

# Annual report 2017

With this 2017 annual overview we want to present some insights in how our work impacts the lives of people who lack reliable access to safe drinking water or decent sanitation facilities. And how a market-push for solar-based irrigation can transform subsistence farmers into small commercial producers in a sustainable way.

With our partners, we supported, trained and built local viable businesses that provide services that match with local demand. We continued to work on product development, but at the same time dedicated more resources to the development of business tools including smartphone based applications. All with the aim to diversify and improve the services provided by the enterprises while reducing cost; Keystones for a successful private sector approach.

In this challenging sector, our practical and pragmatic approach has again proven to be of great value.

**Robert Vuik** , Director Operations

**Jan Nederstigt**, General Director




Local production of solar  
irrigation pumps in  
Burkina Faso

# PRACTICA

**FOUNDATION**

# AT A GLANCE

A photograph showing a woman and two children sitting in a refugee shelter at night. The shelter's interior is dimly lit, with a single solar light fixture hanging from the ceiling, casting a warm glow. The woman is wearing a striped headscarf and a red and white striped shirt. The children are wearing blue and green clothing. The background shows the thatched roof of the shelter.

Our vision is that the private sector in fragile and upcoming economies will play an increasingly important role in providing and accelerating access to clean drinking water, safe sanitation facilities and sustainable solar powered irrigation facilities. We work on knowledge transfer and dissemination of existing low cost technologies to support this private sector so they can provide relevant sustainable services and products. And, if necessary, we develop new technologies when the existing solutions do not meet the demand. With this approach, we contribute to reaching the UN Sustainable Development Goals, as set out in the 2030 Agenda for Sustainable Development.

On operational level, PRACTICA acts as a non-profit consultancy organization: We work with international and local public and private organizations to implement technical innovations in 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.

*“We collaborated with PRACTICA to develop an innovative solar light device for refugee shelters, offering at the same time the option of cellphone charging, ensuring communication after disaster.*

*After having realized the design iterations with NRS Relief, the product has been jointly tested under real conditions in Senegal along the Mauritanian border. The beneficiary satisfactory survey confirmed the adequacy of the proposed solution.*

*Having a strong relationship with a partner as PRACTICA has proven to be successful in developing new products; It liaises different approaches and methodologies of works combining practices, expertise and skills which are the bases of good concept incubation.”*

**Vincent Virgo**, Research officer IFRC – Shelter Research Unit

**The Solar Shelter Kit tested under real conditions in a refugee camp in Senegal.**

# GROUNDWATER DEVELOPMENT



Piloting saline groundwater detection using VES in Baga Sola, Lake Chad region

## Digital tools for data management

The demand for groundwater to meet drinking water and irrigation needs will increase in the coming decades and the sustainable development and management of groundwater resources will be key to ensure the success of such projects.

Practitioners and decision makers developing and managing groundwater resources rely on accessing good quality data in order to plan drilling works and develop models to calculate groundwater availability. In countries where we work, reliable groundwater data is not always available and strategies and solutions to capture, store and share data of existing and new water points are often not in place.

The rapid advance in database and mobile phone application technologies has created new opportunities for collecting and storing data; We are developing a set of digital tools to lay the foundation for professionalization of groundwater data management. The set of tools includes a geo-hydrological database with data that is generated with smartphone apps used by drillers and quality controllers. In 2017 we made a start with the development of apps for digital drill logs, well siting data for resistivity soundings, groundwater level monitoring and well reporting.

*"The WASH sector in Liberia is negatively impacted by inefficient data and information management systems. This makes planning, tackling gaps in provision, and prioritization for interventions difficult. There is enormous potential to radically improve this through supporting both implementers and planners to adopt digital data technology. PRACTICA has worked in a very inclusive manner with ZOA, the government, Unicef and the local partners to support groundwater development in Liberia."*

**Chris MacLulich**, Country Director ZOA Liberia

# FARMER-LED IRRIGATION

## Solar irrigation technologies made useful; Re-inventing water application

Small-scale irrigation is essential to increase local food security and adapt farming systems to the growing consequences of climate change. Irrigation development is frequently hampered due to a lack of knowledge, accessible technologies and appropriate business models. We break the status quo through supporting farmer-led irrigation. Innovative solutions are identified, developed and introduced in collaboration with farmer associations and local enterprises.

