

Using participatory planning processes and learning and action tools to address waste issues in Bikenibeu West, Kiribati

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Acronyms

CDSP	Community Development & Sustainable Participation project
ECD	Environment and Conservation Division
FSPK	Foundation of the Peoples of the South Pacific-Kiribati
GEF	Global Environment Facility
IWP	International Water Programme
KPC	Kiribati Protestant Church
LDS	Church of Jesus Christ of Latter-Day Saints
LSA	Local Spiritual Assembly
PLA	Participatory Learning and Action
PUB	Public Utilities Board
RC	Roman Catholic
SAPHE	Sanitation, Public Health and Environmental Improvement
SDA	Seventh Day Adventist
SPREP	Secretariat of the Pacific Regional Environment Programme
TOT	Training of Trainers
TUC	Teinainano Urban Council
UNDP	United Nations Development Programme
USD	United States dollar

Executive summary

“All good work is done the way ants do things, little by little.”

Lafcadio Hearn

The International Waters Project (IWP) aims to strengthen the management and conservation of marine, coastal and freshwater resources in the Pacific Islands region. It is financed through the International Waters Programme of the Global Environment Facility, implemented by the United Nations Development Programme, and executed by the Secretariat of the Pacific Regional Environment Programme, in conjunction with the governments of the 14 participating independent Pacific Island countries.

The overall objective of the IWP's Kiribati pilot project in Bikenibeu West is to implement a low-cost community-based (solid and liquid) waste reduction pilot project aimed at improving fresh and marine water quality and the condition of the surrounding coastal habitat and resources.

The objective of the participatory consultations with stakeholders in Bikenibeu West was to identify possible solutions to address root causes of waste problems threatening fresh and marine water quality. The pilot community in Bikenibeu West were introduced to the Project's scope and objectives using the established church or religious group structure in the community; a baseline survey was carried out at the same time. Both tasks were completed in the first quarter of 2004.

Participatory Learning and Action (PLA) training was later conducted for potential facilitators (coming from diverse waste-work related areas, and including pilot community representatives). After the PLA training, these facilitators went in groups to the pilot community and conducted a PLA.

The purpose of the PLA was mainly to exchange information at the community level and discuss issues and potential low cost solutions to address root causes of waste issues. This was carried out and completed in the second quarter of 2004. After that, an internal research and evaluation was carried out informally in order to evaluate past successful activities at the community level.

1 Introduction

The International Waters Project (IWP)¹ is a 7-year, USD 12 million initiative concerned with management and conservation of marine, coastal and freshwater resources in the Pacific islands region. The project includes two components: an integrated coastal and watershed management component, and an oceanic fisheries management component (the latter has been managed as a separate project). It is financed by the Global Environment Facility (GEF) under its International Waters Programme. The coastal component is implemented by the United Nations Development Programme (UNDP) and executed by the Secretariat of the Pacific Regional Environment Programme (SPREP), in conjunction with the governments of the 14 independent Pacific island countries: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. The coastal component of the project has a 7-year phase of pilot activities, which started in 2000 and will conclude at the end of 2006.

The International Waters Project Kiribati (IWP-K) was designed to focus on addressing the root causes of degradation of the waters around South Tarawa. Actions were carried out under the auspices of IWP's ICWM program.

This was to be achieved through action at the community level to address priority environmental concerns. The IWP-K project confirmed that there were two high priority areas to be identified for immediate intervention:

- improved waste management; and
- better water quality.

To address these concerns IWP-K supported the establishment of one pilot community project (the Project) within the South Tarawa area and has worked with the community to not only identify how local actions have harmed the environment but also how local actions can positively improve the environment. Recognizing that environmental threats cannot be addressed through community level actions alone, the Project also seeks to engage the Tarawa Urban Council, the Ministry of Environment Lands and Agriculture Development, the Health Inspection Unit of the Ministry of Health & Medical Services and the Water Engineering Unit of the Ministry of Public Works and Utilities in pilot activities. The Project partnered with local stakeholders through the establishment of a National Task Force in order to address in a collaborative way the root causes of environmental concerns in South Tarawa. Community participation at all stages in the project cycle has been a central element of the pilot activities.

The Bikenibeu West community project was designed specifically to build on existing environmental activities being undertaken by nongovernmental organisations and other development assistance agencies that were and/or are active in the community.

The purpose of this report is to summarize the community participation and assessment processes which were undertaken as part of the IWP-K project. Secondly, the report will summarize the findings of the participatory consultation processes, including constraints and challenges.

¹ IWP is formally titled Implementation of the Strategic Action Programme of the Pacific Small Islands Developing States.

² The total Project budget includes an additional USD 8.1 million from co-financing.

2 Background to PLA work in South Tarawa

The first phases of the Community Awareness Workshop meetings were held between February and April 2004 and are summarized in Appendix 2.

The Workshop objectives were to:

- make communities aware of the IWP-K work plan, in order to improve their understanding of environmental resource management;
- develop skills in the collection and compilation of baseline village information for project planning and implementation; and
- develop knowledge and understanding of community waste problems which could adversely impact the community's underground water lens.

