



# **The Unique Waste Management Requirements of Small Island Regions**

**Clyde Falzon**

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**Editor' Note:** This paper has been targeted for a broad audience. The level of scientific detail provided is therefore not as high as would be normally be required in technical paper subject to peer review by environment industry professionals.

There exist around 310 islands in the EU which offer residence to more than 3% of the total EU population. This amounts to approximately 15 Million citizens who need to live in a healthy environment. Furthermore, islands tend to attract tourism which piles further pressure on the environment especially on the waste management infrastructure.

Proper waste management leads to enhanced environmental protection. Higher protection of the environment leads to a healthier society. A healthier society contributes to a wealthier economy. All these are part of a loop often described as sustainable development. However in order to have a healthier environment a case in point is the management of waste generated by the society itself.

In general each country has different social, economic and environmental characteristics requiring specific waste management practices. These specific requirements are more restricted for island regions were limited land area, relatively small waste quantities, and limited industry to transform waste back into a resource are the order of the day.

One of the biggest challenges for waste management on islands is the long distance between the waste generation source and the treatment facilities, where in the case of islands is further complicated due to their relative isolation from the mainland. Long-distance shipping/transportation of waste is not environmentally sustainable thus ideally the waste is to be treated close to the point of generation. In addition, long-distance waste transportation goes against the principles of proximity and self-sufficiency. These principles encourage treatment of waste close to source and within the limits of the municipality producing the waste (whenever this is possible). This obliges the waste planners to come up with holistic approaches to dispose the waste into alternative channels based on the characteristics of the region.

Islands are characterized by a relatively small amount of waste which varies seasonally, mainly due to tourism and climate. Thus waste treatment facilities of these regions shall be capable to accommodate these waste variations. Furthermore, waste management facilities require assurance of certain waste amounts that make it financially viable to operate. Sometime this is difficult to be achieved in island regions, a situation that hinders the interest of the investor.

In order to construct and operate such a facility one would require a number of resources; a significant one is the land area. Limited availability of land space on islands makes siting of waste treatment facilities challenging. A hurdle that in certain cases is difficult to overcome. A viable facility

requires sufficient land area that further takes from the limited available land space of islands. Unfortunately waste treatment facilities suffer from undesired public perception that encourages planners to locate such facilities outside the housing estates. Even large countries that have acres of land resources suffer from the 'Not in My Back Yard' (NIMBY) syndrome when it comes to the siting of waste treatment facilities. Obviously when the land resources are limited the NIMBY syndrome increases significantly. This leads to increased difficulty in constructing waste treatment facilities with the compromise of the general public.

When manufacturing industries are located in close proximity to the waste source, part of the waste might be integrated directly into the recycling systems to produce recycled materials and/or renewable energy. However, on small size islands it is really rare to find significant industries that integrate waste back into the production systems. Thus alternative management systems shall be established.

Unfortunately in this sector short term solutions might seem easier and cheaper. A case in point is the reliance of many islands on landfilling. Although this is a cheap solution, it occupies a significant land area and disrupts the pristine environment that most islands are famous for. This includes archeological areas, beaches, forests and garigue zones amongst other areas. Thus alternative and long term solutions should be utilized.

At this point scenario planning is a useful tool to introduce Integrated Solid Waste Management Systems on islands. Ways and means shall be investigated of how waste can be directly integrated into the recycling mechanisms and used again into the manufacturing of materials for new products. Such mechanisms shall ideally be accompanied by the best practicable environmental option. In this case a balance is required between environmental harm and economic issues for each proposed scenario.

Other tools applicable to both large countries and small islands include knowledge dissemination and financial incentives. People must be informed on how to follow waste management policies and procedures. This can be achieved through school education, meetings and discussions with the public and municipality authorities or incentives to students to further specialize in the field of waste management. Emphasis shall be given on the fact that everyone is responsible for establishing a proper waste management system.

Furthermore financial incentives can be utilized to bring the community in line with the policy targets. These might include the increase of levies regarding undesired waste treatment practices and the decrease of levies related to more appropriated waste treatment practices. Another option might be to increase the waste management levies for those who do not separate their waste. Such tools can be applied according to the specific case requirements.

As can be noticed waste management planning on small islands can be more complex and harder than waste management planning in regions within mainland. Therefore, apart from following the applicable policies suggested by the EU and other organizations, waste management in islands regions shall be dealt with custom made solutions. The latter deal with the development of policies and management systems including treatment facilities based upon the specific case under study.

Ultimately, common understanding must be fostered because a sustainable waste management system is based on the sound participation of all members of the society i.e. people generating the waste (everyone) including waste operators, waste administrators and policy makers.

### Clyde Falzon



Clyde Falzon is a young engineer working in the Maltese waste management sector. Being born and brought up on the small Mediterranean island of Malta, Clyde has firsthand experience of what challenges islands face in order to manage their waste sustainably. In fact it is this challenge that motivates him to continue exploring this field.

During his mechanical engineering course Clyde conducted a feasibility study on PET bottle recycling in the Maltese islands. Following that Clyde opted for Masters Course in Sustainable Environmental Resource Management and Integrated Science and Technology. The research project in this case was focused on the effects of the Maltese waste management sector on climate change. Clyde is currently working with WasteServ Malta Ltd. on the management of hazardous waste. You can contact Clyde Falzon by e-mail: [falzonclyde@gmail.com](mailto:falzonclyde@gmail.com).