

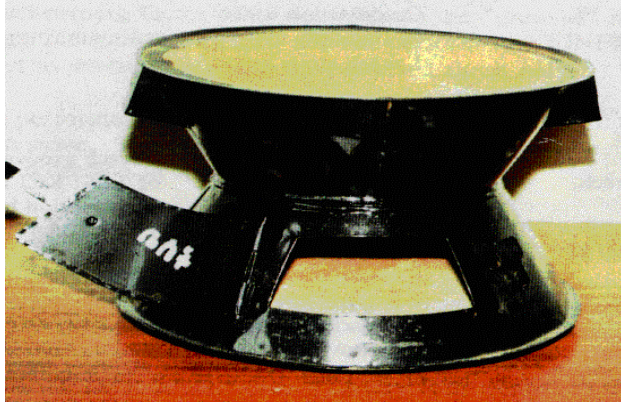
# Clean Cooking Sector in Ethiopia

Hiwote Teshome

Project Manager, SEECCS project

August, 2019





- I. Overview of SNV**
- II. Historical Development of Cook stoves Interventions**
- III. Why the SEECCS Project?**
- IV. Project at a Glance**
- V. Achievement and planned/ upcoming activities**
- VI. Overview of the National Biogas program**

# SNV Netherlands Development Organisation

We were founded in  
**1965**

**SNV works  
in 30  
countries:  
28 program  
countries**

We employ over **1,300**  
people, of whom more than  
**33%** are women

**90%** of our professionals  
are nationals of the country in  
which they work

Bolivia  
Honduras  
Nicaragua  
Peru

Benin  
Burkina Faso  
Cameroon  
DR Congo  
Ghana  
Mali  
Niger  
Nigeria

Burundi  
Ethiopia  
Kenya  
Mozambique  
Rwanda  
Tanzania  
Uganda  
Zambia

Bangladesh  
Bhutan  
Cambodia  
Indonesia  
Lao PDR  
Myanmar  
Nepal  
Vietnam

# SNV's 3 sectors and products



Agriculture

Inclusive Value Chains

Sustainable Nutrition 4 All

Climate & Business



Energy

Sustainable energy markets  
(biogas, off-grid solar &  
cookstoves)

Opportunities for Youth Employment



WASH

Sustainable Sanitation &  
Hygiene for All (Rural)

Urban Sanitation & Hygiene  
for Health and Development

Functionality of Rural Water  
Supply Services

# 1.3 SNV Ethiopia

Started operation in

**1974**

We have full fledged

**3+**

satellite offices

Currently, we implement

**17 projects**

Target Beneficiaries

**4.2 million**

People

SNV started working in Ethiopia Energy Sector from 2006



Active in

**639** Woredas

We focus on **3 sectors** which are fundamental to human development



**215** national /global staff

**97%** national staff

**27%** female staff

# SNV Ethiopia Energy Sector Overview 2019

25,250

Bio-digesters installed  
by June 2019 in

392+

Woredas (districts)

Started biogas  
feasibility study in

2006

Currently, we implement

3 Projects

(2 on bio-digester + 1 on enabling  
environment )

Current energy portfolio in  
Ethiopia

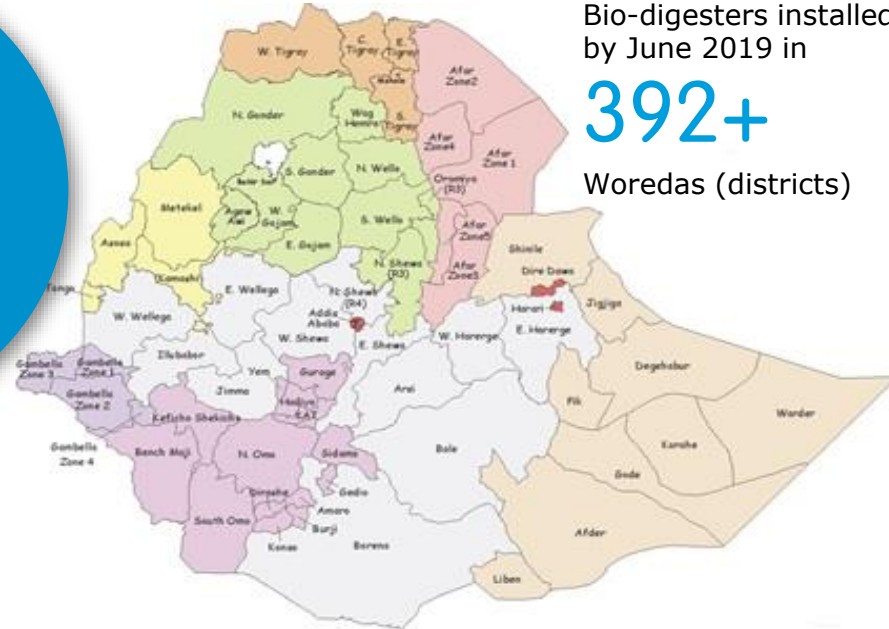
21.27 Million EURO

Target Beneficiaries in 2019

39,840

People

Working  
in 8  
Regions



Full time staff

20

1

international  
staff

2

female full  
time staff

Budget for 2019

€ 3.008  
Million

Pipeline projects

€ 1.2  
Million

# History of Cookstoves Interventions in Ethiopia

- The motives behind
  - Protection of Natural Resources (mainly deforestation)
  - To respond to the then energy crisis
  - Introduction of improved household technologies

Health Impact of solid fuel use was not taken as the major factor for promotion of ICS



# Cooking Kills! Diseases Caused by Air Pollutants

Due to the incomplete combustion of these fuels in open-flame cooking, people inhale soot containing harmful black carbon and other small particles with diameter of 2.5 microns (PM2.5). These penetrate deep into ***lung passageways and enter the bloodstream, causing serious diseases.***



“The impact of being exposed to household air pollution is worse than smoking 400 packs of cigarettes per year.”

