

# **Promotion of Climate-Friendly Cooking in Kenya and Senegal**

**Green Climate Fund project proposal**

**Environmental and Social Assessment**

22 January 2019

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## Acronyms

AE	Accredited Entity
BAU	Business-as-usual
BMZ	German Ministry for Cooperation and Economic Development
E&S	Environmental and Social
FASEN	Foyers Améliorés au SENégal (ICS for Senegal)
GAP	Gender Action Plan
GCF	Green Climate Fund
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNI	Gross National Income
HDR	Human Development Report
ICS	Improved cook stoves
ISO	International Organization for Standardization
KOSAP	Kenya Off-grid Solar Access Program
CEDAW	UN Committee on the Elimination of Discrimination against Women
DHS	USAID Demographic and Health Survey programme
KEBS	Kenya Bureau of Standards (KEBS)
MEP	Ministry of Energy and Petroleum (Senegal)
MOE	Ministry of Energy (Kenya)
MRV	Measurement, Reporting and Verification
MtO <sub>2eq</sub>	Million tons CO <sub>2</sub> -equivalents
NDA	National Designated Authority (for the UNFCCC)
NEMA	National Environmental Management Agency
NDC	Nationally Determined Contributions (to the Paris Agreement of the UNFCCC)
NGEC	National Gender and Equality Commission (Kenya)
PAB	Project Advisory Board
PCC	Project Coordination Committees
PPE	Personal Protective Equipment
PPP	Purchasing power parity
PS	Performance Standard
SIGI	Social Institutions and Gender Index
TA	Technical Assistance
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WEF	World Economic Forum
WHO	World Health Organization

## Summary

In conformity with GCF’s environmental and social policy dated March 2018, an environmental and social assessment has been conducted for project “Promotion of Climate-Friendly Cooking in Kenya and Senegal”, submitted by GIZ to the Green Climate Fund (GCF).

The project consists in technical assistance and limited investments to scale up the current production of Improved Cook Stoves (ICS) in Kenya and Senegal, ensure product quality, support marketing activities, and develop awareness to augment the adoption of ICS by households, with the aim to reduce greenhouse gas (GHG) emissions from domestic cooking, an very important contributor to GHG emissions in these countries. The project also intends to generate knowledge which can be used to replicate these results to the many similar countries where cooking is an important contributor to GHG emissions.

The project will be implemented in both countries by national EnDev<sup>1</sup> teams, who have several years of experience in promoting improved cook stoves and a good network of institutional as well as non-governmental partners, in cooperation with so-called local Executing Entities (EEs).

The project is expected to be implemented in 2020-2024.

For the present E&S assessment, the project activities have been assessed against GCF’s interim environmental and social safeguards (ESS1 to ESS8)<sup>2</sup>

- 1: Assessment and management of environmental and social risks and impacts
- 2: Labour and working conditions
- 3: Resource efficiency and pollution prevention
- 4: Community health, safety and security
- 5: Land acquisition and involuntary resettlement
- 6: Biodiversity conservation and sustainable management of living natural resources
- 7: Indigenous peoples
- 8: Cultural heritage

The project has also been assessed against GIZ’s safeguards for (i) human rights, (ii) context and conflicts sensitivity and (iii) gender impacts and mainstreaming. The present document is the Environmental and Social Assessment and is included as an annex to the GCF funding proposal. A Gender Assessment has also been conducted and a Gender Action Plan developed. Both are presented as separate documents and will be published on the GCF website.

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<sup>1</sup> Energising Development (EnDev) is an energy access partnership currently financed by six donor countries: the Netherlands, Germany, Norway, United Kingdom, Switzerland and Sweden. EnDev promotes sustainable access to modern energy services that meet the needs of the poor. EnDev works in 25 countries in Africa, Asia and Latin America since 2005. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) cooperates closely with the Netherlands Enterprise Agency (RVO) on the global programme level.

