul style="list-style-type: none"> CIIC NES Health Experts in this area 	<ul style="list-style-type: none"> All Year
Coastal Erosion - Incidents of tides going through house	<ul style="list-style-type: none"> Tree planting Re-claiming Environment week World day Red cross Health 	<ul style="list-style-type: none"> Community Council UNESCO 	<ul style="list-style-type: none"> Term 3
Deteriorating Environment	Public Awareness Documentation School Awareness Workshops	PTA Principle Schools NES Security	Term 3 and 4
Communication and support for implementation of Actions	Networking School inter-relationships Constant monitoring of programmes Biosecurity	NES MOE Marine NGOs Students Parents Frontline Boarders	Annual Biannual Weekly Daily
Biodiversity Conservation	Biodiversity Recyclable Art - Flowers or plants formed from recycle material	Science Department School – SMT Environment Officers Agriculture	Term 2 and Tern 4
	Technology Challenge	Agriculture	Term 4
	Phases of the Moon - Planting trees - Fishing etc	CIM Teacher NES MOE	Term 3
	Food Web Invasive Species (group work)	NES Tangareo Rangers Parents	Week 2 Term 2
	Visual Art Competition using recycled products	Art Teacher Parent	Week 3, Term 2 (2 weeks)
	Clean up day	Teacher MOE NES	TBD
Study the Ecosystem and biodiversity inter-relationships: <ul style="list-style-type: none"> Invasive plants Extinction Conservation biodiversity 	Field trip <ul style="list-style-type: none"> Beach Garden Farming - 	NES MOE Marine Resource Department Agriculture School management team Staff Community	Term 2 Environment week

Teachers Recommendations

In their focus group discussions, the trainers were given a space to think about the challenges faced when implementing actions plans developed in 2013. Recommendations made through the group discussions for further support to delivering and implementing school strategies towards biodiversity conservation are noted in the table below:

Recommendations by Teachers
<ul style="list-style-type: none">• Standardize all resources across all levels• Have the MOE website rich with other teacher/schools productive activities, lessons, unit plans etc• Inspire willingness to share amongst schools and teachers• Change teachers mindset to work together – Integrate e.g thematic approach• Continuous and consistent follow-up and feedback from MOE• For community-based schools, important for community awareness and involvement• These programs should be introduced to the PTA to engage their support and involvement• Strengthen ICT: access to online resources, research• Professional Development should be carried out with other schools and MOE• Include outdoor excursions• Inter/outer exchange programs• Media awareness• More community involvement activities• National geographic documents should be provided to garner interest• Free Internet access• Increased internet usage

Communication and Networking:

Activity: Communication Power- Links

Teachers were provided with a set of skewers representing stakeholders for any action plan. Using rubber bands, participants created links between the stakeholders; each link representing how communication and partnership is between stakeholders.



As above, the links were displayed in various ways. Attempts to break their handiwork highlighted that stakeholders that were more closely linked were more resilient; with those that were tied together in a bunch being unbreakable.

Participants Feedback:

Participants shared experiences where school projects have been planned and carried out; however, because of misunderstanding and lack of communication between the relevant stakeholders, the action failed.

“It was very discouraging for the students who had planted mangroves along the coast and to have the communities remove it all after the students had been part of the planning and implementing process in a school project to save coastlines” – Primary School Head Teacher

Communication was highlighted as a challenge in the past. Discussions were carried out on how communication can be made better for all relevant stakeholders. All Participants agreed that working together and involving all stakeholders is the way forward.

Participants noted that all teachers have access to internet and had email addresses. An email list will be created by MOE and NES for feedback on progress of activities and as a platform for the teachers to share experiences, challenges and ideas for school activities to encourage biodiversity conservation.

[Annexed: Participant List and Contact Details]

Summary of Outcomes

All the activities resulted in the following outcomes. The training:-

- 1) Demonstrated the significance of biodiversity conservation and relevancy to the Cook islanders’ ‘way of life’.
- 2) Enlightened and enforced the trainers scope on the different tools applicable to engage the student interest and commitment for biodiversity conservation identified in the Biodiversity Conservation Guide
- 3) Enabled a space for the trainers to develop lesson/unit plans for biodiversity awareness within the school curriculum
- 4) Enabled a space for the trainers to identify strategies and develop an annual workplan for implementation in school
- 5) Facilitated an atmosphere where trainers felt comfortable to share their experiences and challenges faced in integrating biodiversity conservation awareness in schools and the community; and to identify supportive roles for NES and Ministry of Education in supporting the activities developed within the workplan developed by the trainers
- 6) Identified champions and key agents for implementation of the workplan to advocate biodiversity conservation
- 7) Enabled a space for trainers to develop a networking strategy for sharing of experiences in activities in school that advocate and encourage biodiversity

Training Reflections and Recommendations

The overall training objectives were met. The general feedback noted that the training was a good refresher course and for some allowed a better understanding on the concept of biodiversity and the relevance of biodiversity conservation awareness and action in schools. The participant oriented approach allowed for open sharing and communication on various successful actions that have been carried out in various schools. The approach also allowed for open discussion on past challenges in implementing strategies in schools and supportive roles the Ministry of Education and National Environment Services can provide for school management engagement.

The following are important constructive reflections that are recommended to be considered based on the training outcomes and for future similar training:

- 1) District based schools should be encouraged and supported to involve the communities in school activities. It was noted through informal discussions that school activities planned are carried out in silo and often fail because of the lack of consultation with the district community. MOE can play a strategic supporting role in preparing schools to develop a criteria checklist for any action plan identified to ensure that all relevant stakeholders are informed and involved for a strong partnership towards implementing identified actions.
- 2) Monitoring on school resources and materials will encourage usage of available materials. This reflection is based on the unfamiliarity of the LLEE handbook – *Discovering Biodiversity Education Guide* (on which LLEE was contracted to develop the training around) despite MOE distributing a copy to all schools that were represented at the training two years ago.
- 3) Ministry has a strong partnership with NES and should explore resources available by NES to support school strategy plans (such as the identified NES website on the tabled flora and fauna species found within the Cook Islands)
- 4) Rotation of facilitation of similar programs by school clusters is encouraged. The professional development trainings that LLEE has been engaged to facilitate has empowered teachers as change agents and biodiversity champions; building on existing strengths and understanding of the teachers. It can be encouraging for school clusters who have been engaged in the TPD trainings to develop and facilitate and lead similar trainings in the future to continue the cycle of innovative learning.

Concluding Remarks:

This training workshop coordinated by NES and MOE provided an excellent opportunity for awareness on existing resource materials, that can be incorporated into the existing curriculum or used to develop creative approaches to engaging student interest, in understanding the importance and relevance of biodiversity conservation. The organization of facilities and catering was commendable and helpful support was provided during the three days training to ensure that all objectives were met.