The stakeholder groups were identified as members of religious or church groups:

- Local Spiritual Assembly of the Bahais of Bikenibeu West
- Kaibangaki — Catholic sub parish of Bikenibeu West
- Rurete — Catholic sub parish of Bikenibeu West
- Atakibe — Kiribati Protestant Church (KPC) group of Bikenibeu West
- Ununiki — KPC group of Bikenibeu West
- Marenaua — KPC group of Bikenibeu West. Marenaua was not involved in the initial consultations nor the PLA workshops, but was active in the implementation of the management plans designed from the PLA workshops.

2.1 Training of Trainers

The stakeholders consultations held in February and April 2004 formed the preparatory phase for the subsequent 10-day Training of Trainers Participatory Learning and Action (TOT-PLA) Workshop held 21 April–4 May 2004 at the Otintaai Hotel. The TOT-PLA workshop was facilitated by Simone Koto and Floyd Robinson of Partners In Community Development Fiji and Dr Natasha Stacey, IWP Community Assessment Specialist. The IWP-K model for stakeholder engagement is shown in Fig. 1.

The workshop was fully sponsored by the IWP-K project and drew facilitators from the Project Coordination Unit at SPREP and Partners for Community Development Fiji (formerly Foundation of the Peoples of the South Pacific-Fiji). Though this workshop was focused on IWP-K, the skills and understanding they gained are applicable elsewhere.

The participants enhanced their skills and understanding of the following:

- stakeholder participation, facilitation skills and communication with stakeholders;
- identifying resource management problems
- stakeholder and participatory problem analysis;
- the context of resource management problems and related PLA tools;
- identification of potential solutions through the development of “solution trees”;
- participatory impact assessment (examining the social, economic, and environmental impacts of options for addressing root causes, and selection of options for implementation under the IWP); and

- development of action or management plans (including goals, objectives, activities and outputs), and development of the IWP-K work plan.

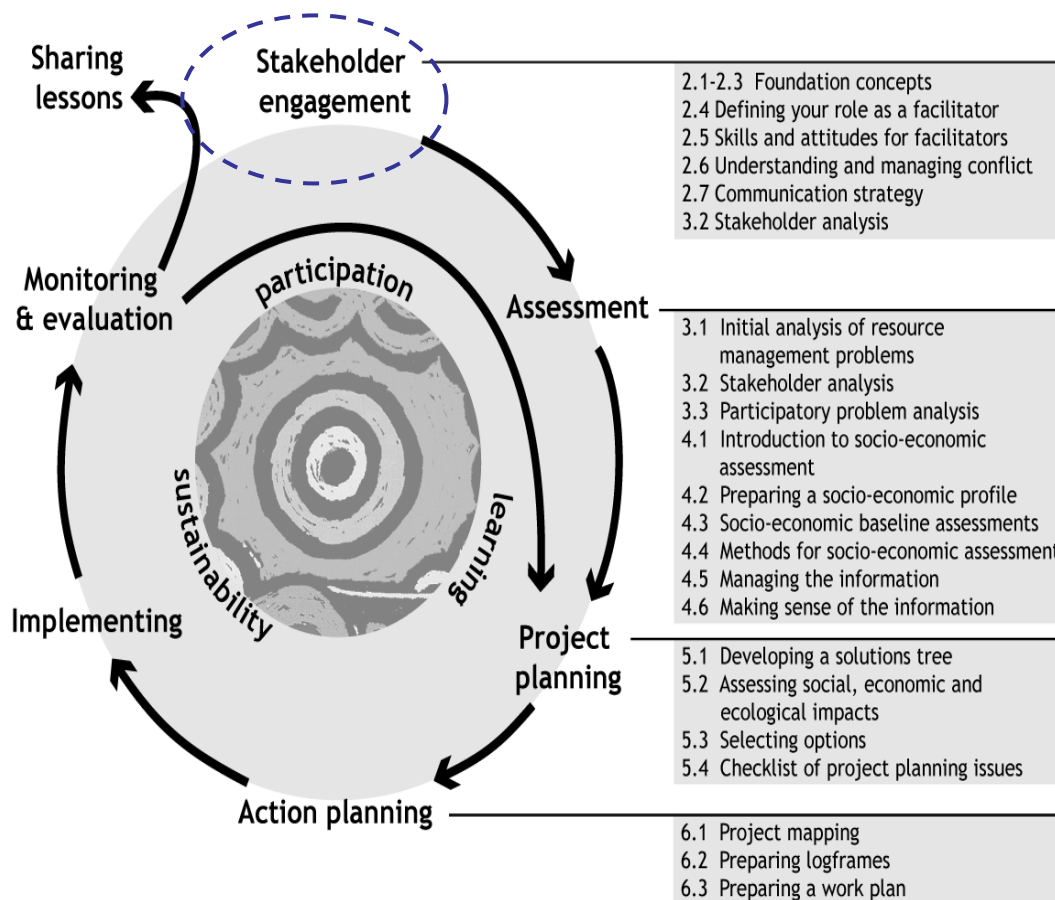


Figure 1: IWP-K model for stakeholder engagement

2.2 Facilitator team

At the end of the TOT-PLA workshop, the participants formed a multi-agency team of PLA facilitators with the objective of assisting each other, other projects, government agencies, NGOs and others who need to conduct a PLA. The team members are:

Ms Marion Namina	Sanitation, Public Health and Environmental Improvement (SAPHE)
Mr Tokamai Tokintekai	Agriculture
Mr Maio Tebania	Agriculture
Ms Rakeiti McKenzie	FSP/Kaokimange
Ms Tarewita Tauaa	MHMS
Mr Uaraoia Teabo	Teinainano Urban Council (TUC)
Mr Kabeia Teuea	Bikenibeu West
Mr Ruatara Toonako	Bikenibeu West
Ms Makin Binataake	Environment and Conservation Division (ECD)
Ms Nenenteiti Ruatu	ECD
Arawaia Moiwa	IWP-K

2.3 Consultation steps

As part of the PLA facilitators preparations for conducting the community PLA workshops, the PLA facilitators conducted a series of meetings during the month of May, directly following the TOT-PLA workshop, and agreed on the following consultation steps.

