



MAKE ACCESS TO ELECTRICITY AND WATER A LEVER FOR THE HUMAN AND ECONOMIC DEVELOPMENT OF THE MOST DISADVANTAGED POPULATIONS

SPEAKERS



Marc
GRATTON
Vice President



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*Head of Project
Management Team*

Electriciens sans frontières (Electricians without borders)

International french NGO, founded in 1986



1200 volunteers in 2019



125 projects in **33 countries** in 2019



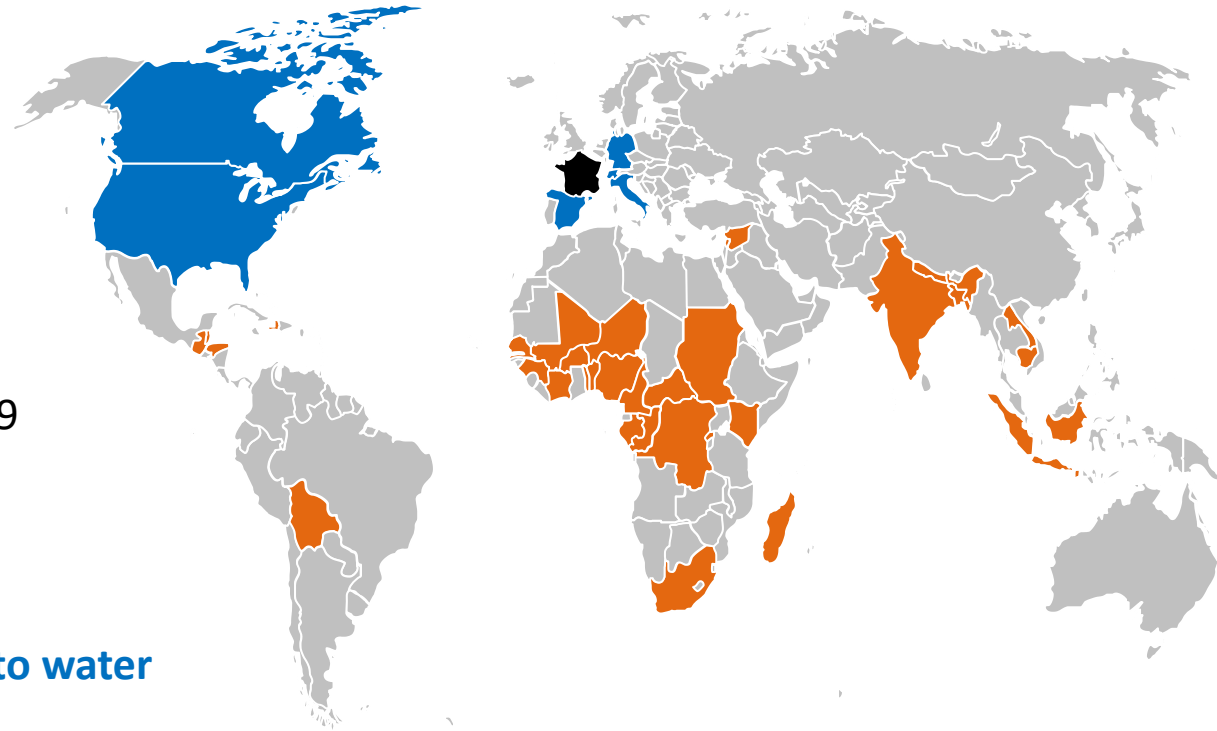
95 % of project use **renewables**



Half of our projects involve **access to water**



International network (Germany, Spain, Italy, Switzerland, North America)



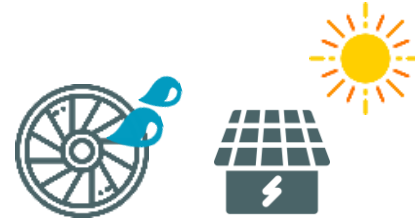
OUR PRINCIPLES



**Respond to a locally
expressed need**



**Involve the
beneficiaries**



**Use local natural
resources**



Transfer skills



SUSTAINABLE PROJECTS

A 10-year commitment

Use as many **renewable resources** as possible.

Train the populations and develop economic activities to care for and maintain the installations.

Implement systematic project monitoring.

Create a durable core.

Beyond the commissioning of our installations, resources are planned that can refurbish them, following a careful analysis of each situation.

A basis for an innovative and committing target: ten years!

OUR FIELDS OF ACTIVITY



Development 68 % of our projects

Create human and economic development of the poorest thanks to access to electricity and water.



Emergencies 6 % of our projects

Assist disaster victims and other NGOs working in humanitarian disaster emergencies.



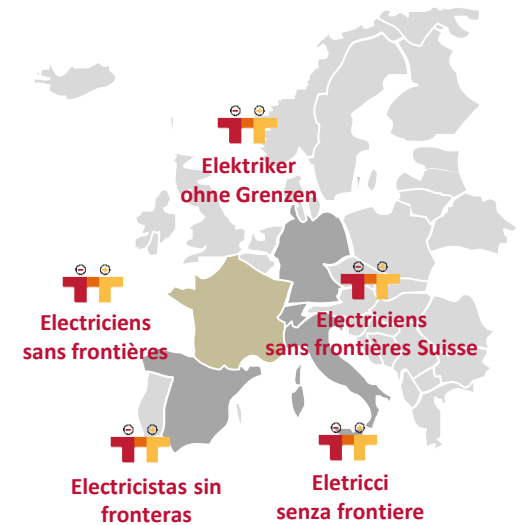
Expertise and support 26 % of our projects

Put our expertise in providing access to electricity and water at the service of international solidarity actors.



IN THE WORLD

In recent years, branches have been created in Europe and North America : we share the same values!



RELATIONSHIPS BASED ON TRUST



And many others !



SISAM

(Improved Solar Irrigation Solution
Solution d'Irrigation Solaire Améliorée)

CONTRIBUTE TO **POVERTY REDUCTION** AND **RURAL FOOD SECURITY** BY PROMOTING THE EMERGENCE OF **SUSTAINABLE AND ACCESSIBLE IRRIGATION** SCHEMES FOR SMALL-SCALE MARKET GARDENING IN BURKINA FASO, BENIN AND TOGO.





Western Africa : number of people facing food insecurity could double due to COVID-19



UNOCHA/Giles Clarke | Au Burkina Faso, le nombre de personnes confrontées à l'insécurité alimentaire est en augmentation



- ▶ Small-scale market gardening is the **main source of income** for tens of thousands of smallholders/farmers, among the poorest
- ▶ **Women** are the first working force involved in market gardening but suffer from a number of inequalities (access to land, etc)
- ▶ The crops that are cultivated represent a **necessary supplement for their subsistence** and against malnutrition (pillar of food security)



- ▶ **Small surfaces** (<1ha)
- ▶ >90% draw water manually from wells (**hardship** and **long time** dedicated to irrigation)
- ▶ For those with motor-pumps, **fuel costs are extremely high**

