

## ANNEX

### 1. IDENTIFICATION

<b>Country/Title/CRIS Ref.</b>	Tuvalu / Water, Waste and Sanitation Project (TWWSP): CRIS FED/2009/021-195	
<b>Total Cost</b>	Euros 4,400,000	
<b>Aid Method/Method of Implementation</b>	Project approach: partially decentralised management	
<b>DAC Code</b>	14030, 14050	Sectors: Basic drinking water supply and basic sanitation Waste management/disposal

### 2. RATIONALE

#### 2.1 Sector Context

**2.1.1 Waste.** Tuvalu is one of the most environmentally fragile states in the Pacific region, due to its low relief and small land area. Two key risks confronting it are: 1) rising population density in Funafuti; and 2) poor waste management and pollution control. Climate change and the prospect of rising sea levels is also a major risk, if not the paramount threat. Poor collection and improper disposal of waste has direct implications for human and ecosystem health across Tuvalu's nine atolls and reef islands. More polluted lagoons, potable groundwater, and greater waste accumulation are latent sources of disease and other public health and sanitation issues. The biggest threats lay within or near each island's population centre, especially on Funafuti, with 50% of the population and where the volume of waste is growing rapidly. On outer islands with potable groundwater, contamination is a growing danger.

The 10<sup>th</sup> EDF TWWSP will drive a strong Tuvalu-EU partnership to establish sustainable waste operations, providing low-technology solutions, appropriate plant and equipment, with Tuvalu providing all service/operational funding. Cabinet has approved in principle funding waste services by imposing a levy on imports. An administrative framework and other details are under investigation. If endorsed a waste levy could provide sustainable funding for future waste services in support of this project.

The 10<sup>th</sup> EDF TCF already funded new waste management legislation. Drafted this year, the *Waste Operations and Services Act 2009* (WOSA 2009) was enacted at the June 2009 Parliament session. WOSA augments the Environment Protection Act 2007, and provides the legal framework for the waste component of this project.

**2.1.2 Water.** The collection and storage of rainwater in Funafuti, and in the outer islands, has been and continues to be a major problem that has a relatively simple solution: Increase water storage capacity nationwide. Funafuti has no underground freshwater lens, rainfall can be infrequent, and there are regular periods of drought that can last months, especially in the three northern islands closest to the equator. To provide enough water for Funafuti to cover periods of drought, residential rainwater catchment and storage capacity has to increase, and larger scale municipal reserves of rainwater storage should scale up. The solution to water shortages in the outer islands is similar: Increase household rainwater storage. The supply of additional water tanks to community halls, primary schools, and government facilities will further increase water storage, and expand reserve water supplies in the event of drought or other emergencies.

Four of eight outer islands possess potable (but limited) sources of groundwater, accessed through boreholes to a very shallow water lens. Reserve government and community storage of up to 6 million litres is available to supplement household supplies during droughts. Funafuti has two desalination plants. These are used to top-up municipal storage as a safeguard against prolonged drought.

Groundwater is becoming increasingly saline, possibly as a result of rising sea levels, and polluted from infiltration of septic effluent. Rainfall patterns are unpredictable, changing over the past decade, possibly as a result of global warming and El Nino effects. Household rainwater catchments (i.e., roofs) vary

considerably, from less than 50 square metres to over 200. Guttering often leaks and some catchment run-off surfaces lack guttering.

A draft National Water Policy (NWP), including policy guidelines, is in-place, developed in 2006 under the International Waters Project (SPREP). Two recent projects, the IWRM (Integrated Sustainable Wastewater Management implemented by SPREP) and PACC (Pacific Adaptation to Climate Change – implemented by GEF, UNDP, SPREP), will refine and implement the NWP platform.

**2.1.3 Sanitation.** Funafuti’s atoll shoreline is a major source of livelihood. It also is a source of marine biodiversity of conservation value. This area is under threat from poor liquid waste management. A Cost Benefit Analysis conducted by the International Waters Programme in 2005-06, conservatively estimated that the cost of poor sanitation to the national economy is roughly €270,000 per year, of which 80% is attributed to public health costs associated with waterborne disease.

Funafuti has no centralised sewage system. Every household has on-site wastewater systems. The use of septic systems for sewage treatment and disposal is not ideal, but alternatives, such as a reticulated system or ocean outfall, are not possible, practical nor financially viable.

Tuvalu’s Public Works Department (PWD) has drafted a National Building Code that includes clear and easy-to-follow specifications for the proper siting and construction of septic systems. The code has been approved in principle but not yet endorsed nor implemented. New septic systems built by private citizens, are usually constructed badly, which leach sewage directly into the ground and ultimately to the lagoon and ocean.