**Dr. Sola Olopade**, physician at the University of Chicago

\*Chronic obstructive pulmonary disease

500,000

Children per year die from acute lower respiratory infections including pneumonia due to exposure to household air pollution.

90

Babies of mothers exposed to household air pollutants are 90 grams lighter at birth.

Sources  
<http://www.ccacoalition.org/en/media-resources>  
<http://www.who.int/airpollution/household/pollutants/combustion/en/>  
<http://cleancookstoves.org>



## Is Clean Cooking is Getting Due Global Attention?

	<b>World Wide Deaths in 2012</b>
<b>HIV/AIDS</b>	1.6 million
<b>Malaria</b>	0.8 million
<b>TB</b>	1.3 million
<b>Total of 3</b>	3.7 million
<b>Indoor air pollution total</b>	4.2 million

- **Yes, indoor air pollution kills more than HIV/AIDS, malaria and TB combined.**
- **Additionally, there is huge socio-economic cost of illness.**

## Clean Cooking & Sustainable Development Goals (SDGs)



- Clean cooking is about SDG 7
- It also has direct link with SDGs 1, 3, 5, and 13
- And rather indirect links with SDGs 2, 4, 10 and 15.

## Recent Trend (globally)

- Better understanding of the burden of disease & cause of death attributable to HAP has become a driver of technology development for cleaner and higher-quality stoves & fuels

### ISO-19867 Tiers

	Tier <sup>b</sup>	Thermal efficiency %	Emissions		Safety (score) <sup>c</sup>	Durability (score) <sup>d</sup>
			CO g/MJ <sub>d</sub>	PM <sub>2,5</sub> mg/MJ <sub>d</sub>		
Better performance ↑	5	≥50	≤3,0	≤5	≥95	<10
	4	≥40	≤4,4	≤62	≥86	<15
	3	≥30	≤7,2	≤218	≥77	<20
	2	≥20	≤11,5	≤481	≥68	<25
	1	≥10	≤18,3	≤1030	≥60	<35
	0	<10	>18,3	>1030	<60	>35

