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National Waste Strategy Guide and Template

General Comments:

The Strategy should be short and simple to revise. It should be a "living" document. That is, it will be accessed by many people often and regularly up-dated. Far better to have a simple strategy with a three year timeline than a comprehensive strategy covering the next two decades but is unreadable and too daunting to refresh every few years. While the longer term goals must be a constant consideration, strategies beyond 5 years are notoriously vague and hard to use.

The Strategy should provide guidance to other agencies, private companies and individuals about where waste management is going so they can invest appropriately. For example, if the Strategy states that medical waste is not included, health professionals then know that they will have to make their own plans for medical waste management while the private sector could see the potential for a niche business to service the health sector.

The Strategy needs a strong consultation process to ensure a sense of ownership by the government, donors, private business and the public.

The document itself needs to be easily read and comprehended by non-waste professionals. Thus, it needs to avoid jargon and unnecessary detail. It is the document that could go to Treasury or a donor to provide the strategic context and justification for a budget, for example.

Finally, the Strategy needs implementation. Sensible actions, realistic timeframes and achievable goals instill confidence in the system and strategy. These are more likely to attract funding than grandiose wish lists. Where possible, it should build on the successful elements currently operating and use the best practice from around the Pacific. You don't need to re-invent the wheel.

Background:
This should set the scene for the reader, answering some basic questions of scope.

- What geographical area is it covering?
- Who is the body or bodies legally responsible for what aspects? (Health Dept., Environment Dept., local government?)
- What waste streams will it cover? (municipal, rural, hazardous, construction and disaster) *NB if disaster wastes are covered, it is essential that very strong links are made with the Disaster Planning Authorities to ensure congruence with their approach. The Disaster Response Plan will be used during a disaster – not the Waste Strategy.*
- What timeframe will it cover? (the site-ing and development of a landfill may take a decade so some issues may exceed the lifespan of the strategy but the relevant actions need to be included.)

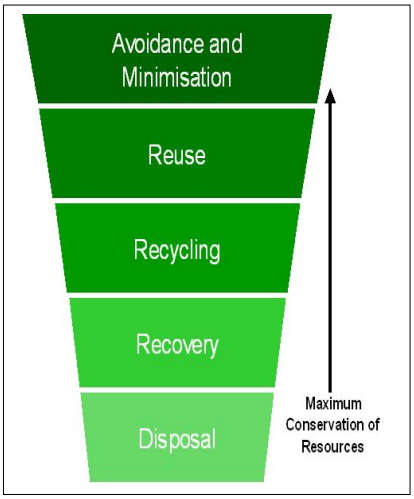
Current situation:
This section needs to give a basic understanding of the situation now. It only needs to be enough detail for a reader to grasp the context of the strategy. A great deal more data may be available for planning but doesn't need inclusion – referencing would be sufficient.

- Tonnages;
- waste composition;
- particular specifics (ie medical wastes, outer islands, ship's waste, etc.);
- any elements of the waste stream that can be recovered as resources for other uses, preferably with some value.
- financial costs of education, recycling, collection, and disposal (include the various elements and, where possible, the wages costs of the people and the annualized costs of equipment). This is very useful for getting an idea of the costs and benefits of the various elements of the system when we you are looking at improvements in the strategy. While a home composting campaign may require some investment, a reduction in collection and landfilling costs can be expected to off-set this.
- Implications of the current system ie poor collection of public bins would undermine a litter campaign, functioning private recyclers can be bankrupted by Government collection schemes, home composting is of less value where urban densities eliminate the space required for gardens.
- If possible, some idea of trends would also assist. For example, increasing urbanization, in the absence of any minimization programmes, will increase waste per person. Increasing affluence will do the same thing, particularly in some items like disposable nappies (diapers). Unless there is volume-based charging, better collection service can often encourage householders to increase the wastes they present for collection. The on-going changes in packaging from glass to PET plastic, double packaging and composite materials are important to note if they will impact on the Strategy.

If this section gets too long, it should be attached as an appendix for those who need to access that level of detail.

The Strategy

The Waste Hierarchy – Reduce, Recycle, Dispose



There are many ways to divide up the issues of waste management. Many use "What's reduce-able? What's recyclable? and What's left that has to be disposed of?" The waste hierarchy is now generally accepted around the World as the appropriate policy framework to guide activities. There are many finer layers of the pyramid – refuse, re-use, recover, waste to energy etc. If these are useful in your situation, include them, otherwise the simplified version will be sufficient. The usual mistake of many strategies is to ignore and under-invest in the preventative elements of reduce and recycle. These can deliver significant savings to the collection and disposal elements if they are well funded and supported by the bureaucracy. Household sorting, composting and delivery to transfer points are by far the most cost-effective ways to handle waste but they need strong public and government support to be successful.

Rural and urban are important

Most National Strategies will need to cover urban, rural and possibly remote areas. The issues and solutions are often completely different. Recycling car bodies may be possible from an urban centre but deep water disposal may be the most sensible option from a remote atoll.