Regular maintenance and pump-out of all septic tanks every 3-4 years will enable the systems to operate properly, improve public health and lower pollution. A previously constructed septage treatment facility that has fallen into disrepair was recently inspected and found to be serviceable if repaired/modified to process septage for use as an organic resource for compost production.

## **2.2 Lessons Learned**

**2.2.1 Waste.** Valuable lessons have been learned from previous waste management efforts. For a solid waste system to be truly sustainable<sup>1</sup>, it must include but not be limited to:

- Responsibility for waste services should be clarified with clear demarcation lines between the national and local governments, and the private sector.
- Stable, reliable and adequate funding must be secured in order for waste management services to improve.
- New funding mechanisms/sources will drive efforts to improve the delivery of waste services.
- New operational approaches must be implemented to break the cycle of under-performance.
- Awareness on waste issues must improve so that the general public buys into improved waste services.
- Complicated waste solutions fail; solutions need to be practical, simple, and use low technology.
- Without comprehensive national waste legislation, including enforceable regulations, the sector has no clear institutional framework in which to operate.

**2.2.2 Water.** A number of reports focusing on reducing Tuvalu's vulnerability to adverse climate events helped design the water component of this project by highlighting, among other things

- Extra household rainwater storage provides the best strategy for water resilience in islands where rainwater is the major source of freshwater.
- Household catchments must be optimised by repairing leaky gutters and providing extra guttering to maximise rainwater catchment, and catchments must be maintained.
- The community must understand water conservation and demand management at the household level and take responsibility for water conservation during dry and drought conditions.

---

<sup>1</sup> In this context ‘sustainable’ means maintaining an effective Tuvalu waste system. Recycling and other initiatives must be considered from the viewpoint of practical and economic sustainability in the context of Tuvalu’s local (microeconomic) situation, rather than a ‘global’ context.

- Water policy needs to be established that is relevant and supports water sustainability. Associated legislation needs to be current and enforced (e.g., building code).

**2.2.3 Sanitation.** Data on existing sanitation conditions are provided by a report on the economics of liquid waste management in Funafuti, also examining the economics of poor sanitation and alternate sanitation systems. Sanitation lessons learned include:

- Sustained pressure must be placed on Government to carry through on commitments to establish standards for construction of septic systems.
- Septic tank maintenance is required to reduce the impact on public health and the environment.
- Community awareness that shows composting toilets to be more convenient and healthier than septic systems, and that composting toilets must be located inside the house, not as separate out houses.
- Community education and awareness must be focused and sustained over a long period.

## **2.3 Complementary Actions**

**2.3.1 Waste.** There are at present no complimentary actions, with the exception of a Republic of China (ROC), Taiwan-funded waste management project discussed below.

**2.3.2 Water.** The 9<sup>th</sup> EDF B-envelope funded 310 10,000 litre water tanks, supplied to Funafuti households. The project was completed at a cost of €352,700. Complementary activities include a rainwater catchment improvement program to repair household roof guttering and drainpipes, and the supply of new guttering and piping.

**2.3.3 Sanitation.** Interventions in the sanitation sector will be supported by and coordinated with other projects that focus on sanitation. The 9<sup>th</sup> EDF B-envelope water project incorporates a sanitation component, which focuses on septic tank repair and the promotion of eco-sanitation systems.

## **2.4 Donor Coordination**

In reference to the Partnership Commitments and Indicators in the Paris Declaration on Aid Effectiveness, this project will contribute as follows:

- Alignment of EC Development Co-operation with national poverty reduction and development strategies;
- Reduction of the need for parallel project implementation units (PIUs);
- Increasing aid predictability and on-time disbursement; and
- Reduction of the number of uncoordinated missions (additional indicator committed to by the EC).

**2.4.1 Waste.** During the 2006-08 programming phase of the 10<sup>th</sup> EDF frequent meetings were held in Tuvalu with officials from key departments involved with waste, as well as with local officials and NSAs. The Waste Management Working Group (WMWG) was established in July 2008, including representatives from the Ministries, civil society as well as other donors involved in the water and waste sectors, namely Japan and the Republic of China.

Government officials and the WMWG, including permanent ROC representation, are working to integrate the ROC waste project into the much larger 10<sup>th</sup> EDF waste component. Tuvalu-ROC consultations are ongoing for the ROC Agricultural Farm to host the centralised composting facility. ROC officials are receptive to the idea, which offers natural complementarity with the organic waste component of this project and the Farm's composting expertise.