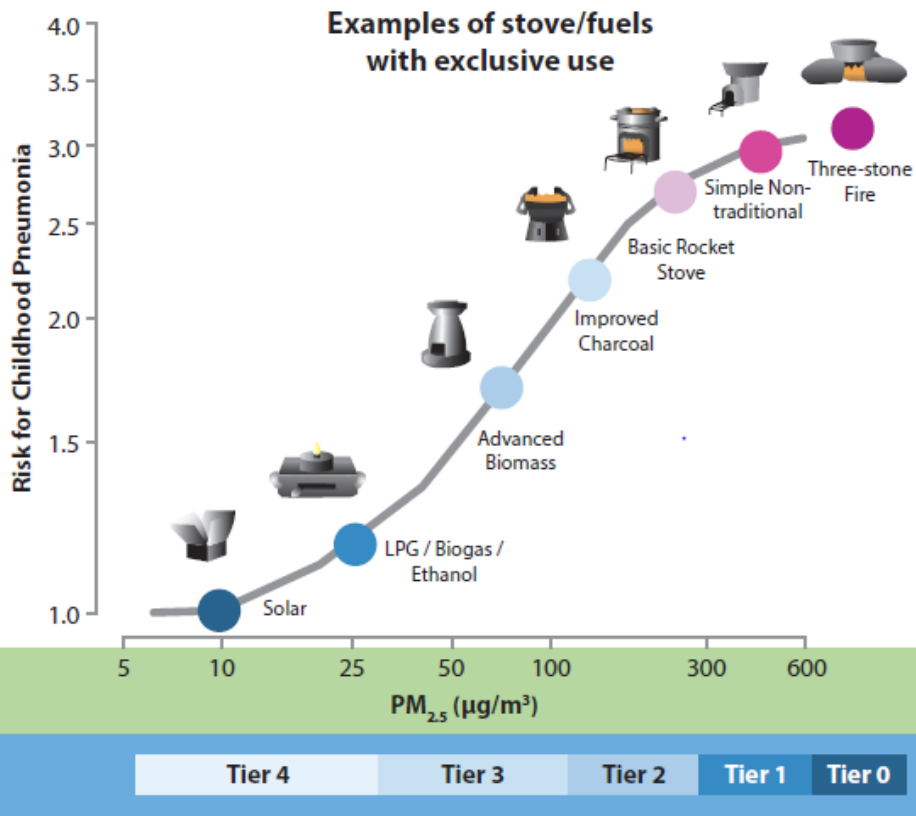
# Barriers to Achieving Health Impacts

ICS are Tier 1 stoves



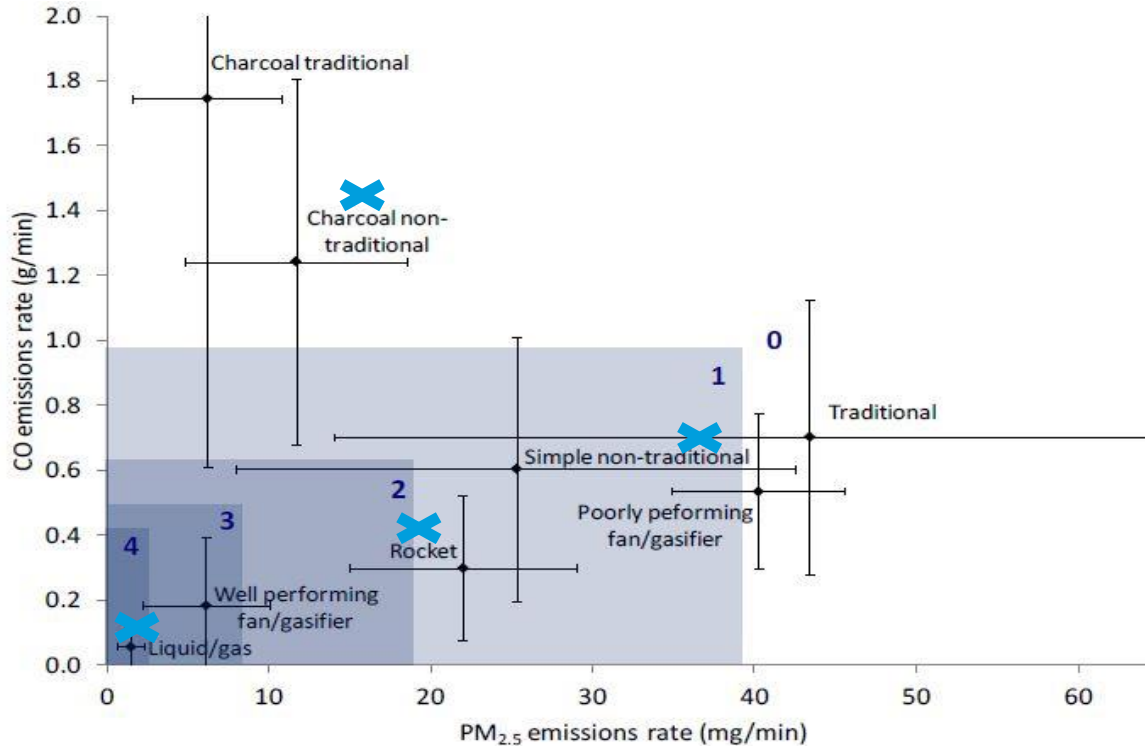
do not have much impact in reducing health impact due to HAP.

Citation- USAID/  
TRAction and Global  
Alliance for Clean  
Cookstoves Ghana  
CPD Training June 2016



# Indoor emissions performances for Key stove/fuels

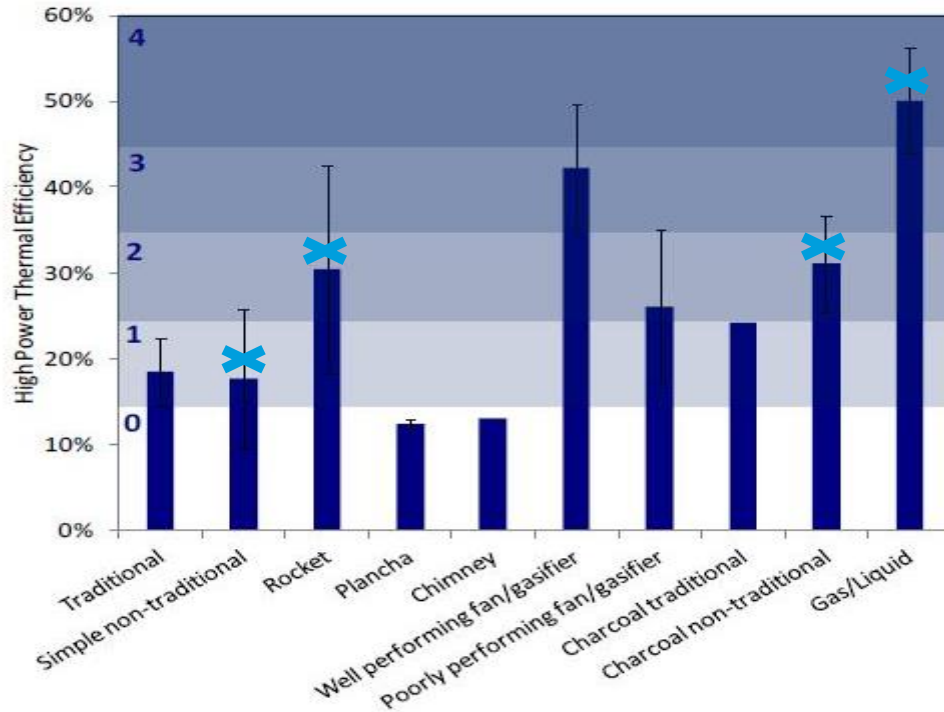
Stove Performance Inventory Report (Berkeley Air Monitoring Group)



