Annual report 2016

We proudly present the 2016 annual overview in which we display a few of the many highlights of our work. Through the projects with our partners, we continued to give people acces to safe drinking water, decent sanitation services and renewable energy sources for irrigation. We supported small local companies to build a viable business around these services. In addition, we have been able to use part of our financial reserves for research on new innovations for the sector and the development of new concepts, which will be deployed in 2017. Altogether a great achievement of our dedicated team of experts and as a result we look back at yet another successful year.

Robert Vuik , Director Operations
Jan Nederstigt, General Director

Locally produced rope pump in use in Nepal

PRACTICA FOUNDATION

AT A GLANCE

In developing countries, the need for clean drinking water, food, sanitation facilities and energy will continue to grow the coming years. Our vision is that the private sector in these fragile economies will play an increasingly important role to cater for this need; we work on knowledge transfer of existing low cost technologies and development and dissemination of new technologies by partnering with the local private sector. This will contribute to global and inclusive access to water, sanitation and energy.

Our mission statement: Seeding practical and affordable technologies for socio-economic change; By continued innovation and dissemination of technologies through adequate business models we trigger socio-economic change as well as sustainable services.

On operational level, PRACTICA acts as a non-profit consultancy organization: We partner with international and local organizations and support those organizations to implement technical innovations within their programs. We charge a consultancy fee for those services based on a cost-recovery basis. We invest in applied research and product development to ensure continued innovation in the sector.

Manual well drilling at a school in Liberia

Rural water supply

Pre-payment technology for water f rom handpumps; a pilot in Rwenzori, Uganda

In October 2016, two pre-payment systems have been installed on handpumps in Rwenzori, Western Uganda, as part of a pilot project together with our partners JESE and HEWASA. These innovative systems formalize small payments for the collection of water from the handpumps, solving critical bottlenecks associated with community based handpump management. Money generated from the sales of water will be used for maintenance and repairs of the pumps and scaling up these initiatives, providing sustainable solutions for safe rural water supply and opening up market opportunities for local water entrepreneurs.

Diana, Wash Officer of JESE: ' The prepaid water system is so interesting especially for the communities. They don't have to wait till the end of the month to pay the water fees or they don't have to wait for the pump to break down. So with this we already have money in the treasury bank to do operational maintenance of a pump. This is a system that we hope in the future to scale up to other places where communities are faced with issues of sustainability of their water systems.'

Vincent, WASH engineer of HEWASA (picture): 'These technologies coming here through PRACTICA have been very helpfull. (…) We now have a range of technologies to help the people of this region'