6 COMPLEMENTARY PARTNERS

3 local partners working with farmers



1 coordinator



2 technical partners



Capitalizing on 30 + years of feedback

Design of the
**Volanta
pump** in
Burkina Faso

Dissemination of **solar pumping and irrigation
systems** in West Africa

Dissemination of the Volanta Pump

Needs analysis
and design of
the SISAM
project

SISAM
Project
deployment



Support towards the **improvement of local
farming practices**



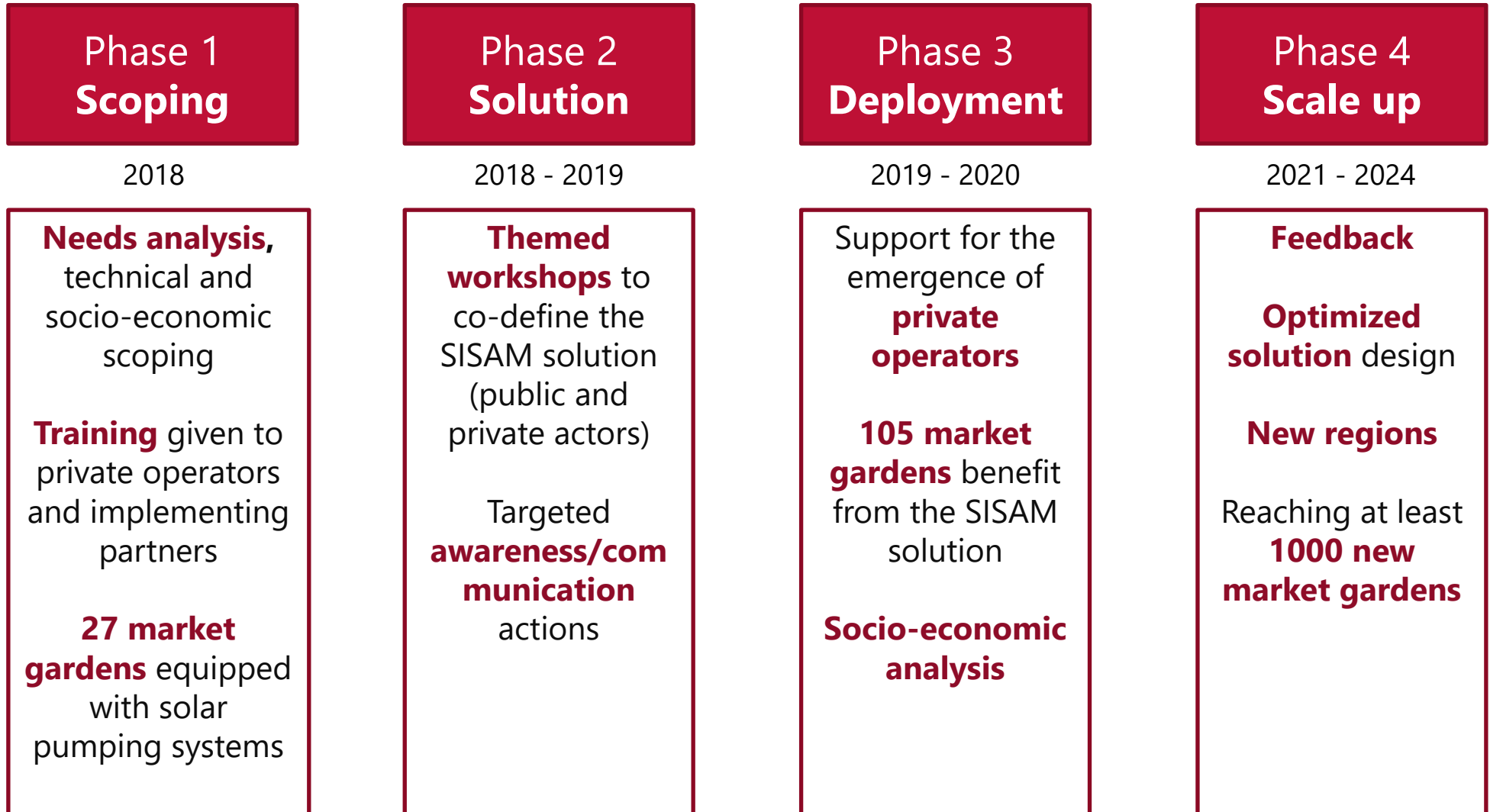
End of the
1980s

1990 - 2015

2015 - 2016

2017 - 2020

PROJECT TIMELINE





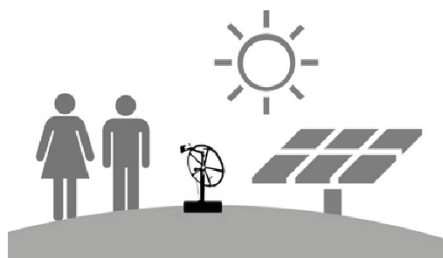
INNOVATIVE TECHNOLOGY

Local Production: Pump Assembly with local components

Performance: New technologies adapted to depth and to small surface areas for irrigation

Usage: Solar powered motors with the possibility of manual use

Useful life: Over 20 years



BETTER ACCESS TO FINANCE



Costs: Acquisition and Running costs reduced

Micro-financing: Improved Credit Conditions

Management: Support before and after equipment acquisition

Delays: The reality of agricultural constraints taken into account

SISAM SOLUTION

Improved access to Irrigation Water for small market-garden holdings (<1 ha)

Poverty reduction and reinforced food availability

Benefits mainly women and children

Solution constructed by and for local actors (rural associations, private companies, institutions...)

MAINTENANCE

Training of Distributors and end-users

Maintenance Kit available

Easy availability of Spare parts



ENVIRONMENT

Evaluation of **Water Resources**

Good Irrigation Practices encouraged

100% Renewable energy (Solar)