2.3.1 Consultation Phase I

Develop a community vision for the future. It may be easier to think about it as the community's future aspirations and wishes (e.g. do they wish to have a cleaner environment, greater water availability, improved water quality). This can be done through brainstorming, or by picture drawing. The vision can be a benchmark or a goal. It is important to ensure that all plans or implemented pilot activities should move the community towards their vision.

Identify problems, root causes, effects and impacts on various stakeholders (using a problem tree, transects, resource mapping, impact flow charts and further specific baseline work if necessary to validate problems and causes).

In conjunction with stakeholder groups:

- i) prioritise problems IWP and the community can address (using participatory tools);
- ii) identify possible solutions; and
- iii) Evaluate the feasibility of possible solutions.

2.3.2 Consultation Phase II

1. Technical experts, with input from stakeholders, evaluate the feasibility of possible solutions. Information presented back to stakeholders to help them in selecting solutions.

Feedback to facilitators about how the solutions were selected or screened.

2.3.3 Consultation Phase III

1. Feedback to community.
2. Select solutions by stakeholders.

2.3.4 Consultation Phase IV

Develop a pilot project management plan (including goal, objectives, outcomes, and activities) and detailed work plans (including social marketing activities or more formal community education activities, i.e. through churches).

2.4 PLA Workshops

Following the TOT, the facilitators undertook following PLA workshops within the target communities:

- Local Spiritual Assembly (LSA) of the Bahais of Bikenibeu West
- Rurete – Catholic sub parish of Bikenibeu West
- Atakibe – KPC group of Bikenibeu West
- Ununiki – KPC group of Bikenibeu West
- Marenaua – KPC group of Bikenibeu West

- Mwanibwan te Kabwaia – Catholic subgroup of Kaibangaki
- Matangare – Catholic Subgroup of Kaibangaki
- Kekeiaki – Catholic Subgroup of Kaibangaki
- Latter Days Saint Church from Bikenibeu group

The facilitators identified four different categories and three subgroups within each community group:

Categories		Gender		
1.	Landowners	Males	Females	Mixed
2.	Non landowners	Males	Females	Mixed
3.	Mixed landowners/non landowners	Males	Females	Mixed
4.	Youth	Males	Females	Mixed

Stakeholder awareness regarding the waste problems in Bikenibeu West communities can be summarized as follows:

1. Dirt and mud draining to wells
2. Littering of solid waste
3. Use beach as dumping site
4. Swampy pits used as dumping site
5. Dumping of wastes in unused wells
6. Domestic liquid waste poured to ground
7. Using beach as toilet
8. Pit latrine toilet
9. Fuel/oil leakage from vehicles
10. Scattered disposable nappies
11. Puddles
12. Graves
13. Overflowing manholes
14. Batteries (dry and acid)
15. Broken water pipes
16. Unburied animal carcasses
17. Overdue waste collection
18. Tar spillage from road construction

The root causes as identified in the community PLA workshops are summarized in Appendix 1.

In June the facilitators participated in an evaluation of the PLA work undertaken to date with the assistance of the Tarawa Technical Institute. The objectives of the workshop were to revise and formulate an improved delivery plan for future consultations at the grassroots level in the Bikenibeu West area as part of capacity building for the PLA facilitators.

The PLA community-based work was completed at the end of June 2004.

3 Root cause analysis

3.1 Root cause analysis with the host community

The PLA workshops with the host community were held from 22 May to 23 June, using the stakeholders analysis prepared for the host community. Out of eight different religious or church groups that were approached, five groups (including, a Bahai group, two groups from KPC, a Catholic group [comprising three subgroups visited during the initial awareness that joined together], and a Mormon group) willingly took part in the PLA workshops. The PLA workshops were conducted separately for each religious or church group, and were normally held over three days, lasting a total of 12–15 hours. About 5% of the host community participated in the PLA workshops.

3.1.1 root cause analysis process

Ten facilitators (graduates from the National PLA workshop organized by IWP-K in liaison with the PCU and Partners for Community Development Fiji), in groups varying between three to five, assisted in conducting the PLA workshops using PLA tools.

The topics addressed in the workshops were as follows:

- problem identification;
- root cause analysis;
- stakeholder problem analysis;
- solution identification;
- stakeholder solution analysis; and
- solution feasibility analysis.

The findings from each PLA were synthesized, problems and root causes validated and solutions assessed in relation to their likely success at the community and national level. All of these findings should be taken back to the community for feedback prior to mini project management planning.

- Resources used include: facilitators trained in the National PLA workshop organized by IWP-K in April; the “Baseline Survey and Waste Stream Analysis Report”, produced in March by IWP-K; and the stakeholder analysis developed in the early phase of the Project, from the Baseline Survey conducted early in the year and also during the national PLA workshop.

