

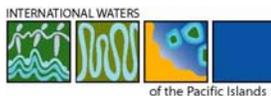
**GLOBAL ENVIRONMENT FACILITY
UNITED NATIONS DEVELOPMENT PROGRAMME
SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME**

**THE INTERNATIONAL WATERS PROJECT
IMPLEMENTING THE STRATEGIC ACTION PROGRAMME (SAP) FOR
THE INTERNATIONAL WATERS OF THE PACIFIC SMALL ISLAND
DEVELOPING STATES**

Information Paper

Community-based waste projects

Prepared by Project Coordination Unit
South Pacific Regional Environment Programme
Revised May 2004



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Introduction

Following on from the 1997 national assessments that were supported as part the formulation of the SAP, and re-confirmed in nearly all priority environmental concern reviews undertaken during implementation of national components of the IWP in 2002, eight of the 14 IWP participating countries have selected ‘waste’ as their focal issue for national and local level activities.

The purpose of this paper¹ is to provide information for discussion for IWP project staff and other project stakeholders on IWP waste management pilot projects, to

- identify the main issues currently being encountered during the design and early implementation stages of their community-based waste pilots, and
- outline a strategy to address issues identified.

Available waste-related information is briefly summarized and already identified elements of IWP waste demonstration projects reviewed.

Objectives of the paper

To consider the scope and opportunities for the design and implementation of community-based waste pilot projects supported by the IWP.

Background

Waste-related output and supporting activities described in the Project Document are:

Output 2.D Three community-centred demonstration projects on waste reduction.

Activity 2.9 Develop criteria for the selection three community centered demonstration projects with the objective of creating models of low cost/no cost community-based waste reduction activities.

Activity 2.10 Undertake a feasibility study to determine the costs, benefits and desirability of regional recycling and disposal options.

Activity 2.11 Develop three demonstration projects that satisfy the criteria per activity 2.9 above and that take into the results of the feasibility study of activity 2.10.

¹ An early version of this paper was prepared for discussion at the 2003 IWP Multi-partite review meeting held in Tonga. Due to time constraints the paper was not specifically discussed by National Coordinators and SPREP. The paper has been slightly modified for more general release in May 2004.

The Project Document outlines the scope and nature of community-based waste pilot projects to be supported under the IWP (emphasis added):

“demonstration projects **should show that there are viable, low cost/no cost alternatives that can be implemented at the community level** that will reduce the current loadings of solid and liquid waste that are having a detrimental effect on receiving waters. As isolated island communities are brought into the market-based economy, non-traditional products and their associated wastes including pesticides, petroleum-based products, processed food products, and other industrial/manufactured products proliferate and accumulate at the household and community level.

Community-based activities **will particularly emphasize integration of traditional practices, cultural values, and public participation** for pollution prevention, waste reduction, and improved sanitation. Since many of the participating countries will find it difficult if not impossible to pay for costly, after the fact pollution problems, every effort should be made to initiate **pollution prevention awareness and activities**. This activity would also include, where appropriate, the application of integrated coastal and watershed management approaches to both problem identification and the development of solutions. The subject of demonstration **would include**, among other things, **wastewater re-use strategies in a country that has wastewater and sewage sludge treatment, waste reduction in the tourism sector and the selection of pilot sites for demonstration projects for composting programmes**. Links between waste management demonstrations, MPAs and coastal fisheries activities will be actively promoted.”

In early 2001 the Project Coordination Unit (PCU) commissioned a review of waste, pollution and sanitation issues². This review is a basic reference for any IWP pilot project with a waste management component. The review:

- explores the reasons for focusing on community-based activities in waste minimisation and pollution control initiatives;
- addresses the subject of pollution control – particularly sanitation. The report notes that often sanitation is relegated to the ‘too hard basket’ even in projects that set out to address it. Strategies and technologies are referred to which reduce pollution from sanitation systems, including composting toilets, sludge co-composting, and constructed wetlands which use native plants to absorb pollutants from waste water;
- examines the interdependent relationships that can enable communities to take responsibility for minimising waste, recovering resources and reducing pollution; and

² Crennan, L. and G. Berry. 2002. *A synopsis of information relating to waste management, pollution prevention and improved sanitation with a focus on communities in the Pacific Islands region*. In Wright, A. and N. Stacey (eds). *Issues for Community-based sustainable resource management and conservation: considerations for the Strategic Action Programme for the International Waters of the Pacific Small Island Developing States*. Technical Report 2002/03. 108 pages. The International Waters Programme. South Pacific Regional Environment Programme, Apia, Samoa. 6 volumes.

