

# HEDERA SUSTAINABLE SOLUTIONS GmbH

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Web <https://hedera.online>

April 2023



# HEDERA: Our approach

**Digital solutions**

**Advisory**

**Research**

**IMPACT DATA  
MANAGEMENT**

**GREEN INCLUSIVE AND  
CLIMATE-SMART FINANCE**

**Data  
collection**

**Data  
management**

**Baseline and impact  
assessment**

**Automated  
reporting**

**Standard  
assessment  
frameworks**

**Market and sector  
research**

**Green product  
design (RE/EE,  
WASH, Agriculture)**

**Capacity  
building**

## Supported by:



## Awards:



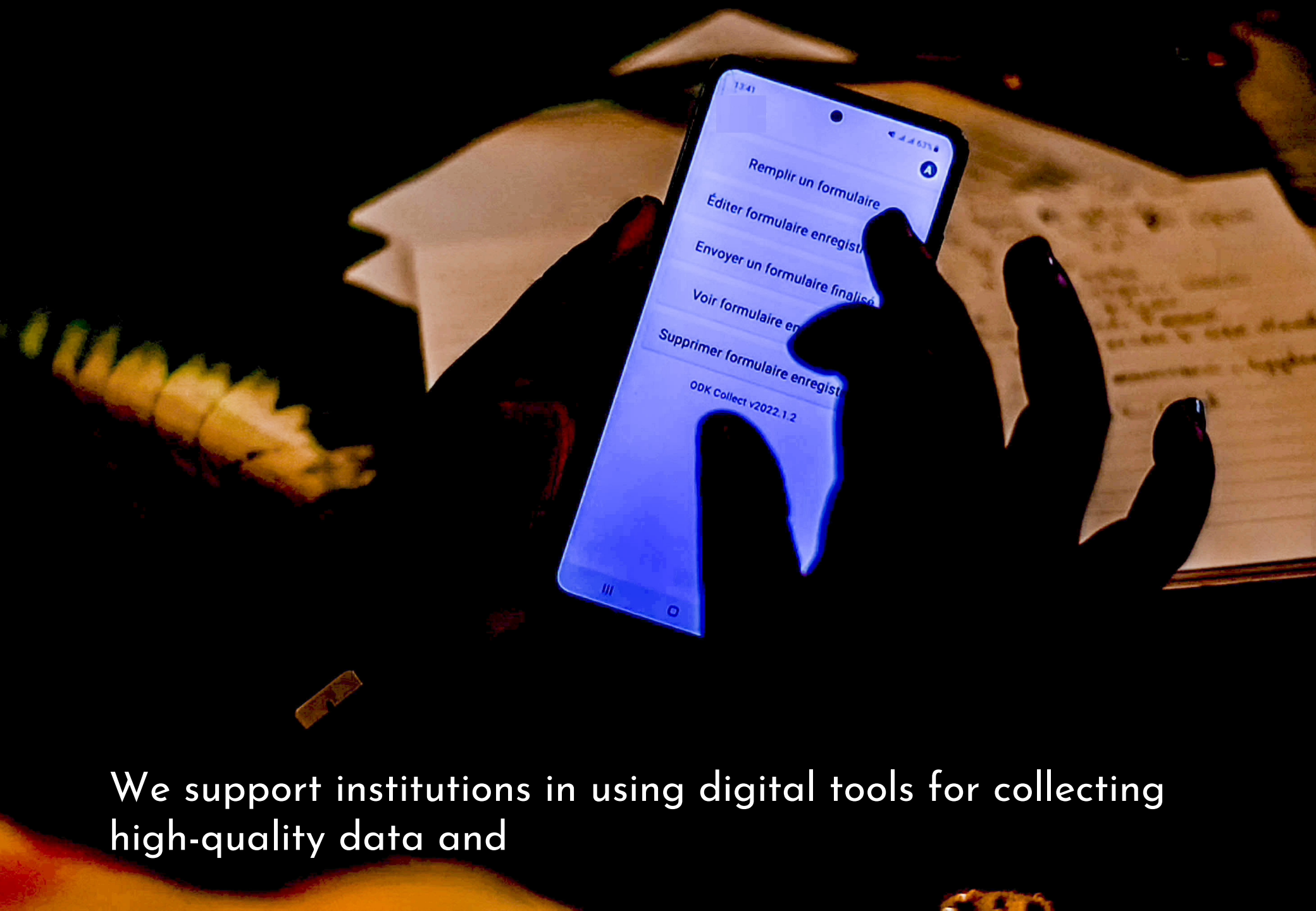
(2019) Digital innovation



(2021) Energy impact management for microfinance



(2022) German Impact Award for Education & Social Innovation



We support institutions in using digital tools for collecting high-quality data and