Recycling of used parts possible







SISAM

PHASE 1

Phase 1
Scoping

Phase 2
Solution

Phase 3
Deployment

Phase 4
Scale up

SELECTION OF BENEFICIARIES

Preliminary **socio-economic** and **technical** study



List of common **selection criteria**



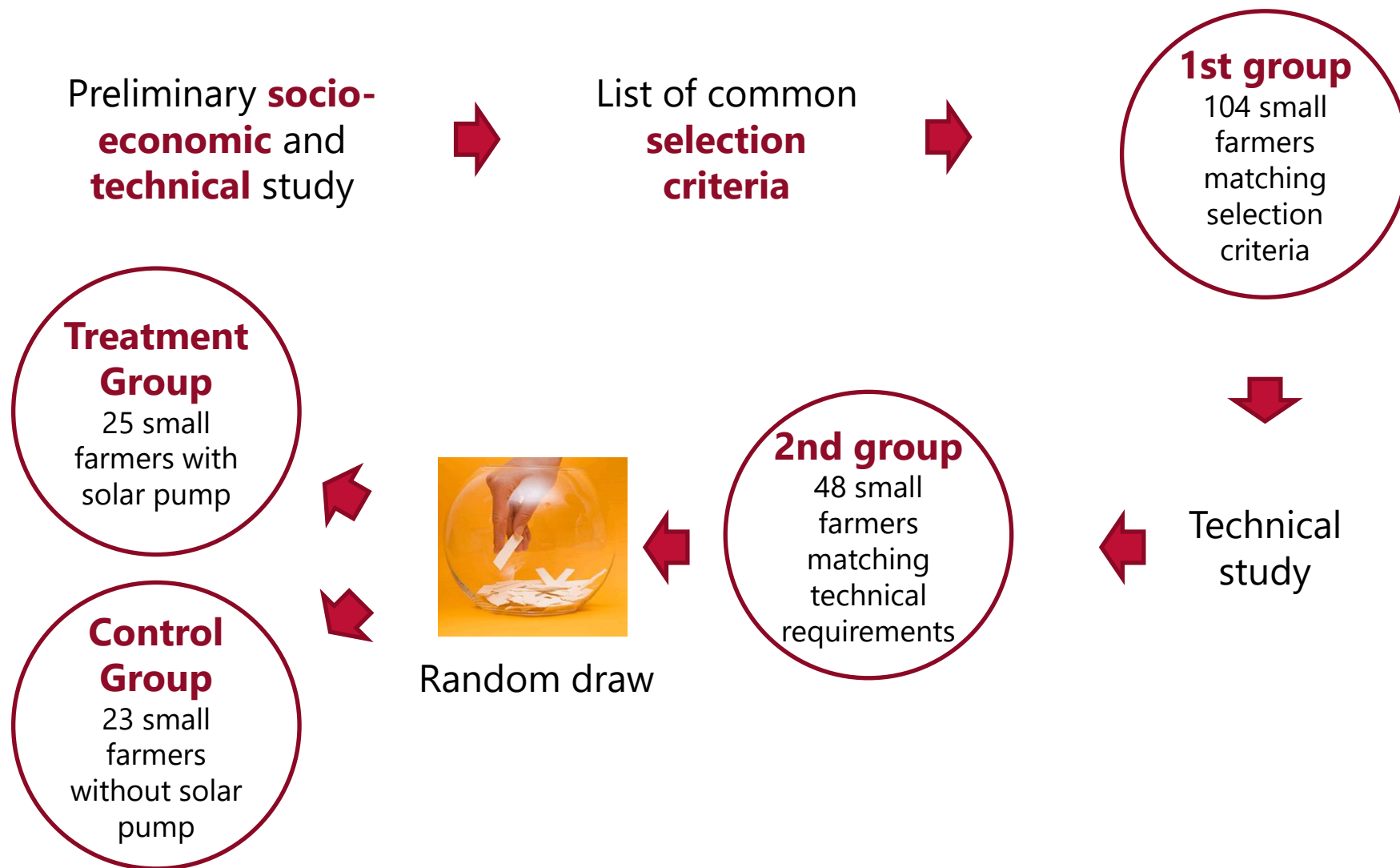
1st group

104 small farmers matching selection criteria

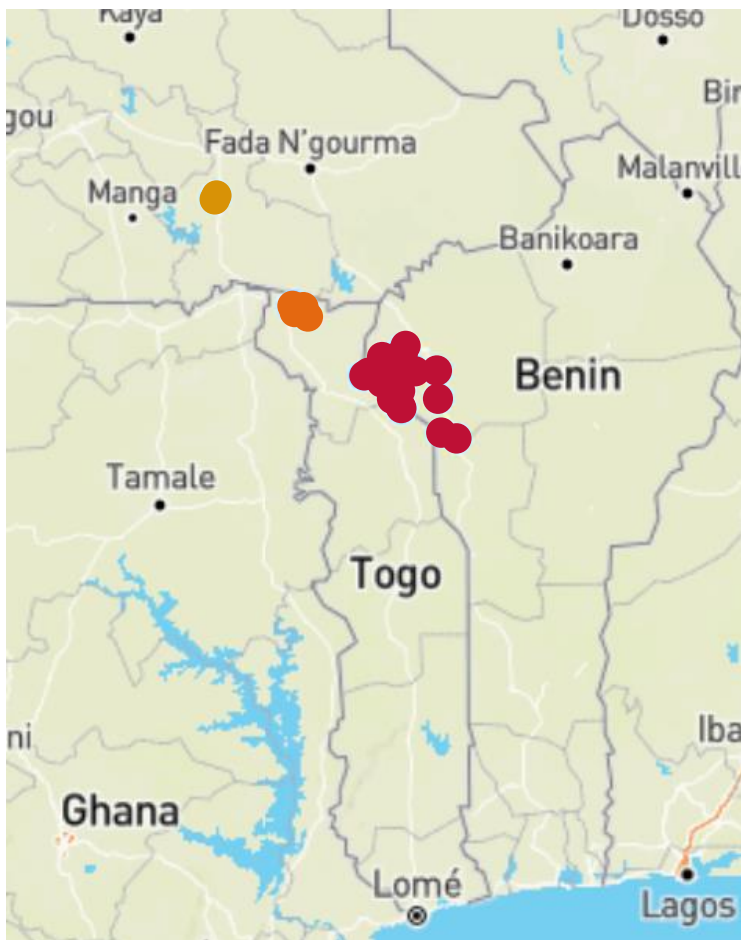
SELECTION OF BENEFICIARIES



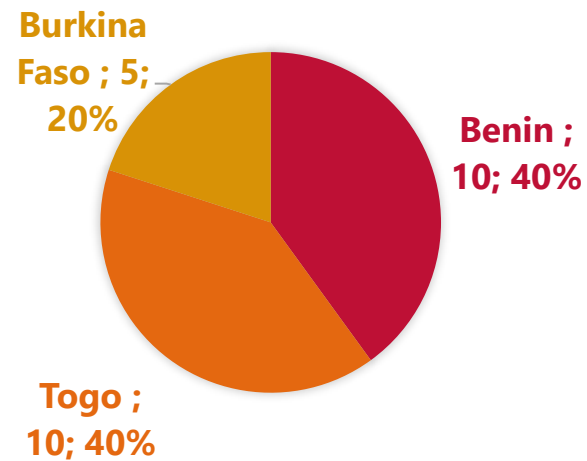
SELECTION OF BENEFICIARIES



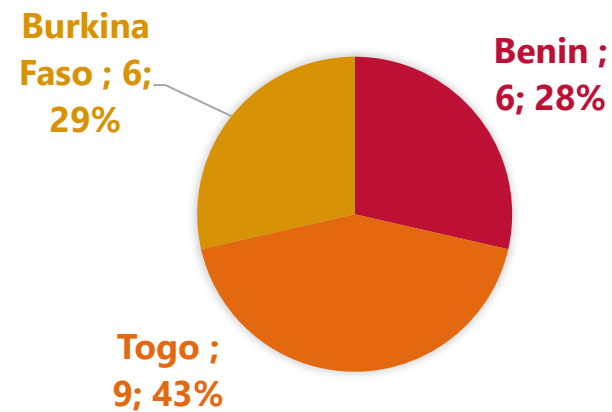
SELECTION OF BENEFICIARIES



Treatment Group



Control Group



1st STEP : QUESTIONNAIRE DEFINITION AND PROGRAMMING

Preview | Responses | Visualization | Survey Report

Enquête SISAM 1-1 - Questionnaire validation des critères de choix et évaluation d'impacts

Created by: TiphaineMasse on 2018-04-19 5:59 pm
Last modified by: F-EVIN-ESF on 2019-12-17 6:26 pm

This is a preview of the form. Your answers will not be saved

Français | Entire Form | Interactive Preview

Print

1. Données terrain

Pays*

Région/province*

Nom du village*

2. Exploitant

Nom de l'exploitant *

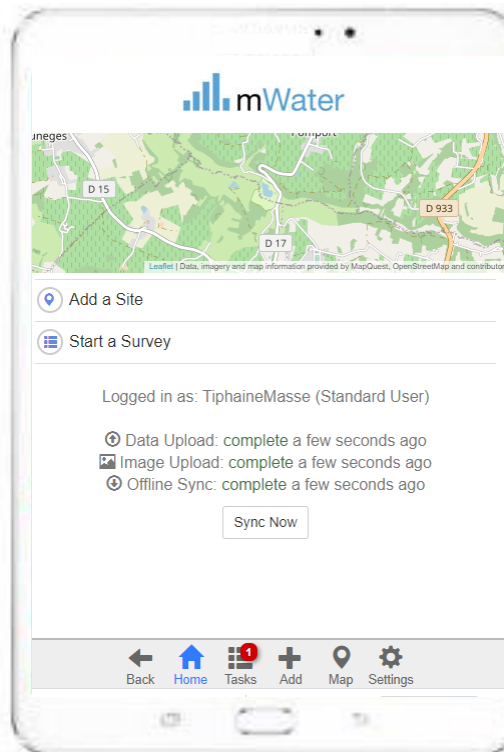
Êtes-vous propriétaire ou locataire de votre terrain ? *

- ☐ Propriétaire
☐ Locataire

Search...