- describes some networks and organisations in participating countries which work with communities to raise awareness and enhance skills to address the challenges of environmental degradation and the related decline in public health. Strategies that attempt to maximise participation and mutual understanding are discussed.

The review includes a summary of lessons from previous community-based waste management initiatives. The summary is appended at Attachment A.

A recent development relates to the Pacific Leaders Meeting (PALM) in Okinawa in late May 2003, where a draft Master Plan for Solid Waste Management was released. The draft had been prepared in response to requests to the Government of Japan to provide assistance to Pacific Island countries in this area. A key element of the Plan allows for consultations with stakeholders in the region, including national governments, donors, inter-governmental and non-governmental organisations, with the aim of producing a final agreed Master Plan. The proposed Plan would then be available to guide national and regional implementation - as part of the Regional Waste Management Strategy which the Leaders of PIF members and Japan has proposed SPREP develop in consultation its Member countries over the next year or so. The draft Master Plan offers significant information and guidance that can be applied to the IWP waste management pilots.

Elements and activities of waste pilot projects

The following discussion briefly highlights some **potential activities** that could be implemented under an IWP waste pilot project and **key elements** of projects including:

- stakeholder participation,
- participatory planning processes including root cause analysis and assessing options and selecting solutions,
- social, economic and resource baseline assessments,
- communications, and
- monitoring and evaluation activities.

The role of the NTF, partnerships, and technical support that may assist in the above activities and elements in the design and implementation of the pilots is then considered.

Potential Waste Activities for IWP Pilot Projects

The IWP pilots have potential to support a broad range of waste-related activities. Examples are included at Attachment B. These include **low cost/no cost** technical activities at the community level focusing on specific components of the waste stream, education and awareness raising at the local community, district, island and national scale and institutional and governance considerations are all possible under an IWP pilot.

Strategic Level Activities (institutional and governance considerations)

While the IWP is intended to address waste management and minimization through community participation, there is a need for community work to be conducted in a broader national context. National level issues are needed, for instance, to:

- coordinate local level activities;
- address cumulative impacts of waste across multiple sites; and
- address issues that cannot be dealt with at the village level – communities alone are unlikely to be able to address all waste problems.

Strategic level activities for waste management can therefore include:

- strategic management plans for the wider areas surrounding the site;
- coordinated education and awareness raising activities that can be reinforced at this wider level; and
- introduction and enforcement of national level legislation

Institutional Issues

The role of the NTF

The Project Document described the NTF as a vehicle for inter-ministerial dialogue and collaboration throughout implementation of the IWP. It was envisaged that it would include representatives from key stakeholders and that it would serve as a principal source of information and identification of expertise that could support IWP implementation. It was to facilitate national policy and institutional changes necessary to engender success of project activities. This intent was incorporated into the Memorandum of Understanding relating to the IWP that was executed between all 14 participating governments and the South Pacific Regional Environment Programme (SPREP) prior to the commencement of national activities under the Programme.

The eight countries that have selected waste as the focal issue for their pilot should re-examine the composition of their NTF to ensure that representation is appropriate for the needs of their waste pilot - bearing in mind the pilot is likely to engage interests representing other focal areas, such as freshwater and fisheries, from time to time.

At the same time that the host community activities are being implemented, the NTF can guide activities that examine national issues associated with the management of community waste. Some participating countries have started these higher-level activities – by profiling government agencies with a mandate in the focal area or areas to be addressed by the IWP pilot. Others have commenced reviews of existing national or international legislation that applies to the focal issue of interest. These activities are important in developing an understanding of baseline policy and legislative arrangements that govern national activities in respect of the focal issue. Such reviews may identify gaps and opportunities to address national concerns in relation to community waste management.