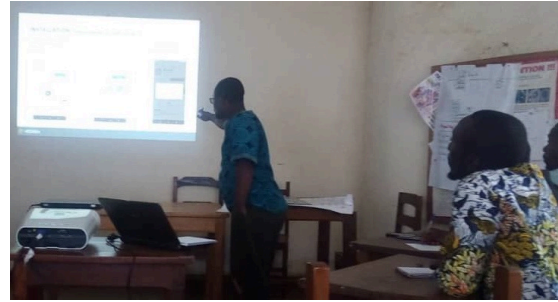
An aerial photograph of a busy street market. The street is filled with various vehicles including cars, a large yellow truck, and a white van. Pedestrians are walking along the sidewalks, and there are numerous stalls and shops, many with corrugated metal roofs. A large tree is visible on the left side of the street. A sign for 'MoneyGram' is visible on the right. The text overlay is centered over the middle of the image.

... empower microfinance stakeholders to exploit the value of data for product development, baseline and impact assessment



# HEDERA: Your Impact Data Management

**Our vision** Empower local institutions. We strongly believe that microfinance institutions and local NGOs are powerful vehicles for sustainable development, with great impact on people.



**Our mission** Support institutions in using digital tools for collecting high-quality data, in order to understand the needs of their community in terms of basic services and for efficiently tracking their contribution to the SDGs at household level. Assist impact investors and impact asset managers in creating integrated impact management and reporting solutions based on the latest standard indicators.

**What we do** Digital solutions and advisory for impact data management (data collection, analysis, & reporting), e-training & IT support

# **Our Services**

**Household Assessment & Impact Data Management**

**Digital Tools for Custom KPI Assessment**

**Trainings, Webinars, Workshops, & Conferences**



# Household Assessment & Impact Data Management

## PROJECT WORKFLOW



Survey design & optimization



Technical setup



Intuitive mobile app for field officers.



Remote training & support



AI-Automated digital reports

# Household Assessment & Impact Data Management

Field officer perspective

## PROJECT WORKFLOW



Survey design & optimization



Technical setup



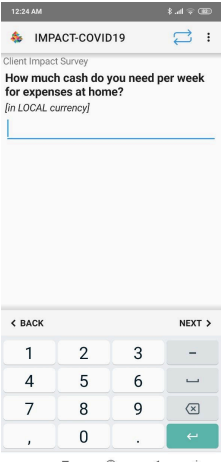
Intuitive mobile app for field officers.



Remote training & support



AI-Automated digital reports



Android App



# Household Assessment & Impact Data Management

IT perspective

## PROJECT WORKFLOW



Survey design & optimization



Technical setup



Intuitive mobile app for field officers.



Remote training & support



AI-Automated digital reports

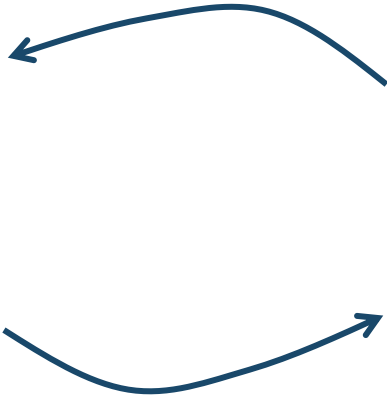
HOUSEHOLD DEMOGR...

Household Socio-Demographic Questionnaire >  
Household Information > Source of income

\* What is the main source of income of the household

- Agriculture (Crop, Vegetables, Livestock, Forestry, Fishing)
- Service business
- Commerce/Independent Business/Artisan
- Mining
- Construction
- Professional, engineering, scientific or technical activities
- Health/Doctor or social work
- Education (Teacher, Professor)
- Government/Administrative
- Military / Security

< BACK      NEXT >



DDK Control    Projects    Users    System

### DEMO VIDEOS HOUSEHOLD DATA

Overview    Project Roles    App Users    Form Access    Settings

#### About Projects

Projects let you group related Forms and Users. Web Users can be given Roles that let them perform certain actions within this Project, including using a web browser to fill out Forms. App Users for this Project can only see Forms in this Project which they have access to.  
For more information, please see this [help article](#). If you have any feedback, please visit this [forum thread](#).

#### Right Now

- 0 > App Users who can use a data collection client to download and submit Form data to this Project.
- 3 > Forms which can be downloaded and given as surveys on mobile clients.