<sup>2</sup> GCF uses the 2012 IFC Performance Standards (PS) as interim ESS. These standards are available in English and French on IFC’s website.

## Assessment and management of potential unintended negative E&S<sup>3</sup> impacts and risks

The ESS1 standard on “Assessment and Management of Environmental and Social Risks and Impacts” requires (i) to identify the environmental and social impacts, risks, and opportunities of projects; (ii) to ensure effective stakeholder engagement; and (iii) to manage environmental and social performance throughout the life of the project.

The project has major positive environmental and social impacts on greenhouse gas emissions, on human health and on gender equality. Potential unintended negative impacts are limited to minor and manageable impacts from larger-scale stove production workshops. The project further offers significant opportunities to positively impact labour and working conditions, as well as health and safety, in ICS production.

The E&S management capacity of the project teams is good. The teams are not yet trained for E&S management, but have been shown to adequately follow up on environmental and social issues. Project partners are subject to a due diligence, which includes an assessment of their E&S management capacity. The project teams also have a very good track record of ongoing stakeholder engagement in the “baseline projects”. The GCF project design builds on extended consultation with stakeholders and provides for participation of all these stakeholders.

Limited possible unintended negative risks and impacts, as well as opportunities to enhance positive project impacts, will be managed through an Environmental and Social Management Plan (ESMP) for the project.

The following sections provide the rationale for the definition of measures included in the ESMP.

### Direct project impacts and greenhouse gas emission reductions

The direct project result will be a sustainable growth of the market for improved cookstoves (ICS). The project should result in 1.91 million additional ICS sales in Kenya and 0.950 million in Senegal during the 5-year project duration. ICS sales will continue to increase after the end of the project to reach 9.2 million additional ICS sales in Kenya, and 4.7 million additional ICS sales in Senegal by 2030.

The project will allow cumulated ICS sales (comprising current baseline sales) to reach:

- In Kenya, 5.4 million by 2024, and up to 16.8 million by 2030. This is estimated to be slightly more than necessary to reach Kenya’s GHG emissions abatement target for the domestic energy sector for the Nationally Determined Contributions (NDC) to the Paris Agreement of the UNFCCC;
- In Senegal, 3 million by 2024, and up to 8.1 million by 2030, which is approximately equal to Senegal’s NDC target for the domestic energy sector.

Because improved cookstoves are at least 30% more efficient than baseline cooking solutions, this would allow GHG emission reductions, compared to the business-as-usual ICS market development, to reach an estimated 6.76 million tons of carbon dioxide equivalent (MtCO<sub>2</sub>eq) during the project period, and an additional 25.9 (MtCO<sub>2</sub>eq) in the project influence period until 2030.

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<sup>3</sup> E&S=Environmental and Social

## **Project co-benefits: conservation of forest resources, human health and gender equality**

The improved efficiency of the stoves will reduce the degradation of forest resources, which is currently problematic in both countries. The project will encourage the adoption of policies and actions for the development of a more sustainable fuelwood industry, by collaborating with project partners in the energy sector, and by sharing the knowledge about wood fuel use gathered by the project monitoring system.

During project lifetime, the adoption of ICS will benefit almost 2 million (mainly rural) households, representing about 12 million people, including more than half a million women-headed households and about 6 million children. These will benefit from the respiratory health improvements brought about by reduced smoke and emissions from poor combustion.

Other co-benefits of the project include employment, comfort, time savings, increased household purchasing power, and improved gender equality. The project benefits all groups of society, including more vulnerable people.

## **Environmental impacts and nuisances from stove production**

The only potential negative unintended impacts from the project would come from ICS production, and only for production centres which would reach a certain scale. Most ICS consist of a ceramic liner, and a metal casing which is painted. ICS are currently mostly produced by artisanal producers, and by a few larger workshops. The project would support producers by giving them training on production process improvement and on access to finance, as well as co-financing of production equipment. In Kenya, at the end of the project, there will be 20 business-class production centres, and 60 to 80 professional ones (including 20 new centres only). In Senegal, at the end of the project, there will be 25 business-class production centres, and 60 professional ones (all upgraded from smaller centres). These producers, although their activities are not directly financed by the project, will be required to work along GCF E&S standards, and trained and supported to this effect.

