



WIPO | GREEN

The Marketplace
for Sustainable Technology

WIPO GREEN Technology Matchmaking Project in Southeast Asia

Introduction of Technology Needs

WIPO GREEN

www.wipo.int/green

Manila
4 June 2018

TECHNOLOGY NEED OVERVIEW

The technology need identification was conducted in 2 countries comprising of over 16 companies and over 24 needs across the 4 sectors: water, energy, agriculture and air. Building on the first report, there were a number of additional needs added by the seekers that are now included in this presentation

INDONESIA



CAMBODIA



Technology needs

- **8 water needs from 7 technology seekers**, ranging from water treatment to water production technologies
- **9 agriculture needs from 5 technology seekers** ranging from harvest to post-harvest technologies

- **6 water needs from 4 technology seekers** ranging from water treatment, water production to wastewater treatment
- **5 energy needs from 2 technology seekers** ranging from energy production to energy distribution
- **1 agriculture needs from 1 technology seeker** in livestock farming
- **1 air needs from 1 technology seeker** need for air quality sensor in urban Phnom Penh

INDONESIA

TECHNOLOGY SEEKING ORGANIZATIONS IN INDONESIA



<p>Water</p>	
<p>Energy</p>	
<p>Agriculture</p>	
<p>Air</p>	



Water



Energy



Agriculture



Air



Water



Energy



Agriculture



Air



THE CHALLENGE:

- **Droughts are common in Northeast Bali** where the rainy season is the only reliable source of water and needs to be stored, as **wells tend to dry up throughout the dry season.**
- **Groundwater is still the main source of water production**

OUR NEED:

What technology exists that can greatly **reduce our reliance on groundwater and help diversify our water intake** as well as help others in Bali and SE Asia increase their own water security?

i.e. Dew water harvester/condenser



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THE CHALLENGE:

- **There is a potential utilization of Brackish water** with 29.000 km² area in Indonesia
- There is **no electricity in some areas** to supply energy of water pump
- **Excessive use of water in houses of worship**

OUR NEED:

Solar water pumps and/or **water filter technologies** are needed to process lake, river or brackish water into safe and clean water



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THE CHALLENGE:

- **Lack of Infrastructure** in Accessing Clean and Safe Water. **Large cement basins are exposed to external contamination** and prone to mold, shortage water around August
- **Untreated Water.** Harvested rainwater are not treated and left in the molding basin during storage period (November–March)

OUR NEED:

Water treatment technology that can treat 4,000-5,000 liters of water for approximately 350 household, supply water during dry season (August-November).



Yan Kanahebi
Facilitator
**KOPERASI CITRA HIDUP
TRIBUANA**



THE CHALLENGE:

- The washing phase of fabric processing requires heavy water usage
- With a **production capacity of more than 900 meters of fabric a day**, Zalmon Fabric wants to use less water for its manufacturing process.

OUR NEED:

Better component or **technologies for more efficient fabric washing process** to reduce water usage during fabric production



Tommy Surya Teja

CEO

ZALMON FABRIC

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FIVE PILLAR
FOUNDATION

THE CHALLENGE:

- Western Bali (Jembrana) is experiencing a **shortage of clean available water due to water exploitation.**
- Jembrana experiences water quality and pollution issues; **saltwater intrusion into freshwater aquifers, improper sanitation and sewage treatment and the excessive use of chemicals in agriculture.**

OUR NEED:

1. The distribution of simple **water filtration systems**
2. **A dew/fog water harvesting technology** to restore the supply of groundwater for villagers
3. **Waste separation container** to be distributed to families in West Bali to mitigate the impact of water pollution and contamination



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THE CHALLENGE:

- Villagers in Central Aceh has been using electric water pumps to supply their water needs. **High electricity cost and frequent power outages limit the usage of the electric water pumps**
- **Renewable energy and clean energy are an unpopular alternative in several communities.**

OUR NEED:

Solar water pump technology with enough power to supply the village could be suitable to address the water issues in Central Aceh



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THE CHALLENGE:

- There are **clean water shortage** issues in East Sumba. The **water available on the wells are salty and brackish**, contaminated with mud and seawater.
- **Power outages and limited electrification** is a recurring problem to allow for technologies to operate efficiently

OUR NEED:

Solar-powered water desalination system that can supply 50-100 liters of water per day from seawater, availability and suitability for local community.



