

## Introduction

Freshwater is one of Earth's most precious resources and is now increasing in scarcity which threatens economic growth, social/political stability, and the welfare of life, especially in underdeveloped countries. This ENPRO focuses on developing a business solution—a nonprofit that delivers water by small scale desalination that can be a solution to this growing global crisis. The desalination units designed are viable, cost-effective, and sustainable systems that will operate off-grid and meet the needs of communities in underdeveloped nations.

## Desired Impacts

The ultimate goals of this ENPRO would be to:

- Improve the quality of life.
- Encourage economic growth
- Ensure social and political stability in the region.

## Background Research

- Global demand for water is increasing.
- Supply is decreasing from factors other than consumption.
- Spurred by increasing world population, urbanization, and the emergence of new middle class in developing world.
- Increased global temperatures are making mountain snow and glaciers melt faster than can be replenished.



- Climate change has shifted rain patterns throughout Central America, Africa, India, and most of Asia.
- India is having their worst drought in 40 years—China is have their worst in over a century.
- Agricultural and industrial runoff is contaminating lakes and rivers.
- The people most affected by all these conditions are those living in the underdeveloped nations.
- These people are the focus of this ENPRO.

## Solution

ENPRO 354's business solution to address the world's water crisis is the creation of a NPO that we've named *FreshSea* that would provide water by small-scale desalination.

The desalination unit we would utilize would implement reverse osmosis. Rather than invent a new innovative approach to desalination we would use an already existing reliable technology on the market. This would reduce costs while eliminating quality issues.

The unit would have an optimal output of 2,000 gallons a day—or 83 gallons an hour. It would be powered by wind, solar, or a combination of both.



RO unit

## Marketing

Unlike other NPOs or aid organizations, *FreshSea* would not create a humanitarian dependence. Rather than drilling wells for inland communities or handing out water bottles, we would target coastal communities and provide by desalination.

Barriers that we'd face would be the high capital costs of desalination and the relative inexperience of the team.

Key to the success of *FreshSea* would be the establishment of strategic partnerships with local governments and other NPOs who have an established presence in the region.

## Financing

As an NPO, *FreshSea* would raise revenues by seeking funding from outside organizations like foundations, trusts, corporations, and applying for grants.

Even minimally staffed, payroll would be the largest expense in the first fiscal year of operation. With a fundraising goal of \$250,000, *FreshSea* would have enough funds to build and field-test a prototype and cover all expenses.



## ENPRO 354

*Small Scale Desalination for  
Global Water Solutions*

### *Team Members:*

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