

PORTO NOVO, Benin

City Information

Population: 280,280 inhabitants (year 2017)

Area (km²): 52 km² (0.05% of the national territory)

Climate: Equatorial climate, with four seasons, two dry (from November to mid-March and mid-July to mid-September) and two wet (mid-March to mid-July and mid-September to mid-November). The humidity is important (75%), the temperatures vary between 21.9 ° C and 32.8 ° C.

Average annual rainfall: 1,200 mm per year

Main Economic Activities:

Porto-Novo is the metropolis of major Beninese traders with relatively large turnover.

Craftsmanship is a major element of the specificity of the city especially in terms of employment and income

City website: <http://www.villedeportonovo.com/>



Country Information

Population: 11,186,785 inhabitants (2017)

Area (km²): 114 763 km²

Economy and GNI/Capita

According to WB classification Madagascar is a country classified as LOW-INCOME ECONOMIES (\$1,005 OR LESS)

- 789.44 USD/per Capita in year 2016
- 601.8 USD/per Capita in year 2005
- 374 USD/per Capita in year 2000

(Sources: Word Bank)

Main Economic Activities

- Primary sector (agriculture): 32.2 % of GDP (2011)
- Secondary sector (industry): 13.4 % of GDP (2011)
- Tertiary sector (services): 54.4 % of GDP (2011)

Average economic growth: 4% (2016)

Government Agencies responsible for guidance on waste legislation

- Ministry of Life and Sustainable Development (MLSD)
- Ministry of Public Health (MPH)
- Ministry of the Interior, Security and Decentralization (MISD)
- The Ministry of Environment, Housing and Urban Planning (MEHUP)



MSW Sector Overview: City Level

Classification of MSW

- Residual household waste
- Recyclable waste
- Glass waste

MSW Generation

For Year 2016 in Porto-Novo city,

- 59,860 tons generated per year
- 226.1 kg/per Capita/year
- 0.61Kg/per Capita/day

Collection Coverage and Type

- In Ton/per year, 13,604 Tons were collected in 2016.
- Approximately 23% of the waste generated is formally collected and disposed. There is no selective waste collection

Waste Composition

- Organic Waste: 37%
- Papers and cardboard: 3%
- Plastics: 15%
- Metal: 2%
- Glass: 1%
- Others and fine part of waste: 43%



The composition of waste results from surveys conducted by the Ramboll Research Department, is nuanced according to three main urban sectors:

- **Sector 1**, comprising the old town, i.e. developed around the fabrics of the old colonial city, built before 1930;
- **Sector 2**, including the first extensions of the colonial city, located after the bridges, mainly urban fabrics developed between 1930 and 1960;
- **Sector 3**, corresponding to low-density fabrics, built after 1960, and developed in rural areas in the northeast and northwest of the locality.

Waste Management Practice

The municipality of Porto-Novo has a two-link garbage collection system. Pre-collection is carried out door-to-door with households. It is entrusted to approximately 60 operators (Association). The city council collects waste from the transfer sites and transports it to the Porto-Novo technical landfill.

The municipality has skips in strategic points of the city to execute the transfer with the pre-collector. Transfer centers are also under construction

Formal Waste Sector

The Municipality of Porto-Novo is in charge of coordinating waste management on its territory. Pre-collection is delegated to small neighborhood associations. Regarding the collection service, the municipality contracts with formalized companies via tender documents. The city of Porto-Novo is thus divided into three collection lots, each of which is attributed to a service provider. Waste treatment is carried out in a landfill located about 60 kilometers from the city. The management of the work is entrusted to AGETUR.

Recycling and composting description:

Recycling: In Porto-Novo, glass and plastic bottles, cans, scrap metal, hard plastics are recovered at the source or at the other stages of the management of the sector either for direct use or for sale by the informal sector. These activities are managed by men and women. Women, for example, called "buyers of bottles" (Gohoto in local dialect) resell their materials to tradi-therapists, while men participate in the recovery of ferrous and non-ferrous metals which will then be exported to Asia.

These activities lead to the development of redemption and scrap loading sites, thus absorbing several unemployed women and young men.



Composting: Only the Songhai Center, which has a vision of sustainable development, produces compost from household garbage and similar products produced in the center. This compost is used to grow market garden products that are used partly in the on-site restaurant. The rest is sold to customers from outside. Other valorisation experiments exist on some vegetable growing sites. Garbage is directly used on the boards or is transformed into compost



Informal Waste Sector

No more information concerning the informal sector of waste management

Financing of MSW

The annual budget for waste management assigned by the Municipality of Porto-Novo corresponds approximately to 620,190,000 FCFA/per Year. This budget does not take into account exceptional investment expenditure.