Individual stove producers hardly have any E&S impacts, and average-size workshops without mechanization only have very minor impacts. Only larger workshops with some mechanization, of which only very few currently exist, can be the source of moderate pollution, noise or dust emissions.

Improved cookstoves hardly generate any waste, since the ceramic liners are made only of clay and sand and can either be disposed without harm, or recycled into new liner production. Metal waste in production is minimal and is recycled; metal from discarded stoves is also recycled. Paint is expensive and is currently always used to the last drop. Potential sources of waste when upscaling production would be limited to waste oil from generators and mechanical equipment, as well as paint rests or cleaning solvents from the use of paint sprayers.

To mitigate potential pollution impacts, the project promotes implementation of E&S guidelines for supported business-scale producers, among others to correctly handle hazardous products, to limit dust and noise nuisances for the neighbourhood, and to engage with local stakeholders.

Quantities of primary materials such as clay and sand used for stove production are negligible compared to any other construction activities, but extraction of these materials may have limited impacts locally on riverbeds or floodplains. The project will promote the use of materials from legally approved sources. In case of local sourcing (in Kenya only), the project may support the rehabilitation of riverbeds.



## Labour and working conditions, including occupational health and safety

For their own staff, GIZ and SNV are fully compliant with the GCF’s standard ESS2 on Labour and Working Conditions, and the assessment has not identified potential non-compliances requiring mitigation, expect potential security issues in Kenya (see below).

The supported private ICS production centres will employ a limited number of employees. The project is expected to create an estimated 2,745 work opportunities in Kenya and Senegal, including about 705 jobs in ICS production sector, and the rest along the ICS distribution/sales chain.

Paragraphs 24 to 26 of ESS2 about “workers employed by third parties”, apply to these employees. These paragraphs require project partners to engage reasonable efforts to ensure that third parties comply with GCF labour standards. However, full compliance with this requirement is not possible in the informal economic sectors in Kenya and Senegal, which still concerns the majority of workers in these countries. But in the baseline projects, the constant monitoring of producers eliminates the **main risks of poor working conditions (such as child labour and forced labour)**, and working conditions are better than in sectors not supported by the project. The GCF project will set forward this practice, and further improve project compliance with ESS2 by training producers and project staff on international labour management standards. The project includes measures to guarantee compliance with the other paragraphs of ESS2: health and safety, compulsory adherence of workers to a social security scheme, monitoring procedure, and grievance mechanism.

The project **includes measures to ensure the compliance of producer working conditions with the other paragraphs of ESS2: occupational health and safety, compulsory adherence to health insurance, monitoring, and grievance mechanism, and will encourage larger producers to shift towards formalization.**

## Community health and safety

To guarantee the positive health impacts of the stoves, as well as the improved safety which, according to consultations with users, ICS represent for users and children, the project includes a component<sup>4</sup> to develop improved quality standards for ICS production, reinforce stove testing capacities in the countries, and develop a system for attribution of stove quality labels.

## Potential land requirements

Even if the project will not directly finance building extension or land acquisition, any land acquisition required for the expansion of supported producers will have to be managed in compliance with ESS5 on land acquisition and resettlement. GIZ/EnDev staff will be trained on identifying potential risks and supporting producers in managing them.

