

# THE SECTORAL APPROACH ON WASTE MANAGEMENT

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## Abstract

*This paper tries to develop a logical map for a sketch designed as what is needed to be done for a better approach on waste management. The secondary purpose of the paper is to highlight the procedures that are developed for creating and obtaining sustainable waste management through sectoral practices and in the spirit of durable economic development.*

**Key words:** waste management, economic development, sustainability, economic instruments

**JEL codes:** Q53, Q57

## 1. INTRODUCTION

In the context of complexity in permanent growing of the problems and standards, the area of municipal waste management is in an accelerated evolution process. As the number of municipal waste management alternatives increase, the selection of the best waste management system that is to decide on the combination of collection, processing and disposal techniques that will best serve the present and future needs of a community, become a more difficult task for local authorities.

We live in a society in which production, consumption and use of products is inevitable (Ailenei, Tartiu, 2008, pp. 134-145). But it is not unavoidable that these activities result in mountains of waste that led to a gradual degradation of the environment.

The issues of municipal waste management are some of the most important challenges of the XXI century taking into account the increased quantities of waste and the worries they generate in the global community, the new technologies and the environmental restrictions.

The EU policies from waste field underline the importance of an integrated approach in waste management. In this sense a group of measures have evolved in the aim of reducing the waste generation as well as the negative impact on health and the environment resulting from waste generation; also coordination, regulation and the organization of collecting, sorting, recycling and revaluation activities, final disposal.

Romania is an average size country comparatively with other European countries - the thirteenth country in Europe as size. By contrast, in Romania resource consumption and waste quantities are high, exceeding the carrying capacities of the natural environment.

The necessity of these transition periods are due to deficiencies recorded in the field: precarious infrastructure for waste collection, transport and elimination, weak awareness of the citizens and economic agents about the adequate waste management, limited capacity of authorities to elaborate viable project proposals, the number of sites damaged by pollution caused by economic activities and unsuitable landfill of waste, the permissive regime of environmental standards application.

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## 2. SUSTAINABLE WASTE MANAGEMENT

In Europe, especially in the EU28 area, the approach on waste management has been developed as a sustainable one, especially with the help of the private – public partnership seen working almost perfect in Germany.

Raw materials are becoming scarcer and energy more expensive, and all around the world, soil, air and water pollution pose a risk to sustainable development. Waste management is closely associated with both these problems: waste disposal issues are exacerbated by changing patterns of consumption, industrial development and urbanization; this in turn means that traditional systems for solid waste disposal and recycling are no longer appropriate. This problem affects informal settlements in particular.

In Europe, waste is increasingly being used to produce both materials and energy, and recycling now saves more greenhouses gases than it generates. However, many developing and emerging countries are faced with the major challenge of improving their inadequate and unsustainable waste management systems. Waste must no longer be deposited in residential areas and uncontrolled landfills or end up on illegal rubbish tips and in waterways. It accumulates in the world's oceans as marine litter, and is blown across continents and pulverized by the action of the wind, sun and waves. Plastic waste in particular does considerable damage to flora and fauna and finds its way into the human food chain in the form of micro-particles. Since 80% of the waste that ends up in the ocean originates from land-based sources, uncontrolled waste deposits in waterways and oceans are largely the consequence of non-existent or inadequate waste management.

Development cooperation projects are not doing enough to take account of and analyze technical, organizational and financial strategies for sustainable waste and resource management and previous experience with the issue; these factors should feature more prominently in the sectoral discussion at national and international level. Waste management is connected with many other areas, including urban development, water, energy and food security. This, too, has been greatly overlooked in the past.

In Germany especially and for sometime worldwide private – public projects are developed for creating sustainable waste management and some of the following strategies are designed (Cointreau, Hornig, 2003):

- **Waste-to-energy technologies**
  - i. In recent years, waste disposal companies have increasingly been offering partners in developing and emerging countries technologies for recovering energy from waste, based in part on their potential for climate change mitigation. The project supports decision-makers in selecting adapted waste-to-energy technology and evaluating product offers.
- **Avoidance of marine litter**
  - i. Various national policy instruments are being examined to determine their effectiveness in reducing marine litter; models are generated to demonstrate their economic, environmental and social impact. The findings are used to produce recommendations for appropriate policy approaches and to identify different options for implementing them.
- **Electronic waste**
  - i. Lessons learned from providing policy advice and carrying out activities relating to electronic waste management are analyzed and made available to international bodies for use in international processes. Building on ongoing activities, new strategies for waste collection and disposal are developed and implemented jointly with

development cooperation projects.

- **Economic instruments**

- i. For local and national administrations, the costs associated with waste management are considerable. In order to reduce these costs or meet them in a way that is effective and socially responsible, they must first be made transparent. In addition to the traditional approaches to financing, such as fee systems, the advisory project is increasingly developing economic incentive systems to avoid or recycle waste. The focus here is on concepts such as product taxation, deposit systems or user charges.