✕ - ICSs in Ethiopia

# Thermal efficiency performances for Key stove/fuels

Stove Performance Inventory Report (Berkeley Air Monitoring Group)



✕ - ICSs in Ethiopia

## Why the SEECCS Project?

- So far interventions were mainly focused on ICS
- A lot to be done in promoting clean cooking beyond the ICS
- Need to boost stakeholders coordinated effort to champion the sector
- Needs to have conducive environment to promote the sector



# Project at a Glance

**Project:** SEECCS

**Duration:** 2017-2019 (with a go-no-go decision after 6 months of Inception Phase)

**Inception Phase:** Dec 2017-May 2018

**Implementation Phase:** June 2018-November 2019

**Donor:** RVO (Netherlands Enterprise Agency), Dutch Government

**Partners:** EFCCC, MoWIE, MoMP, ESA, EEA GIZ-EnDev, World Vision, Gaia Clean Energy, Private Sector, Financial institutions, etc



**Environment Forest  
and Climate Change Commission**



Kingdom of the Netherlands

**SNV**



# Scope of the project

- Objective

- To strengthen the enabling environment of clean cooking sector of Ethiopia with interventions around support for organisational and institutional capacity development and sector facilitation, including for improved cook stoves, biogas and bio-fuel

- Specific Objectives

- I. Ethiopian National Forum for Clean Cooking (ENFCC)
- II. Reviewing the Existing Policies and Strategies, and Support their implementation
- III. To support fine-tuning and getting approval of national standards for ICS/CCS in line with the ISO IWA tier definition
- IV. To support strengthening of the national energy lab to become a state-of-the-art facility for testing and certification for ICS/CCS

# Project Inception phase

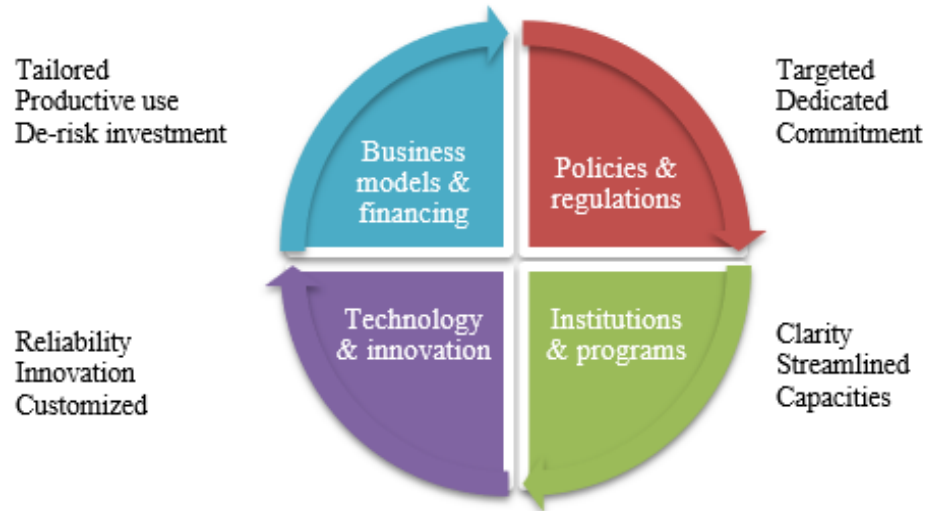
## **Key Activities**

- Bilateral discussion with key stakeholders
- Signing of MoU with MEFCC on the implementation of the SEECCS project and to further support the sector sustainably via joint resource mobilization
- Official launching of the project
- To respond to the 2<sup>nd</sup> specific objective of SEECCS- Reviewing of the Existing Policies and Strategies has been conducted
- Project got 'GO' decision to its implementation phase

# Reviewing of the Existing Policies and Strategies Assignment Focused on

- Policies/strategies/investment plans/proclamations etc. that are linked with the clean cooking sector
- The roles and responsibilities of different actors related to clean cooking sector
- Projects/programme - level of synergy/coordination, etc.

# Building blocks of an enabling environment for energy/Clean Cooking Sector



1. **Policies and regulations** - are they well targeted and have commitments (in institutional and other resources), are there clean cooking specific (dedicated) policies
2. **Institutions and programs** - is the institutional framework clearly articulated and implemented
3. **Technology and innovation** - are the clean cooking technologies in the market fit consumer requirements, are innovations being promoted
4. **Business models and financing** - are the business/promotion strategies and models sustainable and replicable, is there sufficient financing of consumers and producers of clean cooking stoves?

