

Innovative Actions for Community-based Water Management and Education

A. Basic Data

1. Activity Title: Innovative Actions for Community-based Water Management and Education.

2. ADB Project Officer: Steven van der Tak

3. Request Date: 27th September.

4. Implementing Organization: Live & Learn Environmental Education.

5. Types of Interventions: Pilot intervention.

6. Amount of Request: US\$ 177,975.00

7. Period this funding request will cover: 18 months

B. Description of Implementing Organisation

Live & Learn Environmental Education is a non-government, non-profit organisation that aims to promote greater understanding of environmental and human sustainability through action-based education programs, dialogue-building and communication. Whilst maintaining a non-political image Live & Learn works with aid organizations, governments, inter-governmental organizations and non-government organizations from all over the world to enhance sustainable development and reduction of poverty. Live & Learn has more than 10 years experience in community development in the South Pacific and has field offices in Vanuatu, PNG, Cook Islands, Solomon Islands and head office in Fiji (Suva). Live & Learn has had previous experience in working with the ADB on projects in PNG, Vanuatu and the Solomon Islands. During the past decade Live & Learn has implemented more than 20 projects in the Pacific and has through these projects developed new thinking and practice in participatory community action and community mobilization.

Live & Learn is governed by a Board of Trustees that consists of members from all countries in which Live & Learn has projects. The Board meets annually for planning meetings and to accept the annual independent audit. Annual budget is around US\$ 600,000. Live & Learn's accounts are audited yearly by (i) INPACT McDonald Carter, Level 6, 31 Queen Street, Melbourne Victoria 3000, P: 61 3 8613 8888 F: 61 3 8613 8800.

Live & Learn's operational systems are guided by a 'Best Practice Manual' which outlines procedures in areas of (a) financial management and accounting (b) equipment and vehicle use (c) travel policy (d) salary structures (e) staff leave entitlements (f) anti-discrimination (g) occupational health and safety (h) performance management and career development (i) recruitment guidelines.

All our offices are team managed and the management team consists of an office manager, a field and training manager and a finance manager. Planning meetings are held monthly with all staff and monthly reports are received from each project officer. Best Practice Manual is available on your request. Live & Learn is working under a Memorandum of Understanding with many organisations and our networks add value to our capacity as an NGO. Our partners include South Pacific Applied Geoscience Commission, United Nations Scientific and Cultural Organisation, World Wide Fund for Nature, Foundation of the People and many ministries and government departments. Live & Learn has 35 people on staff.

Live & Learn has previously implemented ADB-assisted projects namely in: (i) PNG under RETA 6109 (ii) Solomon Islands and Vanuatu Education under T6123-REG and (iii) Cambodia under ADB Loan No. 1939 CAM and T6123-REG. All these projects have strong links to sustainable management of water resources and actions towards achieving the Millennium Development Goals at a community-level. All our projects have been action-based and have strong focus on achieving leading local participation, sustained learning benefits and replication of local success stories. The benefits of the above-mentioned projects have been shared with civil society networks across the Asia-Pacific region.

Live & Learn has a good relationship with the PNG Water Board and the PNG government has previously supported direct financial flow to Live & Learn – under the ADB-assisted Regional RETA; *NGO Partnerships for Poverty Reduction*.

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C. Proposed Subproject

1. Background and Rationale:

The pilot project aims to improve drinking water and sanitation for thousands of people in rural communities in West New Britain, Papua New Guinea using *environmental education* and *micro-investment in sustainable technology* as the two delivery tools.

The project will be delivered over a period of 18 months. Four overall and inter-connected, outputs will be delivered through 16 activities for the project to meet its aim. These outputs are (i) mobilise an action-based community education program to safeguard drinking water and improve freshwater environments, (ii) support communities in constructing and maintain 16 communal rainwater harvesting tanks (iii) support community monitoring of freshwater resources – incl. drinking water (ii) evaluate impact and access opportunities for multiplying successes.

Land disputes, illegal logging practices, erosion of small islands and reduction of the fresh-water lens on many small islands of West New Britain have left many villagers with no access to safe water. The lack of access to safe water means that more people are getting sick with gastro-related illnesses and villagers (mainly women) need to travel daily to collect water. Conflicts are starting to emerge between villages regarding water supplies and protection of water supplies. The proposed dual approach to community-based water management; involving micro-investments and education, has the strength to – (i) Directly reduce water poverty through the provision of water supply i.e. rainwater tanks; (ii) Heighten awareness and action by transferring knowledge and skills directly to the target communities which will assist in protecting water resources and uphold a better quality of life; (iii) Strengthen dialogue with government officers which will assist in emphasising the value of community-based water management in policy frameworks.

