



# SMART VILLAGES

New thinking for off-grid communities worldwide

## Innovative Access To Healthcare In Remote Communities

In Proud Partnership with

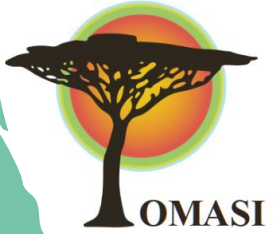




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## The Rural Healthcare Challenge



Patients often resort to traditional medicines and **wait** until their health has severely deteriorated before journeying to their nearest health centre.

By this time it can be **too late**.

## Our Solution

How we're **revolutionising** rural healthcare

-  Patient visits local telehealth centre with basic equipment, and has vitals taken
-  Consultation with doctor in main village is done remotely via video conference
-  Doctor advises patient and sends medication as required
-  Medicine is delivered from main village in batches, reducing transport costs
-  Long journey to doctor only required in emergencies and for specialized tests

## The Benefits

-  **Reduced patient cost, time and effort** to access to doctor, leading to **improved uptake**
-  **Fraction of cost to health authorities** when compared with building a new local clinic
-  **Improved health** in remote communities, reducing burden on existing hospitals and cost to healthcare system
-  **Increased time efficiency** of doctors consulting virtually
-  **Improved awareness** of health in remote communities for health authorities
-  **Improved ability** to contact patients in remote communities for doctors



## Achievements

-  Extensive **Community Engagement** to verify **Healthcare Needs and Priorities**
  - 11 research activity types in 4 rural communities with 200+ participants
  - Support from rural and city Tanzanian public doctors, International Health NGO CACHA, and Tanzanian district health officials
-  Preliminary **Remote Consultations**:
  - Validated feasibility of treating patients over video conference by local doctor in 2 rural dispensaries
  - Positive feedback from trial patients and local doctor
-  **Four Remote Health Clinics** in two off-grid villages:
  - >50 patients, aged 1 to 78, treated via videoconference to nearest health centre
  - Patient vitals taken by trained operators prior to consultation
  - 65% of patients received medication, delivered in batches via motorbike, reducing costs
  - 23% of patients required a follow-up in-person appointment, knowing the journey was necessary
  - 100% of patients saved time and money on transport, and said they would be happy to pay for a remote consultation service in future.

**Patient and doctor feedback was overwhelmingly positive.  
All requested the service be made more widely available and permanent.**



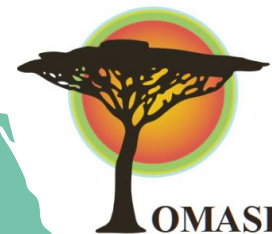




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## Where next?

On the path to **large scale adoption**

There is an urgent need for a remote healthcare system with widespread adoption.

To build a strong evidence base supporting our approach, we are planning long-term trials in multiple off-grid communities:

- Understand effect on demand for existing healthcare system
- Validate improved health quality in target communities
- Develop qualification for remote clinic operators and train local operators
- Develop financial model to present to health authorities for large-scale roll-out
- Refine software used, for video conferencing, patient data transfer, and medicine supply tracking
- Trial alternate technologies for 'offline' communities without internet or signal
- Partner with additional private/public local doctors/nurses, health NGOs, and health authorities

We are working with local partners OMASI in Northern Tanzania, to validate this approach through longer term trials, and to develop a business model to make large scale adoption more sustainable in remote communities across Sub-Saharan Africa.



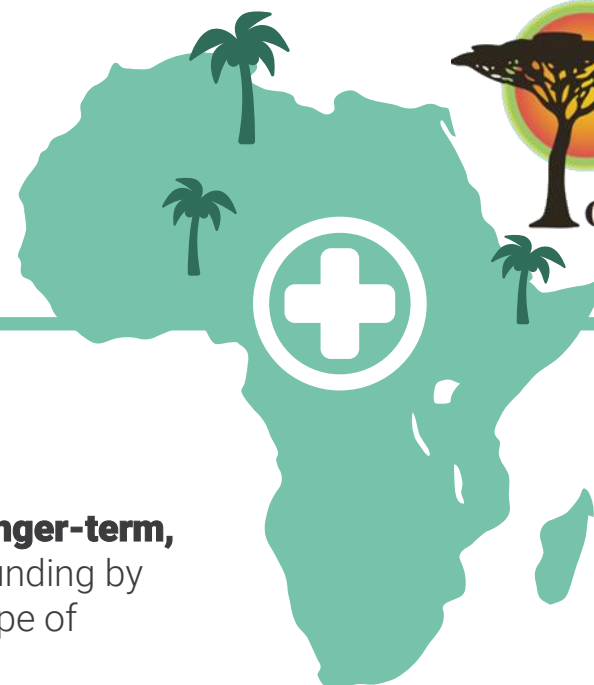




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## The Funding shortfall

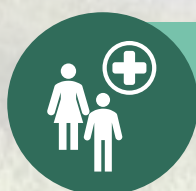
We need additional funding for the next stages of **validation and longer-term, larger-scale testing**. This would previously have been eligible for funding by Innovate UK, but recent UK ODA funding cuts have removed any hope of government funding.

To build a solid evidence base for our solution, we would like to carry out **3 long term remote health trials**, each in a different remote village, working with different rural doctors, and in partnership with the district health authorities. We also plan to begin tests in remote communities in Uganda, demonstrating the potential for horizontal scaling.

