

## FINANCING WASTE MANAGEMENT IN SÃO TOMÉ AND PRÍNCIPE

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### ABSTRACT

São Tomé and Príncipe islands (pop. 178 739), located in the Gulf of Guinea, face acute waste management problems, lacking the means to collect and treat it adequately. Donor countries and agencies (UNDP, EU, AECID, IPAD, etc.) have been supporting waste management since 2005, with limited success. Most districts fail to collect waste, thus non-biodegradable material is accumulating in populated areas. Since 2010, the Extended Producer Responsibility (ERP) principle has been studied as form of paving the way towards a sustainable solution. The aim is to finance waste management through taxing imported packaging and a number of consumer goods which easily become hazardous waste in São Tomé and Príncipe.

A first step to apply the EPR in São Tomé was attempted in 2003 with the Environmental Impact Tax (TIA – Taxa de Impacto Ambiental) Decree Law. However, it lacked the required operational and normative aspects so it was never applied. The first TIA targeted environmental protection and São Tomé Government's financial needs. In 2013, after a second lengthy cross examination from different stakeholders (Commerce and Trading Associations, NGOs, Local and Central Government, and Customs Agents) a newly drafted TIA version was approved and published. TIA is now intended to serve as an instrument to finance waste management, especially at the local level.

In this scope, TIA's target group of imported goods has been defined according to a methodology adapted to São Tomé and Príncipe's economic and social, development. The main aim of the process has been to start with a simplified imported goods analysis concerning the waste generation potential and its impact.

The aim is to allocate 70 % of TIA's revenues to municipalities in order to finance waste collection and disposal activities. At the time of its revision (2011), in São Tomé and Príncipe the total Municipal Solid Waste Management costs were approximately 9 500 million STD per year (390 000 €). Also, in the National Plan of Action for Municipal Solid Waste Management, 2011-2016 (PAGIRSU), an investment of approximately 92 000 million STD (3.7 million €) is expected by 2016, mostly dependent on donations and/or international cooperation projects. TIA revenues (2010) will generate about 13 000 million STD, approximately 550 thousand Euros, based on a 0.5% to 5% CIF tax.

Besides TIA's great impact on the financial side of the environmental arena, namely on the waste management sector, it introduces a new and strong signal to the citizens of Sao Tome and Principe as regards the preservation of environmental values.

**Keywords:** Extended producer responsibility, solid waste management, São Tomé and Príncipe, costs and revenue.

## INTRODUCTION

São Tomé and Príncipe is a small insular country with an area of just over 1 000 km<sup>2</sup> located in the Gulf of Guinea with a population of 178 739 inhabitants (Instituto Nacional de Estatísticas de São Tomé e Príncipe, 2013) and one of the smallest economies in Africa (The World Bank, 2013). In 2011, it had a Gross Domestic Product (GDP) of 253 million USD and a GDP per capita of 1 222 USD (AfDB, OECD, UNECA, UNDP, 2013). It ranks 144th in the Human Development Index (HDI) (United Nations Development Programme, 2013).

The present paper expresses results from the 3<sup>rd</sup> phase of a project funded by AECID, the Spanish Development Aid Organization, in São Tomé and Príncipe, and executed by the following NGOs: ADAPPA, ALISEI, FCJ and MARAPA, “Improvement of solid waste collection and reinforcement of municipalities’ capabilities”. During the project’s three years (March 2009 to 2012), different activities focused primarily on Municipal Solid Waste (MSW) collection, where it was possible to work closely with all the municipalities in São Tomé and also the Príncipe Autonomous Region (RAP). Taking sustainability criteria into consideration, the financial capabilities were analyzed and different kinds of interventions and strategies were put into work. One of these was the revision of TIA - Environmental Impact Tax.

## THE ENVIRONMENTAL IMPACT TAX

Published in 2003, Governmental Decree 14/2003 had an ambitious goal, and, in a single stroke, defined TIA, a sanitation tax, and a packaging management system for retailers, import export businesses, and local manufacturers. It addressed polluter- and user-pay principles for the first time, as well as the co-responsibility of economic participants such as traders and retailers in the management of packaging waste (São Tomé and Príncipe - Diário da República, 2003).