## II. Reviewing Existing Policies and Strategies, and Support their implementation

### Policies & Strategies for CCS

#### Energy

- Energy policy (1994)
- Biofuel Strategy (2009)
- Draft new energy policy (2013)
- National Improved Cook Stoves Investment Plan (2013)
- Biomass energy strategy (BEST) (2014)
- GTP II plan for alternative energy (2015-2020)
- Intended nationally determined contribution (INDC) (2015)
- National electrification strategy (2016)
- National Electrification Program (2017)
- Global Strategy for Safe Access to Fuel and Energy (SAFE), (UNHCR, 2014)

#### Health and gender

- Health Policy (1993)
- National Policy on Women (1993)
- GTP II plans for the sectors (2015-2020)

#### Environment, forestry and climate change

- Environmental policy (1997)
- Ethiopia's Programme of Adaptation on Climate Change (EPACC)
- National REDD+ strategy (final draft, 2016)
- Climate Resilient Green Economy (CRGE) strategy (2010)
- Climate Resilience Strategy for Water and Energy
- Forest Development, Conservation and Utilisation Proclamation (No. 542/2007)
- GTP II plan for the sectors (2015-2020)

#### Agriculture, livestock and natural resources

- Sustainable Land Management Project II (SLMP-2)
- GTP II plan for the sector (2015-2020)

## II. Reviewing Existing Policies and Strategies, and Support their implementation

### Policies & Strategies for CCS

#### CRGE

- **four initiatives** for fast-track implementation
  - exploiting the vast hydropower potential;
  - **large-scale promotion of advanced rural cooking technologies;**
  - efficiency improvements to the livestock value chain;
  - **and Reducing Emissions from Deforestation and Forest Degradation (REDD)**