**2.4.2 Water.** The water component will be closely coordinated with existing AusAID- and Japan-funded water projects, and water projects managed by SOPAC, such as the IWRM, the HYCOSS Project, the 9<sup>th</sup> EDF Disaster Risk Reduction Project, and with other donors who may express interest in water projects.

**2.4.3 Sanitation.** Tuvalu has developed a demonstration project under the Global Environment Fund (GEF), the IWRM project, which began in 2009, will last five years. The project focuses on the promotion and development of eco-sanitation systems. The 10<sup>th</sup> EDF sanitation component will be coordinated with this project, and support the supply of composting toilets where the IWRM program gains community commitment.

### 3. PROJECT DESCRIPTION

#### 3.1 Objectives

The **Overall Objective** of the water, waste and sanitation components is to protect the environment, and improve public health and sanitation standards. The overall **Project Purpose** is to design and implement sustainable water, waste and sanitation components in Funafuti and the eight outer islands that are simple and cost effective. The specific purpose of 1) the waste component is to expand and improve waste services; 2) the water component is to overcome recurrent water shortages by improving catchment and storage; and 3) the sanitation component is to improve household sanitation facilities, and effective disposal of septic sludge.<sup>2</sup>

#### 3.2 Expected Results and Main Activities

**3.2.1 Waste.** The expected activities and results under the waste component include:

1) **Dumpsites/landfills.** Clean-up and (or) reclaim exhausted/nearly exhausted dump-sites in Funafuti. Better management of existing/working dumpsites. Clean up, compaction, rehabilitation and proper management of the main dump site on Funafuti to create a more manageable site and extend the sites working life.

2) **New dumpsites.** Identification, planning and proper management of new landfill sites (specifically in reference to new sites to be identified on each of the outer islands).

3) **Waste streams.** Increased separation of green/organic waste from the inorganic waste stream in Funafuti and in the outer islands (see 4 below).

4) **Composting green waste.** Increased collection, shredding and composting of green waste at a central processing facility (e.g., ROC Agricultural Farm) for commercial-scale farming and household gardening.<sup>3</sup>

5) **Hazardous waste.** Establish a system of safe collection and disposal of hazardous waste, including medical waste, both for Princess Margaret Hospital in Funafuti and medical clinics in the outer islands.

6) **Community outreach.** Community education and awareness on waste separation, reduction and recycling.

7) **Recycling.** Explore and implement commercially viable solutions for recycling and export of recyclables. At present this applies to aluminium only, but could include ferrous and other non-ferrous metals as dictated by export market access, prices, shipping issues/costs, handling and processing methods, and volumes.

8) **Waste operations, service delivery, etc.** New, more efficient and effective systems of waste operations and services (e.g., collection, disposal, recycling), and management at the national and local island level, including the enforcement of newly adopted waste management legislation and regulations.

#### 3.2.2 Water

An assessment carried out at the identification phase of this project, examining the requirements for extra reserve storage in Funafuti provided the basis for reserve storage estimates. The water component will construct up to 3 million litres of extra municipal water storage reserves on Funafuti. This storage will be constructed at several facilities to take advantage of existing large-scale rainwater catchment areas. Reserve rainwater storage in the outer islands will be augmented with new rainwater tanks supplied to each household and supplementary tanks installed at churches, community halls and elsewhere. One existing derelict groundwater facility will be refurbished as an alternative emergency supply. Water conservation and water management campaigns and education programmes will be delivered through partnerships with Non-State Actors.

---

<sup>2</sup> Ideally, for both water and sanitation to meet and exceed MDG 7 (Environmental Sustainability), Target 10, which is to “Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.”

<sup>3</sup> If the general public accepts the use of pig manure and dried septage for basic composting, the end result will be much higher quality compost than currently available.

The expected activities and results under the water component include:

- 1) **Rainwater tanks.** Supply of water tanks to each household in the outer islands, effectively doubling household water storage capacity.
- 2) **Rainwater harvesting.** Improved household rainwater harvesting systems to maximise collection and storage of rainwater.
- 3) **Community storage** Increased water storage capacity (halls, churches) in the outer islands to provide reserve water capacity to supplement household water supplies during drought conditions.
- 4) **Government storage.** Increased Government water storage capacity on Funafuti to provide extra reserve capacity to supplement household water supplies during severe drought conditions.
- 5) **Supplementary supply.** Rehabilitate a rundown groundwater bore facility on the island of Nukufetau to supplement community water supplies.
- 6) **Community outreach.** Education/awareness on household water conservation and demand management.