The project will work with 16 communities situated near Kimbe Bay in West New Britain. Target areas are highlighted in the map below:



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The project will build self-reliance of communities to identify the real causes behind degradation of freshwater resources and apply simple solutions developed through education and learning and provide simple technology to overcome constraints. The project will aim to improve living conditions for 10000 thousand people in resources-constrained, remote communities. Many problems relating to lack of access to safe drinking water and degradation of fresh water resources are caused by lack of appropriate infrastructure, poor knowledge and poor practice. Rainwater harvesting is the preferred community option of water supply as most of the rivers and streams are polluted from poor logging practices and other unsustainable development. On outer islands the freshwater lens is often polluted by saltwater.

Area	No of villages	Population	Men	Women	Youth under 25	Access to basic sanitation ¹	Access to safe drinking water
Garove Island	7 Villages	4000	23	31	46	41 %	49%
Mundua Island	5 Villages	3000	27	28	45		
Kimbe (highland)	Narumatala	1000	24	35	41		
Kimbe (highland)	Dire	1000	21	24	55		
Kimbe (highland)	Murikape	500	26	28	46		
Kimbe (highland)	Ganeboko	1000	20	34	46		

The project provides a unique opportunity to demonstrate how environmental education and awareness can become a key tool in reducing poverty and realising the Millennium Development Goals (MDGs). Specifically, the action will work towards achieving two important MDG target; halving by 2015, the people without sustainable access to safe drinking water. The South Pacific is not progressing well in reaching the MDGs. The second MDG target relates to the involvement of provincial government departments throughout the project and the intention of the project to inspire good policy. -Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources. In regard to the MDG, it must be noted that PNG is facing a significant challenge in meeting the MDGs and is currently ranked as the poorest country in the Pacific region.

The project will be directly complementary to the ADB-assisted Regional Action Plan (RAP) for Sustainable Water Management which was shaped by Pacific Island leaders, civil society groups and international aid agencies in preparation for the 3rd World Water Forum in Kyoto, Japan 2003. The ADB-assisted Pacific Regional Environment Strategy 2005-2009 (PRES) is another key regional strategy that this project will support in a practical sense.

The project sits well within the ADB CSP for PNG. The focus of the project is poverty reduction through the improvement of health and water supplies/quality. The CSP has strong focus on poverty reduction through the improvement of health, infrastructure service delivery, water supply and sanitation. The project will complement the 'Provincial Towns Water Supply and Sanitation Project' by providing innovative solutions to water supply and heighten community participation in the water sector. The CSP recognises the importance of civil society participation in achieving the MDG targets and is committed to work with non-government and community organisations.

2. Objectives

Objective 1: Improve drinking water quality and sanitation for 10000 people in West New Britain in Papua New Guinea.

The project will see the construction of 16 communal ferro-cement rainwater tanks with a holding capacity of 4500 liters each. Ferro-cement tank technology was chosen for a number of reasons: (i) it allows for community participation (ownership) in construction (ii) supporting the local economy and employment and (iii) if local people are part of the construction process the likelihood of the tanks being maintained properly beyond the project period is higher. The project will use locally available skills, material and technology it will work with local small businesses in the process of making wooden and fibre-glass moulds. An extensive water education and awareness program will be carried out during the construction of the tanks. The education campaign will provide simple solutions on safeguarding drinking water and mobilize community action toward restore riverbanks.

¹ Data provided by the World Health Organisation in Suva, Fiji.

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Objective 2: Heighten awareness and action in 16 targeted communities on improving water quality in river and drinking water.

The Water Education and Awareness Campaign (WEAC) will be delivered through four educational entry points as described in Annex 6. The tools to implement the WEAC will include H2S water test kits, awareness materials, public forums. In particular awareness-raising activities will focus on (i) educating people regarding water issues on a watershed scale to address water supply, hygiene and sanitation and watershed management; and (ii) strengthening the resource constrained communities' self-motivation and confidence.

Objective 3: Carry out a comprehensive impact evaluation and access practical ways of replicating local successes to other areas in the South Pacific.

The project will apply two different internal evaluation methodologies focusing on quantitative and qualitative indicators. The *quantitative* method will quantify (i) number of people benefiting from the action, (ii) learning resources produced, (iii) actions in the community and (iv) impact on policy. The project is a pilot on how to engage communities in reaching and important MDG through innovation and participation. The lessons learnt will be widely distributed throughout Live & Learn's network in the Pacific. Also we would be keen to discuss how the successes could be used to reach the aims of ADB's country strategies in Pacific Island countries.