#### Why...

best chances of promoting growth immediately

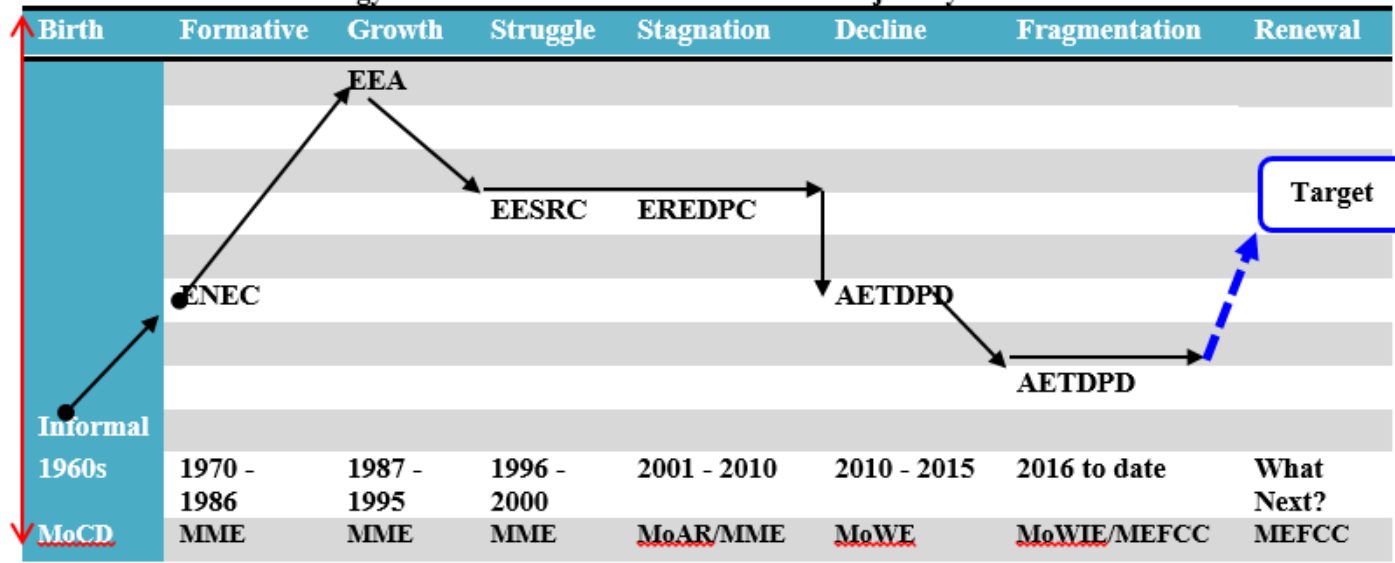
capturing large abatement potentials

attracting climate finance for their implementation

## II. Reviewing Existing Policies and Strategies, and Support their implementation

### Key findings

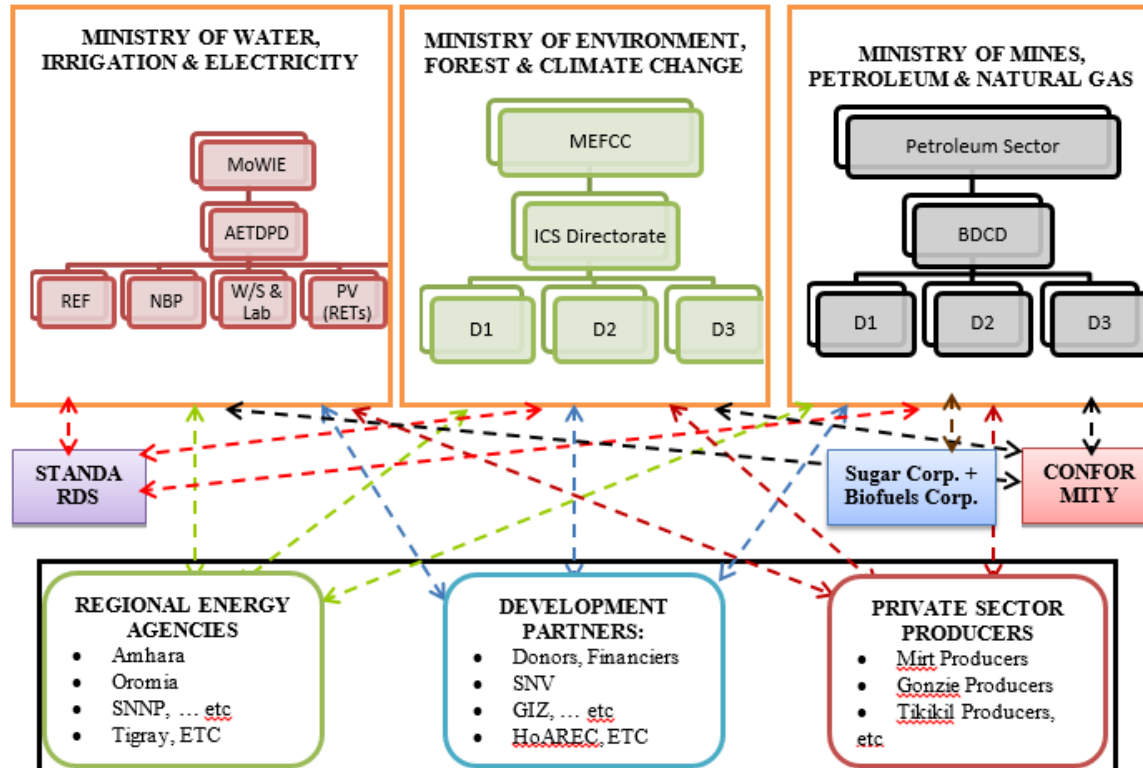
Table 3.1: Renewable Energy and Cookstoves Sector Institutions Trajectory:



Note: Years are only indicative, not exact

## II. Reviewing Existing Policies and Strategies, and Support their implementation

### Schematic Representation of Existing Complex Web of Institutional Arrangements





# Formulation of Plan of Operation-SEECSS Implementation phase

SEECSS Project  
Document

MoU signed with  
MEFCC

Policies and  
Strategies Review  
Findings

Bilateral  
Discussions with  
Key stakeholders

**Achievement and planned/upcoming activities**

# I. Ethiopian National Forum for Clean Cooking (ENFCC)

- **Learning** from similar alliances (country, regional and international level)
- **Bilateral discussion** with key stakeholders
- **Formation of Core Consultative Group** (public, private sector and other development partners)
- Engaging **legal consultant**
- Developing **concept note of the Alliance** with sections of :

**Background, Justification, Complementarity, Vision, Mission Statement, Objective, Specific Objectives,**

**Name and format, Phases of realization, Scope of the alliance, Responsibilities of the alliance,**

**Potential members of the alliance, Mode of operation of the alliance, Governance structure of the alliance**

# I. Ethiopian National Forum for Clean Cooking (ENFCC)

## Current Status of the Ethiopia Clean Cooking Alliance (ECCA)

- The **first founders' meeting** conducted
- Alliance establishment bylaw (**Article of Association**) finalised
- Finalizing **formalities** for the **Registration of the Alliance**
- ECCA is legally registered



## I. Upcoming activities in relation to ECCA

- Conduct general assembly meeting of the ECCA
- Establish **Board of Directors**
- Launching of the Alliance
- Put in place the functional ECCA office (with the manager and office admin)
- Develop the five years strategic plan of the Alliance



## II. Reviewing the Existing Policies and Strategies, and Support their implementation

- Policy and strategy review study conducted
- The findings of the study validated through validation workshop and shared with all partners
- Policy brief/Strategy brief prepared
- Discussion started with EFCCC on the process of reviewing BEST & endorsement process



## II. Upcoming activities in relation to policies and strategies and implementation support

- BEST review and endorsement
- Contribute to the finalization of the draft National Energy Policy
- Support the effectiveness of the clean cooking institutional structure

**Support the establishment of strategy working group lead by EFCCC**

**Support the organisation of discussion sessions to enrich the draft BEST**

**Present the enriched version of BEST with the relevant stakeholders in a workshop**

**Inputs from the workshop incorporated and final version of BEST is prepared**

**Support the endorsement process/mechanism**

**Conduct bilateral discussion with MoWIE (Energy Study and Development Follow-up Directorate)**

**Support the establishment of policy working group lead by MOWIE**

**Support the organization of discussion sessions to enrich the draft energy policy**

**Present the enriched version of the policy with the relevant stakeholders in a workshop**

**Inputs from the workshop incorporated and final version is prepared**

**Organize workshop/panel discussion on challenges and opportunities of the existing clean cooking institutional setup**



### III. Development & enforcement of national CCS/ICS standards

Support  
Cooking

revision  
Bak  
"ES"

Clean

Standard-

Type of stove	Thermal <sup>a</sup> efficiency %	Emissions <sup>a</sup>		Safety <sup>b</sup>	Durability <sup>a</sup>
		CO g/MJd	PM <sub>2.5</sub> mg/MJ d		
Natural draft solid biomass stove	≥20	≤7.2	≤ 321	≥ 77	< 20
Forced draft solid biomass stove	≥30	≤4.4	≤218	≥ 77	< 20
Charcoal	≥30	≤ 4 .4	≤218	≥ 77	< 20
Biogas	>40	≤ 4 .4	≤ 62	≥ 86	< 15
Ethanol	>40	≤ 4.4	≤ 62	≥ 86	< 15
LPG	> 50	≤ 3.3	≤ 5	≥ 95	< 15

