

## Environmental Health and Risk assessment

### Keywords – title

- > Landfill
- > Gasifier
- > Trash
- > Rome

## Introduction

Waste management in Rome and its surrounding areas is emblematic of larger sustainability problems related to widespread economic, social and environmental obsolescence in the area. This situation is rooted in over 35 years of political decisions and dynamics which have obstructed the development of alternative strategies for waste disposal. Despite the succession of waste plans and administrations of different political color, this situation has been fossilized for years.

Located in the Galeria Valley, near the XVI Town Hall, the Malagrotta landfill is the main source of conflict among civil society, local governments and private companies in the area. The critical environmental and social problems related to Malagrotta will doubtless scar Rome's entire urban fabric for many years to come.

There are numerous stakeholders involved in the Malagrotta project: multinational corporations and other companies (Co.La.Ri. -Lazio Waste Consortium- E. Giovi SRL -company administrator-; AMA -Environment Municipal Enterprise-); local and national statutory corporations (Roma Capitale; Regione Lazio; Ministry of Environment; Presidency of the Council of Ministers); several social movements and organisations (Malagrotta Committee; Pisana 64; Viviverde Massimina; Rete Regionale Rifiuti Lazio; "Le Città di Roma" Association; CGIL - Italian General Confederation of Labour; UIL - Italian Labour Union; WWF; Legambiente; Italia Nostra) and international institutions (European Commission).

## The Malagrotta Project

At the end of the seventies, the landfill began to be used as an illegal dump. Since its use was made legal in 1984 Malagrotta has grown to cover an area of 240 ha, receiving between 4,500 and 5,000 tons of waste per day, for a total capacity around 60 million tons.



*Incinerator of Malagrotta landfill.  
Photo by Piero Donadeo.*

These numbers make the landfill the largest municipal solid waste site in Europe.

The surrounding area of the landfill is ridden with industrial facilities. It features: the Testa di Cane dump (23 ha) the Rome refinery, storage facilities for liquefied gas and mineral oils, a bitumen treatment facility, a water purifier, a cement plant, and an incinerator for the Ponte Malnome hospital's waste (the only one in the whole Lazio Region). The whole area is also heavily populated, with centres such as Casal Lumbroso, Fontignani, and Massimina nearby. Despite that, the 2004 development plan foresaw a further extension of the urbanization process.

Landfills have some of the heaviest impacts of all waste management facilities. Furthermore, when combined with factors such as insufficient collection and management systems, a critical location and the chronic inability of government to secure efficient solutions, strong social unrest and serious consequences are likely.

A long history of environmental damages and health impacts has pushed residents in the Malagrotta area to protest. Since 1997 the European Union has threatened sanctions against the Malagrotta waste management, invoking both EU and Italian law.

Three waste management plans were presented by the same regional administrations between 2002 and 2012, all of which were very similar in content





Former tuff quarry supposed to be replacing the Malagrotta landfill. Photo by Piero Donadeo.

and equally unrealistic relative to the reality of the situation. In 2011 a state of emergency was declared and the closure of the landfill became urgent. The government thus decided to build a “temporary” dump in order to allow the closure on Malagrotta, and the authorities were called upon to choose a site to implement the provisional project.

The final and binding deadline was set as December 31st, 2012, and after meetings and negotiations failed, the Special Commissioner Monti Dell'Ortaccio chose a site belonging to CO.LA.RI., located few hundred meters far from Malagrotta. Contesting the decision the Galeria Valley's inhabitants organized themselves in a new protest movement.

On September 30, 2013 the closure of the saturated landfill was triumphantly announced, however, the processing of waste known as "stabilized wet fraction" continued. Meanwhile a regasification plant that cost hundreds of millions of Euro remained out of use.

On the 9th of January, seven people were arrested in an investigation of the management of waste from Lazio. One of the arrested included Manlio Cerroni, an 87 year old lawyer and owner of the Malagrotta dump, known to all as the "king of landfills". For decades he was responsible for waste management in the capital and in the region. As part of the same investigation the police also arrested the former president of the Lazio Region, Bruno Landi.

