

INVENT

FOR THE PLANET

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NEED STATEMENTS

1

Bridging the Agricultural Water Crisis in Middle to Low-Income Countries

Middle to low-income countries face a critical water crisis, exacerbated by agriculture being the primary consumer of up to 90% of available fresh water. In stark contrast, the agricultural water use in high-income countries represents a significantly lower percentage of total water usage (as low as 41% of total usage). Bridging this disparity demands the identification and application of lessons and technologies from advanced nations. Develop a solution that adapts innovative and cost-effective approaches that prioritize water conservation and efficiency in agricultural practices.

2

Building Tomorrow: Innovating Housing Solutions for Growing Populations

With poverty housing areas doubling to a level approaching 25% of the world's population, a severe housing crisis looms. To combat this, innovative and cost-effective housing solutions that prioritize inhabitant preferences are crucial. Emerging construction techniques such as 3-D printed homes show promise but require further exploration. Additionally, sanitation and safe, clean water availability must be addressed. Sustainable water management concepts from developed countries must be identified and applied to address the challenges. Develop a solution that creates livable, sanitary housing alternatives for the rapidly-expanding slum populations.



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3

A Sustainable Approach to Clean Water in Papua New Guinea

Papua New Guinea faces severe challenges in accessing clean water and sanitation due to its geographic constraints. Despite existing government initiatives, the reliance on rainwater persists due to the scarcity of piped water systems. There is an urgent need for a cost-effective and user-friendly solution that empowers people in Papua New Guinea to access clean drinking water. Develop a sustainable solution that ensures equitable access to clean water and that leverages the region's resources while addressing the unique geographical and infrastructural limitations.

4

Preserving the Seas: Innovating to Reduce Bycatch and Safeguard Marine Life

While many fishing practices can be extremely adept at harvesting fish, they also often incidentally catch non-target species, known as Bycatch to devastating effects. Longline, Trawlers, Gillnets, Pots, and other large scale techniques over the past 20 years have killed 3 million sharks, 300,000 manatees, 160,000 albatross, 85,000 sea turtles and other species that have become functionally extinct in many areas. The loss of these species have resulted in far reaching environmental consequences including collapses of critical valuable fishers that local populations heavily rely on. Develop new and innovative solutions that can be deployed and adapted within the existing fishing practices to dramatically reduce Bycatch and restore the health and environmental viability of critical fisheries.



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5

Empowering Communities with Sustainable Energy Solutions

In the 21st century, nearly 700 million people globally lack access to lighting and electricity, with 80% residing in sub-Saharan Africa and similar challenges are faced by riverine populations in developing nations.

Access to lighting and electricity is essential for education, food preparation, and overall well-being, especially in remote areas lacking infrastructure.

There is a need for affordable solutions that bypass extensive electrical networks, particularly for underserved communities. Develop an adaptable, environmentally sustainable, and economically feasible solution to meet household and small community energy needs, benefiting those in disadvantaged conditions.



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