#### Forms

Name	ID and Version	Submissions	Actions
ENERGY ACCESS (MTF) >	etf_household_harmonized 2822961288	0 Submissions >	<a href="#">Preview</a>
HOUSEHOLD DEMOGRAPHIC >	househoId_roster 2821802016	0 Submissions >	<a href="#">Preview</a>
WOMEN EMPOWERMENT IN AGRICULTURE INDEX (WEA) >	weaL_survey 2821118828	0 Submissions >	<a href="#">Preview</a>

# Household Assessment & Impact Data Management

Impact management team perspective

## PROJECT WORKFLOW



Survey design & optimization



Technical setup



Intuitive mobile app for field officers.



Remote training & support



AI-Automated digital reports

## OPTIMIZED MOBILE SURVEYS



Food and Agriculture Organization of the United Nations



MULTI-TIER FRAMEWORK



Energy Sector Management Assistance Program



INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE



Choose Language

English



### CUSTOMER SATISFICATION (DEMO)

#### Customer detail

Gender

- Woman
- Man
- Diverse
- Prefer not to say

→ Next



Return to Beginning

Go to End



# Household Assessment & Impact Data Management

IMM Team:  
Visualization

## PROJECT WORKFLOW



Survey design & optimization



Technical setup



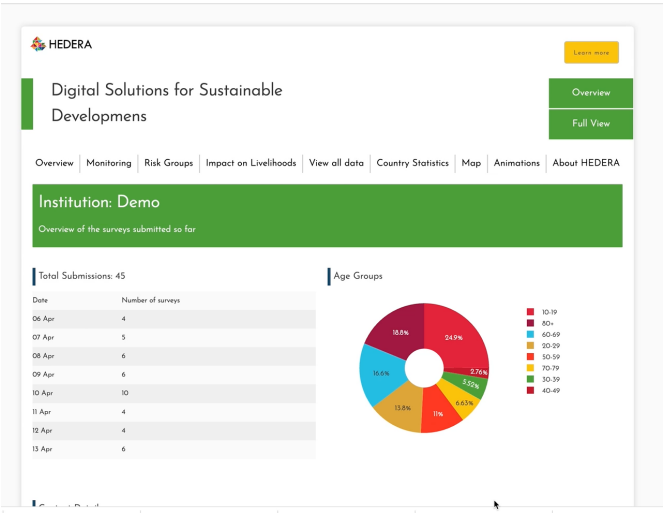
Intuitive mobile app for field officers.