3.1.2 Problems and causes identified

The problems identified as consequences of waste by the community include:

- depletion of terrestrial resources;
- depletion of marine resources;
- degradation of the aesthetic qualities of our islands;
- degradation of fresh water resources;
- poor fresh water quality; and
- increased health risks from wastes.

The root cause of these problems was identified as slow human behavioural change, which has not kept up with the rapid pace of development. Some common examples indicated in the findings are a lack of legislation on differing aspects of wastes, weak enforcement of

legislation or bylaws against waste that do exist, poor institutional support for or poor community capacity building on waste management, and poor systems in place to handle waste (e.g. for waste collection).

The results or perceived outcomes include negative behaviours or social problems. Examples — which were frequently mentioned and appear to be increasingly common — include people being unconcerned about the adverse effects to marine resources from dumping waste at sea, a lack of concern about the consequences of water sealed toilets, and the greed of fishers leading them to exploit spawning fish despite the negative impact on future fish populations.

In terms of social and economic development, it appears that most people are anxious for economic and social advancement, yet their core activities ironically focus heavily on fundraising specifically to support church administrative operations, and less for their own economic well being, or to correct collective social behaviours. On the other hand, minor church groups appear to be more receptive to the idea of addressing social behaviours by having their church or religious groups participate in initiatives such as IWP-K, and they took the lead in implementing some of the corrective measures they identified to be the best solutions to waste problems. Examples include cleaning lessons to be incorporated in the preschool curriculum, activities by the Bahai, and inclusion of problems associated with toilets in Ward council meetings with the Mormons. However, how effective these church or religious initiatives are needs to be evaluated and assessed in the same way other activities are assessed.

3.2 Root cause analysis with national stakeholders

Root cause analysis has not been undertaken with national level stakeholders, although the root cause findings from the community PLA workshops related to waste that involve national rather than simply community-level issues (e.g. weak bylaws on waste collection, or absence of legislation on wastes) will be taken up at the national level for validation and possible counteractive measures.

4 Baseline work

A local socioeconomic expert, Mr Roniti Teiwaki, was recruited to conduct the baseline study at the pilot site. The entire population of the host community was involved in the socioeconomic survey. Both quantitative and qualitative survey techniques were used to gather information. Data were obtained from consultations and interviews with community stakeholders, from household questionnaires and participatory observation during the survey. A sample of twenty households was randomly selected for the purposes of conducting a waste stream analysis of the area.

Resources used included staff from the Community Development and Sustainable (CDS) Project, the ECD, and the Betio Women's group, which helped conduct the survey. FSPK's Waste/Geographic Information Systems (GIS) expert, Mr Alice Leney, assisted with waste stream analysis. Government ministries and agencies such as the Ministry of Health and Medical Services, the Lands and Survey Division, the Ministry of Education, Youth and Sport, the Teinainano Urban Council and the Public Utilities Board (PUB) were consulted and provided relevant information for the baseline survey.

The report on the baseline and preliminary socio-economic baseline survey and waste stream analysis for Bikenibeu West on South Tarawa has been published in English³, and also summarized, translated to I-Kiribati, and distributed to every household and office within the host community area.

5 Participatory problem analysis

The community consultations used the participatory problem analysis approach as a useful tool for understanding the root causes or underlying reasons or symptoms behind the problem. This helps break the problem down into a number of components or issues — rather than assumptions — which can be mapped by way of a problem tree. As a visual exercise this is a good method for not only understanding the problem in more detail, but also provides a good basis for identifying solutions and raising awareness regarding common concerns and shared problems. The problem tree also helps identify gaps and information that may be needed to fully understand the causes, symptoms and potential solutions. It is therefore envisaged that a problem tree would form the basis of the subsequent development of the solution tree and a project map.

The problem tree was developed in each community, as part of the process of mapping the results of the community consultations. This also facilitated the development of a monitoring plan and the identification of indicators to measure impacts of the project and identify lessons learned.

The following problem trees were prepared in Bikenibeu West community (see Appendix4).

1. Root cause analysis — Kaibangaki group
 - Degradation of the aesthetic nature of our islands
 - Degradation of fresh water quality
2. Root cause analysis — LSA Bikenibeu West (Bahai group)
 - Degradation of fresh water resources
 - Degradation of the aesthetic nature of our islands
 - Depletion of marine natural resources
 - Depletion of terrestrial natural resources
3. Root cause analysis — Atakibe group
 - Degradation of the aesthetic nature of our village
 - Depletion of our natural resources in our village
 - Degradation of fresh water quality
 - Depletion of marine resources
4. Root cause analysis — Ununiki group
 - Increasing health risk from waste

6 Results of the PLA consultations

The PLA consultations formed the foundation for the IWP-K pilot project in Bikenibeu West community. The communities identified that environmental problems were complex and difficult to address. The PLA approach assisted in identifying practical low-cost solutions and activities that would build on previous activities as a series of building blocks.

The CDSP project, undertaken by UNDP and SAPHE, was contacted in order to discuss collaboration with IWP-K. CDSP had been working extensively with the communities, schools and women's groups on South Tarawa on water, sanitation and waste issues, along with the ECD, and partnership was therefore essential.

6.1 Akeatemange competition

Consultations with community representatives and other stakeholders also indicated that competitions were favoured, and had in the past been successful in raising substantial interest at the community level.