Issues will over-lap

Issues and waste streams invariably over-lap. Old shipping containers are bulky wastes but some have hazardous asbestos insulation. An Advance Recycling Fee levied on imported cars can be a reduction strategy in that it may reduce car imports (particularly old used vehicles) and it would also fund recycling. Better collection can increase the waste presented. Don't worry about where it sits too much as long as you note the other consequences in the relevant section.

Keep it practical and implementable

The dependence that most Pacific countries have on donor funding requires that a Waste Strategy has a strong project orientated approach to provide potential funders and partners with some clear and discrete elements to consider funding. In this way, the Strategy is almost a mix between strategy and implementation plan.

Establish clear priorities

It is very important to provide some idea of priorities. Many strategies end up as a wish list of improvements in all sectors but with little idea of where the focus needs to be. These can be environmentally driven such as an old landfill impacting on neighbours or water resources. They can be economic by reducing the impact of litter on the tourist industry. They can also be financial. Not all improvements provide the same "bang for buck" of cost-effectiveness. A modern landfill is often only about 1/5 of the cost of a modern kerbside waste collection to operate. Thus, any savings through collection efficiency can be very important. Similarly, the savings from home composting even 20% of garden wastes can be enormous, not just in landfill space but in collection costs.

Inclusive process is cheaper in the long run
The process of developing a Solid Waste Strategy is also an important way of gaining stakeholder "ownership". A inner technical group is almost always necessary but others need involvement. Inevitably, politicians, other agencies, the private sector and the public will need to support most of the chosen activities. Even if donor funding is secured, it is important that there is strong support for those funds to be allocated in line with the Strategy. Thus, an inclusive process of development can provide exposure to the ideas and data that waste managers are familiar with. It can also set the stage for the implementation phase when you will need co-operation from different sectors.

Consultation can only improve your strategy
A good consultation process can identify alternatives that may be cheaper, quicker or superior. A voluntary container deposit scheme can be happening much faster and cheaper than a legislative requirement. A clever policy used by some Governments is to ask the private sector to improve their waste performance voluntarily and have legal regulation as the agreed outcome if the performance goals aren't met.

The SPREP Regional Solid Waste Management Strategy and Action Plan
These documents have been developed to give some coherence to the Pacific's efforts. It provides clarity to donors and Members of SPREP. Your Government has adopted this Strategy so it should guide and assist you in your formulation. However, your national priorities are unique to your situation. Copies of the Strategy and Action Plan are available in hard copy from SPREP or you can download from the waste section of the website. http://www.sprep.org/

Learn from others
Other initiatives such as the International Waters Project, other government programmes, other countries experiences and SPREP officers all can provide valuable assistance in what works and what has caused problems. The SPREP Waste Kit, authored by the highly regarded Pacific waste expert, Alice Leney, can provide a wide range of tools and details that may be needed to establish costs or possible ways of implementing your Strategy. Copies can be provided by SPREP.

The aim of the document is to communicate clearly

- **where you are now,**
- **where you want to get to, and**
- **what you believe needs to be done, in what order and why.**

It should be readable, with minimal jargon and brief enough to be easily accessible. Bigger isn't better!!

A possible format may look like…

EXAMPLE

Waste Reduction

Waste reduction is a necessity for any island with limited land for disposal. While the main island has some land for a landfill, it would be better used more productively and the outer islands are not so lucky. Reduction of the waste will reduce the volumes to landfill and prolong the life of the current disposal facility. As such, reduction represents a cost-effective element of the strategy that is environmentally responsible and sensible for a country with high shipping costs and little land space.

Priority issues: 1 Plastic bags, 2 garden waste,

1 Plastic bags: target is to reduce plastic bag consumption and litter by 10% each year for three years.

Rationale: Plastic bags, while very useful, have become a significant source of litter, mosquito breeding, marine mortality, discouragement to civic pride and tourist satisfaction. This is wasting government and public money in cleaning up, health care, and tourism income. Overseas experience has shown that bag use can be reduced from the current 500 bags per person per year by 30% without causing undue public disruption or cost (approx. $10 per person per year – less if they move to alternatives such as re-usable bags for some of their consumption). The costs to consumers will impact more on wage earners in the urban areas as they use a higher proportion of bags than the rural or outer island residents. Their high visibility offers an opportunity to engage the public on waste management in an area likely to show rapid improvement. The tax will both reduce this problematic waste stream but also be revenue positive to government after the first six months.

Actions	By Whom?	By When ?	How Much?
1. Research overseas experience in taxing plastic bags	**Dept of Env.**	**May 2007**	**$1,000**
2. Consult with public, suppliers and retailers about options for tax	**Dept of Env.**	**August 2007**	**$1,000**
3. Institute a litter prevention tax on plastic bags to reduce the number dispensed free by retailers	**Finance Dept. Parliament**	**Dec 2007**	**$5000 2007 Revenue $50,000 2008 on-going (~$10 /pp/pa)**
4. Commence a public and school education campaign on the issues of plastic bag litter, the reasons for the tax, and alternatives that can be used	**Dept of Env Dept of Ed**	**2007**	**$10,000**
5. Increase litter collection in public places	**Dept of Works**	**2007**	**$5,000**
6. Monitor imports and litter to gauge effectiveness	**Customs Dept of Works**	**2007**	**$1,000**

NB: While each action could be further broken down to more detail, the level of detail is sufficient to explain the strategic action and cost the methodology.