- 1. Données terrain
 - 1.1. Pays
 - 1.2. Région/province
 - 1.3. Nom du village
- 2. Exploitant
 - 2.1. Nom de l'exploitant
 - 2.2. Êtes-vous propriétaire ou locataire de votre terrain ?
 - 2.3. Quel loyer payez-vous par an ?
 - 2.4. Quels sont les problèmes que vous rencontrez concernant le maraichage ?
 - 2.5. Quels dialectes et langues parlez-vous ?
 - 2.6. Avez-vous une autre occupation que le maraichage ?
- 3. Caractéristiques de la zone du jardin possédée par l'exploitant
 - 3.1. Combien de planches de différents légumes possédez-vous ?
 - 3.2. Longueur de la zone de jardin possédée
 - 3.3. Largeur de la zone de jardin possédée
 - 3.4. Longueur d'une planche
 - 3.5. Largeur d'une planche
 - 3.6. Prendre 2 photos de la zone possédée par l'exploitant en étant à une distance de ...
 - 3.7.
 - 3.8.
 - 3.9. Y a-t-il des surfaces disponibles, autour des parcelles concernées par le projet, pour une exte...
- 4. Personnes travaillant avec l'exploitant
 - 4.1. Le tableau suivant concerne l'exploitant et les personnes qui l'aident à cultiver sa partie du ...
- 5. Production agricole
 - 5.1. Quel est le pourcentage des produits du jardin que vous...
 - 5.2. Quels mois dans l'année arrosez-vous?
 - 5.3. Quelles principales cultures maraichères irriguées avez-vous cultivé lors des