We continue the development of smallholder farmer solar irrigation technologies as solar is becoming more and more interesting since PV panels are increasingly common and prices continue to drop. With for example fuel cost for irrigation accounting for 40-60 % of the total production costs for farmers in the Sahel region, solar pumps offer an alternative that can increase the profitability of horticultural production systems and bring about new opportunities for local technology suppliers.

Solar irrigation however needs to be accompanied by a change in irrigation practices and investment patterns. One of our new innovation areas is the development of alternative water application methods that match with the specific pressure and flow patterns of small solar powered pumpsets; In 2017 we started an extensive field trial with low-cost low-pressure 100 m<sup>2</sup> micro centre pivot systems with high water application uniformity.



Micro pivot system  
piloted in Kenya

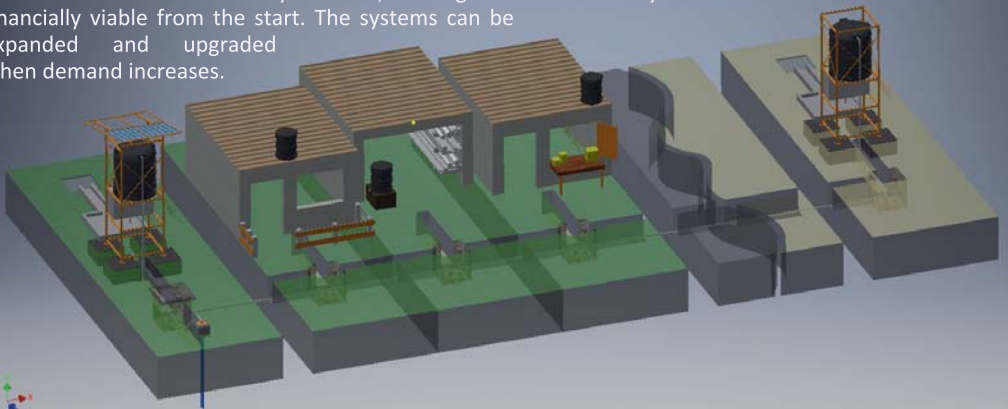
# RURAL WATER SUPPLY



**Safe water access** should last longer than the technical lifespan of the hardware used. However, cost recovery of rural water services is often ignored, resulting into early breakdown and deteriorated service levels. For realising a sustainable operation, it is essential that recurrent costs are recovered and well managed. We develop alternative management models and technical innovations for rural water supply. Focus is on minimizing operational expenditures while at the same time ensuring a revenue stream to cover recurrent cost of water points. Pre-payment technology is instrumental for allowing 24/7 water access, collecting user fees and tracking water use and system functionality.

The combination of low expenses and ensured income provide an opportunity for entrepreneurs to run multiple water points based on a healthy business case. Small piped systems with tap stands and handpumps can be combined, both equipped with the same pre-payment technology. By doing so, the maintenance and replacements of water points can be transferred from informal user associations to professionalized entrepreneurs. Thereby increasing the reliability of the service while also providing an opportunity to accelerate the improvement of water service levels. .

**Modular building** of small piped schemes is an approach that we developed to overcome the problems that are inherent to the conventional piped water system designs; It avoids over-dimensioning using a realistic design horizon combined with realistic current consumption figures. Excessive investments and operational costs are thereby avoided, making these modular systems financially viable from the start. The systems can be expanded and upgraded when demand increases.