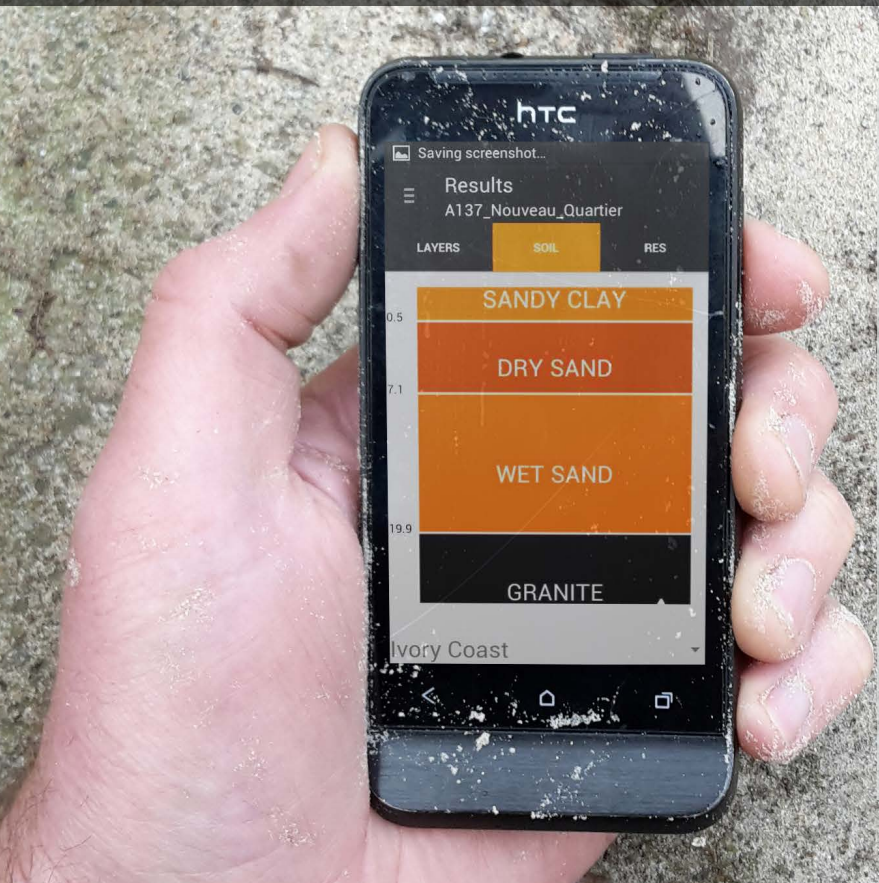
GROUNDWATER DEVELOPMENT

Bedrock - innovative low-cost well siting kit

A smartphone-based geophysical sounding kit to select the best location to drill for water

Manual well drilling has enabled hundreds of African enterprises to drill high quality drinking water wells for a fraction of the conventional borehole cost. Though successful in alluvial plains, failure rates are high in areas with shallow bedrock layers. Geophysical instruments to locate such layers are available but the cost and required skills are too high to make this accessible for local enterprises. To increase the scope for manual drilling in geologically challenging zones and reduce the associated financial risk for local drilling enterprises, an innovative and affordable well siting kit has been developed. It is called Bedrock.

Test soundings have been done in 8 villages in Ivory Coast to compare the Bedrock kit with a conventional resistivity meter (Syscal). The data from the Bedrock kit proved to be very reliable. The test soundings preceded a campaign of 100 soundings using the Bedrock kit to select the most feasible locations for boreholes under the UNICEF manual drilling programme in Ivory Coast. The Bedrock kit uses a Vertical Electrical Sounding (VES) principle to assess soil resistivity at various depths and generate a corresponding soil profile. The hardware is based on a design by Clark and Page (2011) and further developed by PRACTICA. Field experiments in 4 countries were used to improve the design and operation and solve technical problems. An open-source Android application facilitates collection, interpretation and storage of the data. The visual output is presented as a profile of different soil layers, which forms the basis for evaluation of suitable drilling sites. Field data including GPS location can be uploaded to a central database, adding to local knowledge of geology and hydrology.



The Bedrock kit consists of a small control box, which is currently produced by PRACTICA for less than €100. The kit needs to be completed with other parts including an invertor, multimeters, copper wire, a 12V car battery and a basic Android smartphone, which can be shipped with the kit or sourced locally. The total cost of the kit comes down to €600 - €800, which is significantly less than the conventional VES equipment, selling for over €10.000.

SMALLHOLDER FARMER IRRIGATION

Jackline Muturi
technical expert SWA project

The Smart Water for Agriculture (SWA) project is a 4-year project funded by the Embassy of the Kingdom of the Netherlands. We implement the project with lead partner SNV in consortium with MetaMeta, KIT and Aqua for All. The project responds to the need to be smarter with available water, the increased uncertainties farmers have to face because of climate change, while also contributing to further economic development in the agricultural sector. The project will promote market-based solutions appropriately adapted to meet the needs and opportunities of small and medium-sized entrepreneurial (SME) farmers in five focus counties in Kenya.

Our role in the project is to facilitate the improved use and access to smart water solutions by the targeted 20,000 SME farmers. In consultation with the farmers and private sector, we identify and facilitate promotion of 'Smart Irrigation technologies'. These are technologies that are water saving, labour saving, culturally and socially acceptable and fit to the local communities in the focus areas. This will be achieved through linking existing and upcoming suppliers of suitable irrigation technologies to farmers and support the suppliers in setting up pilots and demonstration sites.

SANITATION; FAECAL SLUDGE MANAGEMENT

It is estimated that between 2,1 - 2,6 billion people in low- and middle-income countries rely on on-site technologies that produce tons of untreated sludge every day. When septic tanks and pit latrines become full, the sludge that is collected from them is largely discharged without treatment into open drains, irrigation fields, open lands or surface water.

A 5m^3 truck load of faecal sludge dumped into the environment is the equivalent of 5.000 people practicing open defecation. Since 2009, we suport African municipalities in the design and set-up of full chain on-site sanitation services.