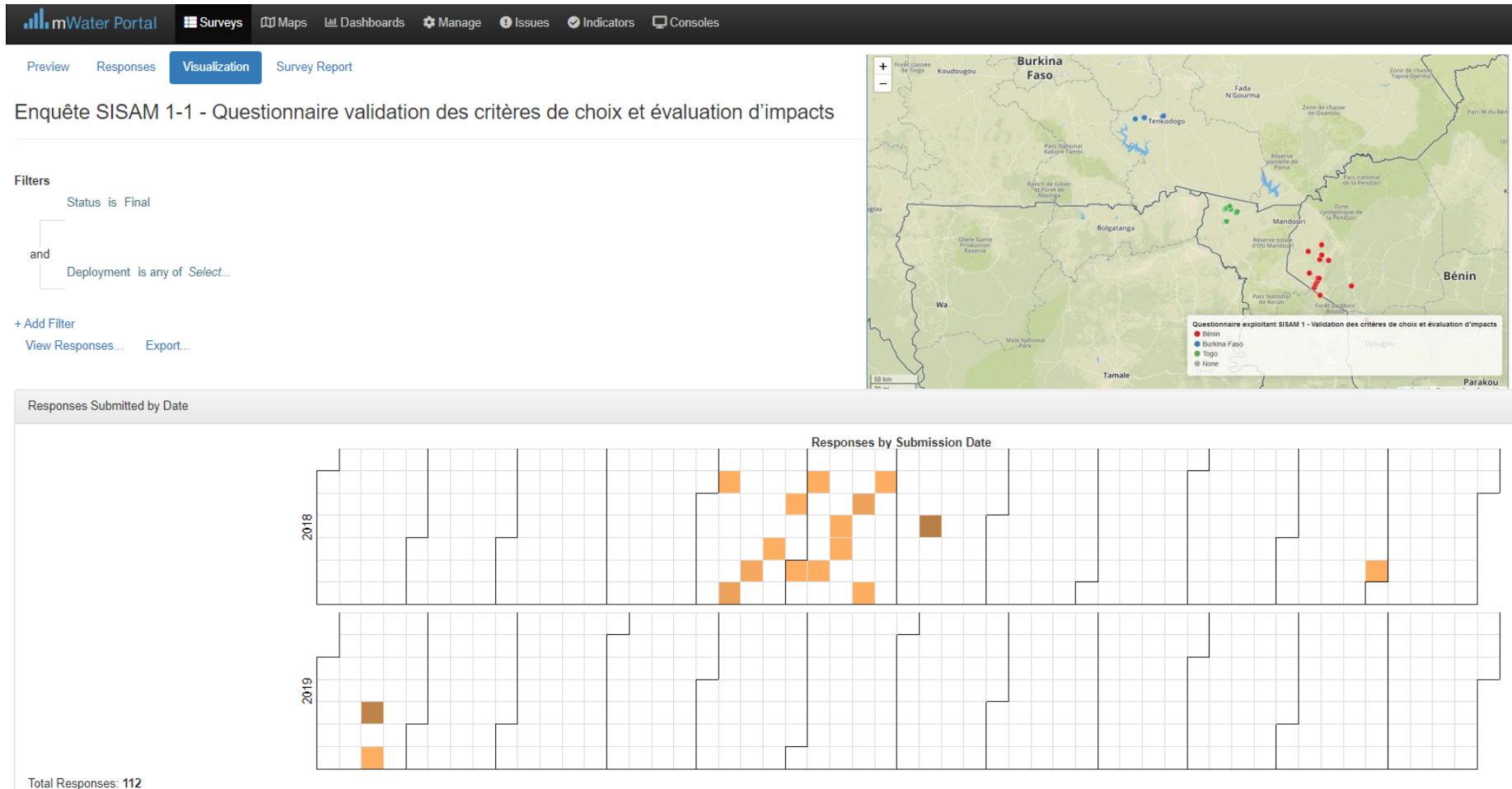
2nd STEP : ON-SITE TRAINING



DATA COLLECTION

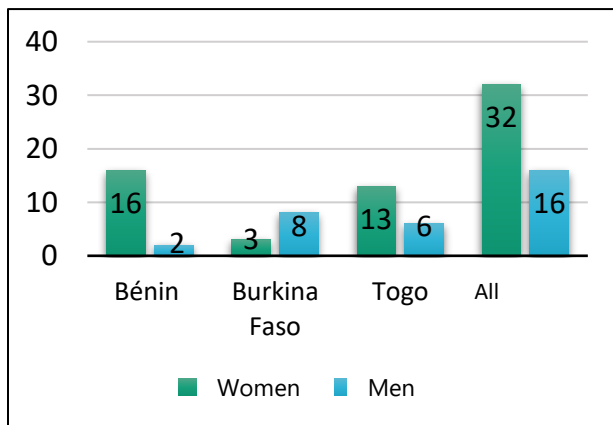


3rd STEP : DATA COLLECTION'S ONLINE MONITORING

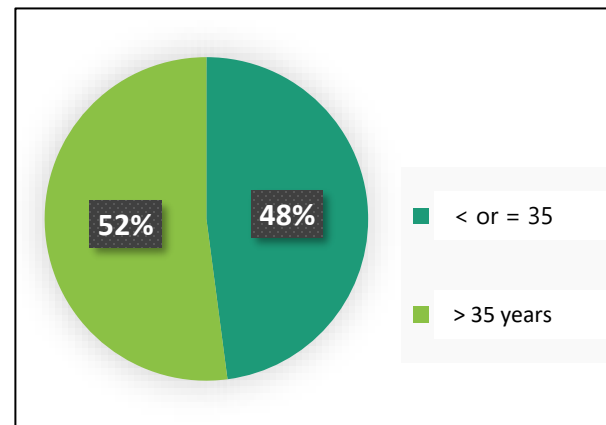


BENEFICIARIES SELECTION CRITERIA

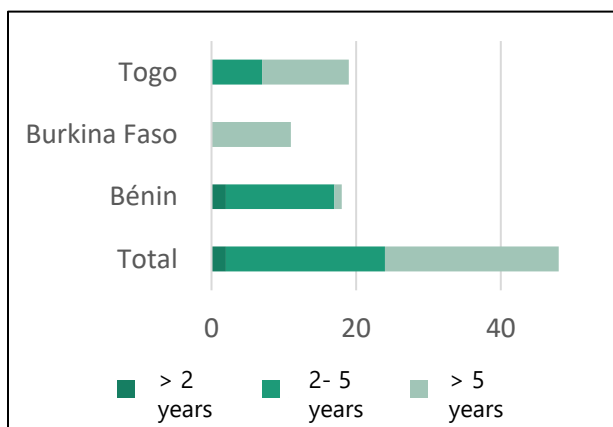
1. GENDER ✓



2. AGE ✓



3. EXPERIENCE ✓



4. PROXIMITY ✓

Benin : 30 km
Togo : 10 km
Burkina Faso : 20 km

BENEFICIARIES SELECTION CRITERIA

5. LAND




Benin : 100% with right to use the land

Burkina Faso et Togo : 97% are owners, 3% with right to use

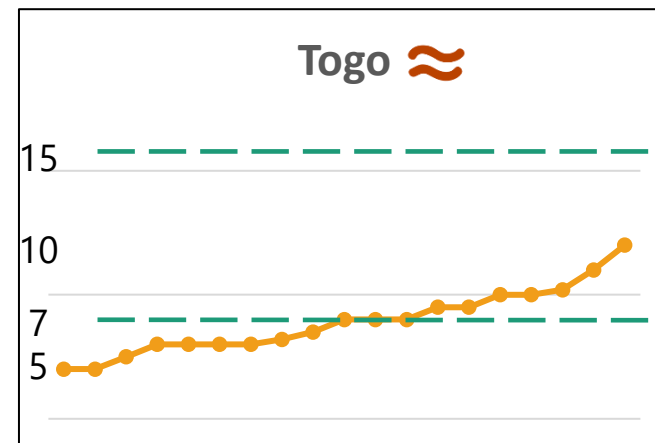
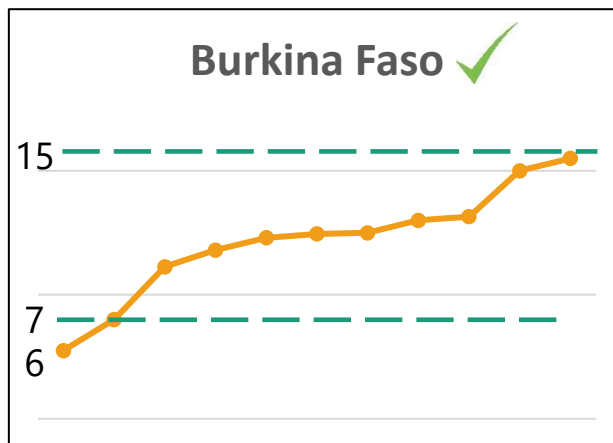
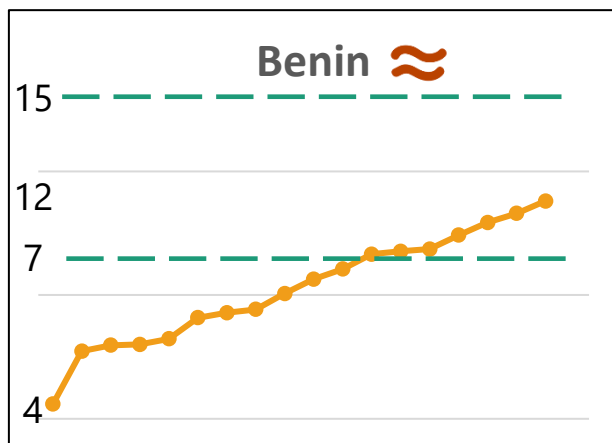
6. AREA

Benin : inconsistent criteria 

Burkina Faso : 100% 

Togo : 80% 

7. DEPTHS (meters)



BENEFICIARIES SELECTION CRITERIA

8. WATER RESSOURCES ✓

100% : presence of water in the wells all year round

100% : wells in good condition and with sun exposure

9. SKILLS ✓

Trained in agricultural good practices :

Benin : 72% ≈

Togo : 100% ✓

Burkina Faso : 45% ≈

10. FINANCIAL CONTRIBUTION ✓

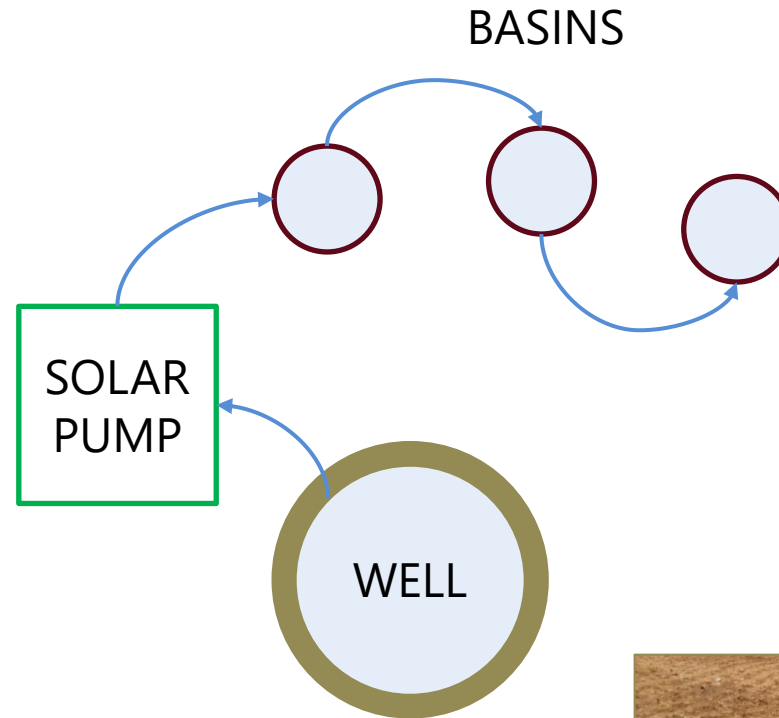
100% agree to pay 80 000 CFA (122 €) over a 2-3 year period + 1 basin (XX F CFA)

11. INVOLVEMENT ✓

100% agree to regular visits of their exploitation (surveys, technical feedback)