In addition, participatory problem analysis activities with local stakeholders may identify causes contributing to the waste problem at the national level, that can be addressed through the NTF.

Partnerships

Joint ventures, and other types of relationships between stakeholders – such as community-based organizations and businesses- should be encouraged to help accomplish waste reduction and pollution control objectives. . By building alliances, resources can be shared, communities can be empowered and employed, money can be saved and people and systems can complement each other to reach a common goal.

National Coordinators are aware that the IWP is unable to support substantial investments in infrastructure. This limitation is especially evident for waste projects, which, according to the Project Document, should support **low cost/no cost** alternatives that can be implemented at the community level. Therefore, if projects require infrastructure investment that cannot be supported with IWP funding, National Coordinators should seek out partnerships with agencies that can fill that gap. In addition, gaps should be raised with IWP NTFs or similar consultative arrangements, such as national waste management committees, so that future national level/strategic actions to address waste issues can perhaps address these issues. (See ‘The role of the NTF’ below.)

It is crucial to establish a working relationship with communities that builds trust and confidence, and avoids creating unrealistic expectations about what the project can achieve. Creating a community/private sector/local government partnership should be mutually beneficial and provide good potential for sustaining critical project elements.

Attention should be given to addressing conflicts, which are commonly experienced when resources are communally owned. This includes anticipating potential conflicts such as disputes over water connection and drainage, and dealing with existing conflicts such as disputed ownership of land.

Technical backstopping

Many participating countries have access to good local technical support for waste-related issues. In many instances this support is resident in Government agencies and it is to those people that most pilot projects could turn to in the first instance for technical advice. Relevant technical skills are also available in local NGOs whether they be national NGOs or local offices for regional or international NGOs. Every opportunity should be made to engage them in the pilot at the appropriate time.

Particularly in relation to social assessment and participatory aspects of pilot projects and economic and communication elements, the Project Coordination Unit can source the majority of technical backstopping required. In most cases it will be PCU staff, in collaboration with other SPREP programmes (particularly in relation to waste management projects). The guiding principal in this respect will be to ensure that pilot projects benefit from the best available advice at a competitive cost.

All 14 participating countries are also members of other regional organizations (such as SOPAC, SPC and UNESCO) that may also be able to provide technical backstopping. Although the PCU can liaise with other agencies in relation to collaboration on IWP pilot projects, as has already occurred in relation to coastal

fisheries, National Coordinators, in consultation with Government officials and technical experts, are best placed to determine the appropriate strategy for this. Thus, countries should consider which organisations they would like to assist them. If they then wish to secure backstopping support from other agencies such as SOPAC or UNESCO, National Coordinators and their governments should either approach the PCU to approach the agency, or they should approach the agency directly themselves.

Crennan and Berry noted that it is important to clarify with external consultants the cost and time that will be involved in technical assistance so that the local counterparts can ensure the budget also allows for necessary community activities. Where possible technical assistance should be sourced locally to reduce costs, and technical skills and activities should be transferred to community members, government or other partners as soon as feasible.

Community-level Issues

Attachment B also includes some of the cost and financial implications of various resources, equipment and activities associated with community-based waste projects in line with the broad aims and scope of IWP waste projects as outlined in the Project Document and noted above.

The Crennan and Berry Review identified the following community-based waste management activities and strategies that could be included in the pilot project program:

- village composting enterprise for green waste;
- biosystems using animal manure;
- minimising the use and impact of disposable diapers;
- composting toilets: domestic and public;
- co-composting of septic sludge and green waste;
- recycling used vehicle oil;
- minimising use and impact of agricultural chemicals;
- household compound ‘waste’ management system including pig raising and gray water re-use, and organic gardens; and
- village management of ‘waste’ separation and litter prevention

However, the Crennan and Barry review did not include technical or design detail for the various waste management strategies, or for the proposed IWP pilot projects. There are many manuals, publications and reports available that provide this information specifically for Pacific Island situations and, in general, for developing and developed country conditions. The References included at Section 7 of the Crennan and Barry review cite this material. Additional assistance is also available through the technical programmes of SPREP, UNESCO and SOPAC.