3. Scope of Work/Description of Proposed Approaches

Please see Annex 1 for Activities to be Undertaken. The Participatory Action Research methodology emphasises the need for open and democratic dialogue followed through with action and reflection. It seeks to "improve the quality of action within a community or social situation". In the context of this action it will seek to highlight:

- a) that each of us has both the power and the responsibility to effect positive change;
- b) the need to increase people's capacities to link awareness to action and change values, behaviour and lifestyles required for a sustainable water management; and
- c) the building of capacity for future-oriented thinking.

The democratic and participatory spirit of PAR has gained popularity in community development. In terms of achieving sustainability through education it is important for the methodology to be broad and have strong cultural founding. This gives opportunity to reflect on the many facets that make up the whole environment and how this came to be. In the Pacific context, cultural practices need to be observed in order to make the activities relevant, effective and maintain local ownership. It is equally important that the PAR is critical and gives opportunity to reflect on and challenge culture, traditions and current decision making processes. This reflection is important both when analysing problems and assessing options. The PAR methodology needs to reflect the complex and diverse conditions that often exist within the community. This includes outside forces that often influence the community environment and local power structures. To support the PAR methodology the project will use two practical approaches; namely: (i) **Micro Investment**. Construction of ferro-cement water tanks. These tanks are cost effective and simple to build. The construction will be facilitated by Live & Learn and will bring villagers (men and women) together in small groups. Government officers and health officers will be invited to the training. The villagers will participate in a in-depth training program which will give them the skills to teach others these simple building techniques. (ii) **Education**. Along with the construction of the water tanks we will delivered a comprehensive water education campaign which heighten awareness among target groups on how to keep drinking water and how to sustain freshwater resources in general. This campaign will be delivered through Chiefs Councils, schools, church groups, and rural training centres.

During the project there will be great focus on skills-transference and training. To be truly effective the project must have measures that lead to institutional change both at government and community level. In this regard improved dialogue between communities and government officers is key. In many provinces government officers are not pro-active in building relationships and good will with communities and this is a practice that will be promoted through this project. In many ways this is a demonstration project to strengthen ties between government departments and people in communities and through these ties build the institutional arrangement to sustain and upscale the project benefits.

² A draft final report will be submitted to ADB two weeks after completion of the project.

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4. Workplan and Reporting

Project implementation will require a total of 66 person months. An Environmental Education Specialist will act as team leader and we will produce (i) an inception report within three months of commencement of the project (ii) a progress report within 6 and 12 months of commencement of the project and (iii) a final report within one month of completion of the project.² These activities are displayed in the Annex 1. The Terms of Reference for Technical Advisers is displayed in Annex 3 and the Indicative TA Schedule in Annex 4.

5. Expected Outputs and Outcomes

(i) Build self-reliance of communities to identify the real causes behind degradation of freshwater resources and apply simple solutions (ii) Improve living conditions for 10000 thousand people in resources-constrained, remote communities (iii) Demonstrate how environmental education and awareness can become a key tool in reducing poverty and realising the MDGs (iv) Empower communities to participate in reaching the MDGs. Links between the Outputs, outcomes, verifiable indicators and risk management are displayed in Logical Framework in Annex 2.

6. Subproject Evaluation and Information Dissemination

The *qualitative* approach will be based on the 'Most Significant Change' evaluation methodology that involves a systematic, participatory interpretation of stories from the beneficiaries. The stories themselves are the indicators of progress and success and these stories will be presented through four 'domains of change' as described in Annex 1. Where a 'domain of change' is not an indicator, dividing stories up into domains makes presentation of stories easier to manage and read. In this action the domains will be used to help describe stories from different beneficiaries and stakeholders.

The MSC technique is well suited to programs that are (i) complex and can produce emergent outcomes (ii) has numerous layers and approaches and (iii) are focused on social and environmental change. The most important aspect of this technique is its participatory nature and the fact that the community benefits directly from the monitoring results in promoting further change and sustainability. So in a sense monitoring and evaluation is not done only to measure whether the action has achieved its objective, it is also done to strengthen capacity, organisation and mobilisation.

7. Scope of Replication/Use in other DMCs

An applicability assessment will be carried out during the MSC evaluation. This assessment will ascertain how the benefits can be replicated in other parts of the South Pacific. The lessons learnt will be widely shared during two Water Education and Action forums at University of the South Pacific in Suva, Fiji.