12. EQUIPMENT SAFETY ✓

100% in possession of a secure space to keep the equipment



SOLAR PUMPS


Design

Production

Technical specifications



PRACTICA
FOUNDATION

 Future pump
(India-based
factory)

- Surface suction pump
- Small depth (<7 m)
- 18m³ / sunny day
- Removable
- Easy maintenance
- Tolerant of grid, sand, mud and debris



PRACTICA
FOUNDATION

Centre de la Sainte
Famille (Burkina
Faso)

- Surface suction pump
- Medium depth (7 to 15 m)
- 10 m³/ sunny day
- Cannot be moved
- Easy maintenance
- Tolerant of grid, sand, mud and debris

« SENEGALESE BASINS »

- Design : **PRACTICA**
FOUNDATION
- Very low cost (50 to 70€/bassin)
- Trained local workforce
- Locally available raw materials



SISAM

PHASE 2

Phase 1
Scoping

Phase 2
Solution

Phase 3
Deployment

Phase 4
Scale up

Technical partners

(micro-finance)



(market study,
technology)



Project leader



*Project Management
Selection of beneficiaries
Technical design & monitoring
Socio-economic surveys' design
& follow up
Country-level institutional
relations*

*Solar pumps supply
Maintenance
Payments
Customer services*

Local private operator



Local partners



ABS ONG

ACTIONS BENIN & SOLIDARITE
Développement Humain et Durable

SIÈGE NATIONAL: BP. 246 NANTINGOU TEL: +229 90537593 +229 97548810 +229 94375737
SIÈGE REGIONAL: 2201 - COLLINES TEL: +229 87783334 +229 94044401 SANALOU



*Pre-selection of
beneficiaries
Field follow-up
Field surveys
Local institutional
relations
Construction
follow-up*

**105 small
farmers**



INNOVATIVE TECHNOLOGY



New version of **Mini-Volanta pump**
produced in India by
Futurepump



New version of **SF2 pump** produced in
India by Futurepump



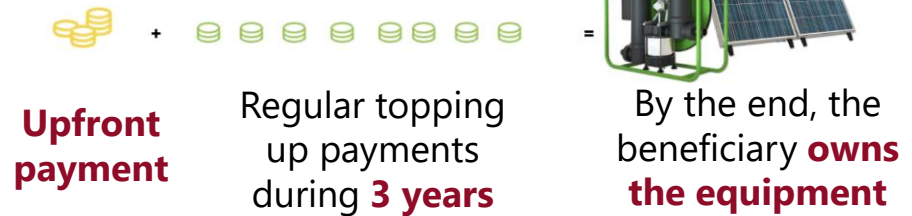
Upscaled **training / production** process for
Senegalese Basins

- ✓ Upscaled **production**
- ✓ Easy **maintenance**
- ✓ Affordable **cost**
- ✓ Real-time online **monitoring**

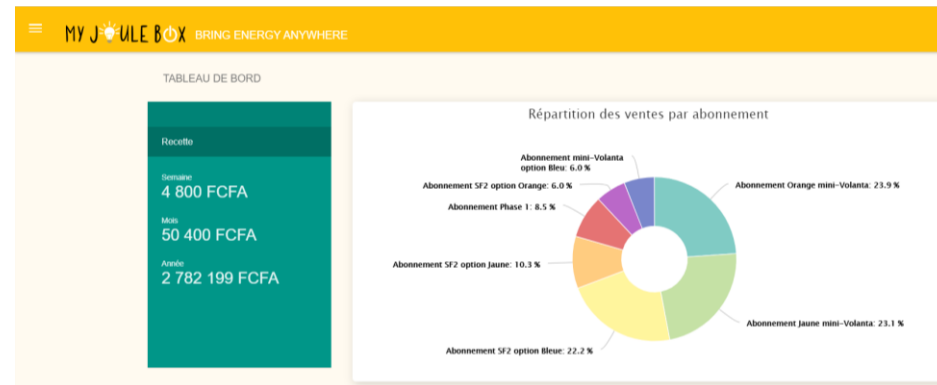


BETTER ACCESS TO FINANCE

Project subsidies cover
about 70% – 80% of
investment costs



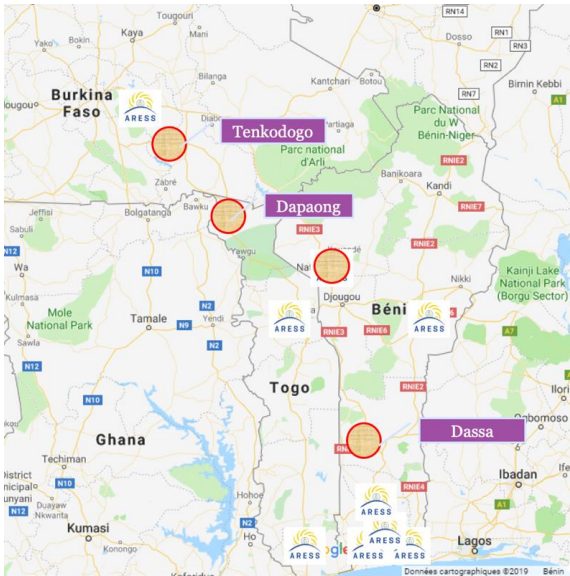
Mobile money



Online Monitoring of payments



MAINTENANCE



Local technical support



Customer service able to send an intervention locally in under **one week after solicitation**



ENVIRONMENT

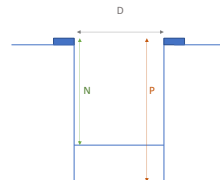
- Improved **use of existing local water resources**