Key Elements of Participatory Planning Processes

Stakeholder analysis and participation

A stakeholder analysis and participation strategy developed soon after site selection is critical to the planning and implementation of the pilot. It will identify key

stakeholders (including local community individuals and groups, non-government organizations, government, private sector) and their interests in the pilot. Participation strategies will outline why, where, how and when various stakeholders will participate in the pilot activities and conditions and supported needed to facilitate their participation.

To ensure stakeholder participation, adequate time and flexibility is required to allow stakeholders to understand and assess what is at stake, and to develop the necessary skills to create and implement solutions.

While the considerable lead-in time for community-based projects is generally widely appreciated the IWP has a set time frame in which it is expected to deliver on a range of agreed objectives. Project activities need to remain cognizant of this.

Community participation in projects may include:

- village ‘clean up’ competitions;
- participation in marine restoration projects;
- training workshops to develop environmental and management skills and knowledge;
- developing a village theatre troupe to perform in schools and workshops on environmental themes;
- participation in field trials and other project research, including participatory monitoring;
- ensuring community opportunity for input to decision-making; and
- incorporating traditional practices such as: working through district councils and/or local chiefs and leaders; and

Stakeholder Participation and Benefits

Community participation in the pilot will vary depending on individual and community benefit. For example, as concluded during stakeholder consultations on waste issues on Nauru in November 2002³, the benefits to a community of reducing waste impacts can be simply expressed in terms of personal outcomes as shown in Table 1.

Non-government participation, including NGOs, other community groups, development assistance agencies and the private sector will also be dependent on the pilot being able to demonstrate benefit in relation to their respective interests. An assessment of partnership opportunities will depend on a good understanding of the individual interests or benefits of each potential partner in the project.

³ IWP (Nauru). (2002). Stakeholder consultations on waste issues in Nauru: IWP Stakeholder Briefing Workshop.

Table 1. Considerations in identifying pilot project benefits

| Objective | Target waste stream | Typical project elements |
|----------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Healthier families | Sewage, Pig Waste, MSW (municipal solid waste) | Composting toilets, septic sludge, anaerobic digestion ponds, diapers disposal. |
| Island sustainability | Chemicals, Hydrocarbons, Green Waste/ Pig Waste | Aerobic composting, hazardous waste collection, groundwater monitoring, target lagoon pollution. |
| Better quality of community life | Dumpsites, Litter, Food/Organic Wastes | Organic gardens, medical incinerator, recycling, grey water and effluent re-use |

For Government it is important that the project addresses priority issues and demonstrates potential to support the Government in its efforts to promote activities of national or regional benefit. Practical benefits to Governments could include the provision of technical expertise to assist the project. The project could provide an opportunity for the Government to develop its capacity in relation to community-based project implementation, to explore co-management opportunities and to provide a practical opportunity to consider national policy in respect of the focal issue.

Root causes and solution options

Project stakeholders must have a firm grasp of those issues that contribute to the problem(s) before a workable solution can be found. It is necessary to know the likely effects of a proposed solution (i.e.- Would the solution be accepted? How much lifestyle change would it require? Are those involved willing or able to make the change(s)) - before significant investments are made in project activities.

In relation to waste management and pollution control, there are many complex technical, social, cultural and economic issues that exert a direct or subtle influence among local stakeholders. These include:

- customary land tenure and access issues;
- customary practices and attitudes in relation to waste and sanitation practices such as taboos, gender roles
- varying concepts of disease;
- extended family obligations and allegiances;
- in some communities the day to day preoccupation with survival;
- financial conditions (such as lack of money);
- notions of communal and public responsibilities (eg. public responsibility could be a non-traditional value); and
- government capacity and infrastructure (including policy and legislation).