### Impacts

The thirty-year presence of Malagrotta has intensified environmental and social consequences to the extent that guaranteed limits for safety and health have been exceeded. Studies carried out by ISPRA (Institute for Environmental Protection and Research) on the Galeria Valley have detected widespread contamination by metals and organic compounds, with levels comparable to those in cities such as Taranto, Brindisi, Livorno and Genoa, major industrial centers.

Besides the unhealthy and unbreathable air, the most evident impact of the dump according to the ARPA (Regional Agency for Environmental Protection) is the poisoned aquifer of Lazio, which in 2010 was found to contain iron levels at 15,290  $\mu$ /liter, despite a limit of 200  $\mu$ /liter. The same is the case for levels of nickel and manganese.

Arsenic also was found to exceed maximum allowances by more than 200 times, as was mercury. High amounts of ammonia, nitrogen, and high concentrations of bacteria have since been verified by subsequent studies in underground aquifers as well as surface water, notably affecting the Rio Galeria, a small tributary of the Tevere River. Water problems particularly affect areas adjacent to landfills.

Most of the soil in these areas is exploited for agriculture or livestock farming, with damaging consequences for both the products and the food chain. The use of private wells has become almost impossible due to contamination. Finally, It should be noted that, as regards the water reserves of the area, the dispersion of leachate in the aquifer will continue for decades even after the closure of the landfill, thus making a constant (expensive) monitoring urgent and necessary.

The environmental damage has had inevitable consequences on human health. A 2012 study, by ERAS (part of the "Waste, Environmental Epidemiology in Latium – Lazio) identified in a population of over 85 thousand citizens, various diseases resulting from contact with the landfill pollutants and other plants located in the Galeria Valley (mainly SO<sub>x</sub>, H<sub>2</sub>S and PM<sub>10</sub>). Exposure to more dangerous substances was found to have led to the emergence of disease of the respiratory tract, liver, pancreas, and bladder, and breast cancer. The rates of these diseases were higher than average, illustrating the impacts of progressive and relentless pollution on the population of the territory.

### Summary of Impacts

#### Environmental:

- contamination of groundwater and surface water, soil and air from landfill and incineration emissions/effluents
- noise pollution due to the machinery's operation.
- Social: damage to the quality of life and health of citizens because of the incinerator emissions and landfill.

#### Economic:

- public expenditure on waste disposal in the Malagrotta landfill
- possible payment of EU fines, devaluation of land and buildings

### Conflict and Consequences

To protect citizens rights, to challenge the obvious environmental damage and to expose the inefficiency of Malagrotta plants, residents have come together over the years in committees, organizations and associations. Out of their consistent activities and monitoring of the evolution of the landfill complex situation, citizens have created the Galeria Valley Environmental Participation Observatory.

In this body, representatives of local committees and companies try to develop proposals to protect and safeguard the local environment. Committees promote a "zero waste" model, which starts from a door to door waste collection and information initiatives, thus presenting alternative strategies to those proposed by CO.LA.RI. (the landfill operator), which are mainly based on incineration and regeneration.

The Malagrotta maintenance and the construction of the adjacent gasifier (active between April 2010 and October 2011 and subsequently halted due to insufficient production have proven to be questionable ventures, costly to the entire community. In addition to the obvious health threat, the landfill and related facilities have also heavily impacted the locality and the nation.

The presence of Malagrotta has resulted in a sharp depreciation of real estate throughout the area, with considerable causing devaluations of between 25% and 30% compared to relative market value.

The EU has also initiated an infringement procedure against the Italian government, which stems from a series of irregularities regarding waste management and treatment. Ultimately such an infraction would cost the community tens of millions of Euros.

#### More on this case

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- <http://www.environmental-expert.com/news/commission-takes-italy-to-court-over-inadequate-treatment-of-waste-landfilled-in-lazio-362580>
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- In Italian [asud.net/wp-content/uploads/2013/06/MonnezzaBlues.pdf](http://asud.net/wp-content/uploads/2013/06/MonnezzaBlues.pdf)

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## Chronology of Major Events

- 1977 - 2013, the Galeria Valley's waste is managed by CO.LA.RI.
- 1997, the EU threatens sanctions against Malagrotta waste management.
- 2011, declaration of state of emergency for the area.
- 2012, December, the Galeria Valley's inhabitants organize themselves in a new protest's movement.
- 2013, September 30, the mayor and the governor announce the closure of the saturated landfill.

## References

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