Information from the results of the community PLA consultation helped to indicate how best to organise the competition. The Project Development Team met for the first time in September 2004 to discuss the Project proposal for a waste reduction competition in Bikenibeu West. The plan was well supported and a *Akeatemange* (Zero Waste) competition was conceptualized and officially launched. About 70% of the community household population registered and participated in the competition, which lasted for 10 weeks, and a community champion was identified.

6.2 Greenbags

At this point, the biodegradable Greenbag (for inorganic waste) and banana circles (for organic wastes) were introduced as a pilot initiative to assess community response. In the first quarter of 2005, it was decided by the Local Project Committee (which has been active since 2004, prior to the first consultations with the pilot community) to introduce Greenbags as a tool for beautifying the household compound and village.

6.3 Next steps

The Greenbag Competition has been a real success and has led the Project to a crucial point now in terms of how to ensure its continuous use. The Greenbag user pay scheme is the next crucial step in consolidating the past waste management consultations and efforts, which will facilitate the shaping of the National Waste Plan in Kiribati.

7 Lessons learned

During the community awareness and the PLA workshops a number of lessons were highlighted by participants and facilitators.

Community level

7.1.1 *The PLA community workshops*

1. Groups involved in the initial awareness consultations appear to be more engaged than those that were not involved. The groups with highest number participating during the PLA workshops were the Bahai and the Atakibe KPC group. The lowest participation was from the Mormons and the Ununiki KPC group.
2. One of the main barriers to emerge was that the church groups (e.g. KPC and Catholics) were busy with their own fundraising activities, which for them had priority over other external activities such as IWP-K PLA workshops.
3. Understanding PLA tools is not all that is required to be an effective PLA facilitator. One has to be properly trained both in facilitation skills and the use of PLA tools in order to be effective
4. The PLA workshops need to engage the community in an active, realistic and fun way in order for participants to feel that the process is worthwhile and relevant, rather than just an academic exercise.
5. Facilitation needs to be targeted, to the point, and ensure participants are fully engaged. A boring long winded discussion will send people to sleep.

7.1.2 *Communications strategy*

6. Public announcements are not enough to effectively engage or task host community with active participation in the project.
7. The host community leaders need to be visited or spoken to by telephone before positive responses can be expected.

7.1.3 *Host Community*

8. The religious groups such as the Bahai and Mormons were very responsive to the Project's waste initiatives and accommodated community activities within their religious programs.

7.2 National level

7.2.1 *Meetings*

9. It is essential to brief the National Task Force Chair in order to achieve the objectives of the meetings.

7.2.2 *Lead Agency*

10. Pre-briefing and correspondences to the GEF focal point or Permanent Secretary should always be done on hard copy for official processing and timely responses.

7.2.3 *Local Consultancies*

11. Compared to young local consultants, retired local consultants tend to be slow and need to be constantly followed-up to hasten the developments.

7.3 General considerations

- It is important to selection relevant key PLA tools for waste management, and adapt these as appropriate to the aims of IWP-K.
- Facilitators need to be sensitive to local culture and protocols.
- It is important to identify low-cost solutions appropriate to communities, in order to ensure sustainability after the project ends, and to ensure projects are replicable in South Tarawa
- It is important to build on local expertise and experience and foster community-based conservation. IWP-K should consult with a range of stakeholders to identify both lessons learned and other potential environmental projects.
- There is a need to clearly understand the roles that stakeholders play, both positive and negative.
- There is a need to establish and maintain relationships with project communities and ensure active participation, confidence and trust. IWP-K needs to avoid building expectations and ensure regular communications with Bikenibeu West community.
- The role of the facilitation network team and community consultations in developing IWP-K projects is important. Facilitators must be aware that awareness raising must be accompanied by practical waste management activities, such as competitions and cleanup days.
- There is a need to develop and improve (through ongoing training) facilitation

skills that focus on process (how) rather than purely output (what).

- Thorough analysis and understanding of the root causes of waste management problems and solutions by the community is essential. This is necessary in order for communities to prioritize and select solutions that are practical, feasible and can be implemented.
- Monitoring and evaluation is an important component of a community-based project and the development of monitoring plans and indicators should engage the community at all stages of the project.
- There is a need to develop an IWP-K exit strategy that will focus on continued sustainability of the Project.

8 Conclusions

Looking back, the IWP-K task was overwhelming, both for the staff and for the target community. The IWP-K unit at ECD comprised only two staff and the waste management concerns that came out of the PLA process were enormous.

Project staff and community representatives were encouraged to set short-term targets within the framework of the IWP-K. Subsequently, IWP-K decided that it was best to work first on a more visible solid waste issue and to use the successes from the solid waste approach to improve the sanitation and liquid waste management at a later stage. Experiences and lessons learned from the concurrent activities being undertaken in Kiribati were used to set the next targets, as well as for improving the program, which was undertaken in a sequence small steps, in partnership with the community and other key stakeholders.

The PLA consultations enabled communities to break down the overall waste management issue into smaller, more manageable problems, which could then be easily addressed with the limited resources that were available.

The IWP-K has been able to come this far with the support from the ECD (Ministry of Environment, Lands and Agriculture), in partnership with Bikenibeu West in South Tarawa.