The approach developed on waste management is deployed as a new macroeconomic accelerator towards a better development of the global economy (US EPA, 1997). The sustainable element is filtered through the financial and resources side and is segmented as following:

- Assessing and continuously *tracking the full service costs* makes cost reduction potentials visible and is thus essential for improving the efficiency of waste management.
- Assessments of all waste management costs, *including upfront and back-end costs* (e.g. landfill closure and aftercare) as well as environmental or social costs resulting from unsustainable waste management or opportunity costs of foregone material value or work productivity show that the technological options with the lowest capital and operating costs may have higher total costs than upgraded technological options.
- Operating costs often constitute 60–85% of total waste management costs. *Mechanisms to cover operating costs* are therefore highly important for ensuring that solid waste management services are sustainable.
- *A socially acceptable tariff structure and an effective billing mechanism* are of the utmost importance when designing user-charging regimes. Integrated billing with utility bills has substantially improved cost recovery in numerous cases.
- Local authorities cannot successfully implement economic instruments for cost recovery without legal backing, guidance/training and complementary measures by national and state governments. *Close coordination between government levels* on financing issues is key.
- Covering the full service costs through user charges alone may in many contexts result in user charges that are not affordable for the majority of the population. Therefore, the *full range of economic instruments* should be considered, including property, tourist or other taxes, user charges, landfill fees or taxes, product taxes and deposit-refund systems, as well as economic incentives for improved waste management like subsidies, tax exemptions or feed-in tariffs for energy from waste.
- Many of these instruments, especially product taxes, public funds that subsidize certain waste management technologies or feed-in tariffs can only be established at the national or regional level, not at the local level. Therefore, local decision-makers *need to put this issue on the national agenda*.
- There is a need for much *wider dissemination of experiences* regarding the use of EPR, advanced recycling fees and other incentive mechanisms. This should include exchanges on how to ensure sufficient data quality, monitoring and control systems and how to integrate informal collection and recycling activities into EPR systems in low- and middle-income countries, which is necessary for the successful operation of these instruments.

### 3. THE IMPORTANCE OF ECONOMIC INSTRUMENTS FOR WASTE MANAGEMENT

Economic instruments in sustainable waste management have two major objectives:

1. to cover costs and thus improve service delivery;
2. to influence behavior by means of the pricing mechanism in order to minimize waste, avoid negative impacts (e.g. from landfill) or to strengthen resource recovery and recycling.

Some instruments only serve one of these objectives; some serve both objectives at the same time. Economic instruments do not substitute but complement and strengthen regulatory and informational approaches (Bodislav, 2015, pp. 257-264). As such, they are an important component of the policy mix and not 'stand-alone' policy instruments. Economic instruments can have various characteristics (Schlegelmilch, et al., 2010):

- Instruments to create revenue for public authorities: typical revenue-creating instruments are user charges or taxes that serve to cover the costs of public environmental services; other fees or taxes also create revenues, but at the same time serve to create incentives for changing behavior (for example, to produce less waste).
- Instruments to provide revenues to, for example, private companies: examples are subsidies or tax exemptions for companies providing environmental services or products.
- Instruments that use market mechanisms but do not generate or provide revenue: examples are permit trading schemes for waste or emissions, or deposit-refund systems.

The following points show why economic instruments should be part of a sustainable waste management approach (Federal Ministry for Economic Cooperation and Development, 2015):

1. The costs of sustainable waste management services are often not well known by local authority managers because they are allocated under different budget categories that are often not attributed to sustainable waste management services.
2. Sustainable waste management costs are rarely covered by local authorities in low- and middle-income countries. Investment costs tend to overshadow operation and maintenance (O&M) costs in such a way that they ultimately seem insignificant. It is relatively simple to find donors or investors for infrastructure, yet it is virtually impossible to find donors willing to participate in meeting O&M costs — and failure to meet these O&M costs on a daily basis risks the deterioration of the service and equipment due to neglect. This often results in a 'fire-fighting' situation where only the worst waste management problems are tackled, which then impedes the systematic provision of waste management services.
3. The need to upgrade waste collection, treatment and disposal infrastructure is widespread, but this will generate additional (capital and O&M) costs that will need to be met.
4. Local authorities are often required to manage (and pay for) all kinds of waste that are found in the municipal waste stream.
5. Cost recovery is insufficient to really tackle the waste hierarchy, so the means for incentivizing waste avoidance and waste recovery need to be found. Compared to other policy options, such as command-and-control measures or communication tools for behavioral change, economic incentives are usually the most efficient means for strengthening waste avoidance and recycling. Economic instruments can also serve to influence the materials used in the production of products by, for example, reducing the use of hazardous materials or influencing the degree to which products can be recycled at their end of life (eco-design).

6. In order to set up a resource-efficient sustainable waste management, simply seeking to influence the behavior of waste producers is not enough. Waste management companies and local authorities operating waste management systems may need incentives in order to adopt more resource-efficient and environmentally friendly practices and technologies, or to engage in recycling- and recovery-related business.

#### 4. CONCLUSIONS

In this economic turmoil waste management developed through sectoral procedures represents a powerful tool towards economic development and attracting new revenue to increase the Gross Domestic Product of a country. There are instruments that could be used in developing instruments (economic and financial ones) that could help in creating a better management for waste, like the following:

- A strategic planning process;
- Political will to implement transparency in financial management;
- A national programme for subsidizing/financing waste management infrastructure;
- When considering initiatives to involve the private sector in service provision;
- The autonomy to apply systematic, service-specific accounting methods as a basis for determining the cost recovery rate;
- Collaboration between national, regional and local government levels and national regulations granting financial powers to local governments;
- A national law requiring cost recovery or setting other targets like recycling quota;
- Regional integration and its resulting policy harmonization initiatives.

Different economic instruments need to be introduced and managed at specific levels of government (local, regional or national) and involve specific responsibilities at each level. Also there is the need to create a better understanding of the concept of sustainable waste management and deploying durable solution in its favor, and in the excellent bias of the development of future generations.

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