Important activities associated with understanding the root cause for community waste problems, and assessing various solution options, have been discussed in previous Meetings of National Coordinators in 2001 and 2002. They also received significant attention in previous sub-regional Train-the-Trainer Workshop initiative

and in the recent Resource Kit “*Collaborating for Sustainability: A Resource Kit for facilitators of Participatory Natural Resource Management*” (SPREP 2004). Activities associated with this aspect of the pilot include:

- stakeholder analysis and participation strategies;
- root cause analysis;
- socio-economic baseline activities – design, information needs and collection methodology;
- project mapping – assessing options and selecting solutions (including social and economic considerations – costs and benefits) and project design options;
- communication issues - social marketing, community education, strategies and tools including stakeholder feedback and communication of results;

Description of the baseline situation

One of the objectives of the Train-the-Trainer Workshop initiative was to develop local skills to backstop National Coordinators and their project development teams and facilitators to assist on a range of community-related activities associated with the pilot. One such important activity is the collection and assimilation of information associated with a baseline description of the pilot site. Lack of attention to this task has been a feature of many Pacific Island resource management and conservation initiatives – as noted in the evaluation of the South Pacific Biodiversity Conservation Programme (SPBCP) and reiterated in Jenny Whyte’s Review.

Community-based waste pilot baseline activities may involve an early waste characterization study so that an understanding of all the elements of the waste stream is promoted and appropriate strategies designed to include consideration of them during project implementation.

Equally legitimate is a baseline description of the Government role in respect on waste, particularly as it relates to community services. This could include such activities as policy reviews, legislative reviews and current priorities and initiatives of all Government agencies with a role in waste-related issues – including those involved in commerce and trade. In many participating countries activities in support of this have either already commenced or are planned for the near future. It would also be appropriate to determine, for example, how existing (if any) waste services are funded, the scope of services and any perceived limitations and constraints.

Identification and selection of solutions

Following an analysis of the root cause of waste problems, National Coordinators are likely to be work with key stakeholders to identify solutions that – as much as is practical – address selected root causes. Preferred solutions will need to be assessed for their cultural suitability, impacts, benefits, costs and sustainability. Critical in this will be that activities started under the Programme will continue to generate benefits after the IWP has ended. Therefore, a key element in identifying and assessing solutions will be to determine on-going funding issues and incentives for continued participation

Community education and public relations

The pilot projects have the potential to be a valuable exercise in public relations, social marketing and community education. The pilot project communication strategy will need to be developed and implemented to support these activities. Project resources will need to be allocated for this purpose

The PCU has developed a social marketing guide to assist NTF's, and other's with an focus on sustainable resource management and conservation, to promote waste-reduction behaviour in pilot communities. The guide provides a practical step-by-step process for the design of communications and community services to support waste reduction behaviour.

Monitoring and evaluation

Successful monitoring and evaluation of the pilots will be enhanced by a thorough description of the baseline situation.

While PCU documentation, including the Train-the-Trainer Workshop, highlights the potential for engaging pilot stakeholders in monitoring and evaluation, the quality of pilot project results will be essentially determined by the capacity of the National Coordinator to manage and document monitoring and evaluation activities. Each pilot will require its own monitoring and evaluation plan.

References

Crennan, L. and G. Berry. (2002). A synopsis of information relating to waste management, pollution prevention and improved sanitation with a focus on communities in the Pacific Islands region. In. Wright, A. and N. Stacey. (Eds.). *Issues for Community-based Sustainable Resource Management and Conservation: Considerations for the Strategic Action Programme for the International Waters of the Pacific Small Island Developing States*. Volume 3. IWP Technical Report 2002/03 108 pp. The International Waters Project, South Pacific Regional Environment Programme, Apia, Samoa. 6 volumes.

Whyte, J. (2002). A review of lessons learned and best practice in integrated coastal watershed conservation and management initiatives in the Pacific Islands region. In. Wright, A. and N. Stacey. (Eds.). *Issues for Community-based Sustainable Resource Management and Conservation: Considerations for the Strategic Action Programme for the International Waters of the Pacific Small Island Developing States*. Volume 6. IWP Technical Report 2002/06 88 pp. The International Waters Project, South Pacific Regional Environment Programme, Apia, Samoa. 6 volumes.