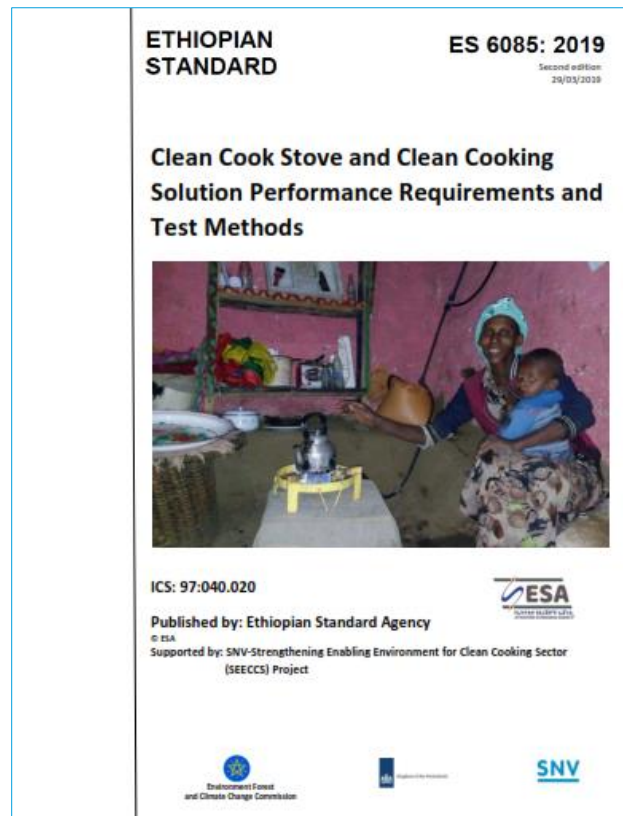
a: The performance test (thermal and emission) and Durability of clean stove shall be tested in accordance with ES ISO 19867-1.

b: For safety test ES ISO 19867 – 1 is applicable for solid fuel stoves and for gaseous, liquid and alcohol fuel stoves ES ISO 23550 and 23551 all parts shall be applicable.



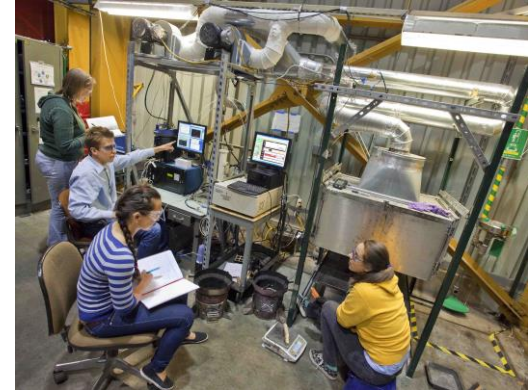
### III- Upcoming activities in relation to development & enforcement of the national CCS/ICS standards

- Support enforcement of the national standards for ICS/CCS
  - Conduct focused discussion with key stakeholders on (how to popularize, who to involve, what mechanisms to use, etc)
  - Preparation of panel discussion
  - Mobilize key stakeholders for the implementation of the enforcement mechanism
  - Popularise the standard through creation of linkage to associations, public and private entities, media, R&D, etc. as required



### III. Explore funding opportunities and develop proposal to mobilize resource for ICS testing facility

- Conduct gap assessment on the existing testing facilities
- Devise interventions plan as per the identified gaps
- Joint fund raising



Type of stove	Thermal <sup>a</sup> efficiency %	Emissions <sup>a</sup>		Safety <sup>b</sup>	Durability <sup>a</sup>
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# Overview of National Biogas Program

# National Biogas Programme of Ethiopia (NBPE), Phase I and Phase II

## Part of Multi-country Africa Biogas Partnership Programme (ABPP)

Geo/Coverage:	4 large regions (Amhara, Oromia, SNNPR and Tigray)
Co-funded by:	DGIS/Hivos and GoE
Period:	Phase I (2009 – 2013) and Phase II (2014 – May 2019)
Donor & GoE Budget:	€ 15.95 M
Role of MoWIE:	Programme hosting and overall management from government side.
Role of SNV:	Technical Assistance [ <i>Note: small budget in 2019 for biogas injera stoves market development</i> ]
Role of Hivos:	Overall programme and fund management
Role of BoWIE/MEA:	Programme implementation on the ground in partnership with Woredas, private sector and others.

