

Green Economy and Rural Development

INDIA

*Expert Group Meeting on Green
Economy and SDGs March
Jeju, Republic of Korea
12th, 2018*

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Regional Director, Asia





GREEN ECONOMY for whom?

Serves

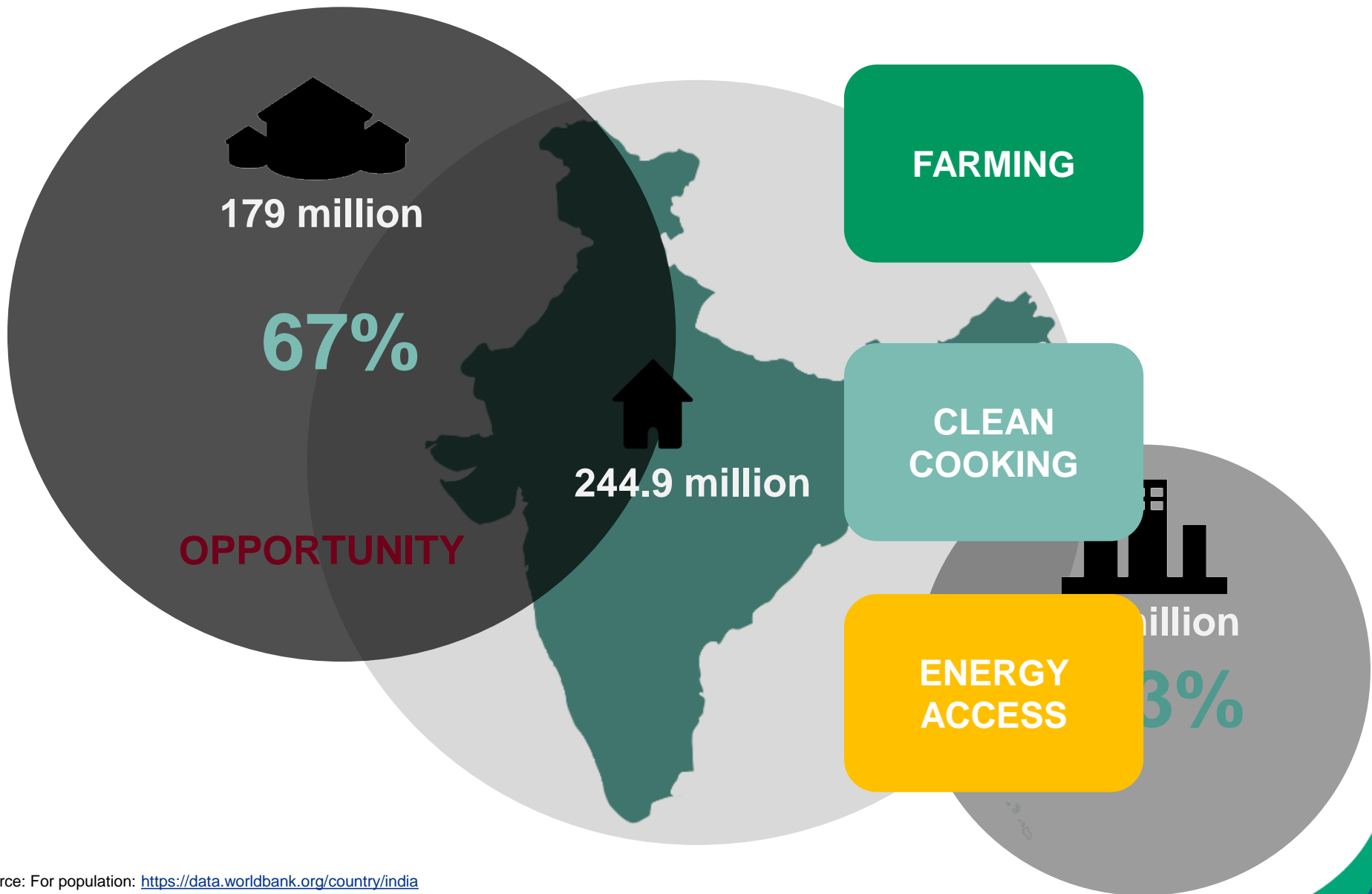
INDIVIDUAL

Improving material, health and environmental conditions in the short & long term

NATIONAL & Sub national INTEREST

GLOBAL INTEREST?

