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COCOON
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Action plan for Malta

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Sound Practices for the Rehabilitation of Landfills & Education and Awareness on Landfill Management

This report was developed in the framework of the interreg Europe project COCOON. This report only reflects the author's view, the programme authorities are not liable for any use that may be made of the information contained herein.



Part I – General information

Project: COCOON, Consortium for a coherent European Landfill Management Strategy

Partner organisation: WasteServ Malta Limited (Partner 3)
Environment and Resources Authority (Partner 7)

Country: Malta

NUTS2 region: Malta (Extra-Regio NUTS2)

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Part II – Policy context

- The Action Plan aims to impact:
- ✓ Investment for Growth and Jobs programme
 - ✓ European Territorial Cooperation programme
 - ✓ Other regional development policy instrument

Name of the policy Instrument addressed:

OP1: Fostering a competitive and sustainable economy to meet our challenges;

SO1: Increase recycling of waste and reduce the volume of waste going to landfill through investment in waste management related infrastructure including the rehabilitation of closed landfills.

Further details on the policy context and the way the action plan should contribute to improve the policy instruments:

The project targets Specific Objective (SO1): *“Increase recycling of waste and reduce the volume of waste going to landfill through investment in waste management related infrastructure including the rehabilitation of closed landfills for other non-waste related uses as well as education campaigns”*. The Action Plan will help to address waste management issues, with a view to reduce health risks and environmental concerns whilst ensuring a more efficient use of waste as a resource. Such aim can be achieved by tackling the rehabilitation of closed landfills. Rehabilitation of such landfills will help in reducing air pollution, improving the visual impacts of such landfills, and ensure that land can be used for non-waste related purposes, amongst others. At this stage, the policy instrument does not provide concrete measures as to how such rehabilitation should be carried out. Through this Action Plan, ERA is envisaging that the process to rehabilitate old landfills will be facilitated for operators and owners of such old landfills or dumpsites.



Part III – Details of the actions envisaged

Action 1

1. The background

There are various ways how a region can tackle the issue of landfill management. In cases like Malta, where the land area is of 316 km², landfilling shall focus on maximising the volume of waste deposited on landfills. Therefore, rather than excavating the loose rubble and install the landfill liner like various other European countries, the Maltese islands have to excavate a landfill cell prior to installation of a liner. Due to this, the focus in the Maltese islands should be on waste deviation from landfills to minimise the waste directed to landfilling. This would take a more holistic approach to the COCOON project as it would not only tackle the management of landfills but would also acknowledge the limitations, issues and room for improvement with regards to the waste being landfilled.

Waste deviation from landfill would not only reduce the pressures and implications that landfills impose on the Maltese Islands, but would also decrease the environmental impacts of landfills since less waste would end up at the bottom of the waste hierarchy; i.e. landfilling. The latter would increase the recycling rate, increase waste utilisation as a resource and decrease the environmental impacts which waste in landfills impose on the whole ecosystem (such as generation of greenhouse gasses).

Educational/awareness campaigns are one of the tools which can be utilised to encourage the public to sort and separate their waste at home, and to avoid disposing of organic and/or recyclable material as mixed waste. The latter would result in an increase in waste being deviated from landfills. This was well documented in the good practice submitted by OVAM (Flemish raise awareness campaigns on waste sorting), where campaigns were used to encourage people to separate waste at source and to properly dispose of their waste. Due to extensive educational/awareness campaigns and initiatives, Flanders recorded a decrease of 56% of residual waste between 1995 and 2015. Apart from the aforementioned good practice, there were two presentations prepared (by Ms. Rosa García (director of Rezero) and Dr. -Ing. Bernd Engelmann (from the German Environment Agency)) for the Interregional Exchange of Experience (IEoE) meeting in Cordoba in February 2018, which emphasised the importance of education and awareness as part of landfill management. Both presentations highlighted the importance of having the appropriate infrastructure (example bins) for the public to dispose of



their waste properly and for the public to be aware of such initiatives through educational campaigns.

Additionally, during the 4th IEOE meeting, there was a site visit to public and private waste-rooms in Cordoba. The aforementioned waste rooms are also mentioned in the Collection of Good Practices for Waste Management in Urban Heritage Sites from the INTHERWASTE projects. These waste rooms are utilised to avoid having bins on the streets, and thus serve as storage rooms. Albeit waste rooms in Malta are not ideal due to lack of space, Wasteserv was inspired by the idea that each household would have the necessary means to separate waste with the minimal use of floor area.

Back in 2015, Wasteserv started working on a project which eventually resulted in the nationalisation of separate collection of organic waste from households. The project was very successful, where the provision of the appropriate bins and the necessary educational campaign played a major role in the project's success. Wasteserv wanted to further improve what was done during the organic waste project. Taking in consideration the success of the organic waste project, the good practice from OVAM and the site visit and presentations during the IEOE meetings in Cordoba, Wasteserv was inspired to develop an extensive communication campaign; the Sort It Out Campaign. Additionally, Wasteserv started its work to improve the infrastructure in each household to stimulate waste separation at source. To this effect, each household was given the opportunity to be provided with stackable bins to be used for waste separation.