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Water



Energy



Agriculture



Air



THE CHALLENGE:

- IDEP currently has an ongoing project in Eastern Indonesia to improve the livelihood of the locals. **Post-harvest processing for coconut and sorghum is laborious and time-consuming.**
- Many of the **project areas are off-grid** and **petrol-generated machines are costly**

OUR NEED:

1. **Coconut shredding technology**
2. **Sorghum processing**

Both should use solar power energy or Bio-fuel power energy



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Sustainable Solutions for Air, Agriculture, Energy and Water

A WIPO GREEN Technology Matchmaking Event in Southeast Asia



Coconut Shredding Process



Sorghum Processing



Agriculture Final Products



THE CHALLENGE:

- **Smallholder coffee farmers in Papua still use traditional sun-drying method.** They use plastic sheets to cover the coffee beans from the rain, but this method won't be able to concentrate the heat from the sun
- **Farmers also need knowledge transfer/training** outside of physical technologies

OUR NEED:

Solar coffee dryer for coffee farmers. Simple technology to help farmers producing good product, preferably those that need minimum electricity.



Russelin Edhyati
Cooperative Member
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THE CHALLENGE:

- Available **on-farm harvester is manually operated and labor intensive**. The technology is also still **inefficient in terms of yield and causes more than 50% grain loss**
- Available **grain dryer is less time efficient, large in size, and consumes high electricity**. Grain loss is more than **30%**

OUR NEED:

1. Breakthrough Harvester Machine

Automated ; higher grain productivity; green fuel based

2. Suitable and Effective Grain Dryer

Increased grain output; low electricity; green powered; compact



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Sustainable Solutions for Air, Agriculture, Energy and Water

A WIPO GREEN Technology Matchmaking Event in Southeast Asia



Harvester Machine



Grain Dryer



Traditional Drying Process

BUMDES WARMARE

THE CHALLENGE:

- **Limited replantation efforts of palm plantation** in Warmare district.
- **Farmers have stopped utilizing and harvesting palm.** Aside from the low productivity, the only place to sell is 50km away. Farmers and villagers have stopped earning from crude palm oil since late 2000s

OUR NEED:

1. A household/medium-sized **post-harvest technology for palm kernel oil**
2. **Technology to make use of the idle land**

Mulyadi
Farming Facilitator
BUMDES

BUMDES PRAFI

THE CHALLENGE:

- Local farmers in West Papua are still using **traditional technique of dry-land paddy farm for rice farming**. The farmer lands are mainly cultivated manually with simple tools without any compost or other fertilizers.
- **There are unused residues** from the swidden rice planting method that could be used for other livestock feed

OUR NEED:

1. Simple **technology to open rice paddy land** to minimize deforestation and burning
2. Simple **composting technology** using locally available material

Mulyadi
Farming Facilitator
BUMDES

CAMBODIA

TECHNOLOGY SEEKING ORGANIZATIONS IN CAMBODIA



Water	 Logos for Teuk Saat 1001 (a blue water drop with '1001' inside), WaterSHED VENTURES (a blue water drop), and Wetlands Work! (a green plant with a water drop).
Energy	 Logos for ENTREPRENEURS du Monde (text in blue and black) and OKRA (a black house icon with a white flower inside).
Agriculture	 Logo for ENTREPRENEURS du Monde (text in blue and black).
Air	 Logo for PEOPLE IN NEED CZECH REPUBLIC (a diamond-shaped logo with a person icon).



Water



Energy



Agriculture



Air



THE CHALLENGE:

- There is **no remote water quality monitoring device** for Teuk Saat 1001's water treatment kiosks in Cambodia
- Teuk Saat 1001 has been building solar-powered water treatment kiosks to deliver drinkable water in a 20L container to rural households in Cambodia

OUR NEED:

Remote water quality monitoring device for water kiosks.

Teuk Saat 1001 seeks to connect their water filter devices on site (sand, active carbon, resin and fabric micro filters) with GPRS signal, to enable remote water quality condition transmission.



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WaterSHED
VENTURES

THE CHALLENGE:

- **Constant water shortage** in areas such as Siem Reap, Prah Vihear, Stung Treng, Rattanakiri, Kratie, Kampong Cham, Kampong Chhnang.
- There is **no centralized fecal sludge treatment** in place in Cambodia
- There are **limited domestic wastewater treatment technologies** in Cambodia

OUR NEED:

1. **Solar water pumps** for domestic and municipal uses
2. **Fecal sludge treatment system**
3. Domestic and municipal **wastewater treatment technologies**



Geoff Revell
Program Director
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THE CHALLENGE:

- **No acceptable technology has been marketed for sanitation in flood prone and high groundwater areas** to protect human health and local water quality
- **Pit latrines are the common technology** that is currently used for sanitation

OUR NEED:

We seek an affordable (<100 USD) alternative **sanitation technology** to pit latrines in flooded/high groundwater environments.