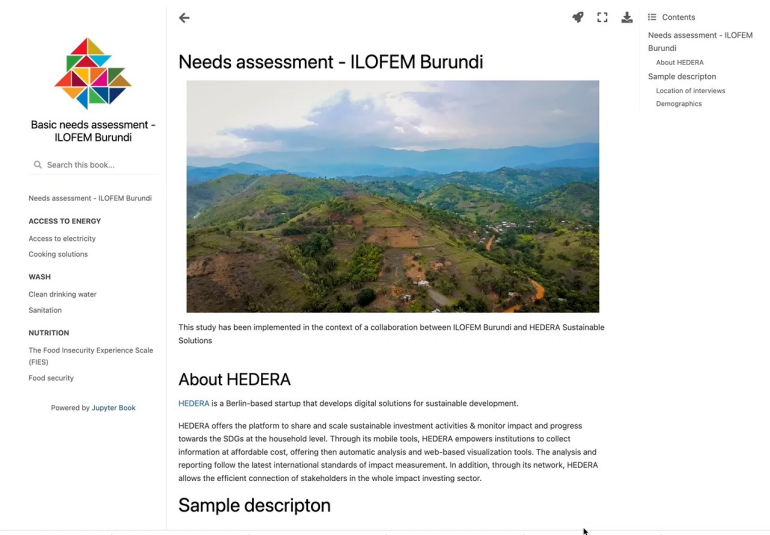
Remote training & support



AI-Automated digital reports



Dashboard



Digital Report

**PDF/Excel**

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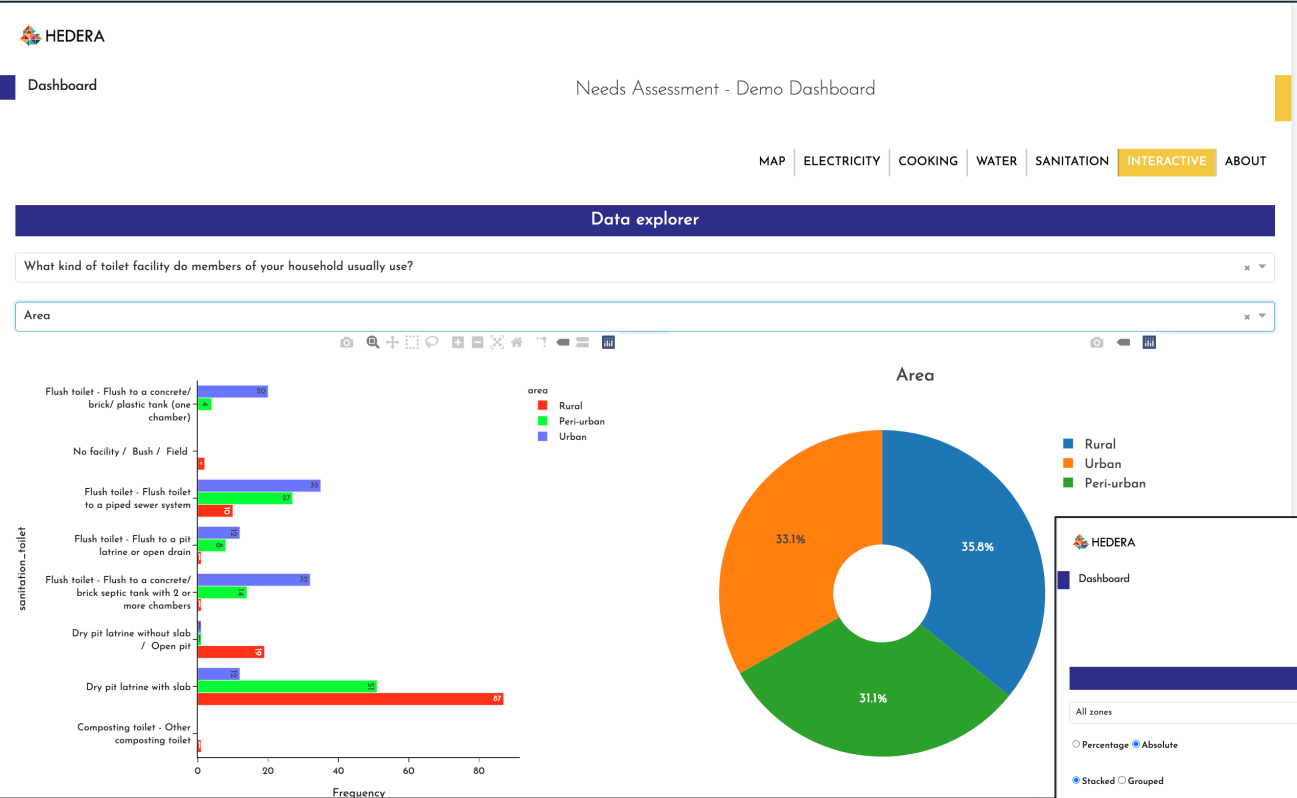
    Toilet 40

PDF/Excel



# Demo Needs Assessment Dashboard

Custom and interactive graphs - energy access, WASH, satisfaction & issues, willingness to pay



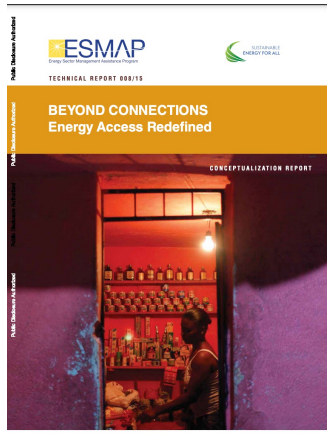
Can be integrated and combined with other data sources



# Assessment Frameworks: Access to Energy



## The Multi-tier framework (MTF)



Developed by ESMAP  
(The World Bank)

Measures access to energy  
at the household level  
across several attributes  
(electricity & cooking)

ATTRIBUTES		TIER 0	TIER 1	TIER 2	TIER 3 <sup>b</sup>	TIER 4	TIER 5
Capacity	Power capacity ratings (W or daily Wh)	Less than 3 W Less than 12 Wh	At least 3 W At least 12 Wh	At least 50 W At least 200 Wh	At least 200 W At least 1 kWh	At least 800 W At least 3.4 kWh	At least 2 kW At least 8.2 kWh
	Services		Lighting of 1,000 lmhr per day	Electrical lighting, air circulation, television, and phone charging are possible			
Availability <sup>a</sup>	Daily Availability	Less than 4 hours	At least 4 hours		At least 8 hours	At least 16 hours	At least 23 hours
	Evening Availability	Less than 1 hour	At least 1 hour	At least 2 hours	At least 3 hours	At least 4 hours	
Reliability		More than 14 disruptions per week			At most 14 disruptions per week or At most 3 disruptions per week with total duration of more than 2 hours <sup>c</sup>	(> 3 to 14 disruptions / week) or ≤ 3 disruptions / week with > 2 hours of outage	At most 3 disruptions per week with total duration of less than 2 hours
Quality		Household experiences voltage problems that damage appliances				Voltage problems do not affect the use of desired appliances	
Affordability		Cost of a standard consumption package of 365 kWh per year is more than 5% of household income			Cost of a standard consumption package of 365 kWh per year is less than 5% of household income		
Formality		No bill payments made for the use of electricity				Bill is paid to the utility, prepaid card seller, or authorized representative	
Health and Safety		Serious or fatal accidents due to electricity connection				Absence of past accidents	