Appendix 1: Summary of root causes identified through PLA workshops in 2004

Issues					
Development/national issues	Population explosion	Explosion of permanent infrastructure	Lack of space	Urban drift	Lack of space for pigs only
External issues	Shoreline erosion	Climate change	Increased ocean temperatures		
Agriculture issues	Inadequate assistance or encouragement from agriculture	Poor soil			
Health issues	Improved health care				
Economic issues	Expensive to connect private sewage pipe lines to main PWU sewage pipe line (PWU)	Cannot afford TUC collection service fee	Expensive sterile services	Poor budgeting skills	People uninterested in planting crops (social issues)
Enforcement	Slack enforcement on building codes (PWU, Lands)	Slack TUC bylaw on pig pen distance from dwellings and wells	Lack of enforcement of pig keeping bylaw	Lack of enforcement on squatter regulations (political)	Lack of toilets in many households (Legislation, national)
PWU issues	Unconcerned about adverse consequences from digging/excavating without first liaising with PWU to prevent accidental leaks in pipe lines (Legislation)	Shoreline erosion	Poor maintenance of manholes or sewage tanks	Easier access and communications	

Issues						
Teinainano Urban Council (TUC) issues	Lack of household waste storage	Lack of settlement planning (national)	Irregular waste collection by TUC (education)	Waste collection points not properly planned	Lack of communal waste storage	
	Overdue collection of waste	Unaware of TUC collection services				
Social issues	Change of lifestyle	Development spin	People heavily engaged with fundraising in church groups	People heavily engaged in other family commitments	Overcrowded households	People unconcerned of adverse effects of un-kept pig pens to water quality (MHMS, Agriculture)
	Fishers not concerned about depletion of fish stock	Greed for fish during easy catch i.e. spawning seasons	Unconcerned about the adverse effects on marine resources from dumping waste at sea	Preference of easy lifestyle	Unconcerned about open piles of waste	Unaware of TUC collection services
Legislation	Lack of bylaw on fishing techniques that are depleting fish stock i.e. mesh size	Lack of regulation on types of toilets permitted for building	Waste legislation not comprehensive, limited coverage	Lack of regulation on the use of water seal latrine	Lack of bylaw on closed fishing	Lack of legislation on littering
Educational issues	Inadequate of awareness about the consequences of littering	Lack of awareness about animal care (Agriculture, MHMS)	People unconcerned about water sealed toilets consequences (MHMS)	Unaware of adverse consequences to marine resources from dumping waste at sea	Unaware of adverse effects on marine resources from fishing during spawning seasons	Lack of awareness of adverse effects of digging in the ground without first liaising with PWU (Ed)
	Lack of understanding on proper animal keeping	Unaware of animal sterile services				

Appendix 2: Summary of first round awareness raising to pilot project community

Date	Community Visited	No. of participants	How community sees waste problem	Community perception towards IWP-K	Remarks & Concerns raised	Facilitators
Sunday 1 st February 2004	Mwanibwan te Kabwaia Group (RC)	20	It is a problem	They believe that IWP-K may be the one who could assist them alleviate increasing waste problem	Concerns: <ul style="list-style-type: none"> • unsealed septic tanks • increasing number of stray dogs and cats • irregular rubbish collection • used disposable napkins scattered around • still not using "te kaoki mange" unit 	Arawaia & Makin
Sunday 8 February 2004	Bahai – LSA Bikenibeu West	30	It is a problem	Same as the above group	Concerns: <ul style="list-style-type: none"> • burying of the dead anyhow, anywhere • stray dogs, defecating anywhere, carrying used or filthy disposable napkins • some houses not connected to main sewerage pipe • loan for composting toilet from Housing only offered to government employees when the need is highest with unemployed people • pungent odors and filthy pigsty • cannot afford proper toilets • some private houses are without water catchments because its costly to them 	Arawaia & Makin
Sunday 15 th February 2004	Matangare RC group	20 people	A problem		Concerns: <ul style="list-style-type: none"> • contamination of marine resources from foreign fishing vessels • contamination from pigsty, graveyard and septic tank • no rubbish bins • some houses with unsealed septic tanks, wants to connect to manhole 	Arawaia, Makin, Noketi and Tiaon