Decree 14/2003 included an attachment, describing a range of target products that should be taxed when entering the country. However, its implementation failed and the Direção Geral das Alfandegas (National Customs Agency) never enforced it and no revenues were generated whatsoever.

## REVISED TIA

Given TIA’s initial setbacks and problems, its revision, in 2010, was an opportunity to redesign it and to include the implementation-related difficulties in São Tomé and Príncipe. In that sense, a pragmatic approach was considered and benchmark studies were performed.

The rationale behind TIA revision was:

1. Progress: TIA is a tool that aims to reduce poverty by easing environmental and insalubrious pressure, and, at the same time, creating jobs and wealth – with new recycling and reutilization materials that are impossible to achieve without public funding;
2. Simplicity: TIA is a reliable mechanism to raise the required funds for PAGIRSU fulfillment. Constraints associated with waste tariffs, such as those in developed countries, are overcome as TIA is applied, not to waste producers (final consumers of manufactures goods, commercial sector) but to goods/material producers;
3. Equity: TIA targets non-essential goods, to spare the underprivileged population from taxes on basic commodities and goods;
4. Transparency: The TIA tax claim is based on effective administrative frames, so that revenues may be invested in a crystal clear manner.

The revised version of TIA introduced the producer’s liability, or the Extended Producer Responsibility Principle. Since all packaged products and manufactured goods eventually become waste, its entire life cycle, including collection and disposal costs, must be considered.

PAGIRSU – This Strategic Waste Plan already includes a provision stating that 75% of the operational costs will be recovered by TIA revenues. TIA is expected to be the main source of financing investments in SWM.

Finally, in 2013, the revised Decree was published (São Tomé e Príncipe - Diário da República, 2013) distributing TIA’s revenues as follows:

- 70% of the total allocated to the municipalities and RAP,
- 20% for Central Government SWM investments, and

- 10% for an Environmental Fund.

## METHODOLOGY

Imported goods were sorted according to their environmental impact. The Customs Office (Direccao Geral das Alfandegas, 2011) has made data available using the international code numbers for product definition (Harmonised System of the World Trade Organization). The following criteria were considered:

- Life cycle of imported goods;
- Type of wastes produced or generated;
- Waste management costs due to the original imported goods or packaging thereof;
- Waste occurrence and frequency in the collection system and in waste dumps.

Based on this criteria, three categories were defined:

- Category 1 – Products with high environmental impact and weight;
  - Products included in this category are non-essential imported goods (e.g., juices, alcoholic drinks, and plastic bags) and others (Electrical Waste and Electronic Equipment – WEEE, batteries, vehicles, tires, pesticides) that by nature, imply large investments for their adequate treatment. Packaged products, generally made of plastic, metal, glass or other (e.g., composites) non-biodegradable material involve high investments in the country for its adequate treatment. In the final life cycle of the product, its package becomes litter that demands correct management, which in turn needs funding.
- Category 2 – Products with moderate environmental impact;
  - Products included in this category are non-essential imported goods with hard to treat packaging, in moderate but significant quantities, that are waste production in and of themselves (cigarette filters, discarded mattresses, discarded umbrellas, etc). This category also includes some WEEE that, although in moderate quantity, represent a SWM challenge for municipalities.
- Category 3 – Oversized products that require special waste management procedures and care.
  - Products included in this category imply a difficult and expensive waste treatment process, which includes products containing hazardous waste, e.g. oils, lubricants, WEEE, vehicles and other constituents treatments with high environmental impact if disposed.

## EXPECTED REVENUES AND ITS APPLICATION

Data made available by the National Customs Agency (Direccao Geral das Alfandegas, 2011), shows that the average annual revenue is expected to be, 11 400 millions STD (approximately 460 000 €), average value from 2009 and 2010 imports, as shown in Figure 1.