D. Cost Estimate and Disbursement Schedule – (a detailed budget in Annex 2 and disbursement schedule in Annex 5)

a) Human Resources -\$102,000 b) Training- \$5,000 c) Learning resources \$20,500 d) Equipment \$1,500 e) Travel and Per diems \$23,300 f) Infrastructure - \$42,500 g) Monitoring Costs -\$ 3,200 h) Replication Costs - \$6,000 i) Communications - \$7,320 j) Office Support - \$9,360 k) Support salaries - \$1,500 l) Management/Reporting - \$4,000 m) Contingency - \$11,309

E. Proposed Subproject Management System

The project will be managed by Live & Learn in Kimbe Bay, West New Britain. The ultimate reporting responsibility to ADB rests with the Regional Director. The financial management of the project will be done by our Regional Field Accountant based in Suva, Fiji. An independent audit report will be provided to the ADB on project completion.

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ANNEX 1: DESCRIPTION OF ACTIVITIES TO BE UNDERTAKEN

Overall Output 1: Mobilise an action-based community education program to safeguard drinking water and improve freshwater environments.

Activity 1.1 (Month 1-3): Rapid Assessment of Perceptions of community attitudes towards water quality.

The Rapid Assessment of Perceptions (RAP) will provide the Live & Learn team with baseline information needed to design the public education and awareness campaign. The RAP will also provide useful baseline data to establish the monitoring and evaluation framework.

Activity 1.2 (Month 3-9): Produce and pretest learning resources conducive to the safeguarding of drinking water and protection of freshwater resources.

This activity will see the mobilization of a large-scale public education and awareness campaign in the target communities through the 4 educational entry-points, namely: (i) focusing on young people (ii) dialogue building and decision making, (iii) protection of fresh water eco-Systems and (iv) safe guarding of drinking water. The resources will include a training manual for teachers and rural trainers, an educational flipchart, posters, stickers and leaflets.

Activity 1.3 (Month 9-18): Deliver an education and awareness campaign in target communities.

The campaign will be implemented through rural training centers, schools and churches/church groups and will reach 10,000 people. Information and learning resources will be integrated in existing community activities and information will be disseminated through local training forums and networks. The provincial department of environment and education will be involved during the campaign and the activity will go hand-in-hand with the construction of the communal rainwater harvesting tanks.

Overall Output 2: Support communities in constructing and maintaining 16 communal rainwater harvesting tanks.

Activity 2.1 (Month 1-3): Select community members for training in the building of ferro-cement rainwater tanks.

Four community members from each community will be selected for training in ferro-cement tank building. Active community members (men, women and youth) will be targeted so the benefits from the training will be shared with other community members.

Activity 2.2 (Month 3-9): Building of 1 demonstration tank.

The training provides a unique opportunity for community members to take ownership of the project and build new skills. The training will focus on the construction of 1 demonstration tank and will take participants through the multiple steps during construction including: (i) mould design, (ii) mould construction (iii) wiring of the mould (iv) mixing of cement (v) casting the top, wall and bottom mould (vi) cement application and drying (vii) problem solving (viii) cleaning and painting.

Activity 2.3 (Month 9-18): Support the community-based construction of 16 ferro-cement rainwater tanks.

Once the demonstration tank has been completed, the community members will prepare their own villages for the construction of their individual communal tank. This may involve discussion on where the tank will have to be placed, who is responsible for its maintenance and who should be engaged with the building of the tank. Activity 1.3 will be delivered with this activity.

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Activity 2.4 (Month 14-18): Training in tank maintenance.

Tank maintenance is a critical component in safe guarding drinking water. Community members will receive training in tank repair, hygiene and tank repair. Ferro-cement tanks are low-maintenance compared to taffa tanks, fiberglass and galvanized iron tanks, but this component is of great importance nevertheless. The moulds are quite expensive and it is important the community have the knowledge to keep them safe for the building of additional water tanks.

Overall Output 3: Support community monitoring of freshwater resources.

Activity 3.1 (Month 3-9): Training in the use of the AM12 and H2S test kits.

Water quality monitoring is a highly effective tool for building up-stream / down-stream dialogue. Particularly between communities that have had a history of conflict. The action will explore new ways of joint, community-based water management and vision building using water testing as an entry tool. The testing will not only include rivers and freshwater eco-systems. It will also include drinking water using the Hydrogen sulfide (H₂S) presence-absence tests. This activity is delivered and sustained over a period of 18 months, which will enable us to access impact and identify lessons learnt. This sustained period of pilot implementation will enhance community participation.

