

# WATER SHOP CONCEPT

A sustainable solution for scaling up of drinking water supply service provision to poor communities in remote areas.



## THE CONCEPT

# A SOCIALLY RESPONSIBLE, ENVIRONMENTALLY SOUND AND ECONOMICALLY PROFITABLE BUSINESS MODEL.

Today, more than 1.1 billion people worldwide do not have access to clean drinking water. Mainly poor people living in remote communities in developing countries suffer from contaminated water. In order to achieve the UN Millenium Development Goals for drinking water supply, large efforts and co-operations between government and non-government organisations are required to make progress in gaining access to a safe water source for residents in remote areas.

The Swiss company Trunz Water Systems has converted the vision of a self-sufficient water treatment system into practice. The compact and exceptionally energy efficient water treatment and desalination systems are powered by integrated photovoltaics and wind generators. This means that there are virtually no boundaries to using this system anywhere in the world.

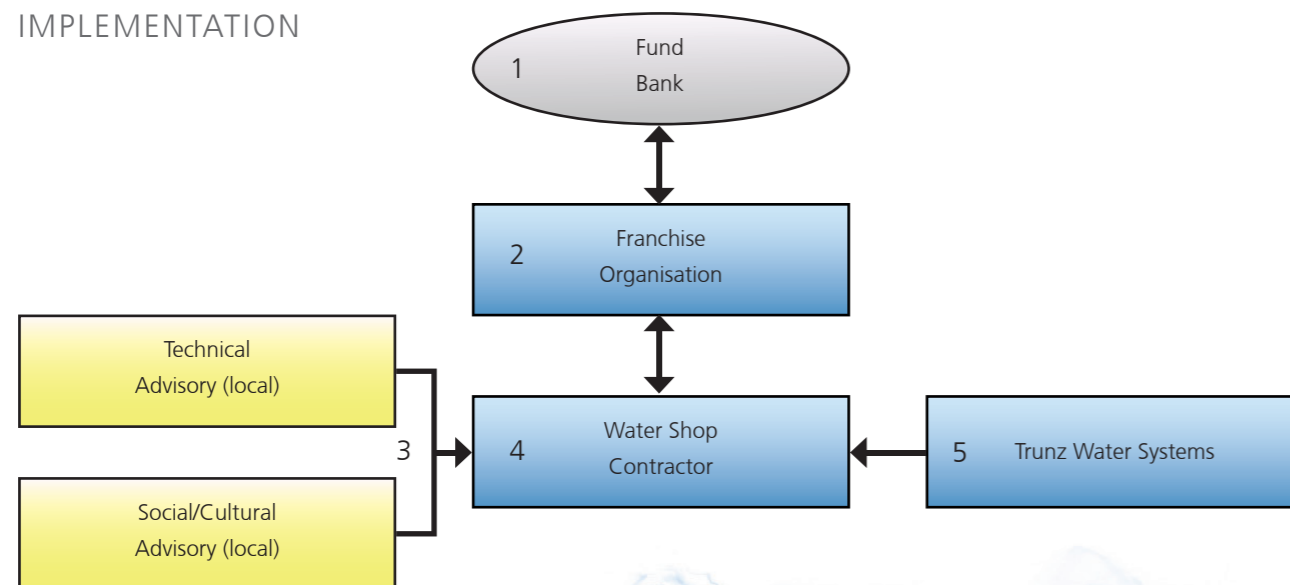
The operation of water shops is already established in some areas and remarkable success has been achieved.

Trunz Water Systems is now targeting a next level with the WATER SHOP CONCEPT. This innovative solution is going one step further by using renewable energy and exceptionally energy efficient water treatment units to operate water shops in a sustainable and environmentally friendly way.

The WATER SHOP CONCEPT is by far more than a technical solution – it is our vision to achieve maximum impact such as:

- providing access to clean drinking water and energy for an affordable price
- establishing sanitary installations in order to improve health conditions
- reducing poverty by establishing microentrepreneurship and small-scale trade
- producing green energy to operate the water shop sustainably
- raising awarness for topics related to water, sanitation and health

## IMPLEMENTATION



## THE STRUCTURE

In order to achieve maximum support the concept foresees to involve all stakeholders. The shop concept acts as a catalyst for low-income and has positive impact for small-scale trade possibilities. The concept provides relief to the people who did not have access to safe water in the past. The people are served with affordable and reliable water.

### 1 Credit grants

Financial institutes, funds, development organisations etc. grant a credit to the Franchise Organisation. Similar to micro-credit foundations, they provide pro-poor financing and act as supervisor to the Franchise Organisation. The investment has to be profit orientated yet socially responsible and sustainable.