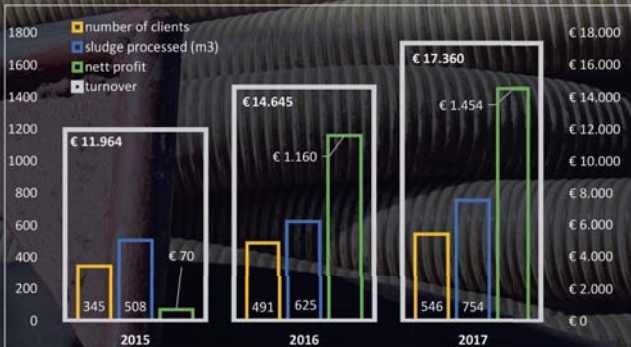
# SANITATION; FAECAL SLUDGE MANAGEMENT



This is one of the heroes of the latrine emptying business **Impact** in Toamasina (Tamatave), Madagascar. We established this social business together with our partner Protos and it has been in business as a social enterprise since 2015. We closely monitor the performance of the enterprise using data collection by a smartphone application that we developed. By analysing the data, we have been able to further support **Impact** to optimize management and the use of resources and support the enterprise to grow to a profitable business.

The concept of FSM business support and support tool package is now ready to be copied to other locations and other countries.

The results of **Impact** over the last 3 years.



# 2017 BY THE NUMBERS

## Annual financial report

We deploy our knowledge and expertise within a wide range of projects, in which we have the role of technical support partner. We work with many different international and local partners. All our projects are contract-based, which forms our major 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 projects to be able to either cross-subsidize other projects or to invest in research & development of innovative products and services. As a project organization, our incomes and expenditures are registered under the different projects with manpower being the main component of the costs.

Our annual financial statement is as follows:

EUR	2017	2016
Revenues	1 059 997	815 206
Project costs	<u>-550 391</u>	<u>-365 467</u>
	<b>509 606</b>	<b>449 739</b>
Personnel costs	423 654	382 959
Depreciation	7 083	8 464
Other operational expenses	<u>102 632</u>	<u>121 800</u>
<b>Total expenses</b>	<b>533 369</b>	<b>513 223</b>

Operating result	-23 763	-63 484
Finance result	<u>-8 390</u>	<u>187</u>
<b>Deficit for the year</b>	<b>-32 153</b>	<b>-63 297</b>

The deficit for the year is added to the following reserves:

Continuity reserve	23 742	19 175
Restricted reserves	0	-91 713
Other reserves	<u>-55 895</u>	<u>9 241</u>
	-32 153	-63 297

## Some key figures:

We worked on **43** unique projects within our four main themes



Working together with over **120** international and local partner organizations, from civil society, government and private sector

with our dedicated team of **24** experts from **6** different countries



## 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.



# LOOKING AHEAD

## 2018 strategic focus

Within the themes of PRACTICA several activities are planned to be rolled-out in 2018 to further position ourselves to fulfil a leading role in the sector of research, development and commercial application of innovative pro-poor technologies in developing countries:

## Affordability and functionality in rural water supply

Our aim is to further expand our services including advice on suitable management solutions, institutional and financial feasibility studies, technical field trainings and business trainings for the introduction of viable pre-payment enabled handpumps and modular small piped systems.



## Groundwater development

We see a growing need for improved groundwater data management. We will finalize and introduce a number of Android-based smartphone apps and a geo-hydro database that enables the capturing and sector utilization of valuable drilling, siting and groundwater monitoring data. All in close collaboration with other expert organizations.

## Urban and peri-urban faecal sludge management chains

With the growing number of newly established viable small FSM businesses, we will work on evaluation and analyses to be able to scale this concept. We will also invest in the development of add-on technologies that will further improve the efficiency of FSM businesses.



## Innovative smallholder irrigation packages

Within the rapidly expanding sector of Solar-Powered Irrigation, we see clear gaps in the availability of affordable and durable solutions for the deeper water tables and affordable high-flow pumps. Development of simple low-cost water application systems tailored for SPI will help to improve the business case.

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