Pre-collection financing: direct payment of users to neighborhood associations. The payment is 1500 FCFA per month per subscriber (1\$ USD = 554 FCFA), with a collection rate of 37%.

Waste Management Challenges

- Develop waste recovery at transfer sites.
- Increase the rate of collection and service to the city of Porto-Novo.
- Make the CET really active. Only a very small percentage of the waste is sent there at the moment.

MSW Sector Overview: Country Level

General description and overview of common practice

In Benin, the management of waste is the responsibility of the town halls that provide the service by management, where delegate to private operators and NGOs. Only a few cities have structures waste transport namely Cotonou, Porto Novo, Kandi, Ouidah, Lokossa, and Parakou. In terms of discharge, only the city of Cotonou and Porto-Novo has a landscaped site in Ouèssè and Takon. In other cities, this is for most of the wild dumps located at an acceptable distance from the city. The cases of the cities of Djougou, Bohicon, Malanville and Parakou are illustrative.

Waste Generation (per capita/year)

- Waste Generation: 197.1 kg/per Capita/year (source: World Bank 2012 UFC)
- Waste Generation projection for 2025: 274 Kg/per capita/year (source: World Bank 2012 UFC)

Collection Coverage

No available information at the country level.

Number of Landfills/MSW Disposal rate (tons/year)

There is no study mentioning the number of landfills and tonnages buried in the country, nevertheless the cities of Cotonou and Porto-Novo have a landfill for their waste.

Recycling Rate

The main recovery activities in Benin concern the recycling of plastic waste into other plastic products and the reuse of plastic waste in the production of other plastic or semi-plastic objects. Most of the activity is managed by informal sector. The valuation practices are quite limited and concern some types of plastics, as shown in the table below.

Two of the more experiences interesting are:

- The experience of Porto Novo's NGO "Qui dit mieux", which consists of re-using plastic bags for the manufacture of various utility items;
- The experience of the "AGRIPLAS" center dependent on the NGO "Bethesda", located in Cotonou, which shines strongly on the neighboring cities and more particularly Porto Novo, and which, moreover, is distinguished by the diversity of its production, and processing technologies used.

Classe	Types de plastiques	Objets plastiques	Importance de la récupération		
			Très Faible	Faible	Bonne
Thermoplastiques	PET (3,8%)	Bouteilles d'eau minérale			X
	PEHD (36,3%)	Ustensiles de cuisine Bidon, jouets Récipients, sièges		X	X
	PELD (0,7%)	Sachets		X	
	PP (52,3%)	Seringues, imperméables jouets, tuyaux, récipients, valises, nappes de table			
Thermodurcissables	PVC (2,9%)	Tuyaux, matériaux de quincailleries	X		
	PS (1,9%)	Pots de yaourt, jouets, ustensiles à jeter	X		
Elastomères	PUR (2,1%)	Matelas-mousse Coussins pour salon, Coussin pour voiture			X



Organic fraction management (composting, anaerobic digestion)

For the recovery of organic waste, there is a track followed that lead to produce potting mixes of soil and organic matter (especially rotting leaves), used in particular by nurserymen and market gardeners.

In the context of waste management, Porto-Novo has a composting site supervised by the NGO "EMMAUS" of the Household Waste Treatment Center (CTOM) of Tohoué.



Energy Recovery Rate

Energy production from waste is not yet available and is not determined.



City Level

Aimed at improving Waste Management in General

The municipality of Porto-Novo does not yet have a master plan for waste management aimed at establishing a strategic orientation on the medium or long term. The structuring of the waste sector is only at its beginnings. Nevertheless, the support of "Grand Lyon" to the municipality of Porto-Novo makes it possible to lay the foundations for the reduction of waste to be buried at the level of the CET through the implementation of a sorting project financed by the French Development Agency.

Aimed at addressing Climate change and reducing SLCPs through waste related activities

In terms of reducing short-lived climate pollutants, no action has been planned so far. Nevertheless, it is for these reasons that Porto-Novo joins the African network of cities of the CCAC and wishes to strengthen its technical service.

Country Level

Aimed at improving Waste Management in General

In 2012, the Beninese State adopts a National Plan of Hygiene and Sanitation. Waste management is formally registered (household and plastic waste, biomedical waste, industrial waste). The institutional framework of the hygiene sector and of sanitation in force at Benin confers on the State the role of the regulator, the municipalities the role of building owners, the private sector of service provider and to the people the role sanitation service consumer and defender of the interests of consumers / users.