In FOCUS: INDIA



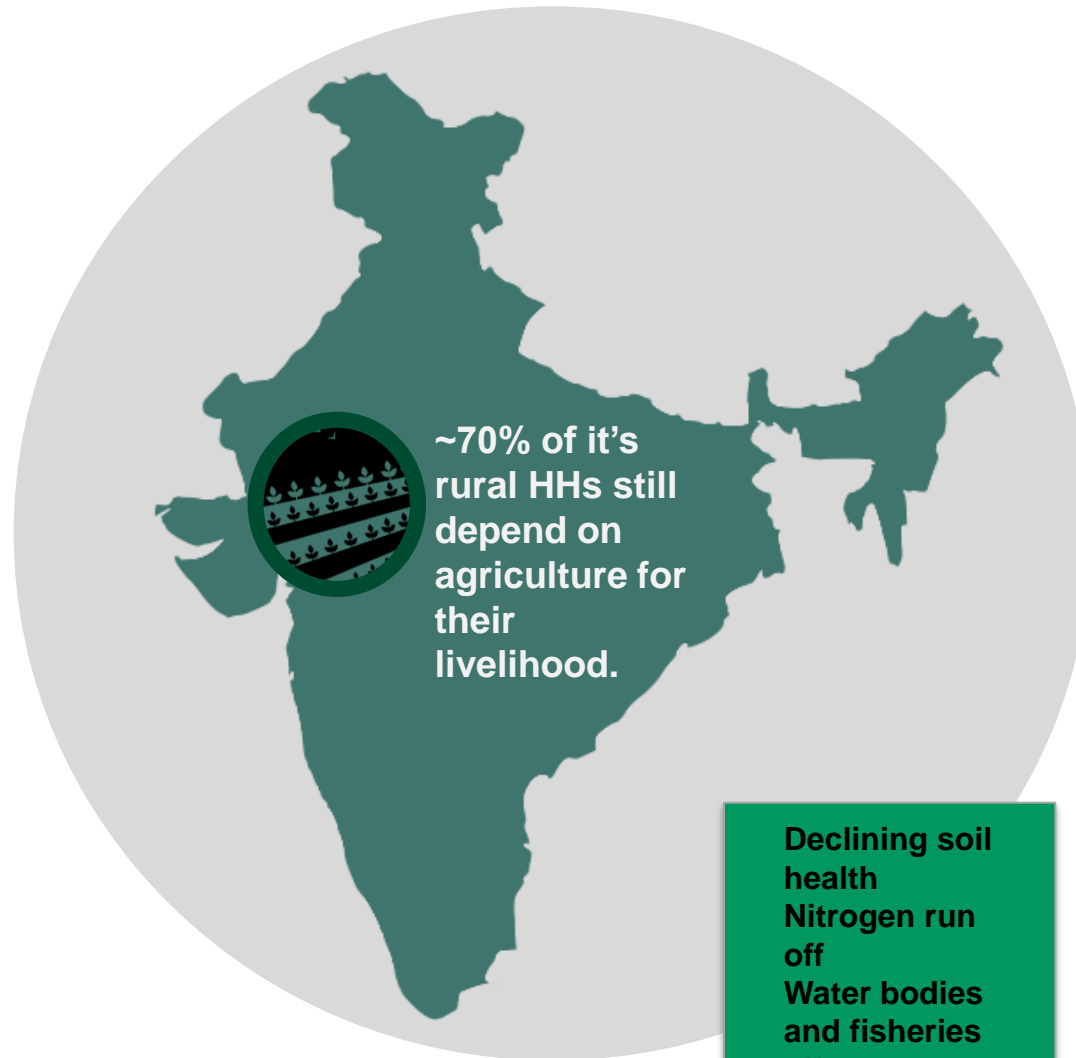
Source: For population: <https://data.worldbank.org/country/india>