### 3.2.3 Sanitation

The expected activities and results under the sanitation component include:

- 1) **Septic systems.** Repair defective septic systems to reduce health/environmental impacts from effluent.
- 2) **Septic tank maintenance.** Provide a pump-out tanker trailer and tractor for the regular/systematic pumping of septic tanks, to increase the operating effectiveness of septic systems.
- 3) **Septage treatment.** Repair/modify existing septage treatment plant to more effectively treat septic sludge to reduce public health and environmental impacts resulting from indiscriminate public disposal of sludge.
- 4) **Eco-sanitation toilets.** Pilot project to replace existing water seal (septic) toilets with composting toilets where such toilets are accepted; and
- 5) **Community outreach.** Community education and awareness on hygiene and promotion of eco sanitation systems as the preferred sanitation system for Tuvalu.

### 3.3 Risks and Assumptions

**3.3.1 Waste.** The major risk is establishing new waste systems, and assigning responsibilities that rely on sound relationships between the parties, e.g., national waste authorities, local authorities (*Kaupule*), Public Works Department and private contractor(s) who may be involved in service provision. Risks associated with recurrent funding should be overcome as a result of enacting *WOSA*, and the adoption of new waste

**3.3.2 Water and Sanitation.** There are no major risks or assumptions associated with the water and sanitation components. For water, responsibilities are clear, the supply of household water tanks and municipal-scale storage facilities straight forward. There is some risk associated with shipping an estimated 1200 tanks to the outer islands. Tuvalu's two inter-island vessels are ill-suited for shipping bulky, space intensive tanks. A landing craft-barge is the only practical cost-effective solution. A chartered or purchased barge would be employed on 6-8 inter-island voyages for tank distribution.

**3.3.3 General.** It is assumed that all materials for the three components of this project can be procured within budget. It is also assumed that shipment to the outer islands can be done at reasonable cost. There is a mid- to high-level risk associated with the waste and sanitation components of this project if a derogation from the EDF Rules of Origin is not approved.

### 3.4 Crosscutting Issues

**Environmental sustainability.** The waste, water and sanitation components of this project specifically addresses environmental sustainability issues through better pollution control, waste management, control of hazardous wastes, and ecosystem protection.

**Gender equality.** Overall, this project is gender neutral. The project may, however, benefit women disproportionately as improved water, waste and sanitation services facilitate domestic tasks traditionally in the hands of women.

**Good governance and human rights.** This project addresses governance issues through enhanced legislative and institutional capacity for delivering better waste management services to the general public. It further contributes to human rights with access to more clean water, healthier personal and natural environment.

### 3.5 Stakeholders

Apart from the end beneficiaries, stakeholders consulted were those directly responsible for delivering water, waste and sanitation oversight, services and community outreach. These are: local government officials (Kaupule); national authorities (e.g., WMU, PWD, Ministry of Home Affairs); possible contractors (pilot recyclers, dumpsite operators, water tank suppliers); compost site operator (ROC Agric. Farm); ROC project staff engaged in waste management TA; and civil society, represented by TANGO.

## 4. IMPLEMENTATION ISSUES

### 4.1. Method of implementation

Partially decentralised management through the signature of a financing agreement with Tuvalu .The contracting authority for the project shall be the National Authorising Officer. The overall responsibility for the implementation of the programme lies with the National Authorising Officer, who may request the Commission to implement services contracts under Article 23.6 of Annex IV to the Cotonou Agreement.

The activities will be implemented through service and supply contracts (predominantly specific commitments), accompanied by Programmes Estimates through which small-scale actions will be implemented by the Public Works Department (see Attachment 4 for details). Programmes Estimates will be implemented through Direct Decentralised Operations.

The Commission controls ex ante all the procurement procedures except in cases where programmes estimates are applied, under which the Commission applies ex ante control for procurement contracts > 50.000 EUR and may apply ex post for procurement contracts • 50.000 EUR. The Commission controls ex ante the contracting procedures for all grant contracts.

Payments are executed by the Commission except in cases where programme estimates are applied, under which payments are executed by the beneficiary country for operating costs and contracts up to ceilings indicated in the table below.

The Authorising Officer ensures that, by using the model of financing agreement for decentralised management, the segregation of duties between the authorising officer and the accounting officer or of the equivalent functions within the delegated entity will be effective, so that the decentralisation of the payments can be carried out for contracts up to the ceilings specified below.

Works	Supplies	Services	Grants
< €300,000	< €150,000	< €200,000	• €100,000

For the water and sanitation components PWD will be the lead agency taking delivery of the equipment purchased under the project budget, ensuring that all items are installed and maintained, the latter via contracts/MOUs with the Kaupule. Apart from the procurement of equipment through standard EC supply tenders other parts of these components will be delivered through consecutive Programme Estimates.