To further augment the utilisation of communication campaigns and the provision of the necessary infrastructure to encourage waste separation, Wasteserv launched a project which involves five kerbside vehicles. With the kerbside vehicles, the public is able to dispose of certain waste streams whilst given the necessary information with regards to waste, proper waste management and other related topics. This is an innovative idea which combines the use of communication campaigns and the provision of necessary infrastructure to encourage the public to separate waste at source.

2. Action

1) Communication campaign themed 'Sort It Out'

The extensive campaign showcased a number of actions which all encouraged waste separation at source and promoted waste deviation from landfilling. Through the Sort It Out campaign, the public was encouraged to participate and embark on the actions launched by Wasteserv and thus stimulate waste separation. Wasteserv utilised various media, including television, radio, social media platforms and billboards, in order to target all age groups and Malta's demography. The

OVAM good practice and the presentations presented in Cordoba inspired Wasteserv to target this campaign to different demographic sectors in a persuasive manner.

2) Provision of a set of 4 stackable bins to households in Malta to ease waste separation

In order to facilitate and encourage the public to separate waste at source i.e. home, Wasteserv provided each household with a set of four stackable bins; one for glass, one for mixed recyclables (paper, plastic and metals), one for sanitary waste and another bin for mixed waste. The bins are colour coded in line with the local system and designed to stack on top of each other to utilise a smaller floor area. The distribution of stackable bins started in Q4 of 2018 and is still ongoing. This action was influenced by the Cordoba Site visit / good practice on to the Eco-waste rooms, however since the Maltese islands have limited space bins were provided instead of building waste rooms. The final objective is very similar.

3) The use of Kerbside collection vehicles for promoting waste separation and implementing a social marketing campaign

Five specialised kerbside collection vehicles are operating across the Maltese Islands with the main objectives to:

1. Promote sustainable waste practices with respect to separation efforts
2. Make it easier for the public to dispose waste properly
3. Educate and raise awareness
4. Engage the public in relation to waste management

The public is invited to dispose of their source segregated waste to a parked vehicle which visits each locality at a known time, place and date. The trucks accept several waste streams, including polystyrene, plastic, glass, paper and cardboard, metal, textiles, cooking oil, lights bulbs. Promoters are always present on site to explain, educate and assist the public. The operational phase of the kerbside vehicles started on the 14th October 2019. This action is a combination of the previous two sub-actions with an innovative medium i.e. the trucks.

3. Players involved

1. Ministry for Environment, Sustainable Development and Climate Change (MESDC)
Wasteserv is implementing this project on behalf of the MESDC and regularly consults the Ministry on various implementation issues.
2. Local Councils in Malta and Gozo (68 in total)



Wasteserv consults and communicates with all local councils when certain activities are held in specific localities. Local councils were also consulted with respect to the operation of the use of kerbside collection vehicles for promoting waste separation and implementing a social marketing campaign.

3. Local Council Association (LCA)

LCA was consulted with respect to the operation of the use of kerbside collection vehicles.

4. Timeframe

The activities related to this action plan started in 2018 and will continue through to 2020.

5. Costs

Total cost of this action plan project is circa EUR 5M.

6. Funding sources

The actions of this action plan are part of the project 'Encouraging Sustainable Waste practices in Households and Beyond' is part-financed by the Cohesion Fund (Operational Programme I – European Structural and Investment Funds 2014 – 2020 "Fostering a competitive and sustainable economy to meet our challenges") with co-financing rate of 85% European Union and 15% National funds.

Action 2 – Guidelines on the Closure, Aftercare and Rehabilitation of Landfills

1. Relevance to the project

ERA will apply the lessons learnt from other partners concerning the rehabilitation of closed landfills into actions through developing for the first national guidelines for landfill operators on best practices and procedures to follow for the rehabilitation of landfills. Such guidelines will be intended to be binding on all operators through a new specific requirement to be included in the environment/IPPC permit of the operators issued by ERA as well as the development permit covering the rehabilitation of a landfill issued by the Planning Authority (which has been a key stakeholder through the project).

The inspiration to prepare such guidelines came from site visits, best practices and presentation shared by the Project Partners on such topic (listed below). Moreover, throughout the project, various rehabilitated landfills were visited, which inspired ERA to create such a document which may act as an motivation for the rehabilitation of the number of old dumpsites, which as yet have not been addressed. In Malta, operators have been showing interest in rehabilitating old dumpsites for new uses; however, the lack of clear guidance has either hindered or prolonged the whole process.