Household data: [SECC 2011](#)

NSSO 2009-10 Key Indicators of Household Consumer Expenditure, monthly per capita expenditure (MPCE) based on modified mixed reference period

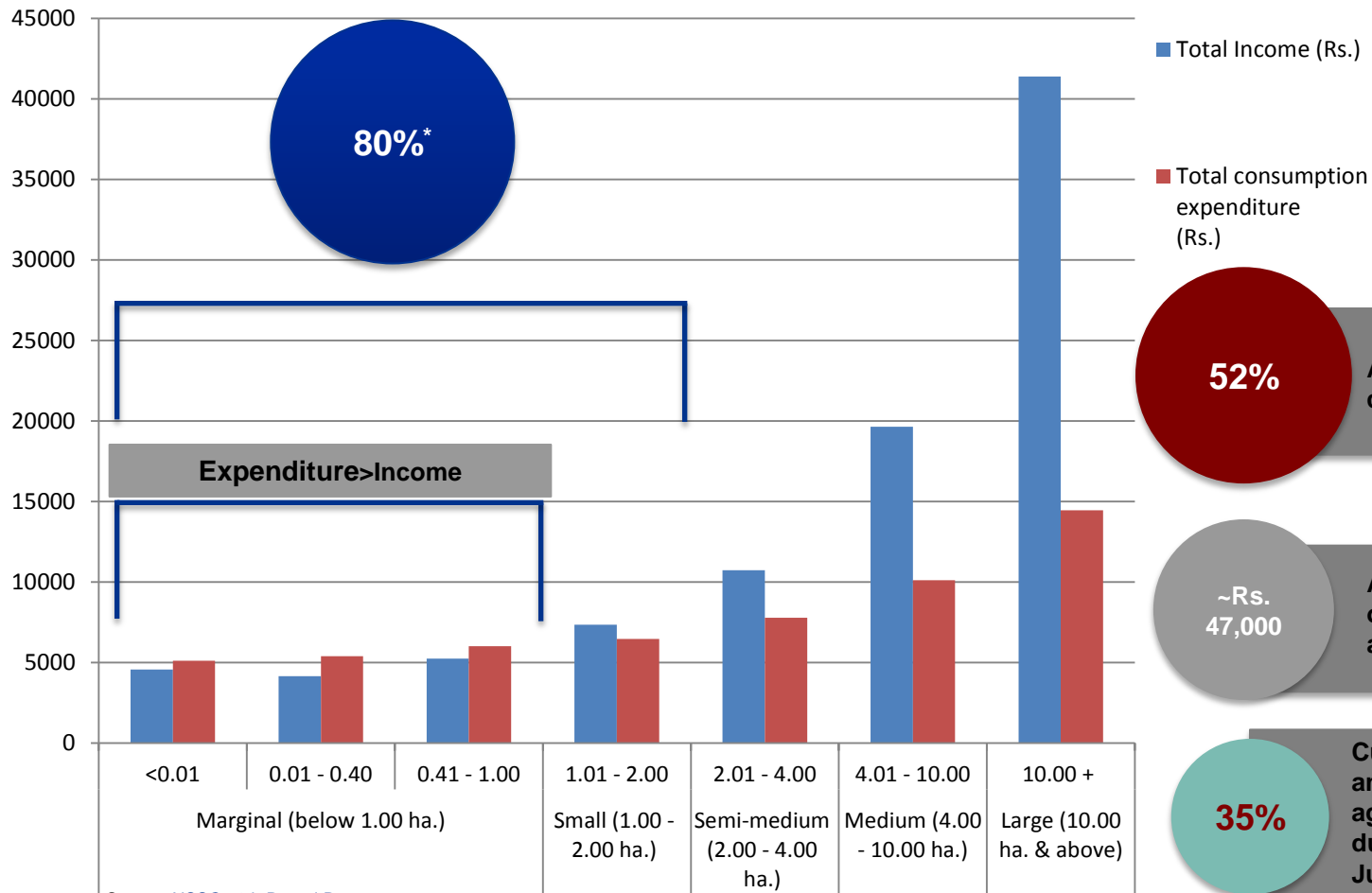
(MMRP) 2009-10

Challenges in farming/agriculture in India



Drawing focus to small and marginal farmers...

Avg. monthly income (Rs.) from different sources, consumption expenditure and net investment in productive assets per agricultural HH during July 2012- June 2013 for each size class of land possessed



80%*

Expenditure > Income

52%

Agriculture HHs in country indebted

~Rs. 47,000

Avg. amount of outstanding loan per agriculture HH

35%

Cultivator households accessed any of the listed sources/ agencies for technical advice during the period January 2013- June 2013

Source: [NSSO 70th Round Report](#)