## Indigenous people

Indigenous peoples are present both in Kenya and Senegal. The project is expected to have an overall positive impact on these communities, since it will contribute to the preservation of natural resources, which are often vital to indigenous people, and reduce conflict potentials over these resources. Marketing and sales activities are not expected to target indigenous people, but individuals among them may freely decide to become ICS users or producers. This is not expected to affect indigenous people negatively, or

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<sup>4</sup> Sub-component 2

affect their culture, knowledge and practices. Some indigenous people may not be recognized as such by the governments of Kenya or Senegal, but due to the nature of project interventions, this is not considered as a significant source of risks. However, to manage any residual risks, the project teams will be trained to identify indigenous peoples in the respective project areas and to monitor potential project impacts on indigenous peoples (as well as any other marginalized or vulnerable groups), and the ESMP includes a mechanism to ensure that culturally appropriate approaches, as well as gender-sensitive approaches, are adopted at all times by project partners, including government institutions, when working with communities and households.

### Financial intermediation

The GCF requires financial intermediaries to be screened on conformity with their E&S policy. Potential financial intermediaries who might be involved in the project are small-scale institutions who would be categorized under the lowest level of risk, I3: “when an intermediary’s existing or proposed portfolio includes financial exposure to activities that predominantly have minimal or negligible adverse and social impacts”, and would therefore require to be screened only for E&S management capacity (standard ESS1) and labour conditions (standard ESS2). A mechanism is included in the project to screen all FIs who may get involved at later stage, and review their E&S management capacity every year.

### GIZ Human Rights safeguard

The project was screened with regards to GIZ’s human rights safeguards. The screening was based on the same information collected for the assessment of the project with regards to ESS2 (labour), ESS5 (involuntary resettlement), ESS7 (indigenous peoples) and prevention of discrimination and right to participation (both included under ESS1). This information sufficiently covered GIZ’s safeguard for the considered project activities.

### GIZ Conflict and Context Sensitivity safeguard

GIZ’s safeguard system requires an analysis of conflict potential and context sensitivity for Kenya. Kenya is a fragile state with serious risks of conflicts and violence. Although the country has a relative economic stability and has been building up a solid legal framework since 2010, risks are fuelled by unequal access to resources, impunity within the political class, extra judicial responses by the police, corruption, electoral violence whereby ethnic affiliation is used for political purposes, abuse of political finance, land conflicts, non-recognition of indigenous land rights and internal displacements of peoples, border disputes, conflicts in neighbouring countries, youth unemployment, radicalization and (transnational) extremist groups, proliferation of weapons, presence of armed militia in the extractive industry, in politics and in public transport, and a traditional custom of cattle raiding which is gaining in violence due to exacerbation of the pressure on pastures and availability of weapons.

In this context, GIZ will manage employee security through their corporate system and require partner organizations to do the same for areas/periods in Kenya which are particularly at risk. The project will use experience of local EEs in risk-prone areas. When relevant, the corresponding mitigation measures will also be applied in Senegal, as a precaution.

Since violent attacks have occurred in the sand extraction sector, producers in Kenya will be required to shift as much as possible to using sand from legal sources. The project will further identify cases when supported producers are related to political parties and discuss them with GIZ’s Integrity Management Unit, to avoid reputational risks.

## Project risk categorization

The screening did not identify other potential negative impacts at this stage of project development. In GIZ’s Safeguards and Gender management system, the project is automatically categorized as B under the “Conflict and Context Sensitivity Safeguard” for Kenya. From an environmental and social point of view and according to the GCF’s categorization, the project could in principle be categorized as C<sup>5</sup>. However, the large geographical extent of the project, which covers two entire countries, the human rights context of the countries, as well as the number of partners involved, makes a full prior complete identification of risks relatively difficult, and the project is therefore categorized B as a precaution, with implementation of a full E&S management plan.

## ESMP

The mitigation, risk management, and impact enhancement measures defined above are included in the Environmental and Social Management Plan (ESMP) for the project. The ESMP has been budgeted in the overall project costs, and is presented in chapter 7.