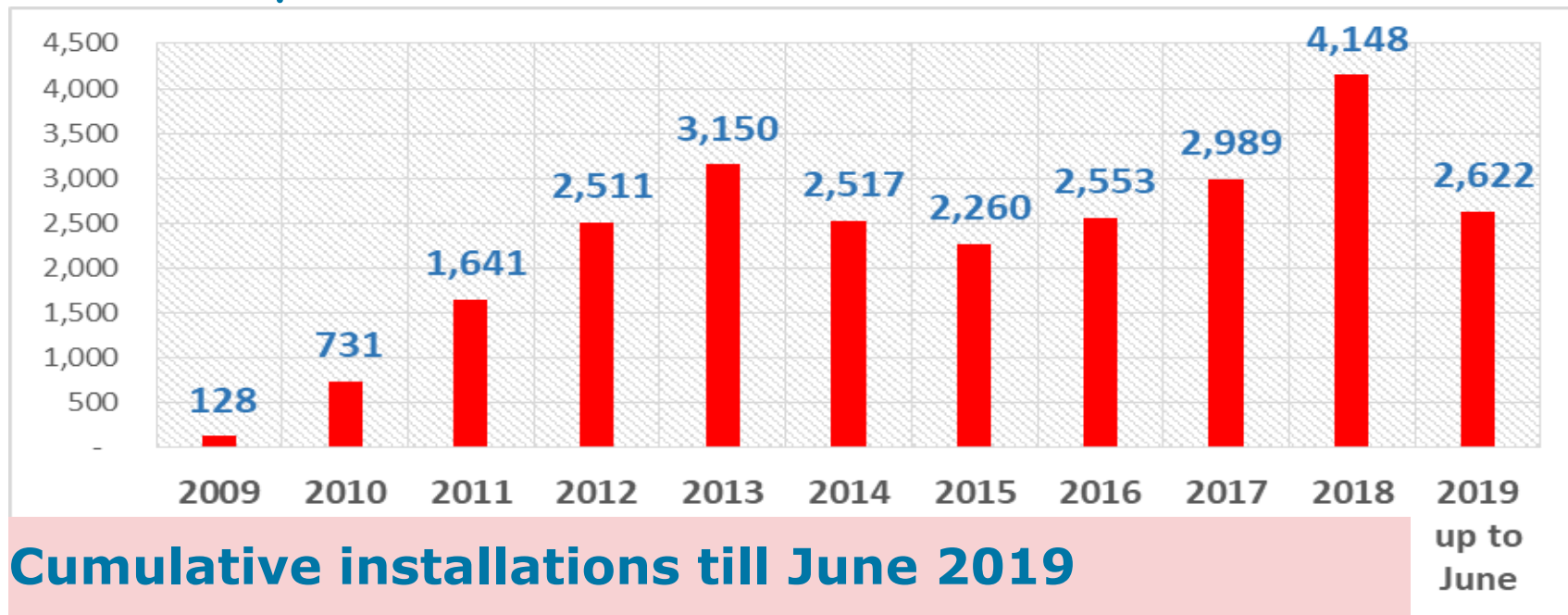
Achievement = 8,161 + 12,538 = 20,699 bio-digesters (original target of 34,000)

## Biogas Dissemination Scale-Up Programme (NBPE+)

<b>Geographical Coverage:</b>	4 large regions (Amhara, Oromia, SNNPR and Tigray) + 4 new regions (Afar, Benishangul-Gumuz, Gambella & Somali)
<b>Target:</b>	1) 36,000 domestic bio-digesters 2) 40 larger size bio-digesters as pilots
<b>Period:</b>	63 months (Apr 12, 2017 to Jul 11, 2022)
<b>Co-funded by:</b>	EU = € 20.85M and GoE = € 2 M; Regional Governments also funding
<b>Role of SNV:</b>	Overall Programme Management, Quality Assurance, Technical Assistance & Implementation Support.
<b>Role of MoWIE:</b>	Programme hosting and overall management from government side.
<b>Role of BoWIE/MEA:</b>	Programme implementation on the ground in partnership with Woredas, private sector and others.

**Achievement = 4,551 bio-digesters, until June 2019**

# Market Development Trend (NBPE I, NBPE II and NBPE+)



## Cumulative installations till June 2019

- **25,250 in some 392 Districts (over 51% of 760)**
  - Amhara = 8,808; Oromia = 6,160; SNNPR = 4,463; Tigray = 5,700
  - Afar = 12; Benishangul-Gumuz = 51; Gambella = 4; Somali = 52

## Other Overall Achievements

- **Biodigester Designs & Biogas Injera Baking Stove**
  - Main Bio-digester Designs: SINIDU → SINIDU 2010 → SINIDU 2011
    - Options: 1. Black-cotton Soil Digester (BSD); 2. Solid State Digester (SSD); 3. Pre-fabricated Fibre Glass Design
  - Injera Baking Stove: GM Energy (rolled out); (B)energy (still being improved)
- **Systems (frameworks, manuals, guidelines, tools, strategies)**
  - Private sector development framework (2016), bio-slurry promotion and mainstreaming guidelines, etc.
  - Guidelines/manuals for training, promotion, after-sale service, QA, etc.
- **Customer Service Centre (CSC)**
  - Call Centre for outgoing and incoming calls

## Other Overall Achievements (continued ...)

- **Basic Capacities in Place**
  - MoWIE/NBPCU and 8 Regions/RBPCU have a total of 111 programme staff
  - Zones/Woredas/Kebeles engaged through a Partner Engagement Guidelines
- **Piloting Larger Size Bio-digesters**
  - Preparatory work completed and 2 bio-digesters installed
- **Carbon Finance (through DBE and with the World Bank CI-Dev)**
  - All bio-digesters installed from January 2015 are included in the Carbon Finance Project
  - First payment in few months for first 2 Credit Periods (April 2016 to March 2018) for some 35,000 tons of Carbon Credit.



Promotes sustainable development of clean cooking sector to benefit Ethiopian families and the environment



Strengthening Enabling Environment For Clean Cooking Sector (SECCS)

Thank you for your  
attention!

[hteshome@snv.org](mailto:hteshome@snv.org)