Aimed at addressing Climate change and reducing SLCPs through waste related activities

The National Hygiene and Sanitation Policy states that "Technical approaches retained must be innovative and the technological option must aim at maximum elimination of negative impacts on the environment".

National agencies contributing to the implementation of national standards and respect for the environment:

The Beninese National Agency for the Environment (ANBE): Its mission is to ensure, within the framework of the general policy of the Government, to take into account the protection of the environment in the programs and in the plans and projects in favor of sustainable development in Benin. It intervenes notably through the control of impact studies (decree N ° 2001-235 of July 12th, 2001), and sits within the Environmental Cells created in the Ministries and in the prefectures of department. It also plays an important role in raising awareness and popularizing environmental culture and regulation.

The Society for Regional Studies of Habitat and Urban Development (SERHAU): The SERHAU is a structure intervening in the planning and the urban management in Benin, become Service of Regional Studies of Development and Town Planning (under Ministry of Public Works), before being transformed (since 2001) into a public limited company of mixed economy (urban constituencies holding shares of capital), whose policy is decided by a Board of Directors.

City Level

Legislation governing MSW management

The development of the role and prerogatives of municipalities represents a fundamental political orientation. A great step has been taken in this direction in terms of texts, and the establishment of elected municipal councils.

Among the texts contributing to organize decentralization, we can mention:

- Law No. 97-029 of 15 January 1999, on the organization of municipalities, which, in Chapter III, confers on the 999 municipalities the organization of the territorial administration;
- Law n ° 98-005 of 15/01/99 concerning the organization of competences among others in the field of the environment, hygiene and sanitation, in particular: - Article 82 states that "the commune shall cooperate with the State and the other communities in the administration and planning, in the economic, social, health, cultural and scientific development as well as in the protection of the environment and improvement of the living environment "; - Article 93, which stipulates that "the municipality is responsible for the collection and treatment of solid waste other than industrial waste";
- Law No. 98-007 of 15 January 1999 on the financial system of municipalities, which stipulates in article 13 that "the revenue of the commune's operating section for hygiene, public health and funeral services shall include garbage collection taxes and fees for removal of debris and materials other than household waste ";
- Law No. 97-028 of 15 January 1 of municipalities with special status (including Porto Novo);
- And the Law n ° 98-008 of the 09/03/00 on the municipal and municipal electoral system in the Republic of Benin.

National Level

Legislation governing MSW management

The main laws and regulations governing the recovery of household solid waste in Benin concern:

- Law No. 98-030 of 12 February 1999, which sets the framework law for the environment in our country, defines the bases of the national environmental policy and organizes its implementation in accordance with the constitution. Based on the polluter pays principle, this law focuses on:
 - The protection and enhancement of the receiving and natural environments;
 - Protection and enhancement of the natural environment and the human environment;
 - The limitation of pollution and nuisance;
 - The obligation to carry out environmental impact studies and to provide contingency plans and incentives before the implementation of any important project or established in a fragile environment (including wetlands); it should be noted that Article 70 imposes on this obligation the carrying out of projects for the installation of storage, transfer, treatment or disposal of waste;

- The compulsory issuance of an environmental compliance certificate, based on the impact study carried out or on an environmental audit, before the authorization to operate the structure or establishment;
- The implementing legislation of Law No. 98-030, in particular:
 - Interministerial Order No. 136 / DHAB 1995 regulating the activities of collection, disposal, treatment and disposal of solid waste in the Republic of Benin;
 - Decree 74-60 of 8 March 1974 establishing the allocation, composition, organization and functioning of the national commission charged with combating pollution and improving the environment;
 - Decree 2001-235 of 12 July 2003 on the organization of the impact assessment procedure;
 - Decree 2001-093 of 20 February 2001 laying down the conditions for drawing up the environmental audit in the Republic of Benin;
 - And Decree 2001-095 of 20 February 2001 on the creation, organization and operation of environmental cells in the Republic of Benin.
- Law 87-15 of 21 September 1987 on the code of public hygiene, regulating the behavior to be adopted in the field of hygiene on public roads, in homes, and Article 97 reprimands the carelessness observed at the level biomedical waste that is mixed with household waste;
- And Decree No. 97-616 of December 1997 implementing Law No. 87-015 of 21 September 1987 on the code of public hygiene.

Key Stakeholders

AGETUR Benin: <http://www.agetur.bj/>

SERHAU Benin: https://www.pseau.org/outils/organismes/organisme_detail.php?org_organisme_id=6389

Additional Useful Information

National hygiene and sanitation policy:

https://www.pseau.org/outils/ouvrages/Politique_nationale_de_l_hygiene_et_de_l_assainissement_du_Benin_2013.pdf

Contacts

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