Activity 3.2 (Month 9-18): Improve conditions of riverbanks.

River bank degradation is a significant source of river pollution in West New Britain. Rivers are degraded through poor logging practices, oil palm plantations and unsustainable garden practices. This activity will develop long-term, community-driven river re-generation plans, which includes re-vegetation of riverbanks. Work will be done through schools and church groups and will involve relevant, local government departments.

Activity 3.3 (Month 14-18): Deliver community advocacy training.

During implementation of activity 3.2 participants will receive training in advocacy and dialogue building. These skills are critical in changing practice of industry and increase community participation in decision-making. The activity will focus on (i) improving debating skills and building an argument (ii) listening skills (iii) who makes decisions and who owns water, rights and responsibilities and (iv) how to facilitate a meeting with government officials and authorities.

Activity 3.4 (Month 9-18): Record best community practice and innovative actions.

The local success stories are recorded. It will be important to capture approaches that led to inspiration, communication and improved water management and local success stories will be documented and shared widely within civil society networks in PNG and beyond.

Overall output 4: Evaluate impact and access opportunities for multiplying successes.

Activity 4.1 (Month 12): Training of staff in monitoring techniques.

It is important that the project have in place adequate processes of monitoring and evaluation from the start. Without that, it will be impossible to know if the action is making any difference and what that difference is. More importantly, monitoring is a key-learning tool for the stakeholders and can assist in inspiring action, motivating and sustaining innovation at community-level. For the purpose of replication, heightened impact and improved participation, the action will introduce the Most Significant Change (MSC) monitoring and evaluation approach early in the project start-up. The MSC will be linked back into the community learning process and findings of the impact will be used to further mobilise communities. The qualitative MSC approach involves a systematic, participatory interpretation of stories from the beneficiaries. The stories themselves are the indicators of progress and success and these stories will be

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presented through four 'domains of change' as explained in activity. This activity will provide comprehensive training of the field staff in understanding 'how to identify change 'and 'how to measure it'.

Activity 4.2 (Month 12-14): Establish 'Domains of Change'.

Domains are categories of MSC stories. The purpose of a domain is to group the stories so they are easily assessed and analysed. To ensure local relevance and ownership, the domains will be established by stakeholder committees with members from each community. They will have specific relevance to the respective field of work but the domains will generally look at: (i) changes in the quality of people's lives in relation to access to safe drinking water, (ii) changes in community dialogue with government departments on water management, (iii) changes in the nature of young people's participation in water management, (iv) opportunities for Upscaling.

Activity 4.3 (Month 14-15): Collection of most significant stories.

Staff and key stakeholders will receive training in capturing MSC stories. This training will involve some basic research skills such as (i) how to interview (ii) how to facilitate a discussion and (iii) how to note take and (iv) developing good listening and community relations skills. For the MSC to be effective and meaningful the stories collected must be free of bias and replication of successes must be a top priority.

Activity 4.4 (Month 16-17) Analysis of stories.

Once the stories have been collected they are analysed by the stakeholder groups and assessed for significance. The key question is "what makes one story more significant than another"? The Most Significant Stories can be replicated, shared with other communities and widely publicised. The tools, processes and action that led to the change are all significant in the learning process and, when captured, lead to replication and inspiration beyond the communities where the story took place

Activity 4.5: (Month 17-18): Use of analysis in replication and up scaling.

The true impact and change deriving from the project is achieved through replication and up-scaling. The resources, outcomes and benefits from the pilot intervention will be directly integrated in Live & Learn's network across all the target countries in the South Pacific to an estimated 200 communities. Also resources, outcomes and benefits will be widely shared with civil society groups, government departments and partners through a series of 2 Water Education Symposiums held at the University of the South Pacific in Fiji for civil society groups, youth from all over the Pacific and lectures. A special website will be developed displaying resources, methodologies and lessons learnt.

