



WATER AUTONOMY FOR THE DARU PEOPLE

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CUSTOMER
LR Group

LOCATION
Daru Island, Papua New Guinea

PROJECT TYPE
Municipal Potable Water Treatment

COMMISSIONED
2023

CAPACITY
1,920 m3/day (352 gpm)

STATUS
Operational

OVERVIEW

Daru island in the South Fly District of Western Province Papua New Guinea needed a solution to provide a reliable clean water supply for communities and agricultural development.

The PNG Sustainable Development Program (PNGSDP) and Innovative Agro Industry (IAI), an affiliate of the international development company, LR Group, partnered with ROTEC to deliver a water project that combines green energy and clean water supply to Daru Island.

Having incorporated ROTEC's Flow Reversal Reverse Osmosis (FR-RO) innovation in the brackish water treatment desalination facility, Daru Island is now benefiting from a renewable energy-powered project that provides high-quality potable water to its residents.



THE NEED

With about 20,000 residents, the island of Daru previously imported its water from a diesel-powered pumping station located on the mainland. This was an expensive source and supply was unreliable, often leaving the island stranded with no available potable water for months at a time.

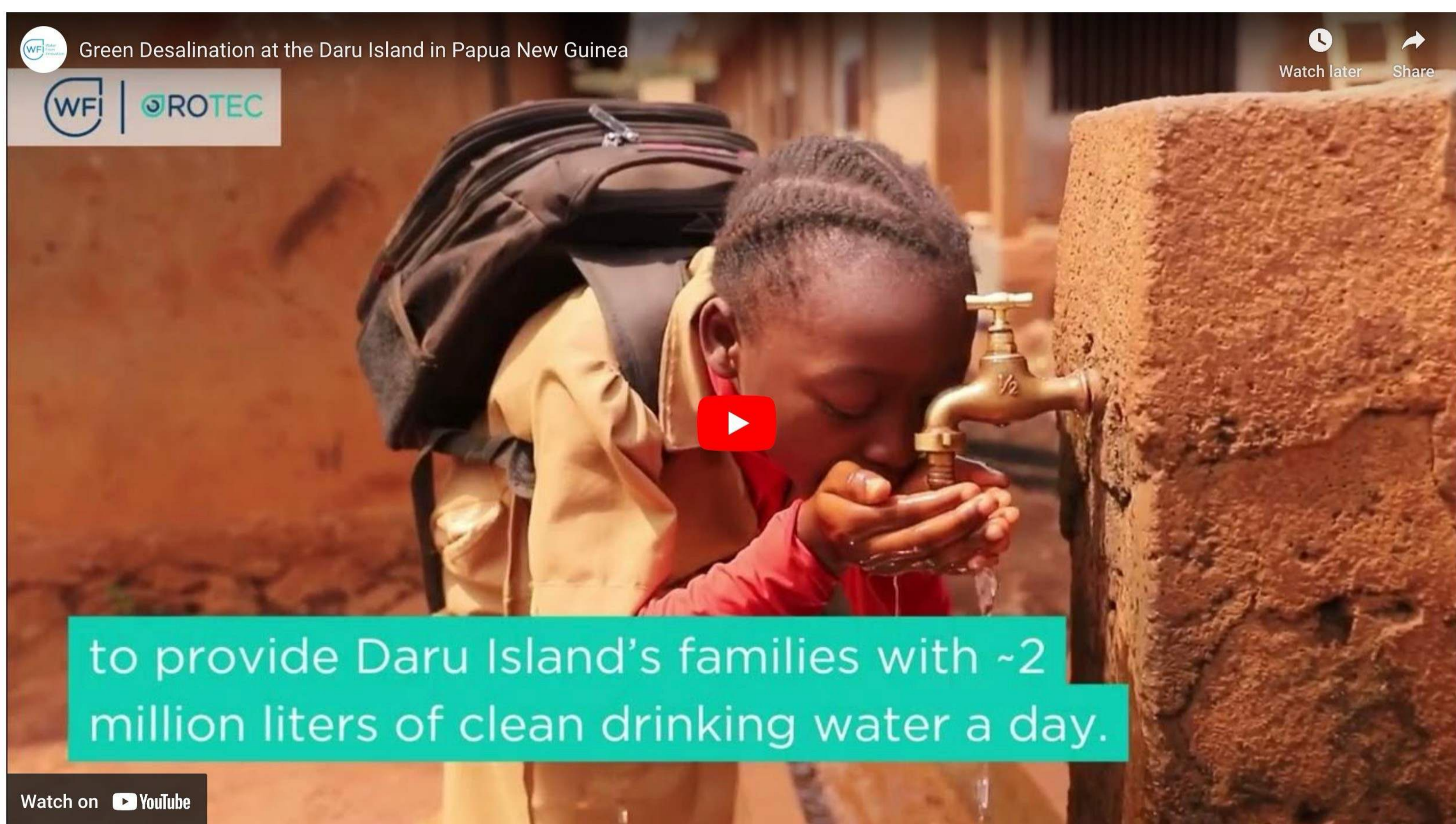
Lacking water independence and facing potential fuel shortages and other logistic challenges, the island needed a solution to provide a reliable clean water supply for its communities and agricultural development.

THE PROCESS

The process includes several major steps:

1. Pre-treatment using a dual-media sand filter
2. Blending the feedwater with the permeate, dramatically reducing chemical consumption while enhancing water stability
3. Reverse Osmosis using ROTEC's FR-RO technology
4. Post-treatment for potable-level water

The plant treats brackish water from boreholes that did not meet WHO regulations. Low-quality groundwater with high salinity is handled by the FR-RO process, providing self-cleaning while maintaining stability. By using our leading-edge technology, the Daru project delivers high-water recovery rates of 80-90% while using near-zero chemicals in the process, all while maintaining high performance and at the same time minimizing impact on the marine environment.



A LANDMARK IN GREEN & ECONOMICAL DESALINATION

The 1920 m³/day turnkey water treatment plant was commissioned in a record two months, despite facing challenging logistics, including delivering materials and equipment to a remote Island. It provides Daru's inhabitants with nearly two million liters of high-quality drinking water per day.

Water supply was also required for the Fly Agro-Industrial Centre, established by PNGSDP and IAI. The center includes a modern vanilla farm and aqua-culture, creating jobs and revenue-generating opportunities for the local communities.

By linking to a neighboring solar array and utilizing the cutting-edge Flow Reversal Reverse Osmosis (FR-RO) technology, the plant eliminates high diesel fuel costs and reduces the carbon footprint associated with water production. Thus, Daru is a groundbreaking project that demonstrates the power of green desalination.

Daru Island thrives with high-quality water along with improved health, sustainability and economic freedom – overcoming water scarcity and empowering the community.

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ROTEC provides holistic, modular reverse osmosis desalination solutions and services. With our eco-friendly approach based on our FR-RO technology, we enhance water recovery, efficiency, and reliability, supporting healthy communities.

Keep in touch

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