*Challenges & Opportunities of small farmers in India, International Journal of Academic Research, Vol. 2 Issue 2, April-June 2015

A photograph of a farmer in a white shirt and dark pants, wearing a white turban, plowing a field with two oxen. The field is dark brown soil, and there are green trees in the background. The image is overlaid with a semi-transparent dark grey layer and a diagram with green and blue boxes and lines.

Energy Savings

Food Security

**Farming practices that
focus on resource use
efficiency can deliver-**

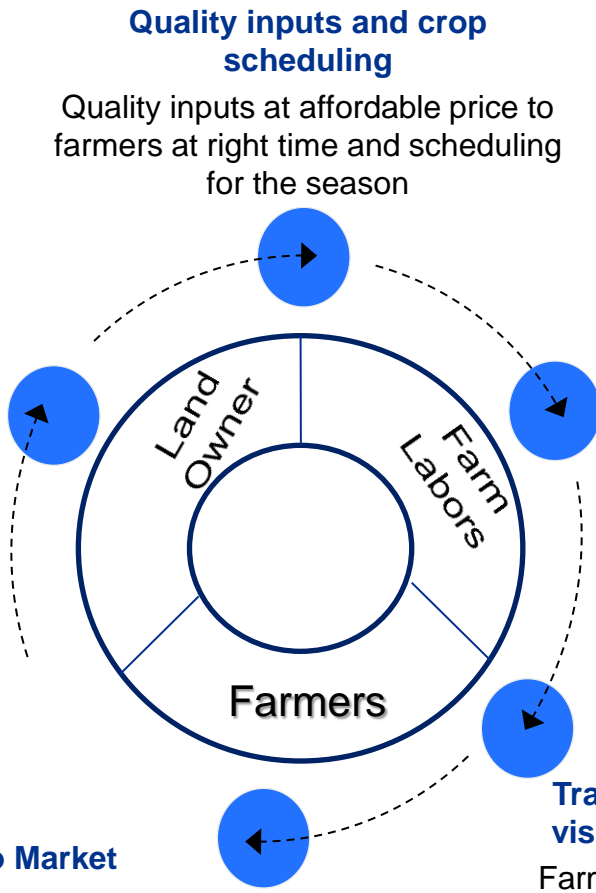
Profitability

**Environmental gains of
mitigation & adaptation**

Various Suppliers driven by demand



Farm Testing & Farmers profiling
 R&D team carries out tests for Soil (pH, RH, N-P-K ratio), Farm type and other climatic conditions



Quality inputs and crop scheduling
 Quality inputs at affordable price to farmers at right time and scheduling for the season