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ANNEX 2: COST TABLE

Item	Details	Unit/Price	Total (US \$)	ADB (US \$)	Live & Learn (US \$)
Human Resources	Water Engineer (Int) Infrastructure O&M	2 person-month @ 7000	102,000	90,000	12,000
	Specialist (Int)	1 person-month @ 7000			
	Water Engineer (Local)	18 person-month @ 1000			
	Environmental Education Specialist (Int)	2 person-month @ 7000			
	Environmental Education Specialist (Local)	18 person-month @ 1000			
	Community Mobilisation Specialist (Int)	1 person-month @ 7000			
	Community Mobilisation Specialist (Local)	12 person-month @ 1000			
	Monitoring and Eval. Officer (Local)	12 person-month @ 1000			
Training	Venues, meals, local facilitators	50 sessions @ 100	5,000	2,000	3,000
Learning Resources	Design, testing and printing of resources.	Lump sum	20,500	10,500	10,000
	Test Kits	50 kits @ 60			
Travel and Per diem	International travel	6 trips @ 2000	23,300	13,300	10,000
	Local travel / Boat Hire	Lump sum			
	Local travel / Car Hire	Lump sum			
	Per diems (Urban)	120 days @ \$40			
Infrastructure	Ferro Cement Rain Water Tanks (Construction)	17 tanks @ 2000	42,500	42,500	
	Ferro Cement Rain Water Tanks (O&M)	17 tanks @ 500			
Equipment	Computers, software	1 computer @ 1500	1,500	1,000	500
Monitoring Costs	Field budget	32 field visits @ 100	3,200	1,000	2,200
Replication	Water Education and Action Symposiums	Lump Sum	6,000		6,000
	Contributions to journals and publications	Lump Sum			
Communications	Telephone, internet, facsimile.	18 mo @ 200	7,320	5,675	1,645
	Postage and courier services.	Lump sum			

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	Website development and writing costs	Lump sum			
Office Support	Rent and security	18 mo @ 500	9,360	5,000	4,360
	Stationary and office supplies	18 mo @ 20			
Support Salaries	Admin and finance staff	15 % of monthly salary for one staff.	1,500		1,500
Management Reporting	Reporting, annual work plans and management of staff.	15% of program manager salary	4,000	2,000	2,000
	Financial management	Independent audit @1500			
Contingency	5 %	Lump Sum	11,309	5,000	6,309
TOTAL			237,489	177,975.	59,514

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ANNEX 3: PROJECT LOGICAL FRAMEWORK			
Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal The pilot project aims to improve drinking water and sanitation for thousands of people in rural communities in West New Britain, Papua New Guinea using <i>environmental education</i> and <i>micro-investment in sustainable technology</i> as the two delivery tools.	Poverty reduced through improvement of water access and quality in targeted areas.	Water tests	Communities committed to maintaining safe drinking water.
		Risk Management: <ul style="list-style-type: none"> ○ Increased participation through the construction of rain water tanks. ○ Use our existing commitment from communities as an entry point for implementation. ○ Use of visual awareness tools to stimulate participating and interest. 	
Objective Improve drinking water quality and sanitation for 10000 people in West New Britain in Papua New Guinea.	Coli form absent from all drinking water by 18 th month. Drinking water supplies safe stored and access available to everyone by 18 th month.	Water tests Most significant stories and observations.	The dual approach (education and micro-investment) will have the strength to safeguard drinking water.
		Risk Management: <ul style="list-style-type: none"> ○ The dual approach of education/awareness and micro-investment is new in the context of PNG. It will be important to minimise risks by allowing the RAP to inform education approaches and use the RAP to create community ownership of the project. 	
Heighten awareness and action in 16 targeted communities on improving water quality in river and drinking water.	3 learning/awareness tools developed by 12 th month. The campaign delivered to at least 10000 people before the 18 th month.	Learning tools Field reports.	Public interest and participation is high.
		Risk Management: <ul style="list-style-type: none"> ○ Use established entry points eg. Schools and Chiefs Councils. 	

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Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Carry out a comprehensive impact evaluation and access practical ways of replicating local successes to other areas in the South Pacific.</p>	<p>Impact evaluation based on the MSC methodology carried out by 18th Month.</p> <p>Deliver two Water Education and Action symposiums at the University of the South Pacific by 17th Month.</p> <p>Widely disseminate results and case studies/stories by 18th month.</p>	<p>Impact evaluation.</p> <p>Symposiums notes.</p> <p>Web site, case studies/stories.</p> <p>Risk Management:</p> <ul style="list-style-type: none"> ○ The evaluation outcomes should benefit communities. It should not only be seen as external tool used to access progress and constraints. ○ The stories, processes and outcomes should be widely communicated. 	<p>Communities willing to participate in evaluation.</p> <p>Interest at regional level is high.</p>
Outcomes			
<p>▶ Build self-reliance of communities to identify the real causes behind degradation of freshwater resources and apply simple solutions.</p>	<p>Water tanks built by communities and installed by communities by 18th month.</p> <p>Leading community participation and application of local skills.</p>	<p>Water tanks, field reports</p>	<p>Good will, good planning and good people at all stages of the project.</p>
<p>▶ Improve living conditions for 10000 thousand people in resources-constrained, remote communities.</p>	<p>Education and awareness delivered to at least 10000 people by 18th month.</p> <p>10000 people have sustained access to clean water by 18th month</p> <p>At least 10 river re-generation plans and actions to re-vegetate river banks in place by 18th month.</p>	<p>Most significant stories, health reports from clinic. No. of river actions</p>	<p>Easy access to communities.</p>
<p>▶ Demonstrate how environmental education and awareness can become a key tool in reducing poverty and realising the MDGs</p>	<p>Learning and awareness tools developed conducive to poverty reduction.</p>	<p>Most significant stories, feedback from communities on education and awareness tools.</p>	<p>Communities understand the purpose with the learning tools.</p>

