



DIOTIN Solution for Congo-Brazzaville’s Water Crisis

What is DIOTIN?

DIOTIN is a stabilized chlorine dioxide-based liquid concentrate used for advanced disinfection and purification of water systems. Unlike traditional chlorination agents, DIOTIN is highly effective even in small dosages (10 mL per 1,000 liters), with long shelf life (up to 24 months) and remote monitoring capabilities. It neutralizes bacteria, viruses, fungi, biofilms, and heavy metals like lead and mercury. This makes it suitable for municipal water, surface water bodies, and sewage treatment plants.

The Water Crisis in Congo-Brazzaville

Despite Congo’s abundant natural water resources—such as the Congo, Sangha, and Likouala rivers—urban and rural areas face persistent challenges in water safety due to poor infrastructure, untreated sewage, industrial waste, and microbial contamination. Cities like Brazzaville and Pointe-Noire experience frequent water supply issues, microbial risks including *E. coli* and *Shigella*, and heavy metal pollution in key waterways. Firewood and charcoal are widely used to boil water for drinking, contributing to carbon emissions and deforestation.

How DIOTIN Solves Congo’s Water Challenges

DIOTIN can be applied strategically across Congo’s entire water cycle:

- In municipal plants, it ensures pathogen inactivation even during low-pressure events.
- In rivers and estuaries, it disinfects water near urban discharge zones and recreational areas.
- In lakes, it clarifies turbid water and removes biofilm and heavy metals.
- In sewage and reuse systems, it reduces microbial load, stabilizes sludge, and enhances reuse safety.
- Remote dosing systems minimize the need for frequent site visits, ideal for Congo’s dispersed communities.

National Water Volume and DIOTIN Dosage Requirements

Sector	Annual Volume (million m ³)	DIOTIN Required (liters)
Municipal water systems	180.0	1,800,000
Rivers (all major + tributaries)	120.0	1,200,000
Urban rivers & streams	90.0	900,000
Lakes & estuaries (national)	4,800.0	48,000,000
Sewage & wastewater	110.0	1,100,000
TOTAL	5,300.0	53,000,000

Based on DIOTIN’s dosage rate of 10 mL per 1,000 liters and a price of \$15 per liter:

- Total DIOTIN required: 53,000,000 liters
- Total estimated cost: \$795,000,000 USD

Implementation Plan & Strategic Value

To implement DIOTIN across Congo effectively, a phased plan is recommended:

1. Pilot programs in Brazzaville and Pointe-Noire’s municipal and river systems.
2. Nationwide training and remote monitoring setup.
3. Integration with existing infrastructure upgrades (e.g., pressure zones, pipe replacements).
4. Environmental and health monitoring to validate long-term safety.



Detailed Cost Analysis by Sector

Sector	DIOTIN Required (liters)	Cost (USD)
Municipal water systems	1,800,000	\$27,000,000
Rivers (all major + tributaries)	1,200,000	\$18,000,000
Urban rivers & streams	900,000	\$13,500,000
Lakes & estuaries (national)	48,000,000	\$720,000,000
Sewage & wastewater	1,100,000	\$16,500,000
TOTAL	53,000,000	\$795,000,000

Carbon Credit Potential from DIOTIN Water Treatment in Congo

What Are Carbon Credits?

Carbon credits are tradable certificates that represent the removal or avoidance of one metric ton of carbon dioxide equivalent (CO₂e) from the atmosphere. Organizations that reduce emissions beyond regulated limits or remove carbon through verified methods—such as water sanitation, afforestation, or clean energy—can earn credits. These credits can then be sold on voluntary or compliance markets to companies seeking to offset their carbon footprint.

2030 Agenda and the Growing Carbon Credit Market

Under the Paris Agreement and SDG 6 and 13 of the UN 2030 Agenda, countries are incentivized to reduce greenhouse gas emissions and improve access to clean water. Carbon markets are central to achieving these goals. As nations approach 2030 targets, the value of verified carbon credits is expected to surge due to supply constraints and growing demand from ESG-driven corporations and governments.

How DIOTIN Enables Carbon Credit Generation

DIOTIN enables large-scale environmental impact through water system rehabilitation and disinfection across Congo. It eliminates the need for traditional boiling using wood or coal, and it stabilizes water ecosystems, improving oxygenation and microbial cycling. These activities qualify for carbon credit generation under international methodologies such as Gold Standard or Verra’s VCS program.

Estimated Carbon Credit Impact from DIOTIN Deployment

Impact Category	CO ₂ e Offset (tons)	Value (USD)
Avoided Emissions (waste, fuel)	5,300,000	\$1,590,000,000
CO ₂ Absorption (river & lake restoration)	240,000	\$72,000,000
TOTAL	5,540,000	\$1,662,000,000

Conclusion

This project presents a national-scale deployment of DIOTIN, a stabilized chlorine dioxide-based water treatment solution, across Congo’s municipal, surface, and wastewater systems. The initiative addresses Congo’s critical water contamination issues while simultaneously unlocking carbon credit revenue streams through emissions reductions and ecological restoration.

By treating over 5.3 billion cubic meters of water annually using DIOTIN, Congo can drastically improve public health, restore natural ecosystems and reduce carbon emissions.