Project potential unintended negative risks and impacts of the project will be managed among others by:

- i. appointing and training dedicated national and regional E&S staff for the project;
- ii. coordinating E&S management among project partners;
- iii. regularly monitoring E&S aspects;
- iv. regularly engaging with beneficiaries and producers;
- v. implementing a project grievance redress mechanism for affected people and for workers;
- vi. training producers on E&S management and providing them with safety equipment;
- vii. requiring all supported producers to adhere to environmental and social management guidelines;
- viii. requiring all supported business-scale producers to develop and implement a producer ESMP.

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<sup>5</sup> The environmental and social risk categories as defined in the ESS of the GCF apply to activities financed by the GCF as follows (GCF, 2016):

- Category A. Activities with potential significant adverse environmental and social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented;
- Category B. Activities with potential mild adverse environmental and social risks and impacts that, individually or cumulatively, are few, generally site-specific, largely reversible and readily addressed through mitigation measures; and
- Category C. Activities with minimal or no adverse environmental and social risks and/or impacts.

## 1 Introduction

As an accredited entity, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is submitting a funding proposal for the Project “Promotion of Climate-Friendly Cooking in Kenya and Senegal” to the Green Climate Fund (GCF).

The project aims at accelerating the growth of the market for Improved Cooking Stoves (ICS) and increase the share of ICS users amongst the rural and most vulnerable populations in Kenya and Senegal. It will enable these countries to significantly reduce consumption of non-renewable biomass in the energy cooking sector and reduce GHG emissions<sup>6</sup>.

In conformity with GCF’s environmental and social policy dated March 2018, project activities have been assessed against GCF’s interim environmental and social safeguards (ESS1 to ESS8)<sup>7</sup>, and impact mitigation or enhancement measures have been defined when necessary to ensure project compliance with the safeguards. The project has also been assessed for compliance with GIZ’s safeguards and gender management system.

Measures to reduce potential negative impacts, or to reinforce positive impacts, have been defined when necessary for the project to comply with the E&S requirements.

The project will have very significant positive environmental and social impacts. The main impacts of the project are the reduction of greenhouse gas emissions, the reduction of non-renewable biomass consumption, and the improvement of health and comfort in the houses. Only the ICS production sector can be identified as a potential source of unintended negative impacts, and these impacts will be minor and manageable.

GIZ has contracted an independent Environmental and Social Consultant to confirm the categorization, to prepare the E&S assessment and the ESMP, and to perform the relevant stakeholder consultations. The consultant has worked in close cooperation with the EnDev country teams in Kenya and Senegal during development of the GCF proposal. The consultant has interviewed country staff in Kenya and Senegal, and has visited EnDev project activities in Kenya in July 2018. The consultant has verified the consultations already carried out by the project in Kenya and Senegal, and has carried out additional consultations in Kenya. The consultant has then developed a draft E&S assessment and Environmental and Social Management Plan (ESMP), which were discussed with the country teams and GIZ headquarters before being finalized.

The E&S assessment was performed during proposal development, which allowed the incorporation of recommendations for E&S management and gender mainstreaming into project activities.

The present Environmental and Social Assessment is included as an annex to the GCF funding proposal. A Gender Assessment has also been conducted and a Gender Action Plan developed. Both are presented as separate documents and will be published on the GCF website.

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<sup>6</sup> The ESA is based on the project description and project impact data as available on December 20th, 2018, with some updates on January 15th, 2019. Some changes to the project are still possible, which are not expected to affect the results of the impact assessment. The ESMP will continuously monitor E&S impacts and risks, and adjust mitigation measures if any significant project changes occur.

<sup>7</sup> GCF uses the 2012 IFC Performance Standards (PS) as interim ESS. These standards are available in English and French on IFC’s website.

## **2 Baseline situation**

### **2.1 Data sources**

Unless mentioned otherwise, data and information in this section are from the draft Funding Proposal (FP) prepared by GIZ for the GCF, dated 20<sup>th</sup> December 2018, which includes a feasibility study in its Annex 2. Some changes to the project are still possible, which are not expected to affect the results of the impact assessment. The ESMP will continuously monitor E&S impacts and risks, and adjust mitigation measures if any significant project changes occur.