FSM application for smartphones

It is essential for faecal sludge removal workers to efficiently master each phase of this process. The same applies to the authorities in charge of structuring and regulating the FSM sector.

We develop applications for faecal sludge removal workers, sludge recycling unit operators, authorities and their partners that enable them to control the business of FSM systems over time. The developed tools are tailor-made to the specific local needs. The developed applications allow for:

- GPS tracking of vacuum vehicles
- Automatic generation of dashboards that inform the technical and commercial management of faecal sludge removal and recycling services
- Automatic generation of reports compiling technical and financial result indicators of the overall FSM system.

2016 BY THE NUMBERS

Annual financial report

In the current projects and partnerships, we have the role of technical support partner. We are being paid for our services on a project and contract basis, which is our single source of income. Project incomes cover the costs of operation, including our overhead.

PRACTICA foundation is registered as a non-profit organization; where possible a modest margin is included in the individual projects to be able to either cross-subsidize other projects or to invest in strategic projects and concepts.

As a project organization, our incomes and expenditures are registered under the different projects with manpower being the main component of the costs.

Our 2016 annual financial statement is as follows:

	EUR
Revenues	815 206
Project costs	-365 467
	449 739
Personnel costs	382 959
Depreciation	8 464
Other operational expenses	121 800
Total expenses	**513 223**
Operating result	-63 484
Finance result	187
Surplus for the year	**-63 297**

The surplus for the year 2016 is added to the following reserves:

Continuity reserve	19 175
Restricted reserves	-91 713
Other reserves	9 241
	-63 297

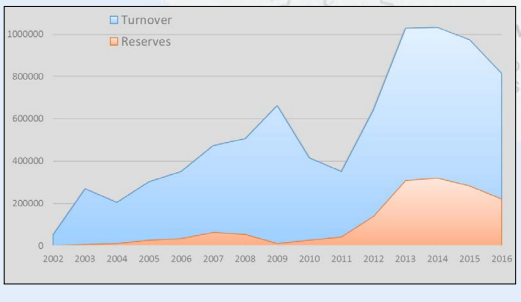
Some key figures:

33 projects in a total of **17** countries

with our dedicated team of **22** experts from **6** different countries

Working together with over **100** international and local partner organizations, from civil society, government and private sector

Internally, we worked on **4** concept development trajectories in which we invested **€79.983** of our financial reserves, resulting in the development of new product and services for sustainable rural water supply, small scale commercially viable urban faecal sludge management services and smart use of solar powered irrigation for smallholder farmers.



Our reserves:

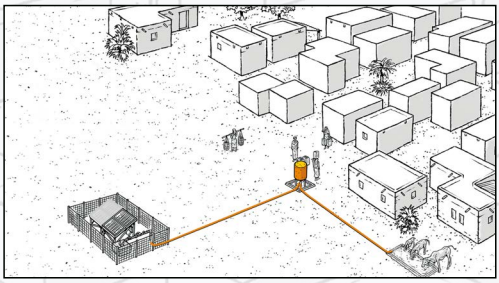
Our continuity reserve is increased annually to cover a total of up to 50% of the annual operational costs. The restricted reserves are used for cross-subsidizing projects, concept development and investments in workshop and office facilities in Madagascar and the Netherlands. In 2016, restricted reserves have been reduced due to investments in the development of new concepts and products.

LOOKING AHEAD

The focus of the coming year is to strengthen the existing technological base and bring the innovations from pilot stage to real use; we will seek partnerships to for scaling the innovative concepts. Three focal areas are:

Affordability and functionality in rural water supply programs

Sustained functionality of rural water supply systems is still a major challenge. We have developed concepts like Scalable Small Piped Systems and Pre-payment enabled handpumps that combine high customer service levels with financially viable management models. This reduces the donor-dependency for exploitation and scaling rural water supply.



Innovative smallholder irrigation packages

To allow smallholder farmers to produce in an environmentally responsible manner, we believe in a shift to solar powered irrigation combined with efficient use of the water. This requires a technology package that is currently not available at affordable price levels. We will focus on getting our innovative technologies to farmers through existing channels.

Urban and peri-urban faecal sludge management chains

With a range of faecal sludge removal, transportation and management technologies developed and piloted in Madagascar, we will use these experiences to work with partners in other countries to improve the FSM chains and make the conversion form a costly process for municipalities towards a viable business for small local enterprises.

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