Mahanty, S and N. Stacey. (2004, draft). Collaborating for Sustainability: A Resource Kit for Facilitators of Participatory Natural Resource Management in the Pacific. SPREP, Apia, Samoa. (available at www.sprep.org.ws/iwp)

Some generalized lessons from previous waste and sanitation pilot projects (from Crennan and Berry, 2002)

Hygiene behaviour change

- Training and equipping of community facilitators is crucial to the accomplishment of hygiene behaviour change.
- Comprehensive baseline surveys focused on targeted behaviours are important for planning awareness programs and training, as well as for documenting health and environmental impacts.
- All community members can be mobilised as educators, not just community facilitators.
- Multiple means of communication should be used in implementing behaviour change activities.

Strengthening of local partners

- Sufficient time must be set aside at the beginning of implementation to understand and train local implementation partners including government and community-based organisations.
- All local partners should be brought together under an umbrella arrangement rather than conducting all activities with a single local partner.

Sustainability of interventions

- One year is too short a time period to accomplish both interventions and their long-term sustainability.
- Income can be generated by community-based waste management.
- In income generating projects related to infrastructure management, a targeted amount of funds should be set aside to cover recurrent capital costs.

Program design

- Proposals must be written based upon a thorough understanding of the situation in the field.
- A formal start-up workshop bringing together all stakeholders is beneficial in project implementation.

Some potential resources, equipment and activities in community-based waste projects

Note: 'IWP phase out' refers to the end of IWP funds supply after December 2006. After this point, activities that require on-going funding will need to be taken up by stakeholder groups or other agencies/organisations or programmes. If such activities are to be part of the IWP, National Coordinators will need to discuss with stakeholders *in the planning stage* where such funds would be sourced after the IWP. They would need to commence planning for this funding (talking to donors, governments etc.) so that the funding is ready to commence as soon as the IWP ends. Otherwise projects will grind to a halt.

| Resources, Equipment and Activities | Considerations for Discussion w.r.t. the IWP |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Human resources</i> | |
| <ul style="list-style-type: none"> ▪ wages to someone to collect waste | <ul style="list-style-type: none"> ▪ Short-term start-up assistance possible for partial support – with community agreement to use funds in this way ▪ partnership arrangement preferred – particularly with the community, perhaps a local NGO or development assistance agency. ▪ IWP phase-out |
| <ul style="list-style-type: none"> ▪ wages for someone to manage a recycling center (aluminum, paper, oil, batteries, etc) | <ul style="list-style-type: none"> ▪ Short-term start-up assistance possible for partial support – with community agreement to use funds in this way ▪ partnership arrangement preferred – particularly with the community ▪ IWP phase-out |
| <ul style="list-style-type: none"> ▪ Payment to community members to dig a septic tank | <ul style="list-style-type: none"> ▪ labor considered an in-kind contribution ▪ Possible IWP contribution – assistance to purchase materials or refreshments? ▪ W.r.t. a community facility - land and labour would be considered part of the community contribution (although communities may also be able to negotiate reciprocal arrangements for access to land. For example, a landholder may give up some land for septic tanks in return for assistance with other activities?) |
| <ul style="list-style-type: none"> ▪ community waste official's salaries – rangers | <ul style="list-style-type: none"> ▪ Short-term start-up assistance possible for partial support – with community agreement to use funds in this way ▪ partnership arrangement preferred – particularly with the community |