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Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
▶ Empower communities to participate in reaching the MDGs.	Quality community engagement and participation.	Most significant stories	Communities see the relevance of the MDGs. context.
Activities and Milestones		Input	
1.1: Rapid Assessment of Perceptions of community attitudes towards water quality.	RAP	Human Resources	102,000.00
		Training	5,000.00
		Learning resources	20,500.00
1.2: Produce and pretest learning resources conducive to the safeguarding of drinking water and protection of freshwater resources.	Field Reports	Travel and Per diems	23,300.00
		Infrastructure	42,500.00
		Equipment	1,500.00
		Monitoring Costs	3,200.00
1.3: Deliver an education and awareness campaign in target communities.	Field Reports	Replication Costs	6,000.00
		Communications	7,320.00
		Office Support	9,360.00
		Support salaries	1,500.00
		Management/Reporting	4,000.00
		Contingency	11,309.00
		Total	237,489.00
2.1: Select community members for training in the building of ferro-cement rainwater tanks.	Selection criteria, list of community members		
2.2: Building of 1 demonstration tank.	Demonstration tank		
2.3: Support the community-based construction of 16 ferro-cement rainwater tanks.	16 rain water tanks		
2.4: Training in tank maintenance.	Training records		
3.1: Training in the use of the AM12 and H2S test kits.	Test results		
3.2: Improve conditions of riverbanks.	Field reports		
3.3: Deliver community advocacy training.	Training records		
3.4: Record best community practice and innovative actions.	Most significant stories		
4.1: Training of staff in monitoring techniques.	Training records		
4.2: Establish 'Domains of Change'.	Domains of change		
4.3: Collection of most significant stories.	Field reports		
4.4 Analysis of stories.	Analysis		
4.5: Use of analysis in replication and Upscaling.	Replication strategy		

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ANNEX 4: TERMS OF REFERENCE FOR CONSULTING SERVICES

A. Introduction

1. The Poverty and Environment Program (PEP) is a regional technical assistance financed by the Poverty and Environment Fund (PEF), a multi-donor trust fund. The program aims to accelerate poverty reduction through effective environmental management. It promotes targeted environmental interventions that contribute to poverty reduction and environmental improvement by providing funding for small-scale activities in three focal areas (i) protection, conservation, and sustainable use of natural resources and ecosystem services, (ii) reduction of air and water pollution and (iii) disaster prevention and reduction of vulnerability to natural hazards.
2. Live & Learn Environmental Education is seeking funding under the Poverty and Environment Program to implement a subproject in Papua New Guinea. The proposed subproject aims to support 16 communities to safeguard drinking water resources and protect freshwater environments through environmental education and awareness and micro-investments.

B. Recruitment of Consultants

3. Consultants will be recruited according to ADB's Guidelines on the Use of Consultants.

C. Terms of Reference for International Staff

4. The Environmental Education Specialist will assume the Team Leader responsibility for project implementation. The Team Leader will liaise closely with our PNG manager and ADB. The terms of reference of the international specialists will include, but not necessarily be limited to, the following:

1. Water Engineer (2 person-month)

- a) Provide technical advice in the construction of the water tanks.
- b) Facilitate training and capacity build of community members and local counter-part.

2. Environmental Education Specialist (2 person-month)

- a) Carry out the RAP and channel findings into environmental education design.
- b) Facilitate the design of the environmental education and awareness campaign including training and development of resources.
- c) Facilitate the delivery of the campaign.
- d) Skills transference to local counter-part.