Appendix 3: PLA Consultation plan 2004

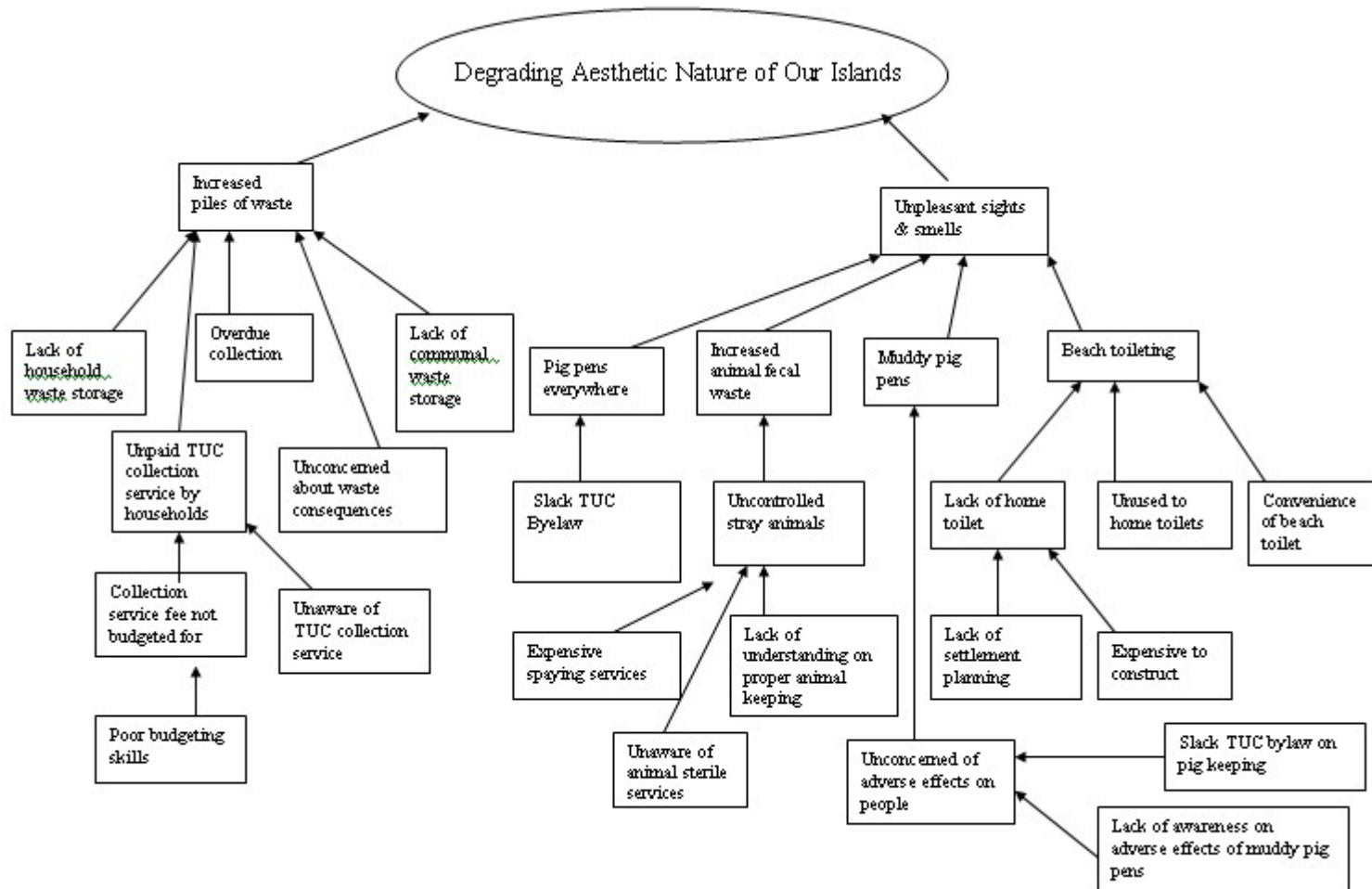
A. Consultation Plan – Bahai

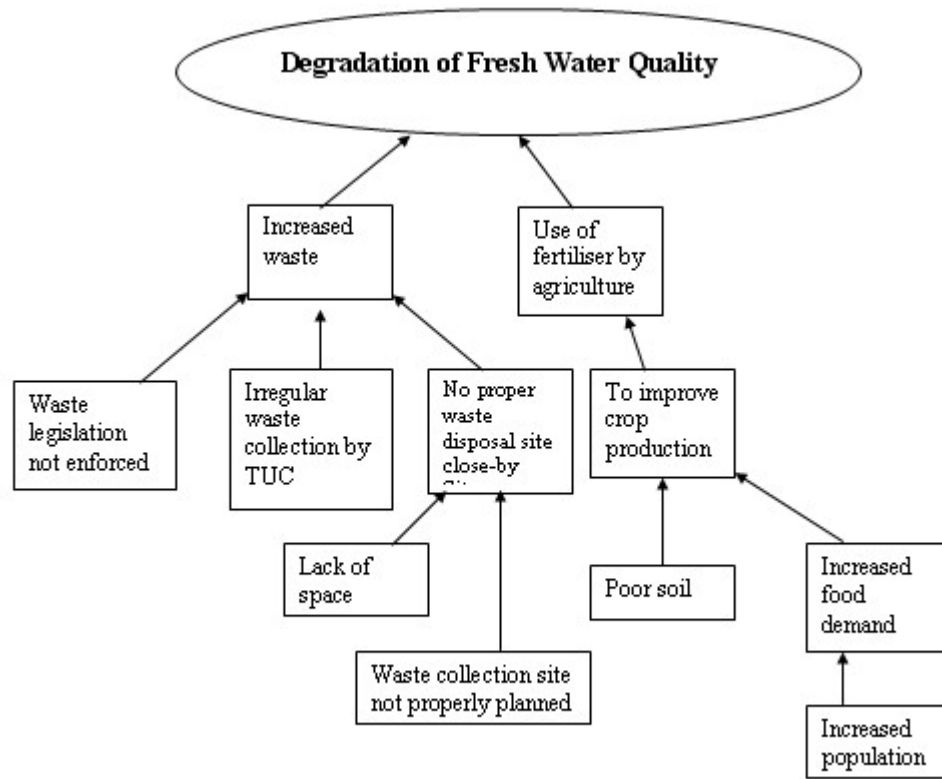
Day 1.	1. Gathering information	Resource mapping, transect walk, historical profile – with subgroups
	2. identification of problems	Brainstorming with subgroups
Day 2.	3. Stakeholder analysis	Brainstorming in subgroups
	4. Problem analysis	Matrix
Day 3.	5. Problem tree	
	6. Identification of solutions	Brainstorming
	7. Solution analysis (if time permits)	Matrix