- 100% renewable energy / 0 direct CO2 emissions**



- Trainings allowing simplified analysis of well's **hydraulic capacity**



- Optimized **maintenance / repairs**





SISAM

PHASE 3

Phase 1
Scoping

Phase 2
Solution

Phase 3
Deployment

Phase 4
Scale up

DEPLOYMENT PROCESS

List of common
**selection
criteria**



**Technical
study**



**Contract
signing**



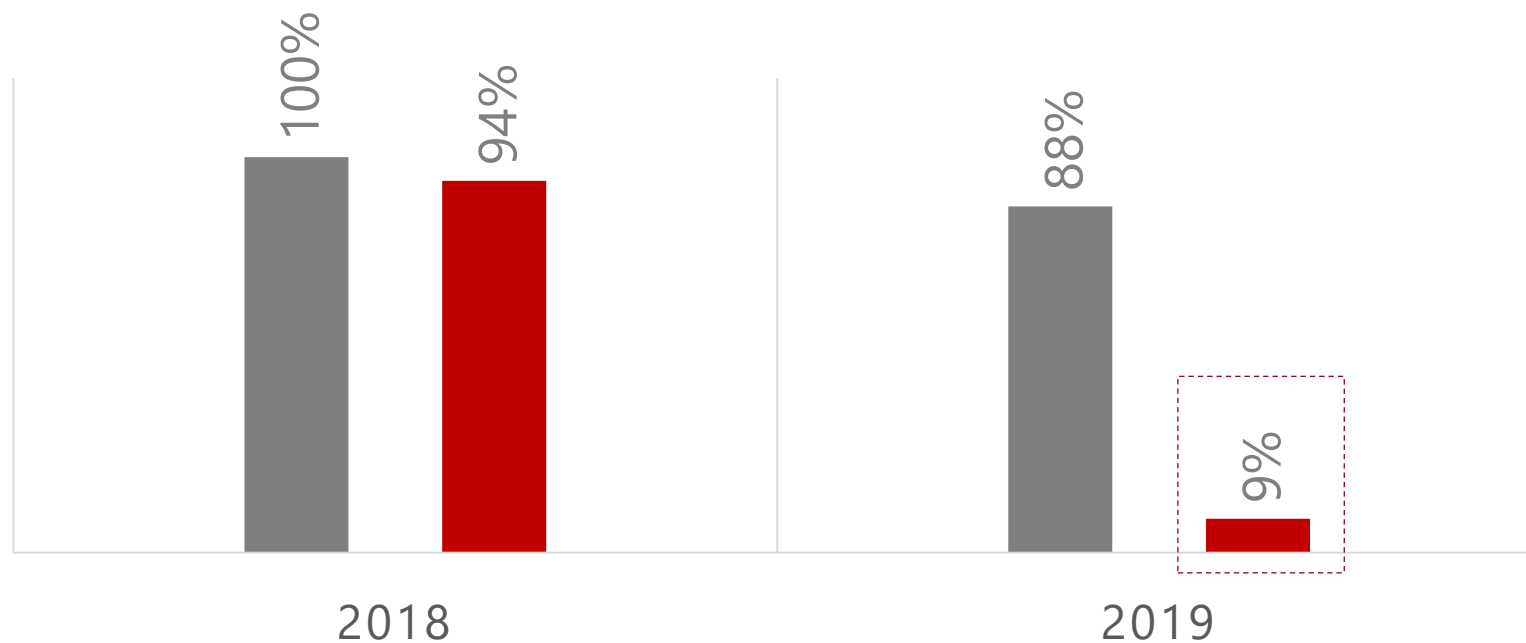
105 small
farmers benefit
from the
SISAM solution
(35 per
country)



HEALTH

SMALLHOLDERS SUFFERING FROM PAINS WHEN DRAWING WATER (%)