EXAMPLE

Waste Recycling

Recycling is an opportunity to both reduce the pressure on the landfill and to recover resources for economic development. Recycling is usually very labour-intensive and has significant social benefits in addition to the environmental ones. Recycling can also be a hazardous occupation and so the impact of facilities and safety for workers must be considered at all stages. Most recycling is not "viable" without some subsidy but the start up phase is usually the most difficult. Once established, government can decide on whether to continue subsidising collection and sorting (as happens in most developed countries).

Priority issues: 1 garden waste; 2 aluminium cans, 3 car bodies

1 Garden waste: the target is to reduce garden waste landfilled by 35% over three years.

Rationale: Garden waste represents almost half of the waste being collected and landfilled. Given that collecting waste is costing around 80% of total waste system budget, that replacement landfill airspace is valued at $35/ sq m, organic waste is the major pollutant affecting leachate quality and compost can reduce both biocide and fertilizer use, reduction in garden waste to landfill represents an obvious and cost-effective focus. The best option is to get householders to compost at home as this avoids collection costs. The next best option is to divert whole loads of garden or other organic wastes at the landfill. Both options will benefit from improving the public's knowledge of the benefits of compost – either home made or purchased. This activity should be integrated with the Dept of Health's initiative to encourage "Healthy Eating" of increased fruit and vegetables.

Actions	By Whom?	By When ?	How Much?
1. Establish area for composting at landfill	**Dept of works**	**May 2007**	**$5,000**
2. Reduce tipping fees for whole loads of organic wastes	**Dept of Env.**	**May 2007**	**$1,000**
3. Liaise with Health Dept to mesh with "Healthy Eating" initiative	**Dept of Env & Dept of Health**	**Feb 2007**	**$1000**
4. commence a wide spread public education and marketing campaign on • the value of compost • how to home compost • uses in home gardening and food growing	**Dept of Env & Dept of Health**	**May 2007**	**$10,000**
5. call expressions of interest in operating landfill composting business and marketing product	**Dept of Env**	**March 2007**	**$1,000**
6. examine volume-based charging for rubbish collection to discourage garden waste presentation	**Dept of Env**	**March 2007**	**$1,000**
7. Monitor organic waste diverted and compost sold to gauge effectiveness	**Dept of Env, compost operator**	**2007**	**$1,000**

EXAMPLE

Waste Disposal

Disposal of the residual waste will be necessary for many decades to come. The current landfill has 3-5 years of life at current volumes and compaction of waste with a bull-dozer could extend that by another two years. In either case, it is prudent to begin the site investigations for a new site as negotiations with landowners and donors are likely to take some years before construction can commence. The new medical waste incinerator is operating well.

Priority Issues: 1 up-grade wet weather access to tipping face, 2 build leachate ponds and swales to reduce freshwater pollution, 3 begin planning for new landfill site

1 Up-grade wet weather access: construct formed and drained road to landfill to reduce illegal dumping in summer

Rationale: The wet season often brings sufficient rain to make access for smaller trucks and cars difficult. Those customers then feel justified in dumping their loads along the access road. Wind-blown plastic bags and other litter is reaching the main road and adjacent sports field. This is causing conflict with the landfill's neighbours and is costing money to clean up the dispersed litter and rubbish. The dumped wastes also encourage others to follow the bad example. Even other Govt Depts have been known to do this. While building the road is expensive, the current site has 5 more years of life, and all weather access will remove the single biggest cause of land use conflict regarding the current landfill. Just as importantly, responsible behaviour now will assist in convincing potential neighbours of the future landfill that impacts will be minimized as much as possible. This will reduce the public opposition to having the new landfill in their area.

Actions	By Whom?	By When ?	How Much?
1. Commission road design and costing	**Dept of Works**	**March 2007**	**$5,000**
2. Consult with landfill neighbours about road route	**Dept of Env.**	**April 2007**	**$1,000**
3. negotiate with potential donors and Treasury about funding	**Finance Dept. Dept of Env**	**April 2007**	**$1000**
4. call tenders for construction and maintenance	**Dept of Works**	**July 2007**	**$2,000**
5. award tender and construct	**Dept of Works**	**Sept 2008**	**$45,000**
6. increase litter removal on access road	**Dept of Works**	**2007**	**$5,000**

Further information: There are many other documents that may assist in the production of a Solid Waste Strategy. The SPREP Waste Kit and website has most but the EPA's in the USA, NZ, and most Australian states have useful tools on costing landfills, etc etc. The SPREP website also has the Regional Solid Waste Management Strategy and Action Plan which have been endorsed by your government and provide a regional context and agreed way forward. Your national priorities may differ however. **The waste team at SPREP can always assist**. Contact markr@sprep.org .