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Water



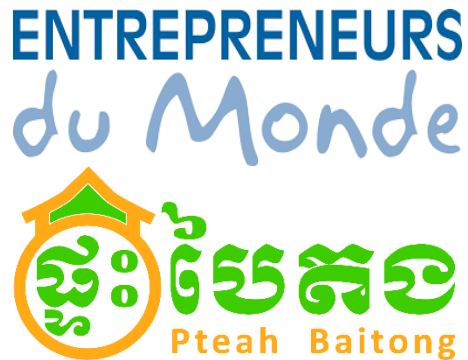
Energy



Agriculture



Air



THE CHALLENGE:

- The challenge is to **provide clean, sustainable and affordable access to energy to Cambodian rural off-grid households.**
- Pteah Baitong is distributing high quality solar products in 3 Cambodian Provinces, through its own sales agents and a 65-reseller network.

OUR NEED:

- 1) Affordable and sustainable **solar lighting kits.**
- 2) **Solar eggs incubators**, from 50 to 500 eggs capacity.
- 3) Affordable and low consumption **DC appliances:** Fridge, TV, laptop, speaker and fan.
- 4) **Solar powered battery bank**, from 5000 mA
- 5) Affordable **water filters**, to improve our resellers catalogue.



Ugo ANDRÉO
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THE CHALLENGE:

- **1.2 billion people still live without access to electricity** and rely on dirty and expensive stop gap solutions.
- **Existing solutions have failed to achieve true market proliferations and commercial viability.**

OUR NEED:

1. **DC appliances for off-grid solar power**
2. **3G & 4G microchip and software**

There is a need for a commercially viable and scalable solution that is user and market agnostic.



Louis Jolivet
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Water



Energy



Agriculture



Air



THE CHALLENGE:

- **Air pollution is a growing concern in Cambodia**, particularly with the large increase in cars on the roads and the boom in the construction industry.
- **Accurate and stable monitoring of air quality** within cities forms an important part in raising awareness about the problem of air pollution levels.

OUR NEED:

Air Quality Monitoring device able to capture for PM2.5 and PM10 particulate matter as well as carbon monoxide levels, nitrogen dioxide levels and for the presence of ozone and sulphur-dioxide.

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PHILIPPINES



GTI CONSULTANCY SERVICES

*“We Do Not Sell Services,
We Deliver Performance”*

THE CHALLENGE:

Develop sustainable technologies for recycling waste generated by local population in order to reduce environmental impact of human activities (family size businesses or daily life pollution). Two projects are currently in the plan to reduce uncontrolled used oils, savagely disposed tires and plastic materials (water pollution), and to valorize them through unconventional “green” processes

OUR NEEDS:

The challenge being identified, the need is now to define potential partnerships (e.g. technology providers, equipment manufacturers, green chemistry developers, patenting services providers, either from industry, institutional or governmental origins), to facilitate the technical development, the communication and the future implementation of these self-funded projects



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*“Pioneering a World of Innovative,
Sustainable and Efficient Chemistry”*

THE CHALLENGE:

The Challenge consists in the development of a 100% Green ecolodge on a 3-ha land in The Philippines where no pollutant will enter the site, where every waste will be valorized, where electricity will exclusively have renewable energies origin, where constructions are made of materials having lowest environmental footprints, while developing local competencies for green technologies and environmental awareness.

OUR NEED:

What we need is providers/partners of green technologies (e.g. solar panels, solar generators, passive water heaters, sewage and biological treatment, green packaging for natural fertilizers, waste treatment technologies and equipment, water sterilization, etc...) of which technologies are applicable to remote locations, and eventually willing to propose trials of innovative technologies.



Thierry Maysounabe

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Maquinit Hot Springs

THE CHALLENGE:

Water utility service does not currently reach the resort's location. Currently, significant time and effort is being spent daily on hauling water into the resort for daily operations.

OUR NEED:

A water desalination plant capable of treating seawater available by the resort's shoreline in a cost-effective manner.

Lia Maquinit

MAQUINIT HOT SPRINGS

Email address



THE CHALLENGE:

Our project, **LRT1 Cavite Extension** Works consisting of the design and construction of the 11.7 km line extension from Baclaran to Cavite City which includes all the civil works, the signaling, communication and the power track system and the integration of both systems to complete the commissioning and the acceptance of the entire line of 32.7 km, (21.0km existing line, 11.7km extension line),

In order to carry out the work, we must build a precast yard with site offices on Las Piñas in the south of Metro Manilla with all facilities,

OUR NEED:

Solar panels roof system:

We need 2 time 500 square meter of solar panel, to apply on roof with climb of 8 degree, building exposition South, without shadow area, this solar power come in supplementary of the national power supply, full electrical load need 375kVA

Sewage treatment plant:

For site office, we need sewage treatment plant for 28m³ of daily domestic waste water, Water come from sanitary and lavatory only, (Office of 350 staffs)



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