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| | <ul style="list-style-type: none"> IWP phase-out |
| <ul style="list-style-type: none"> health inspector salaries | <ul style="list-style-type: none"> A Government responsibility – and Government contribution to the project Some equipment and training costs could be considered – subject to community and government agreement. |
| <ul style="list-style-type: none"> Meeting fees to stakeholders participate in community pilot committees or working groups. | <ul style="list-style-type: none"> National Coordinators should plan most community meetings so that it does not interfere with primary day-time responsibilities of primary stakeholders. Meeting participation fees generally cannot be supported from the Project budget. |
| <i>Sewerage management equipment</i> | |
| <ul style="list-style-type: none"> water supply diversion/installation | <ul style="list-style-type: none"> Shared costs – project beneficiaries/local and national governments/IWP/other donors? Perhaps takes into account community in-kind contributions such as labor and access to land. |
| <ul style="list-style-type: none"> flush toilets – public/private | <ul style="list-style-type: none"> Shared costs taking into account community in-kind contributions such as labor and access to land. Acceptance of criteria for environmentally-safe septic systems a pre-condition. |
| <ul style="list-style-type: none"> Composting toilets – public/private | <ul style="list-style-type: none"> Shared costs taking into account community in-kind contributions such as labor and access to land. |
| <ul style="list-style-type: none"> new low cost septic tanks – public/private | <ul style="list-style-type: none"> Shared costs taking into account community in-kind contributions such as labor and access to land. Acceptance of criteria for environmentally-safe septic systems a pre-condition. If septic is low cost – perhaps full IWP coverage of costs – depending on contribution of beneficiaries? |
| <ul style="list-style-type: none"> Seepage pond construction | <ul style="list-style-type: none"> Shared costs taking into account community in-kind contributions such as labor and access to land. IWP could support cost sharing in relation to equipment hire for pond construction. Prior community commitment, or an alternative arrangement, for pond maintenance, required. |
| <ul style="list-style-type: none"> sludge treatment | <ul style="list-style-type: none"> Shared costs taking into account community in-kind contributions such as labor and access to land. |
| <ul style="list-style-type: none"> bio-system design and construction | <ul style="list-style-type: none"> Shared costs tasking into account community in-kind contributions such as labor and access to land. |
| <i>Household and animal waste management equipment</i> | |
| <ul style="list-style-type: none"> Litter clean-up | <ul style="list-style-type: none"> IWP could provide some incentives (refreshments, vehicle hire, advertising to promote |

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| | community involvement, etc. – but as part of a broader community waste management initiative to address waste concerns in addition to litter). |
| <ul style="list-style-type: none"> ▪ rubbish dumps | <ul style="list-style-type: none"> ▪ Rubbish dump construction not considered a low cost/no cost “solution” – so not supported by the IWP alone. ▪ Instead, IWP could support activities that would support efficient use of a rubbish dump funded by another agency or programme. That is, IWP could partner a rubbish dump programme and assist, for example, with (i) education campaigns (ii) strategies to reduce, reuse and recycle waste (iii) legislative reviews related to waste. |
| <ul style="list-style-type: none"> ▪ Fencing | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. |
| <ul style="list-style-type: none"> ▪ wire mesh cages for domestic in-house waste separation | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. Collection system designed and operational. |
| <ul style="list-style-type: none"> ▪ rubbish drums for houses | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. Environmentally-sensitive collection and waste processing system designed and operational. |
| <ul style="list-style-type: none"> ▪ Receiver bins for communities | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. Environmentally-sensitive collection and waste processing system designed and operational. |
| <ul style="list-style-type: none"> ▪ rubbish bins for household sorting | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions. Environmentally-sensitive collection and waste processing system designed and operational. |
| <ul style="list-style-type: none"> ▪ Vehicles for rubbish collection | <ul style="list-style-type: none"> ▪ Not a low cost/no cost solution. |
| <ul style="list-style-type: none"> ▪ compacter for rubbish dumps | <ul style="list-style-type: none"> ▪ Not a low cost/no cost solution ▪ Could training be paid for by IWP as part of waste management and capacity building? |
| <ul style="list-style-type: none"> ▪ Graders/front end loaders for land fills | <ul style="list-style-type: none"> ▪ Not a low cost/no cost solution |
| <ul style="list-style-type: none"> ▪ shredder to reduce organics for composting | <ul style="list-style-type: none"> ▪ Shared costs tasking into account community in-kind contributions such as labor and access to land. ▪ Training can be funded under IWP? |
| <ul style="list-style-type: none"> ▪ rubbish collection drums for organic rubbish at various sites (to service | <ul style="list-style-type: none"> ▪ Shared costs tasking into account community in-kind contributions such as labor and access to land. Environmentally-sensitive collection and waste processing system |