### 2 Franchise Organisation

The shop infrastructure is owned by a Franchise Organisation that is established for this purpose. The Franchise Organisation may be the local Water Authority or another organisation. They are responsible to search for water shop operators and issue franchise contracts.

The Franchise Organisation is responsible for installation, maintenance and training of new shop operators and has to appoint one person who is responsible to visit each water shop operator every two weeks in order to collect earnings and provide assistance for sales or technical issues.

### 3 Advisory Board

The Advisory Board acts as the independent organisation for recommendations to social, cultural and technical issues. The Advisory Board secures regular controlling of rules and regulations. The Advisory Board consists of leaders within the community, development committees or other organisations.

They are involved in the implementation of the water shop concept but without any commercial aspect.

Their goal is to secure independence and ongoing operation of the water shops free from any political, religious or other circumstances.

### 4 Water Shop Operators

The Operator sells safe drinking water for an affordable price. The price is set in advance in each country by the water sector regulation organisation. All cash that is collected is deposited with the operator until the Franchise Organisation collects the money. The Operator has to pay the Franchise Organisation each month according to the water meter and receives commission for every liter of water sold.

The Operator may sell other goods related to sanitary/hygiene and healthcare which could be financed by a preliminary micro-credit. Additionally, the Operator is responsible to keep the shop clean and has to report any technical or any other problems to the franchise organisation. The shop has regular opening hours.

### 5 Provider of technical Equipment

Trunz Water Systems is the technical partner providing the water treatment and solar equipment. The Swiss company is the market leader for decentralised drinking water treatment systems which are powered by renewable energy resources like wind or solar power. With more than 650 applications in over 35 countries for freshwater and saltwater and many applications for decentralised solar electrification, Trunz Water Systems has the solutions and the technological know-how to supply the water shops with economical and reliable equipment.

## BUSINESS CASE WATER SHOP CONCEPT

General Information		Solar radiation	5 hours per day
Site	Gandinagar, India	Equipment	Water: TWB 002
Application	Drinking water for remote village		Solar: TSPC 700 4/8
Installation	Fixed installation	Salinity	none
Water source	River water/well water	Contamination	organic (e.g. bacteria, virus, spore)

Technical Data			
Capacity of the unit		900.0	l/h
Power Requirement		350.0	Wh
Provided Solar Power		1,480.0	Wp
Energy by radiation	5 kW/m <sup>2</sup> /day	7,400.0	Wp
Power loss (cabling etc.)	20%	-1,480.0	Wp
Average energy supply		5,920.0	Wp/day
<b>Runtime of the unit</b>		<b>16.9</b>	<b>h/day</b>
<b>Total capacity</b>		<b>15,222.9</b>	<b>l/day</b>

Drinking water costs			
Investment costs consisting of:		60,000.00	US\$
<i>Water and Solar Equipment</i>		50,000.00	US\$
<i>Water source development</i>		5,000.00	US\$
<i>Infrastructure Water Shop</i>		5,000.00	US\$
Annual amortisation	5 years	12,000.00	US\$
Annual interest rate	10%	3,000.00	US\$
Annual maintenance costs (estimation)		600.00	US\$
Total costs per year		15,600.00	US\$
Total amount of water production per year		5,556,342.9	l/year
Amount of water sold per year	50%	2,778,171.4	l/year
<b>Price per litre of drinking water</b>		<b>0.0056</b>	<b>US\$</b>
<b>Price per m<sup>3</sup> drinking water</b>		<b>5.6152</b>	<b>US\$</b>

Business Model			
Sales price per litre		0.015	US\$/l
Costs per litre		0.0056	US\$/l
Gross Margin		0.0094	US\$/l
<b>Gross Earnings</b>		<b>26,072.57</b>	<b>US\$/year</b>
Participation of Watershop Operator	20%	5,214.51	US\$
Participation of Franchise Organisation	60%	15,643.54	US\$
Misceallaneaus costs (Expenses, Transport)	15%	3,910.89	US\$
<b>Net Earnings</b>		<b>1,303.63</b>	<b>US\$/year</b>

Rentability for Fund/Bank			
Number of Water Shops		50	Units
Total Investment	50 x 60,000.00	3,000,000.00	US\$
Total Earnings	50 x 1,303.63	65,181.43	US\$
Total interest rates for equipment	50 x 3,000.00	150,000.00	US\$
<b>Return on Investment</b>		<b>7.17%</b>	<b>per year</b>

Authorised Trunz Representative for West-Kenya

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