Used by ESMAP to monitor progress towards SDG7 at country level

### IMPACT MEASUREMENT INDICATORS:

- Increase in overall tier
- Increase in selected indicators (e.g., energy reliability or safety)

# Assessment Frameworks: WASH



## Service ladder framework developed by the Joint Monitoring Program (JMP) UNICEF+WHO

### Drinking water ladder

SAFELY MANAGED	Drinking water from an improved water source that is accessible on premises, available when needed and free from faecal and priority chemical contamination
BASIC	Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing
LIMITED	Drinking water from an improved source for which collection time exceeds 30 minutes for a roundtrip including queuing
UNIMPROVED	Drinking water from an unprotected dug well or unprotected spring
SURFACE WATER	Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal

### Sanitation ladder

SAFELY MANAGED	Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite
BASIC	Use of improved facilities which are not shared with other households
LIMITED	Use of improved facilities shared between two or more households
UNIMPROVED	Use of pit latrines without a slab or platform, hanging latrines or bucket latrines
OPEN DEFECCATION	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste

Based on a set of core questions to rank each household in a service ladder (for water, sanitation, and hygiene)



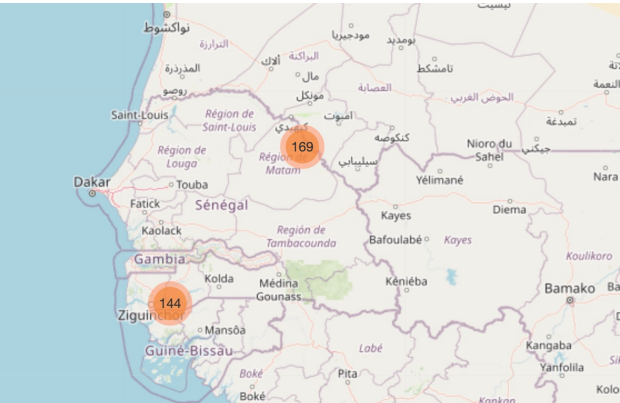
Used by JMP to track progress in SDG6 at level of households, schools, and health facilities

### IMPACT MEASUREMENT INDICATORS:

- Increase in overall ladder
- Increase in selected attributes (e.g., water availability, water quality, sanitation safety)



