

# Innovating towards economic impact

Safeguarding global water resources and improving the way water is used is a powerful economic tool.

There is great value in managing water effectively so that it is inclusive to all. Providing water and sanitation services to a community can be a profitable business model, which not only serves the community, but also provides employment and economic development.

VIA Water supports a diverse range of innovations that tackle global water challenges in cities of Benin, Ethiopia, Ghana, Kenya, Mali, Mozambique, Rwanda and Senegal.

These innovative solutions stimulate the economy in multiple ways. They create alternative circular economic opportunities through the reuse of waste, drive economic growth through new ICT-driven solutions and/or bring new or adapted products to the market.

These innovations focus especially on creating new economic opportunities for low-income communities and the inclusion of women and youth.

Many innovations provide not one, but multiple economic growth solutions with the potential to add economic value and impact to the communities they serve. They foster strong partnerships and create new markets.

Here we show examples of VIA Water supported innovations that are helping economies grow.

## Innovations that are economic drivers:

Overview of projects here: <http://bit.ly/VIAWaterimpact>



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Innovations using recycled or biowaste materials



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Innovations piloting ICT solutions



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Innovations creating or adapting a new product/service



The *Impact Series* showcases examples of VIA Water-supported innovations that are making an impact in different key areas and to share emerging lessons from these.

## Meet our innovators

More project updates can be found at [www.viawater.nl/projects](http://www.viawater.nl/projects)

### Soil-less farming in small urban spaces (hydroponics)



**Country:** Kenya

**Innovator:** Hydroponics Kenya

**Partner:** Africa Funded

**Economic driver:**

- Creating or adapting a product/service

**Website:**

<https://hydroponicskenya.com/>

#### Problem

Producing sufficient food to meet the demand of a growing urban population is a continuous challenge, especially when faced with water scarcity.

#### Innovation

To help low-income farming communities in Kenya make optimal use of small urban spaces to grow crops without soil and using less water, this innovation is pioneering the manufacture and installation of simple hydroponic systems. Crops are grown vertically or horizontally in simple hydroponics kits made from local materials and using a nutrient water solution.

Farmers receive regular technical and marketing support to help connect their harvest to local markets. They pay back the cost of their hydroponics kit in monthly installments using a

portion of their harvest sales. The innovation is targeted mainly at women based in urban areas providing them with an essential means of income and new skills.

#### Lessons learned

Targeted mainly at families, women and disabled user groups, this innovation provides a new economic opportunity that tackles urban food and water challenges. An additional range of hydroponics kit designs was introduced to make the hydroponics kits more accessible and affordable to the needs of local users.

#### Key results

- During this project, **45 hydroponics kits** were installed for farming families to grow their own produce
- These farming families were able to grow a total of **22,000kg of vegetables** whilst saving the equivalent of **737,000 litres of water a year**
- Around **21,000 litres of water** is saved annually using the vertical hydroponics kits compared to traditional irrigation

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### Smart solutions to help communities access safe water



**Country:** Kenya

**Innovator:** MobiTech Water Solutions

**Partner:** Upande Limited

**Economic drivers:**

- ICT solution
- Creating or adapting a product/service

**Website:**

<https://www.mobewater.co.ke/>

#### Problem

In the informal settlement of Kibera in Kenya, over 95% of the population depend on unreliable communal water points as their main source of water. With little to no data on water distribution for this community, local water point operators struggle on a daily basis to provide water consistently throughout the week.

#### Innovation

MobiTech Water Solutions has developed a low-cost water monitoring system to help water point operators keep track of the levels of water within their storage tanks.

This ICT-based innovation uses sensor technology to collect information from water points straight to operator's mobile phones. This allows operators to monitor in real-time the status of their water storage tanks and when

water levels in their storage tanks fall below a certain threshold.

This innovation has changed the way that water is managed by operators and has reduced the number of days that these water points are inactive. This means that less time is wasted by women and children who collect water each day.

#### Lessons learned

Scaling this ICT-based solution in an informal settlement has been achievable by working closely with the local community. Different repayment models and hardware design changes have been tried and tested to keep this innovative solution affordable and inclusive to the needs of the local community.

#### Key results

- **29 water vendors** currently use the monitoring sensors in Kibera
- **30% increase** in water consistency has been reported for some water points
- Most water vendors are paying **\$10 per month** to repay the full cost of the system
- This innovation is aiming to reach a larger number of water vendors in Kibera and similar urban settlements in the future

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### Eco-roof tiles from recycled plastics and glass waste



**Country:** Kenya

**Innovator:** TRACE Ecotiles

**Partners:** Tereco Ltd RSA, WASTE

**Economic driver:**

- Using recycled or bio-waste material
- Creating or adapting a product/service

**Website:**

<http://ecoblocksandtiles.co.ke/>

#### Problem

Globally, cities are under pressure to manage the increasing levels of plastic waste produced by a growing urban population. More than 60% of plastic waste is not collected from the town of Gilgil in Kenya, causing severe blockages to urban drainage systems and polluting natural water resources.

#### Innovation

A social enterprise in Gilgil, TRACE, is addressing this problem. With VIA Water support, TRACE created the company Ecotiles Ltd that transforms collected plastic and glass waste into durable, certified eco-tiles. They are sold at a competitive price and are of better quality compared to ceramic tiles. Approximately 2000 eco-tiles are

required for a house, which is the equivalent of 1500 kg of plastic waste removed.

TRACE is especially focused on creating employment opportunities for young people and low-income members of the community at each stage of the process: from collection and transport of the plastic and glass waste to processing, manufacturing, sales and roofing.

#### Lessons learned

By working closely with their potential clients and engaging the community from the very beginning, this innovation has created circular economy opportunities to meet the demands and needs of their end-users.

#### Key results

- **13,000 eco-tiles** were sold in 2018
- Refurbishing **1 house** with eco-tiles creates wages for **50 plastic waste pickers in one day**
- A network of **11 community-based youth and women organizations** have been established to collect and shred the plastic waste from **~500 waste pickers**
- **18 young people** from the local community have been trained with new eco-tile production

#### About VIA Water:

VIA Water supports projects with innovative solutions for water problems facing cities in eight African countries. Through the programme, these solutions can be brought to life: with financial support, but also with the help of the (online) learning community. At the moment, VIA Water has a full portfolio: over 60 projects are being implemented in Mali, Benin, Ghana, Rwanda, Kenya, Ethiopia, Senegal and Mozambique.

VIA Water is executed by Aqua for All and funded by the Dutch Ministry of Foreign Affairs.

[www.viawater.nl](http://www.viawater.nl) | [info@viawater.nl](mailto:info@viawater.nl)