



## **PROPOSAL FOR THE SPIRAL WATER WHEEL PUMP**

### **Submitted by:**

Mat Water Solutions Company Ltd

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## **1. Executive Summary**

The Spiral Water Wheel Pump is an innovative, off-grid water pumping system designed to provide sustainable and affordable irrigation solutions for smallholder farmers and rural communities. Developed by Mat Water Solutions Company Ltd, this pump harnesses the kinetic energy of flowing water to deliver irrigation without relying on fuel or electricity. The technology has already been successfully implemented in multiple locations, including Muhondo Coffee Company in Rwanda, where it significantly improved irrigation efficiency and attracted further interest from potential clients.

## **2. Problem Statement**

Access to affordable and sustainable irrigation remains a major challenge for small-scale farmers in sub-Saharan Africa. Traditional irrigation methods rely on expensive fuel-driven pumps or manual labour, which are inefficient and unsustainable. Without a reliable irrigation solution, farmers struggle with seasonal water scarcity, leading to reduced agricultural productivity, food insecurity, and financial instability.

## **3. Innovation and Solution**

The Spiral Water Wheel Pump is a cost-effective, environmentally friendly, and easy-to-maintain solution that eliminates the need for external energy sources. It operates by utilizing the natural flow of water from streams, rivers, and canals to generate continuous pumping action. The pump is:

- Eco-friendly – Operates without fuel or electricity, reducing carbon emissions.

- Affordable – Provides a low-cost irrigation alternative compared to conventional pumps.
- Scalable – Can be customized to meet different irrigation needs, from small farms to large plantations.
- Durable and Low-Maintenance – Made from locally available materials with minimal maintenance costs.

## 4. Market Potential

The Spiral Water Wheel Pump has significant market potential in rural agricultural communities across Africa and beyond. It addresses the urgent need for sustainable irrigation, especially in regions facing climate change challenges and unreliable rainfall. The target market includes:

- Smallholder farmers
- Agricultural cooperatives
- Coffee and tea plantation owners
- Government and NGO-led agricultural programs
- International development agencies promoting sustainable agriculture

With successful deployments in Uganda, Rwanda, Kenya, Nigeria, South Africa, Congo, and Mozambique, the demand for this technology continues to grow.

## 5. Business Model

Mat Water Solutions Company Ltd employs a tiered pricing strategy to ensure affordability while maintaining profitability. The pump is available in different models:

- MAT 1 – UGX 1.5M
- MAT 2 – UGX 2.5M
- MAT 3 – UGX 3.5M
- MAT 4 – UGX 4.5M

Additionally, revenue is generated through installation services, maintenance contracts, and training programs for users.

## 6. Impact and Sustainability

The implementation of the Spiral Water Wheel Pump leads to:

- Increased agricultural productivity and food security
- Reduction in operational costs for farmers
- Creation of employment opportunities in local manufacturing and installation
- Promotion of climate-smart agriculture through energy-efficient water management

Mat Water Solutions aims to refine the pump to irrigate larger acreages (10+ acres) and integrate automation for enhanced efficiency.

## 7. Funding Requirements and Utilization

To scale production and expand market reach, we seek funding of USD 100,000 to be allocated as follows:

- Product enhancement and R&D: 30%
- Manufacturing and scaling: 40%
- Marketing and distribution: 20%
- Operational support: 10%

## 8. Conclusion and Call to Action

The Spiral Water Wheel Pump is a transformative solution for sustainable irrigation in Africa and beyond. We invite investors, development partners, and stakeholders to support this innovation in addressing water scarcity and improving agricultural productivity. Together, we can revolutionize irrigation and empower communities with affordable water access solutions.

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