# Energy-Water Baseline Assessment in Senegal (Microfinance institution: EdM FANSOTO)



70% Connected to the grid



50% Availability of electricity or reliability issues



Less than 25% using clean fuel

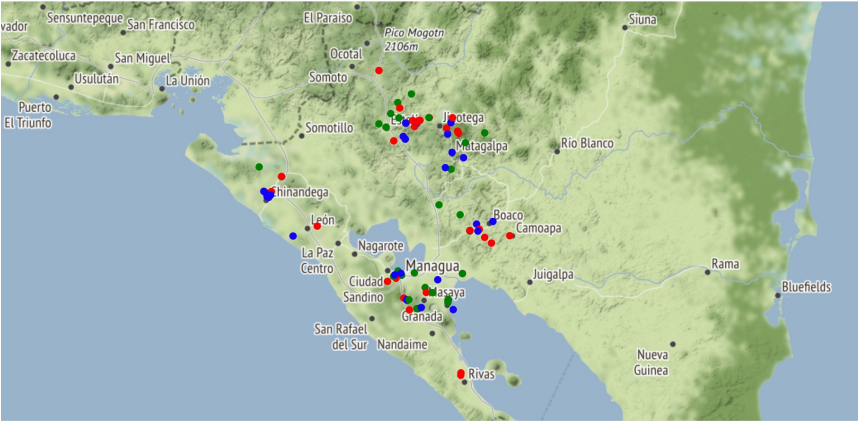


40% with access to improved sanitation





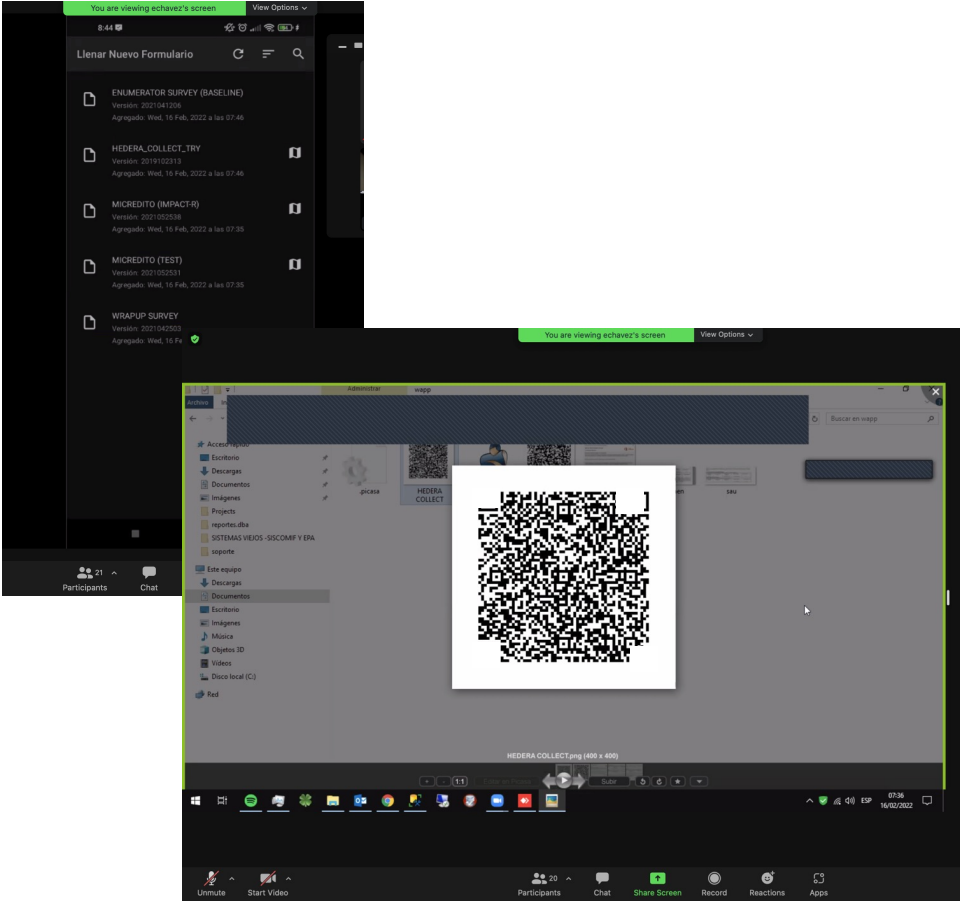
# Energy-Water Baseline Assessment in Nicaragua (Microfinance institution: MiCrédito)



1,200 households surveyed

All 40 loan officers involved

MiCrédito uses already a similar data collection system: advantages -> very fast integration, training 100% remote communicating with their IT dept.



# IMPACT-R



# Community Baseline Assessment in Burundi (local NGO: ILOFEM)



Team of 10 enumerators



In local language, easy to understand for surveyors and participants



500 households interviewed in 1 week



80% off-grid, 95% relying on biomass for cooking



80% collect biomass, 25% needs 1h/day



Women are in charge of fetching cooking fuel and water

# Digital Tools for Custom KPI Assessment

## **DIGITIZATION**

Convert Excel tools into webforms, technical setup (server & database)