3. Infrastructure O&M Specialist (1 person-month)

- a) Assist local staff in the design of O&M program.
- b) Provide training to local leaders and participants on maintenance and tank repair modules.
- c) Establish a O&M support schedule for Live & Learn in providing on-going support to communities.

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4. Community Mobilisation Specialist (1 person-month)

- a) Provide advice on maximising local ownership and participation.
- b) Examine and strengthen community fabric to ensure improved practice on safeguarding drinking water and protection of freshwater eco-systems.

D. Terms of Reference for National Specialists

5. Water Engineer (18 person-months)

- a) Design training program for tank construction.
- b) Oversee all aspects of tank construction.
- c) Facilitate training related activities for communities and share experiences with wider civil society network.

6. Environmental Education Specialist (18 person-months)

- a) Support the RAP and assist in bringing data and community perceptions into the environmental education and awareness campaign.
- b) Develop and pre-test learning resources to support the campaign.
- c) Deliver training and awareness raising in communities through church groups, schools and other relevant channels.
- d) Collection of most significant stories and present lessons learnt at Water Education and Action symposium in Suva-Fiji.

7. Community Mobilisation Specialist (18 person-months)

- a) Strengthen the capacity of community structures to support practices conducive to better management of water; both drinking and other freshwater resources.
- b) Advocate for the involvement of women in decision-making of water management and protection.
- c) Ensure training is delivered with high-quality participation and engagement from community members.

8. Monitoring and Evaluation Specialist (12 person-months)

- a) Develop 'Domains of Change' and 'Most Significant Change Framework'
- b) Provide training to community members in participatory monitoring and evaluation techniques.
- c) Collection and analysis of stories.
- d) Bring the stories into a strategic approach to national and regional replication.

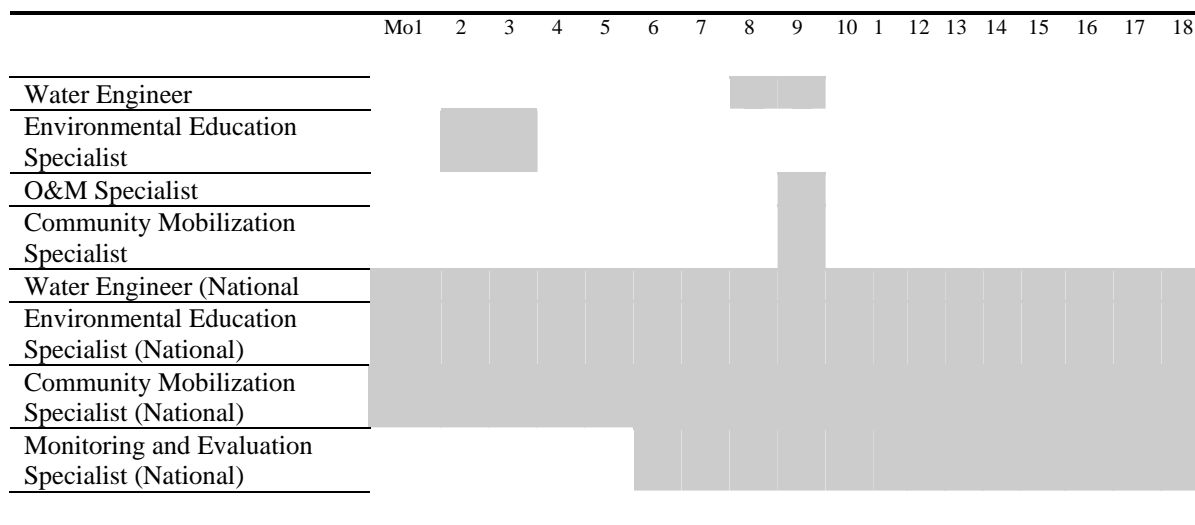
E. Implementation and Reporting

- 4. Project implementation will require a total of 66 person months. The Environmental Education Specialist will act as team leader. Live & Learn Environmental Education will produce (i) an inception report within three months of commencement of the project (ii) a progress report within 6 and 12 months of commencement of the project and (iii) a final report within one month of completion of the project.³

³ A draft final report will be submitted to ADB two weeks after completion of the project.

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ANNEX 5 : IMPLEMENTATION SCHEDULE



ANNEX 6: Disbursement Schedule	
<i>Timing</i>	<i>Percentage of Budget</i>
On Mobilization	35%
On receipt of Progress Report after 6 Month	25%
On receipt of Progress Report after 12 Month	25%
On Receipt of Final Report	15%

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Annex 7 – Participatory Action Research – Overview and Focus Areas