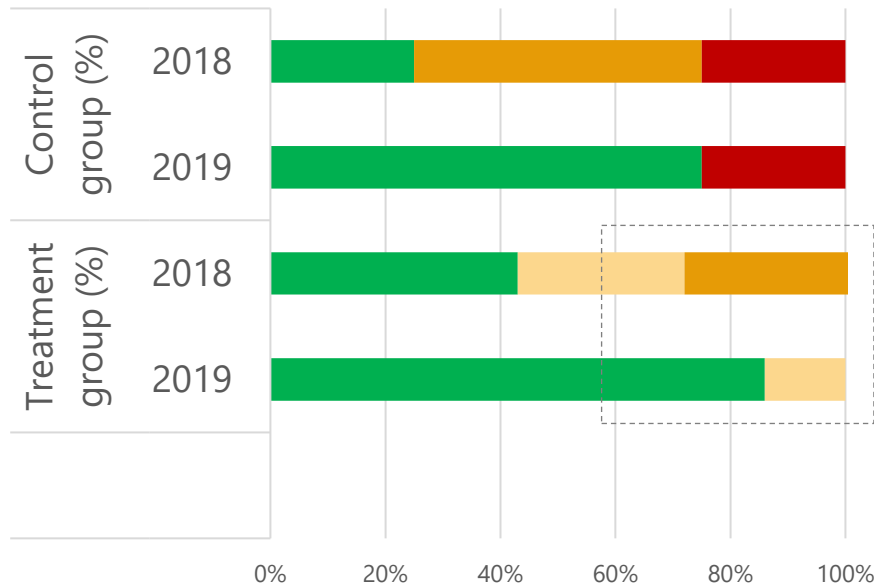
■ Control group ■ Treatment group



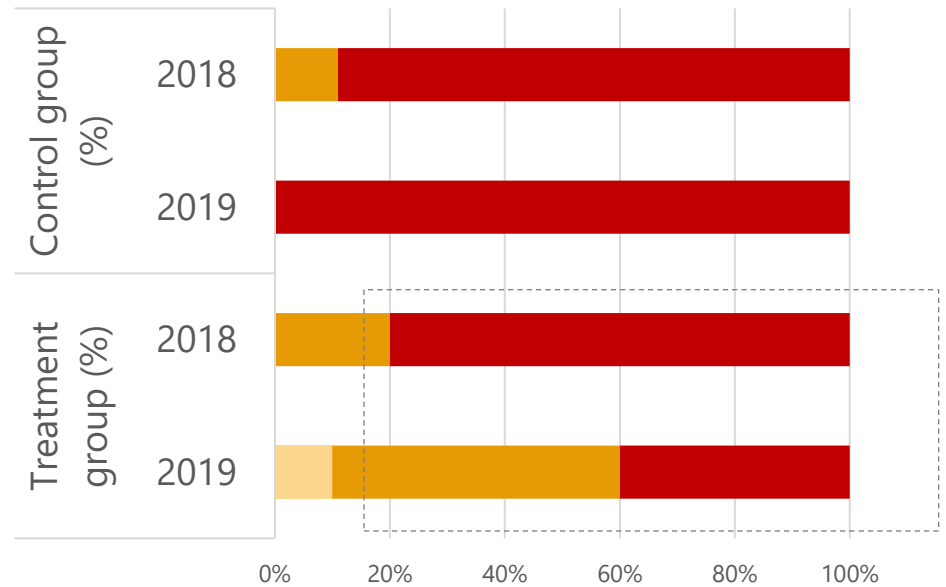
SOCIO-ECONOMIC IMPACTS

FOOD SAFETY

BURKINA FASO



TOGO

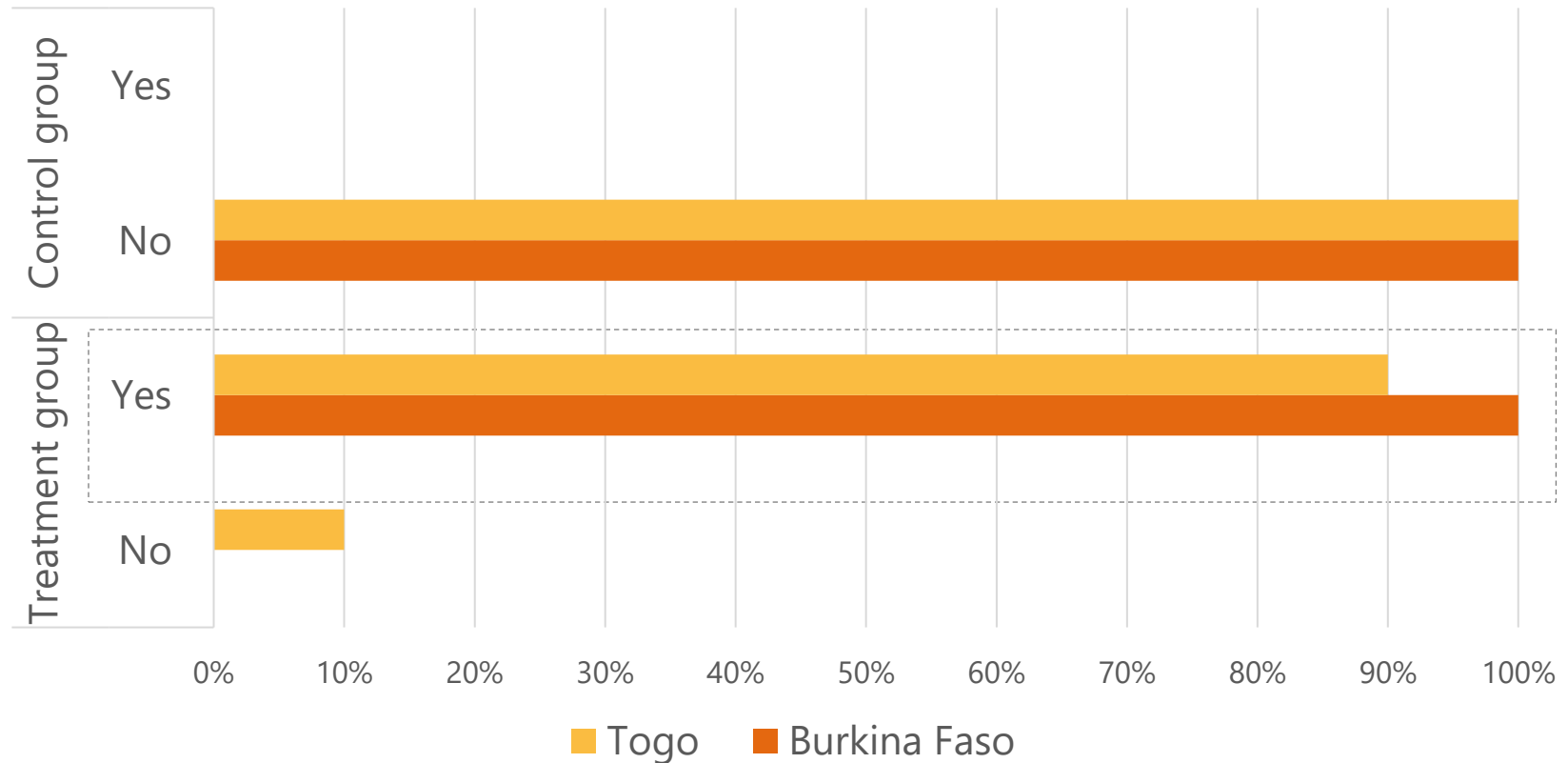


- PAIAM 1 Food security
- PAIAM 2 Low food insecurity
- PAIAM 3 Medium food insecurity
- PAIAM 4 Severe food insecurity

SOCIO-ECONOMIC IMPACTS

CROPS

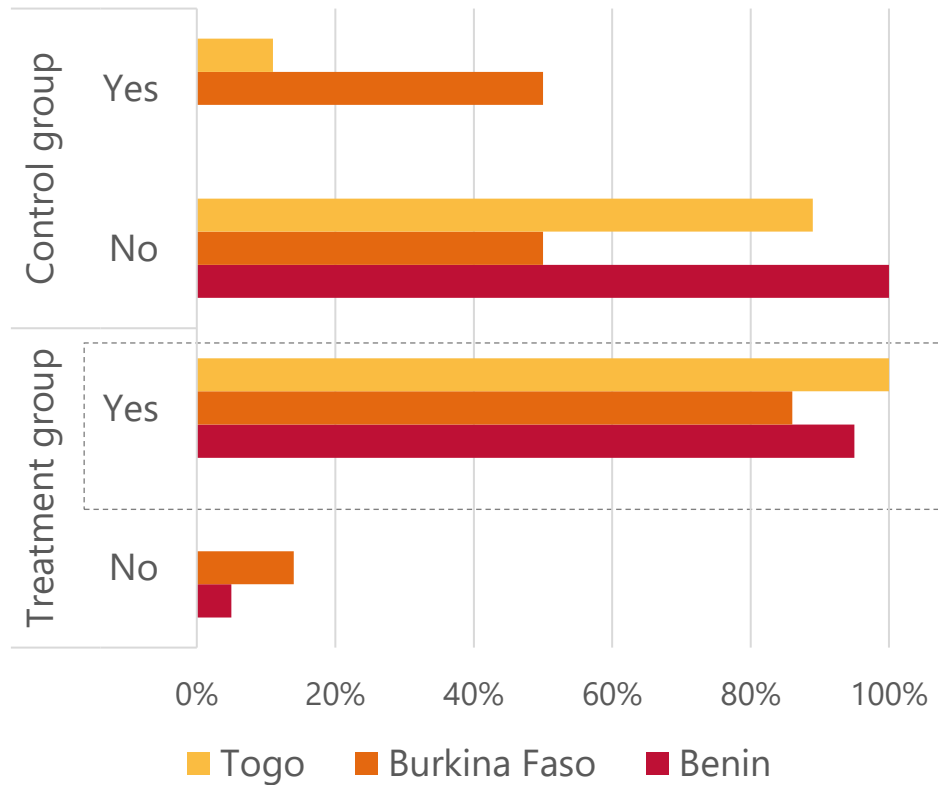
Crops improvement according to farmers



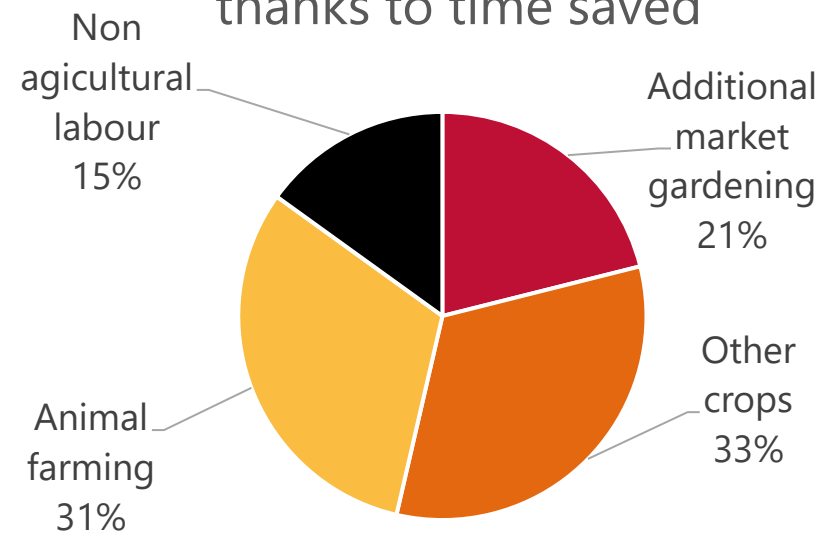
SOCIO-ECONOMIC IMPACTS

TIME SAVED AND INCOMEGENERATIVE ACTIVITIES

Time saved according to
beneficiary famers



Incomegenerative activities
thanks to time saved





SISAM

PHASE 4

Phase 1
Scoping

Phase 2
Solution

Phase 3
Deployment

Phase 4
Scale up

SCALE UP CHALLENGES

We expect phase 4 (scale-up) solution to reach at least **1 000 new family farms by 2024**.

Main scale up challenges are:

1. Involvement of institutions

- Maintain close involvement of ministries and local institutions
- Link with public polices

2. Local skills and support

- Identify and train new local partners
- Maintain qualitative support of beneficiaries

3. Reaching priority beneficiaries

- Gender balance
- Reach the poorest farmers
- Farm groups vs family farms

4. Geographical targeting

- Farm labor profile
- Hydraulic capacities
- Climate change

5. Technology / Cost

- Improve design
- Industrialization of production
- Decrease of unit cost / share of subsidies
- Support local employment development



SISAM QUESTIONS

Phase 1
Scoping

Phase 2
Solution

Phase 3
Deployment

Phase 4
Scale up