## **ADVISORY**

Optimize flow, correct common errors (AI-based validation), simplify aggregation

## **REPORTING**

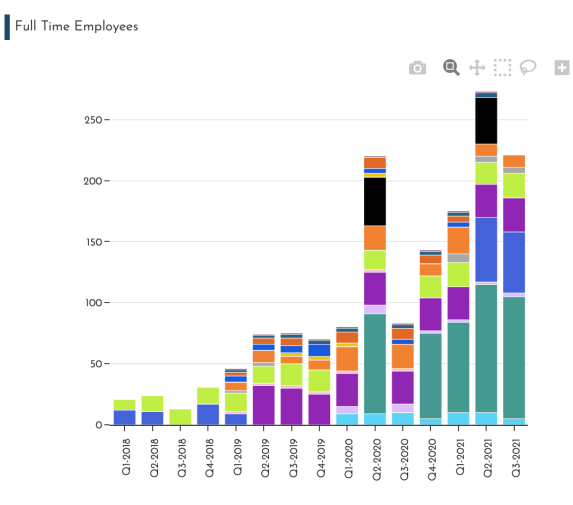
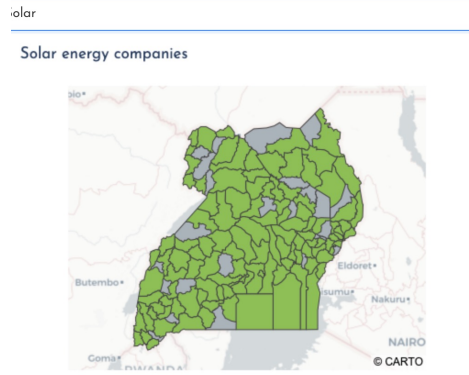
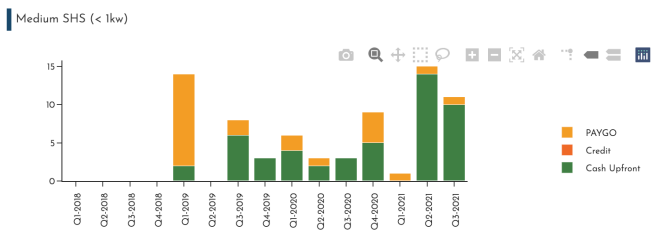
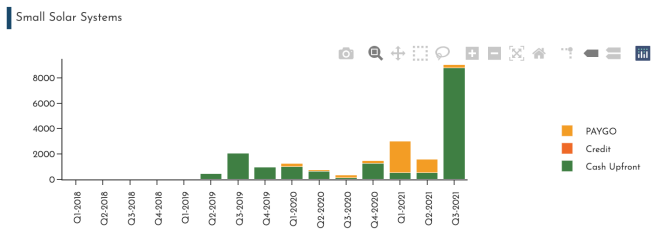
Automatize reporting from different investees, custom visualization (dashboard or digital report)

# Automation of Reporting (UNCDF Uganda/DRC)

## Impact KPIs Tracking for UNCDF RECF Program (Renewable Energy Challenge Fund)

- Digitization of KPI Tool
- Overall cleaning of database
- Web-Visualization
- Training of investees

PRODUCTS & SALES | SALES OUTREACH PER DIS | ORGANIZATION/STAFF





# Automation of Reporting (UNCDF Uganda/DRC)

## Impact KPIs Tracking for UNCDF RECF Program (Renewable Energy Challenge Fund)

UNCDF DRC Automation of Clean Cooking SMEs KPI Reporting (DRC)

COMPANY KPIS: BBoxx, Brisol-1, Brisol-2, Yahwe Nissi, ALTECH, BASCONS, ESF, DAP Energy, TAD ET MBOA, ETS Mizinzi

Products	Sales	Target	Difference	Q1-2021	Q2-2021	Q3-2021	Q4-2021	Q1-2022	Q2-2022	Q3-2022	Q4-2022
Cookstoves	54920	95700	-42.61%	3164	6875	7980	11559	9475	10926	2705	2238
Starter kits	5054	3000	68.47%	1671	940	829	646	456	512	0	0
Ceramic liners	2347	3600	-34.81%	0	0	0	0	1239	1108	0	0
LPG stoves	3670	3050	20.33%	87	819	1952	812	0	0	0	0
LPG (tons)	1449	1425	1.68%	172	209	239	226	208	392	0	0
Briquettes (tons)	425	1580	-73.1%	0	0	0	102	147	175	0	0

Investor View

DAP Energy Automation of Clean Cooking SMEs KPI Reporting (DRC)

Products & Sales | Customer segments | KPI Quarterly Table

Starter kits

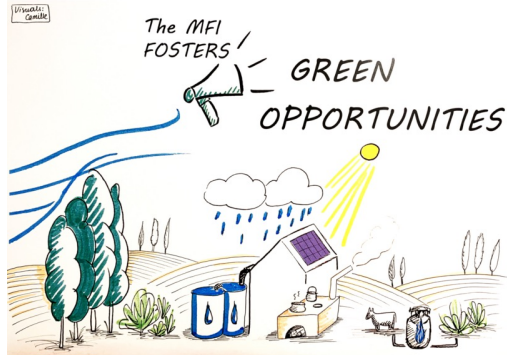
Sales

LPG (tons)