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|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| groups of households) | <ul style="list-style-type: none"> ▪ designed and operational. ▪ Clarification of “shared” costs will always be a contentious issue. |
| <ul style="list-style-type: none"> ▪ bailer to compress recyclables | <ul style="list-style-type: none"> ▪ Shared costs tasking into account community in-kind contributions such as labor and access to land. |
| <i>Freshwater related equipment</i> | |
| <ul style="list-style-type: none"> ▪ walls to prevent river bank eroding | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land and raw materials. IWP could contribute to equipment hire, material purchase and technical advisory costs. |
| <ul style="list-style-type: none"> ▪ boreholes for freshwater | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. IWP could contribute to equipment and assets purchases and technical advisory costs. |
| <ul style="list-style-type: none"> ▪ taps in villages | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor. IWP could contribute to equipment and assets purchases and technical advisory costs. |
| <ul style="list-style-type: none"> ▪ cement tanks for freshwater storage | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. IWP could contribute to equipment and assets purchases and technical advisory costs. |
| <ul style="list-style-type: none"> ▪ new piping system for underground water delivery | <ul style="list-style-type: none"> ▪ Shared costs taking into account community or local council in-kind contributions such as labor and access to land. IWP could contribute to equipment and assets purchases and technical advisory costs. Agreed maintenance arrangement in place. |
| <ul style="list-style-type: none"> ▪ Roofing materials for water harvesting | <ul style="list-style-type: none"> ▪ Shared costs taking into account community in-kind contributions such as labor and access to land. IWP could contribute to equipment and assets purchases and technical advisory costs. |
| <ul style="list-style-type: none"> ▪ water monitoring equipment | <ul style="list-style-type: none"> ▪ IWP can support – within reason. Community or local council commitment to training in equipment use, on-going monitoring and reporting a pre-requisite. Community based training can be funded under IWP. |
| <i>Institutional activities</i> | |
| <ul style="list-style-type: none"> ▪ Waste social and economic baseline studies | <ul style="list-style-type: none"> ▪ IWP can support – preferably in partnership |
| <ul style="list-style-type: none"> ▪ waste stream analysis | <ul style="list-style-type: none"> ▪ IWP can support – preferably in partnership |

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| <ul style="list-style-type: none"> ▪ Development of a model community code of practice for environmental management | <ul style="list-style-type: none"> ▪ IWP can support |
| <ul style="list-style-type: none"> ▪ policy reviews | <ul style="list-style-type: none"> ▪ IWP can support |
| <ul style="list-style-type: none"> ▪ committee and working group support | <ul style="list-style-type: none"> ▪ IWP can support – technical backstopping, facilitation, etc. |
| <ul style="list-style-type: none"> ▪ short-term consultancies | <ul style="list-style-type: none"> ▪ IWP can support |
| <ul style="list-style-type: none"> ▪ Training activities | <ul style="list-style-type: none"> ▪ IWP can support |
| <ul style="list-style-type: none"> ▪ public relations and social marketing activities – advertising, school events, community theatre, etc. | <ul style="list-style-type: none"> ▪ IWP can support – preferably in a partnership arrangement involving cost sharing. |
| <ul style="list-style-type: none"> ▪ legislative reviews | <ul style="list-style-type: none"> ▪ IWP can support |
| <ul style="list-style-type: none"> ▪ Feasibility studies | <ul style="list-style-type: none"> ▪ IWP can support – for example, recycling options, composting systems, income generation opportunities from waste, economic appraisals, etc. |
| <ul style="list-style-type: none"> ▪ workshops and consultations (e.g. on governance) | <ul style="list-style-type: none"> ▪ IWP can support. Partnership support to share costs, e.g. provision of facilitators, preferred. |