Crop reminders & Access to information
 Through capturing field level data frequently and providing quality extension to farmers

Access to Market
 Small growers are linked directly to institutional buyers

Training & field visit by experts
 Farm gate training & field visits by scientists for plant protection



agrevolution **FIN**

Name	: NEGAM SINGH
FIN	: Amb0007
Village	: BATROLIA
Membership Date	: 2013-12-12

Land Type	Area
Upland	1 Acre
Midland	NA
Lowland	NA
Orchard	1 Bigha

Upland Crop Description :

Crop	Variety	Season	Area	Soil	Yield	Rate
Gehu	2338	Rabi	1 Bigha	halqi	NA	NA
Aaloo	BHOLURA	Rabi	5 Katha	halqi	NA	NA
Shakarand	NA	Rabi	5 Katha	halqi	NA	NA
Tori	INATH	Rabi	15 Katha	halqi	NA	NA

Midland Crop Description :

Crop	Variety	Season	Area	Soil	Yield	Rate
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Lowland Crop Description :

Crop	Variety	Season	Area	Soil	Yield	Rate
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Orchard Description :

Tree	Area	Number Of Trees	Rate
Mango	1 Bigha	0-10	NA

DeHaat Model of End to End Services

The Dehaat Model is a “solutions-oriented approach for a smarter, more inclusive, economically & food secure nation & state”

Dehaat centers are *tech enabled localized centers* run by *micro-entrepreneurs* in a sustainable way



Farmers' profile management

Technology related to best agricultural practices

m-commerce platform for 400+ agri-input, farm equipment at better rates

Farm based advisory on real time basis

Aligning with national interests: Doubling farmer incomes by 2022

THE  HINDU

India To Ratify Paris Climate Agreement On October 2, Says PM Modi

“We have to find ways to produce **more** on **less land** and in **less time** without **any quality erosion**.”

Address at the 86th Foundation day of Indian Council of Agricultural Research



THE TIMES OF INDIA

PM Modi calls for ‘per drop, more crop’

Govt to prepare roadmap for doubling farmers income by 2022

PTI | Feb 16, 2018, 08.55 PM IST

“These small farms, though operating only on **44 per cent** of land under cultivation, are the **main providers** of **food** and **nutritional security** to the nation, but have **limited access** to technology, inputs, credit, capital and **markets**.”



THE ECONOMIC TIMES

The key takeaways of these statements is that resource use efficiency is at the core of sustainable agriculture practices, facilitating higher farmer profits and incomes.

Timeline: CSA program milestones

2012-15

EDF-FCN work in South India

- Development of tech platform
- Established scientific labs across 3 states
- Developed models for CSA practices (4 Indian crops)

2016



FnF+EDF partnership announced in W. Champaran



Union Agriculture Minister launches DeHaat App (FV)

Phase 1 Champaran Project

2017

- Agreement with GOI to deploy CSA program across jurisdiction + 1 district in another state
- Champion similar platforms within the government

2018-20



200,000 Farmers

Open discussions on national policy

Measure impacts of program across pilot locations

Launch CSA program with GOI in third quarter

Feb '16

April '16

Oct '16

March '17

Worked with 5 NGOs across their constituents

2,000 farmers surveyed

35,000 air samples (NO₂ + CH₄) analyzed across 5 labs est. by EDF

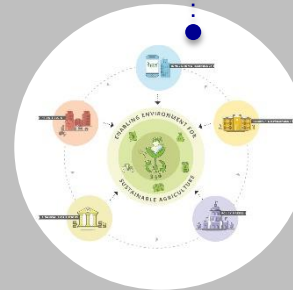
25 personnel trained in specialized instrument operation + lab maintenance

50 personnel trained in field operations: soil, water & air sampling

8 DeHaat centres

~5,000 farmers registered

1,01,460 farmer touch points (FTPs)