Investee View

# IT Advisory & Digitization: Green Index 3.0

## GREEN INDEX



Collaboration between European Microfinance Platform, SPTF & CERISE

Flexible and adaptive web-tool

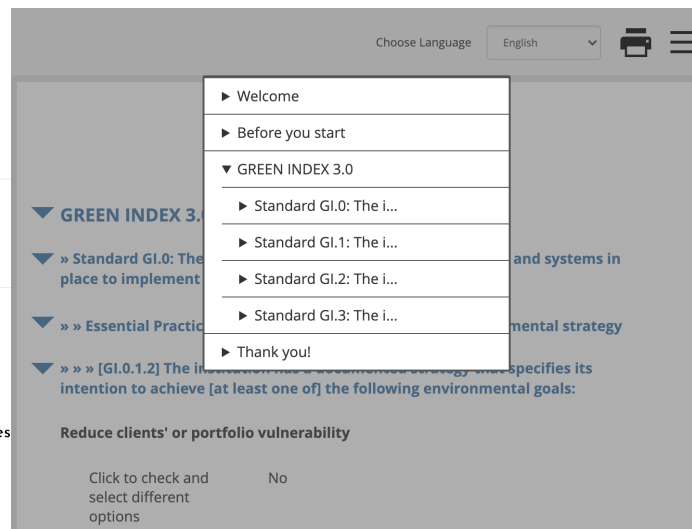
Automated reporting features

Digitized automated report

GREEN INDEX 3.0 REPORT

Contents	
<b>1 About the Green Index 3.0</b>	<b>2</b>
Standard GI.0: Environmental strategy	2
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Officers perspective (20 answers)	5
Risk Management View	6
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Breakdown	7
<b>4 Green Practices &amp; Technology Financed</b>	<b>8</b>

### Excel tool converted to webform



### Green Index 3.0

For management

See also the [FAQ section](#).

For field officers (English, Français, Español)

ضوابط الميدان (English, Arabic)

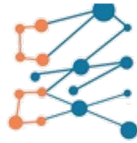
### Frequently Asked Questions

Where can I find more information about the activities

Dedicated website for tool

# Clients

## NGOs



Clubes de Ciencia



## Impact Investors



## Development Cooperation



# Research Partners



# MFIs - Assessments' Implementations



FORTUNE CREDIT  
*Delivering Dreams*

*MiCrédito*  
*Crecemos juntos!!!*



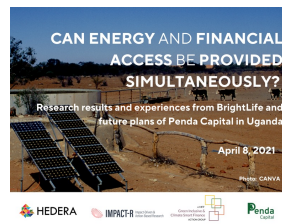
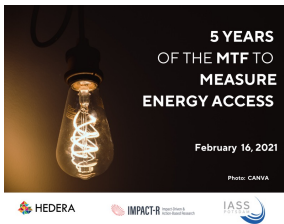
ENTREPRENEURS  
*du Monde*



Examples of  
**TRAININGS -  
WORKSHOPS -**  
more

# Trainings, Webinars, Workshops, & Conferences

## 2021 Webinar Series



## Trainings & Workshops

### Digital solutions for green finance + Green Index 3.0

Training (FSPs, MIVs and consultants) on digital tools for assessing environmental performance of FSPs

### Data collection tools for energy, WASH, food security

Training for microfinance practitioners on tools and international frameworks for assessing access to basic services.

### Climate change adaptation strategies for MFIs

Training for microfinance practitioners on strategies on climate change adaptation and mitigation within their organizations and for their clientele.

## HEDERA Training platform

**HEDERA**

**MICROFINANCE AND GREEN FINANCE**

The linkage between microfinance and energy supply and the origins of green microfinance will be examined. The course will look at the current energy financing approaches, e.g. paygo and energy loans. The role of impact investors in enhancing energy access and developing the energy sector will be explored.

- Expertise
- Case Study: How to scale up Green Microfinance? Peruvian MFIs
- Green Microfinance in Latin America, FOMIN
- Why do Microfinance Institutions go green?
- Case Study Analysis: Energy access through microfinance
- Distribution models of energy products in microfinance
- PAYGO ENERGY - Case
- Homework - Delivery of case study analysis

**GETTING STARTED WITH DATA SCIENCE + PRINCIPLES OF DATA COLLECTION AND STORAGE**

The course will give participants a deep understanding of data collection, cleaning, preparation, types, and storage. It will look at both non-aggregated and aggregated data. Best practices for a database architecture in the cloud will be reviewed. The course will teach participants how to work with containers and the basics of container orchestration. Cloud services and storage will also be covered.

- Virtual Classroom
- Video: how data science is done
- Book: Python Data Science Handbook

# CO-FOUNDERS

Natalia REALPE CARRILLO, CEO [natalia@hedera.online](mailto:natalia@hedera.online)



10+

Consultant in green inclusive (portfolio diversification, market assessment, suppliers' evaluation, M&E) and impact assessment.  
Co-head of the Green Inclusive Finance AG of e-MFP.  
Klaus Töpfer Sustainability Fellow at IASS Potsdam (IMPACT-R Project)

PhD

Energy Engineering - needs assessment tools for MFIs

Alfonso CAIAZZO, Impact Data Management [alfonso@hedera.online](mailto:alfonso@hedera.online)



15+

Project-Oriented Research in Applied Mathematics, Software Development

PhD

Applied Mathematics



# HEDERA

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April 2023