B. Consultation Plan – Kaibangaki

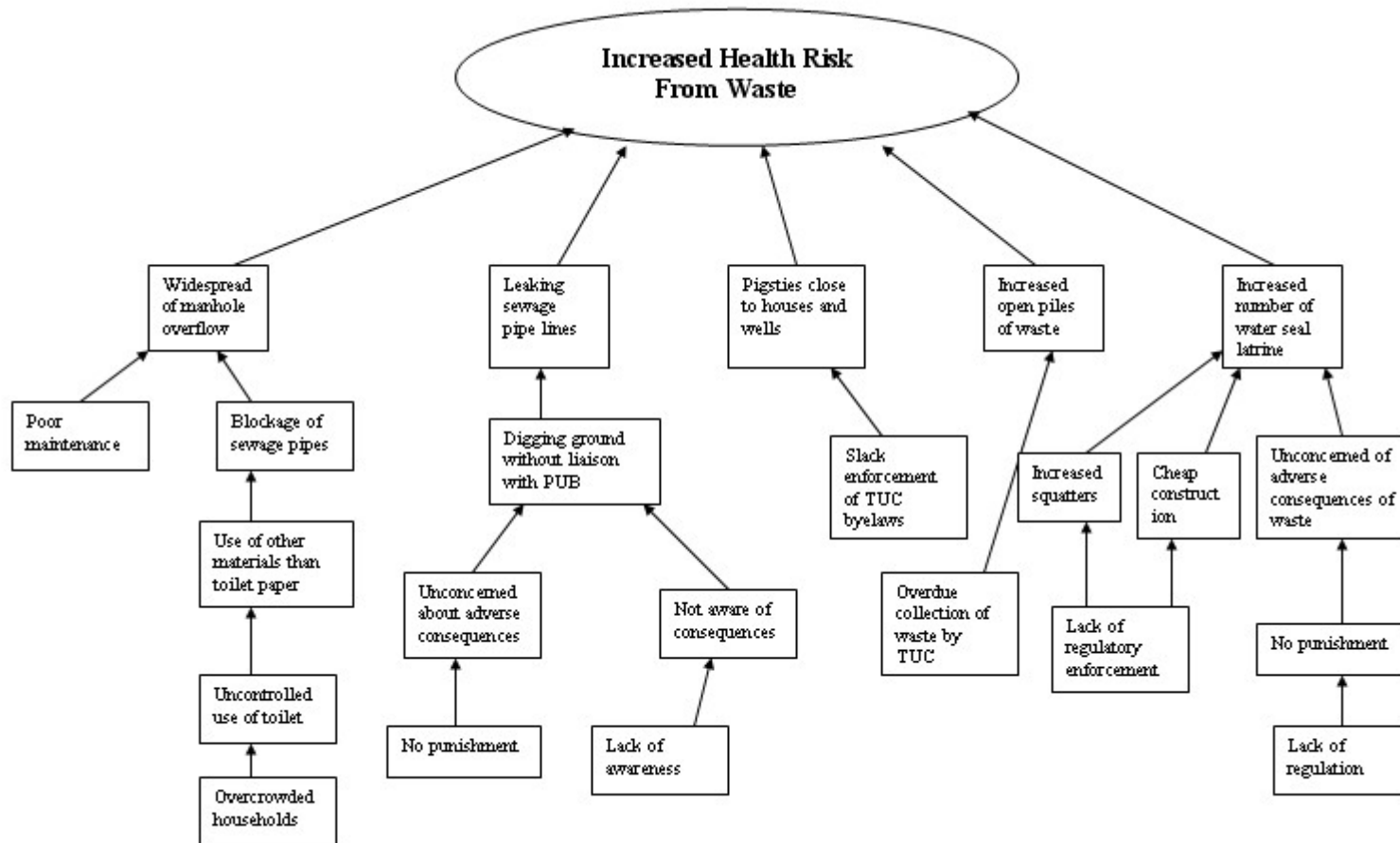
	Activity	PLA tool/Method	Participants	Objective	Presentation Back to All participants	Time (min)
1.	Visioning	Pictures of rubbish shown to all participants	Whole	To emphasize the purpose of the workshop and the impacts of wastes	Presented by IWP-K facilitator?	5-10
2.	Identifying waste/waste problems	Brainstorming	Divide into small groups	To identify problems	Presentation by rep from each group	30
3.	Identification of root causes of waste/poor water quality	Problem Tree	Each subgroup work with one general problem	Identification of root causes	Presentation by rep from each group	45
4.	Stakeholder problem analysis (each subgroup use the same general problem in 2)	Tabulation (Matrix)		To identify stakeholders who are affected and contribute to problems	Presentation by sub-groups	20-30
5	Prioritise problems (IWP can address with stakeholder groups, identified in activity 2)	Grading – using stones	Sub-groups			20
6	Identify possible solutions	Solution Tree	Subgroups			30
7	Stakeholder solution analysis	Tabulation	Sub-groups			30

Appendix 4: Root cause analysis (Kaibangaki group)





Appendix 5: Root cause analysis (Ununiki-KPC Group)



Appendix 6: Root cause analysis (Bahai Group)