Enabling Environment for Sustainable Agriculture

20,000 HHs of 2 adjacent blocks

8 DECENT WORK AND ECONOMIC GROWTH



Alignment with Sustainable Development Goals

1 NO POVERTY



2 NO HUNGER



Economic

Job creation & financial inclusion

Social

Empowering farmers & the community

CSA project and its impact

Technological

Innovation, data & transparency

Environmental

Nitrogen use efficiency, water & soil management, organic carbon stock in soil, N₂O & CH₄ emissions

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



17 PARTNERSHIPS FOR THE GOALS



13 CLIMATE ACTION



Alignment with Sustainable Development Goals

Access to clean cooking





A household biogas unit serving 5-6 members can mitigate **1.5-3 tons of CO₂e per year** while also:

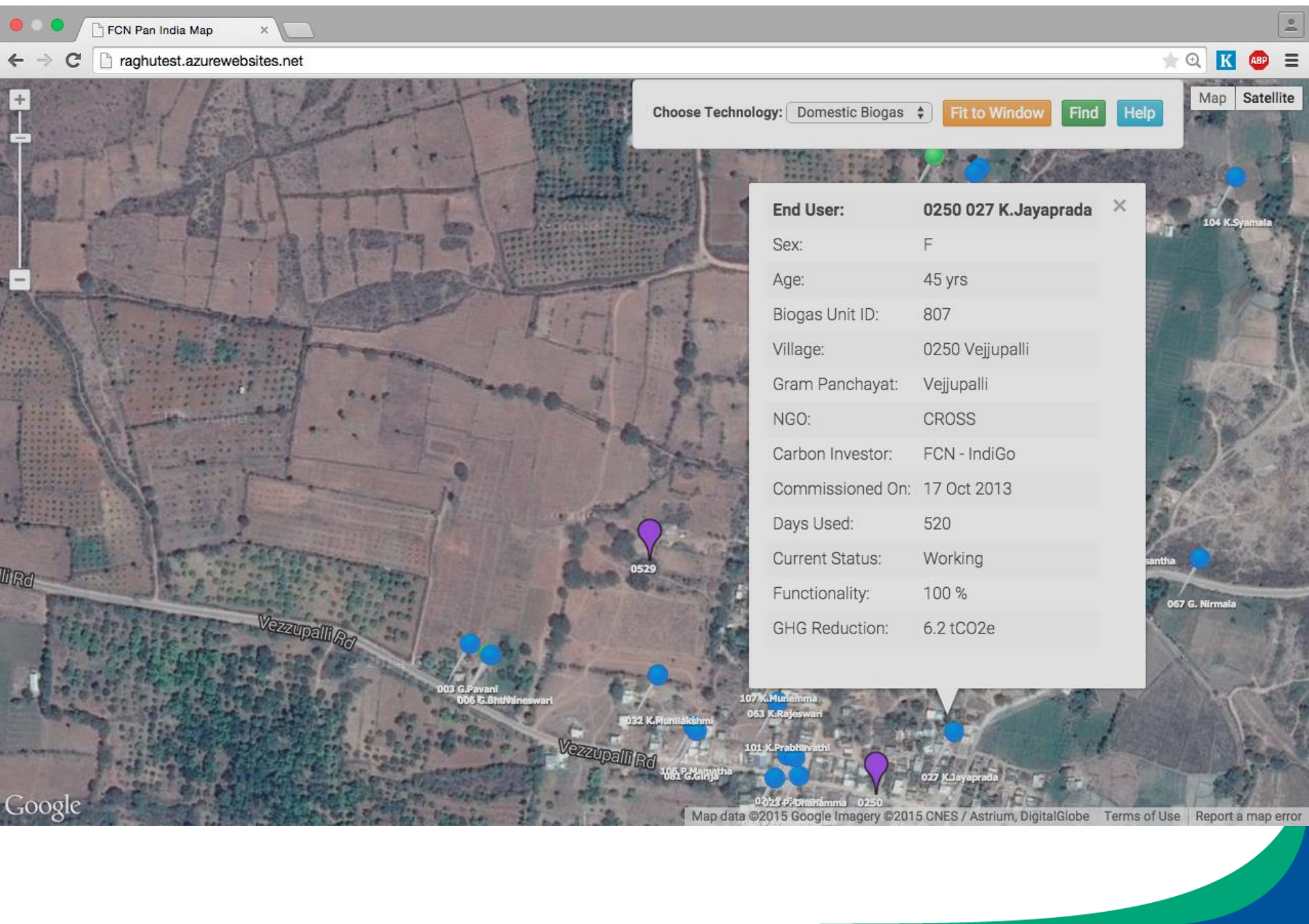
1 Reducing Indoor Air Pollution

2 Improving household health

3 Freeing up time used to collect firewood

4 Opening the door for new income opportunities





Choose Technology:

Domestic Biogas

Fit to Window

Find

Help

Map Satellite

End User: 0250 027 K.Jayaprada

Sex: F

Age: 45 yrs

Biogas Unit ID: 807

Village: 0250 Vejjupalli

Gram Panchayat: Vejjupalli

NGO: CROSS

Carbon Investor: FCN - IndiGo

Commissioned On: 17 Oct 2013

Days Used: 520

Current Status: Working

Functionality: 100 %

GHG Reduction: 6.2 tCO₂e

Proposition for government



Bio gas program



Bio gas program to augment the existing government schemes: taking *clean cooking* to the *end user*

ADVANTAGES OF BIO GAS PROGRAM DELIVERY est. 15 million households

- 1 **Low Cost**
NPV ₹ 83,217 vs. ₹ 26,638
- 2 **Foreign Exchange Savings**
of over **\$1 billion** per year every year
- 3 **Job Creation of 220,000 permanent jobs & 300,000 temporary jobs**
- 4 **Stimulation of local economy**
through **local wealth creation**
- 5 **Green house gas mitigation of 45 million tonnes CO2e**
- 6 **Carbon Financing Support revenues @ USD 10 per tonne = \$450 million per year**
- 7 **For 10 million biogas units and slurry created savings on 25 million tonnes of urea and subsidies levied**

