

MITIGATING METHANE AND BLACK CARBON FROM THE MUNICIPAL SOLID WASTE SECTOR

ABIDJAN CÔTE D'IVOIRE

The District of Abidjan is the largest city in the Ivory Coast and encompasses multiple municipalities. The District faces a number of solid waste management challenges; it hopes to address its primary ones by closing its single outdated landfill, capturing landfill gas, and improving waste collection related to organic waste management. In late 2013, Abidjan and its partners began participating in the Climate and Clean Air Coalition Municipal Solid Waste Initiative (Waste Initiative) to identify and address major waste challenges. Through this partnership, the city identified and pursued several actions that will generate a range of environmental, economic, and public health benefits, including reduced emissions of short-lived climate pollutants (SLCPs), primarily methane and black carbon.

CHALLENGES AND OBJECTIVES

Abidjan faces several significant waste management challenges, including:

- Limited space in the city's one landfill that was constructed in 1965
- Limited logistical and technical capacity for landfill operations
- One non-functional landfill gas recovery operation
- No adequate regulatory or policy frameworks
- Insufficient funds allocated for waste management
- Low public awareness of waste topics

Abidjan joined the Waste Initiative to obtain assistance to address its primary waste management challenges and achieve multiple benefits. For example, improving collection and diverting organic waste from landfills can save space and also reduce methane generation; better landfill operations can reduce equipment fuel costs and black carbon emissions from open burning by waste pickers; and upgrading the collection fleet can reduce transportation costs and black carbon emissions (e.g., diesel vehicle emissions).

ACHIEVEMENTS TO DATE

With the help of the Waste Initiative and local partners, Abidjan created a work plan that identified three actions to improve waste management and reduce SLCP emissions. Key implementing partners in Abidjan include the District itself; its municipalities; the National Ministry

CITY FACTS

Population:
≈ 6 million
Waste Generation Rate:
≈ 0.8 kg/person/day
Waste Collection Rate:
≈ 80–90%

The **Climate and Clean Air Coalition Municipal Solid Waste Initiative** unites national and local governments, international organizations, and other partners to reduce emissions of short-lived climate pollutants, such as methane and black carbon, from the municipal solid waste sector.



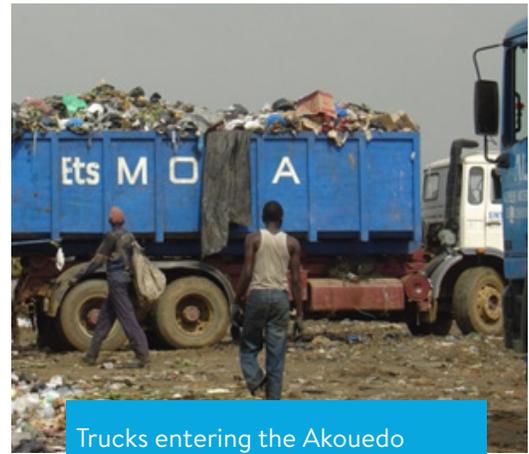
of Environment and Sustainable Development (MINSEDD); the National Agency for Urban Health (ANASUR); two French technical support entities, Gevalor and Girus; and the Cameroonian consultant Bruno Serge Djietcheu Kametcha. Through their collaborative efforts, the city and its partners have made progress on several action items through early 2017:

Close the Akouedo landfill and begin gas recovery: The project consultant conducted a detailed study of the Akouedo landfill and determined the landfill would need to remain open through at least 2018 until a new sanitary landfill could be constructed. However, MINSEDD accelerated the schedule, and the closure is now planned for 2017. Two potential future sanitary landfill sites were identified. The first, at Kossihouen, was planned as a privately operated landfill; its construction was near completion in early 2017. The second, at Attiekoi, was planned as a publicly operated landfill, but its future is uncertain.

Regarding the existing (non-functional) landfill gas recovery operation, the consultant identified several technical deficiencies, including limited space, insufficient quantity of gas collection wells, and leachate in the wells. The study made recommendations regarding future landfill gas recovery potential, ongoing environmental management of the site, and social considerations for closing the site (e.g., employment and well-being of waste pickers). With the impending closure of the Akouedo landfill, project partners – including the Ivory Coast Renewable Energy Development Agency – were optimistic about restarting gas recovery projects at the site. A private sector partner is interesting in developing the landfill gas recovery project and is seeking financial backing.

Start organic waste separation and composting: Girus conducted an in-depth characterization study of Abidjan’s waste to determine the feasibility of turning organic waste into compost. It recommended that a composting facility be built at Akouedo; co-locating the compost facility would ensure a consistent stream of organic waste. Girus estimated that the facility will treat roughly 30,000 tons of organic waste annually and employ 100 individuals. Holding Groupe Eoulée is planning a pilot composting program with support from the African Development Bank and the Worldwide Environmental Fund. However, no composting activities have taken place to-date.

As a result of these scoping efforts, MINSEDD is now collaborating with the Canadian Department of Environment and Climate Change on a four-part national project to improve organic waste management:



Trucks entering the Akouedo landfill

1. Strengthen legislative and institutional frameworks for SLCP mitigation measures, particularly composting and anaerobic digestion projects that avoid methane emissions
2. Strengthen technical capabilities to monitor the SLCP emissions reduction actions implemented by ANASUR, the National Agricultural Research Center, the National Agency for Rural Development Support, and others
3. Begin ANASUR’s composting project and complete a composting pilot in Yamoussoukro
4. Communicate activities and results to local, national, and international stakeholders

Optimize collection routes and fleet vehicles:

In addition to better waste management and reduced SLCP emissions, the city sees other potential benefits from pursuing this work. For example, informal waste sorters and pickers could be brought into the formal sector, improving working conditions and increasing wages; better collection could reduce the quantity of recyclable waste that ends up in the landfill, create employment for recyclers, and result in a higher market value for packaged recyclables; and the city and its partners could produce quality compost for local farmers and non-agricultural users.

ABOUT THE COALITION

The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (Coalition) is a voluntary global partnership of governments, intergovernmental organizations, business, scientific institutions and civil society committed to catalysing concrete, substantial action to reduce SLCPs (including methane, black carbon and many hydrofluorocarbons). The Coalition works through collaborative initiatives to raise awareness, mobilise resources, and lead transformative actions in key emitting sectors.

MORE INFORMATION

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