The estimated cost to Smart Villages and its partners, of planning, implementing and analysing these remote health trials, is **£370,000**

We need to find funding to cover these costs before we can continue to research and implement our healthcare innovation.

## Help us deliver widespread healthcare



**£30**

Pays the fees for 2 telehealth operators for 1 week



**£50**

Pays for the doctor's fees for 1 day of a health trial



**£70**

Pays for the health and first aid training of one local telehealth center operator



**£150**

Pays for a tent, chairs and tables for a telehealth center



**£230**

Pays for the basic medical equipment and conferencing device needed at one telehealth center



**£1000**

Pays for the provision of internet for 1 year in a community with no phone signal



**£5000**

Pays for the development of telehealth software to securely record patient data prior to consultation, and track medication



**£10000**

Total cost (minus Smart Villages labour and data analysis) for 1 month of remote health clinics





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## Introducing Kiruru Village

**Population:** 1000-1500 (240 households)

**Distance to nearest health facility:**

15 km, 1.5 hours via motorbike

**Communal facilities:** Church, Shop,  
Central 'meeting tree', Pre-primary school

**Challenges:** No phone signal,  
No primary or secondary school,  
Almost inaccessible by road in rainy season



## Help us bring healthcare to Kiruru

Kiruru is a small, marginalised community made up of multiple Maasai bomas spread over 15 square kilometres. In May 2021, Smart Villages installed a solar array in the village centre, **providing electricity** to the church, pre-primary school and encouraging the growth of central businesses. Despite this development, the **nearest health facility is still over an hour away**.

Recent funding cuts to UK overseas development aid have made finding funding for continued development of our remote healthcare system extremely challenging. **Help us fund** the next phase of remote healthcare trials in Kiruru village, bringing large scale adoption of our remote health innovation one step closer to reality.





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## The Rural Development Global Challenge



**770 MILLION**  
People lack  
access to  
electricity



**663 MILLION**  
People lack  
access to safe  
water



**3 BILLION**  
People lack safe,  
'clean' cooking  
facilities without  
polluting fuels

Smart cities are on everyone's lips, but this sole focus on cities is also worrying.

**Half the world's population do not live in cities**, and that includes **more than 70% of the world's poor**.

**We believe people in remote villages in the developing world  
deserve the same opportunities as everyone else.**

## Our **Innovative** Approach

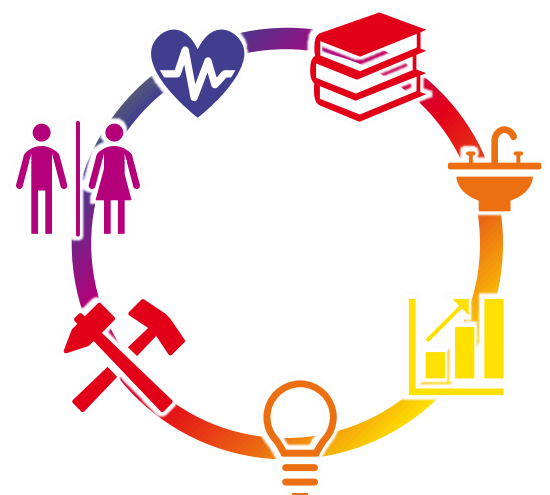
Developed from a 7-year long grassroots research program, to understand why development projects fail

1. Working Across the Sustainable Development Goals

2. Focusing on Community Needs and Priorities

3. Using Energy as a Catalyst

4. For Sustainable, Lasting Impact



Whilst the traditional approach focuses on a single technology or development goal, our **holistic model** maximises impact at little extra cost, developing systems for, and with, target communities, for lasting benefit. Through energy access and a carefully selected suite of complementary technologies, our 'Smart Villages' enable provision of good **education** and **healthcare**, access to **clean water**, **sanitation** and **nutrition**, the growth of productive **enterprises** to boost incomes, and enhanced **security**, **gender equality** and **democratic engagement**.



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**10 Projects**

**5 Countries**

**12 International Partners**

**1 Vision**

Innovate Access to Healthcare in Remote Communities

Developing Low Cost, Locally Appropriate Cold Storage Solutions for Rural Uganda

Innovating Farmers' Enterprise Centres for Wealth Generation and Energy Access in Rural Communities

Second-life battery solar system for rural schools in East Africa

Smart Sustainable PV Minigrids as an Alternative to Grid Extension in Lesotho

Sustainable Offgrid Education Technology in Rural Schools

Developing Interactive Community Energy Modelling Toolkits in Somaliland

Innovative Community Energy Monitoring, Control and Reporting Technology

Foster Community Environmental Stewardship by Removal and Recycling Plastic Waste from Rivers in Kenya

Smart Integrated Energy in Northern Community Tanzania

Our current projects, coupled with **rigorous monitoring** and **evaluation**, aim to **validate the Smart Villages Approach** to universal energy access and rural development, whilst **developing** and **testing innovative technologies** to deliver these integrated development objectives.

## Help us make a **lasting impact**

As an R&D and innovation-led, impact-oriented SME, we rely on external funding to make our projects possible, though often this funding does not cover 100% of costs for us and our partners. Recent cuts to the UK Overseas Development Aid budget have also severely impacted several of our projects.

Without additional funding we will be **unable to achieve all our initial project objectives**, and in turn, inevitably **disappoint the communities** with whom we have been working over the past year.

**We need your help to fill this funding gap.**