Experience shared which inspired ERA to propose this action

- Site Visits
 - “Schöneicher Plan” and “Luckenwalde” in Brandenburg, Germany (3rd IEOE);
 - Nedereindse plassen non-sanitary landfill in Utrecht, Netherlands (5th IEOE); and
 - “La Pitilla” in Puente Genil, Cordoba Spain (4th IEOE).
- Presentations
 - ‘Leachate collection and treatment’ by G.Burkhardt, Karlsruhe (7th IEOE);
 - ‘Geophysical investigation to detect accumulations of leachate’ by E.Aguirre Lora, SADECO (7th IEOE);
 - ‘Case re-development old landfill into residential area in Turnhout’ by Bart Nevejens, Aertssen (8th IEOE); and
 - ‘Case re-development old landfill into industrial area: Taminco’ by Peter van de Bossche, DEME Group (8th IEOE).
- Good Practices
 - Requirements for the design of a sanitary landfill: The Dutch practice and legislation (Netherlands);
 - Landfill mining to develop the area in housing area in Veenendaal (Netherlands);

- Remediation of two landfill sites by landfill excavation at the Duisterweg in Amersfoort (Netherlands);
- Possibilities of using a closed landfill area for production of renewable energy: case Luckenwalde (Germany);
- Remediation of a landfill by a surface sealing system with an electronic leak control system (Germany);
- Remediation of a large-scale landfill by installing a surface sealing system: Lübben (Germany);
- Remediation of a landfill with low risk potential in a rural environment – Case Klausdorf (Germany);
- Landfill remediation by excavation – Case Treuenbrietzen (Germany);
- Surface capping: Constructing top soil by incorporation of compost (Germany);
- Klaverenboer ward: landfill remediation and tackling land pressure (Flanders);
- Rehabilitation of “La Pitilla” landfill (Andalucia, Spain);
- Brownfieldcovenants as an instrument to revitalize former landfill sites (Flanders);
- Geophysical Prospection (ERT) for the detection of leachate in a Municipal Solid Waste landfill (Andalusia, Spain);
- Technical elements in landfills: A compulsory guarantee of 100 years (Germany);
- Deetz / Spremberg-Cantdorf: evapotranspiration-optimized capping system (Germany);
- Quality management plan: Monitoring the quality of technical elements of a landfill during constructions works (Germany);
- Brandenburg policy: Remediation of closed landfills with small volume in a rural area (Germany);
- Groundwater observation (Germany);
- Leachate capturing and purification at the landfill „Grube Präsident“ (Germany);
- Multiple use at a landfill – Ullerberg (Netherlands);
- Verordnung über Deponien und Langzeitlager (Long term ordinance) (Germany);
- Waste management on operational landfills: Deposition of waste (Germany);
- Funding aftercare (Netherlands); and
- Remediation of a chemical waste landfill by means of ex-situ immobilisation (Flanders).

2. Action

The preparation of a guidance document, which is intended to be binding for operators through their environment/IPPC permit and development permit and thus enforceable by the competent authorities (i.e. ERA and Planning Authority).

Guidance document which will cover the whole process from closure and after-care of a landfill as well as their rehabilitation, including the following, amongst others:

- Any initial baseline tests that need to be carried out;
- Monitoring:
 - What parameters to monitor;
 - Frequency of monitoring;
 - Timeframe for monitoring after closure;
- Landfill cover and capping system to be installed;
- Period of years operator is still responsible for the landfill;
- Thresholds;
- Identification of sites;
- Identification of possible after-uses;
- Information to be submitted;

3. Players involved

Ministry for the Environment, Sustainable Development and Climate Change (MESDC) – policy owner.

Planning Authority – as the authority that receives and processes development applications and issues development permits, including those for new landfills and rehabilitation of landfills.

4. Timeframe

Drafting of document – 14 months

External consultation – 3 months

Review & Finalisation of document – 3 months

Review & variation of environment/IPPC permit – 4 months

5. Costs

The implementation of Action 2 will be carried by the Environment and Resources Authority and will be funded by the Authority itself. Estimated costs related to the implementation of this action



are circa € 16,500. Costs considered are mainly related to staff costs, costs of consultation sessions, and for the engagement of a designer to prepare the document layout. This estimate does not consider the possible engagement of an external consultant.

Staff costs (including the drafting, consultations, review and finalisations): € 13,000;

Organisation of consultation session, document design and printing: € 3,500.

6. Funding sources:

Such costs will be covered by the ERA budget.



Date:

Signature:

Suzanne Brincat
WasteServ Malta Ltd

Louise Boller
Environment and Resources Authority
Chief Executive

SUZANNE BRINCAT DIMEUH
CHIEF OFFICER STRATEGY IMPLEMENTATION
Stamp of the organisation (if available):

Environment and Resources Authority



Annexe: Letter of support from policy owner