Alignment with Sustainable Development Goals

8 DECENT WORK AND ECONOMIC GROWTH



Economic
Job creation &
Financial Inclusion



7 AFFORDABLE AND CLEAN ENERGY



Environmental
Deforestation &
Air Pollution



13 CLIMATE ACTION



**Biogas
project & it's
impact**

**Health &
Nutrition**



3 GOOD HEALTH AND WELL-BEING



Social
Women's Safety &
Child Health



5 GENDER EQUALITY



Alignment with Sustainable Development Goals

Access to energy, water & cold storage in Rural India

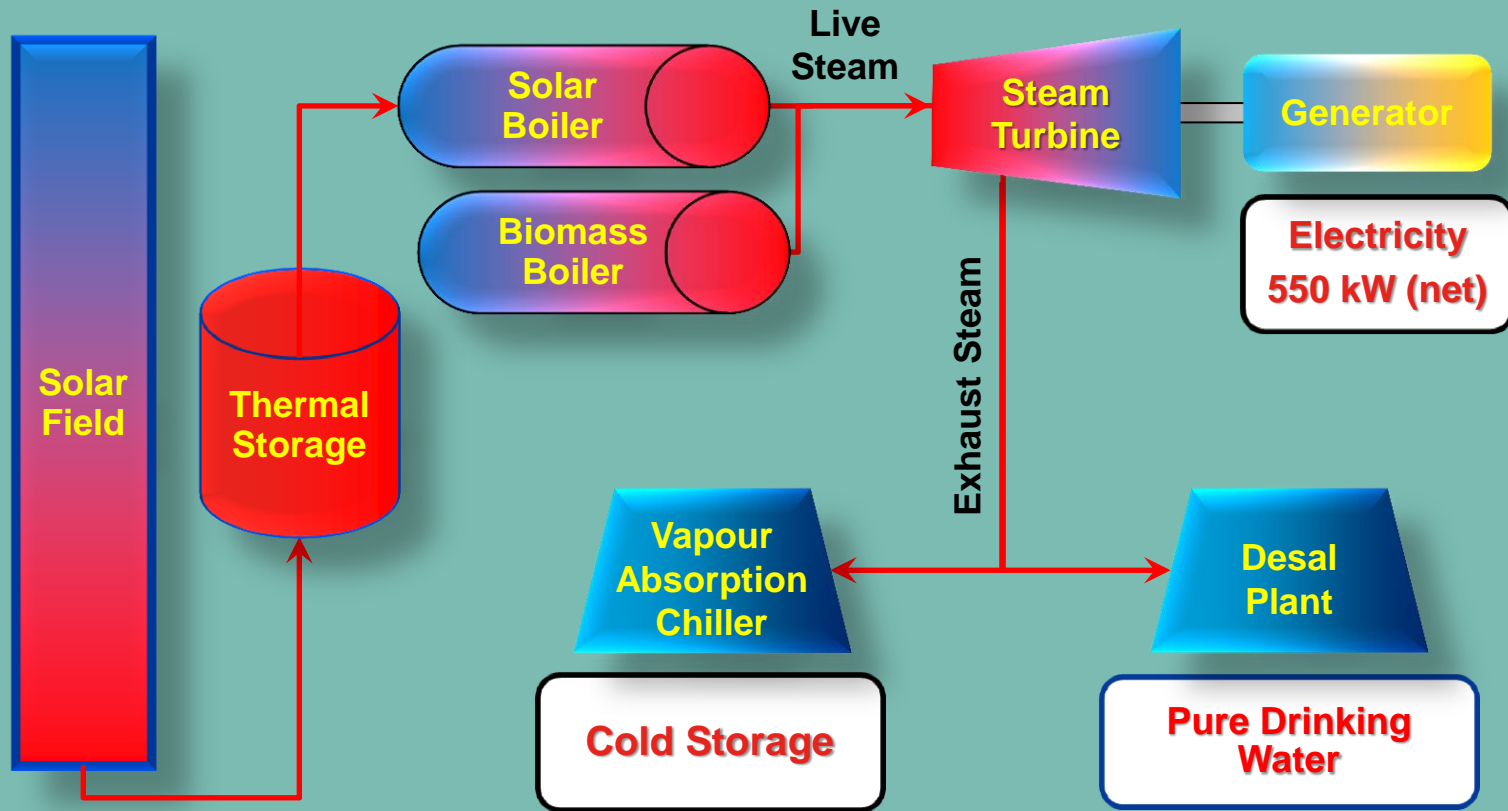


*<http://www.indianelectricity.com/rural.html> , <http://timesofindia.indiatimes.com/india/11-lakh-households-have-no-electricity-85-of-rural-India-uses-firewood-as-fuel/articleshow/12256306.cms?clid=CI3WhNWcrgCFUQIjgodTuAAHA>



***http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf

CSP-550 kW Solar Thermal Plant with Purified Water & Cold Storage



Alignment with Sustainable Development Goals



7 AFFORDABLE AND
CLEAN ENERGY



13 CLIMATE
ACTION



2 ZERO
HUNGER



6 CLEAN WATER
AND SANITATION



9 INNOVATION AND
INFRASTRUCTURE



17 PARTNERSHIPS
FOR THE GOALS



3 GOOD
HEALTH



Alignment with Sustainable Development Goals

Components for change

NGOs & CBOs



BUSINESS



Mahindra



FINANCE



Carbon finance

Private Equity

Philanthropy

SUB NATIONAL & NATIONAL GOVERNMENTS



बिहार सरकार



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