The Waste Management Unit (WMU), as the regulatory authority under WOSA, will oversee implementation of the waste component. Waste equipment will be procured through standard EC supply tenders and be made available to the various service providers. The Kaupule will remain in charge of

waste collection. Landfill management and concurrent operation of a recycling centre will be run by a private contractor, contracted by the WMU separately. Funding for this will derive from annual waste appropriations or the proposed waste levy on imports.

The project requires only minimal external technical assistance (TA) to deliver its results. Some local TA will be required to assist NSAs with community outreach, education, and training programmes. Local expertise is sufficient for the equipment operation/maintenance.. A special project implementation unit is not required. Project implementation will be overseen by the NAO's Office, PWD, WMU, Kaupule, WMWG and NWSC. Non-State Actors, to the degree that a weakly organised civil society permits, will be involved through Calls for Proposals to deliver public awareness activities, and community training on water conservation and management, waste and sanitation issues.

#### **4.2. Procurement and grant award procedures / programme estimates**

##### **(1) Contracts**

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the 10<sup>th</sup> EDF. Further extensions of this participation to other natural or legal persons by the concerned authorising officer shall be subject to conditions provided for in Art. 20, Annex IV of the Cotonou Agreement.

##### **(2) Specific rules on grants**

The essential selection and award criteria for the award of grants are laid down in the Practical Guide to contract procedures for EC external actions. They are established in accordance with the principles set out in Title VII 'Grants' of the Financial Regulation applicable to the 10th European Development Fund. When derogations to these principles are applied, they shall be justified, in particular in the following cases:

- Financing in full (derogation to the principle of co-financing): the maximum possible rate of co-financing for grants is 90%. Full financing may only be applied in the cases provided for in Article 253 of the Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of the Financial Regulation applicable to the general budget of the European Communities and in Article 109 of the Council Regulation on the Financial Regulation applicable to the 10th EDF.
- Derogation to the principle of non-retroactivity: a grant may be awarded for an action which has already begun only if the applicant can demonstrate the need to start the action before the grant is awarded, in accordance with Article 108 of the Financial Regulation applicable to the 10th EDF.

##### **(3) Specific rules on programme estimates**

All programme estimates must respect the procedures and standard documents laid down by the Commission, in force at the time of the adoption of the programme estimates in question.

**4.2.1 Derogation from EDF Rules of Origin.** In order to successfully implement the waste and water components of this project, a derogation from the EDF Rules of Origin is required for all plant, equipment and machinery. Tuvalu requests that Australia and New Zealand be included in the list of eligible source countries for supplies and services under this project. The legal basis for this request is contained in Annex IV, Art. 22, of the Cotonou Agreement. In accordance with Instruction Note (2008) 9406 and its Annex I such derogation will be sought from the Director of the geographical Directorate in EuropeAid as the supply tenders under this project will exceed the threshold of Euros150,000.

### 4.3 Budget and Calendar

The operational phase of the project will have a foreseen duration of 48 months. It will require funding of Euros 4,400,000, broken down by each sector component as follows:

<b>SUMMARY INDICATIVE PROJECT BUDGET BY SECTOR in Euros</b>	
<b>Activity 1 : Waste Management (Supply)</b>	1,170,000
<b>Activity 2 : Water (Supply and PE)</b>	2,400,000
<b>Activity 3 : Sanitation (Supply and PE)</b>	200,000
Accompanying measures, technical assistance, project management, visibility (Service and PE)	350,000
Evaluation (Service)	40,000
Audit (Service)	40,000
Contingencies	200,000
<b>PROJECT TOTAL</b>	<b>4,400,000</b>

### 4.4 Performance Monitoring

Project monitoring will include six-monthly and annual reports, notwithstanding specific reporting requirements under each PE, the latter prepared by the NAO in consultation with stakeholders (e.g. PWD, WMU, NSAs). Annual reports will be considered by the WMWG and NWSC. The key monitoring indicators are elaborated fully in the TAP:

### 4.5 Evaluation and Audit

A mid-term review and final evaluation of the project will be carried out by external consultants contracted by the EC. External audits will be conducted annually or as specified in the Programme Estimates.

### 4.6 Communication and Visibility

This project will be communicated directly to local communities, the Tuvalu public and Tuvalu and EC decision- and policy-makers, through a variety of media releases, and during in-country visits. EU financial support will be highlighted in all project-related activities, reports and media releases, and through NSA-implemented community outreach, education and training programmes.