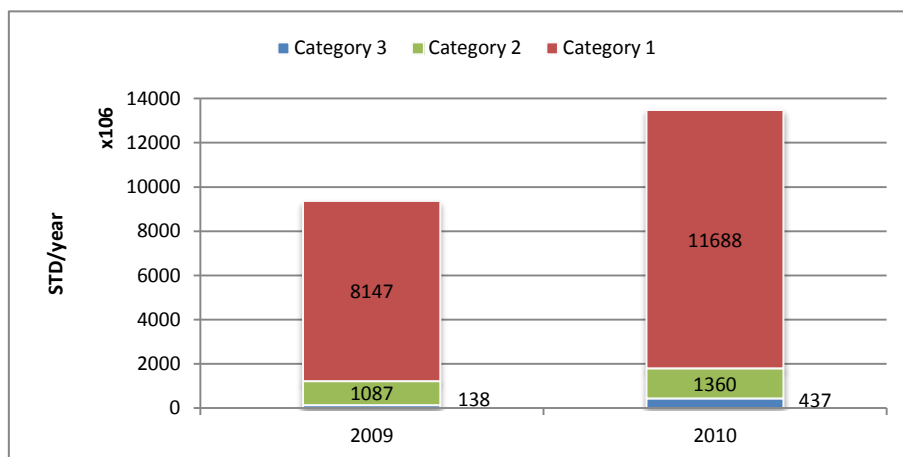


Figure 1 - Expected total revenues from implementation of the revised TIA.

## CONCLUSION

Economic growth in São Tomé e Príncipe is strongly based on imports, which also introduces new materials that easily become non-biodegradable waste, consequently creating greater challenges to SWM on both islands. These unwanted materials, *lato sensu* are mainly low-weight packaging, plastic bags, WEEE, and other by- or end-products of imported commodities.

The investment in the SWM sector in São Tomé and Príncipe still depends greatly on donations and development cooperation initiatives, due to the lack of internal funds and the constraints related to the collection of taxes. The use of the Producer Extended Responsibility principle is essential to cover waste collection, transport and treatment costs, especially at the local level. Municipal solid waste management requires sustained investment, in order to increase waste collection efficiency and scope, and will gradually cover the entire country.

TIA is part of the SWM funding solution in Sao Tomé and Príncipe but other forms of finance, such as the polluter pays principle, must be also considered in the future to cover the investments. And, individual responsibility should also be included, as soon as coverage reaches acceptable levels.

TIA monitoring, accountability, and transparency are also crucial to the success of its implementation, and the goal of sustainable improvement of SWM in São Tomé and Príncipe.

## REFERENCES

AfDB, OECD, UNECA, UNDP, 2013. *African Economic Outlook*. [Online] Available at: <http://www.africaneconomicoutlook.org> [Accessed October 2013].

AfDB, OECD, UNECA, UNDP, 2013. *African Economic Outlook*. [Online] Available at: [africaneconomicoutlook.org](http://www.africaneconomicoutlook.org) [Accessed 3 December 2013].

Direcção Geral das Alfandegas, 2011. *Base Importação Anual 2009 - 2010*, Sao Tome: Direcção Geral das Alfandegas.

Direcção Geral das Alfandegas, 2011. *Pauta actual*, Sao Tomé: Direcção Geral das Alfandegas.

Instituto Nacional de Estatísticas de São Tomé e Príncipe, 2013. *Recenseamento Geral da População e Habitação de 2012*. [Online] Available at: <http://www.ine.st/> [Accessed 1 December 2013].

São Tomé and Príncipe - Diário da República, 2003. Decreto-Lei nº 14/2003 - 5º Suplmento. *São Tomé and Príncipe - Diário da República*, 31 Dezembro.

São Tomé e Príncipe - Diário da República, 2013. Decreto-Lei nº 64/2013 - 24º Suplemento. 31 Dezembro, Issue 163, pp. 1095-1105.

TESE/ECOGESTUS, 2010. *Plano de Acção de Resíduos Sólidos Urbanos, 2011-2016*, Sao Tomé: Direcção Geral do Ambiente.

The World Bank, 2013. *Sao Tome and Principe - Country at a glance*. [Online] Available at: <http://www.worldbank.org/en/country/saotome> [Accessed 1 December 2013].

United Nations Development Programme, 2013. *Human Development Reports*. [Online] Available at: <http://hdr.undp.org> [Accessed 13 November 2013].