### **2.2 Choice of Kenya and Senegal as beneficiary countries**

Nearly 3 billion people worldwide use solid fuels, such as fuel wood and charcoal, as the primary source of cooking. Burning solid fuels for cooking in open fires and traditional stoves releases emissions of carbon dioxide, methane, black carbon, and other short-lived climate pollutants, some of the most important contributors to global climate change. The Intergovernmental Panel on Climate Change (IPCC) estimated that replacing traditional open fires with more energy efficient improved cook stoves (ICS) has a global mitigation potential between 0.6 and 2.4 GtCO<sub>2</sub>eq/year, while at the same time delivering a wide range of sustainable development benefits, such as reducing the pressure on forests and biodiversity, reducing exposure to smoke-related health hazards, reducing the burden on women and children for collecting fuelwood, and saving money for the poor (when the fuel needs to be purchased).

Global patterns in population growth, urbanization, and historical fuel use suggest that the number of people relying on solid fuels for cooking and heating will persist at the level of about 3 billion primarily due to growing firewood consumption and rising charcoal use in Sub-Saharan Africa (SSA), which will counterbalance the declines in solid fuel use in Asia and Latin America. For this reason, two SSA countries, Kenya and Senegal, have been selected as the targeted countries for the project.

### **2.3 Need for climate-friendly cooking solutions in Kenya**

#### **a) Socio-economic overview**

Kenya's population is estimated at 48 million (about 9.6 million households, 2016) and is growing at annual average of 2.7%. Seventy-eight percent of the population is in the rural regions and 22% in the urban area. Economically, Kenya has been classified as a low-income country but was reclassified to a middle-income country in October 2014. One-third (33%) of the urban population and 51% of the rural population (45% of the total population) live on less than USD 2 a day. Poverty is higher in the Northern and Coastal regions of the country. About 20% of the population is between 15 and 24 years. Youth unemployment (people aged 15 -24 years) was 22.1% by 2017, higher than the Sub-Saharan Africa rate (12.9%).

The western, central and coastal regions, which are primarily rainfed and with productive agricultural land, occupy less than 20 per cent of the country's area, and carry the majority (approximately 90 per cent) of the country's population. The Arid and Semi-Arid Lands (ASALs) in the North and North-East, occupying 80 per cent of land area, are sparsely populated, carrying the remaining 10 per cent of Kenya's population.

In 2010, Kenya promulgated a new Constitution that created 47 Counties. Each county is semi-autonomous, with devolved resources and functions and is headed by a governor. Legislative power at the county level vests in the County Assemblies).

Kenya is identified as a fragile state, with a significant potential for violence and conflict. An assessment of this context and of potential risks for the project is presented in section 6.8.

More detailed information on the country’s socio-economic and environmental baseline situation is presented, as relevant, in each of the thematic sections of the present report.

#### b) Environmental impact of biomass use for cooking

Seventy-five percent of households in Kenya rely on solid biomass energy (mainly firewood and charcoal) as the primary source of fuel for cooking and heating, while only a smaller proportion relies on gas (12%), kerosene (11%) and electricity (0.4%). The use of biomass is predominant in rural areas, with about 95% of the households relying on it. Fuelwood consumption remains one of the major factors for degradation of Kenya’s forest resources, with the UNFCCC estimating that 92% of biomass consumption in the country is non-renewable (leading to net GHG emissions).

#### c) Climate targets and ICS

The Second National Communication to the United Nations Framework Convention on Climate Change (NEMA, 2015), estimates that current GHG emissions are around 90 MtCO<sub>2</sub>eq/year in Kenya, and without action, are expected to increase to 143 MtCO<sub>2</sub>eq in 2030. In its National Determined Contributions (NDC) to the Paris Agreement, the Government of Kenya has committed to 30% reduction (42.9 MtCO<sub>2</sub>eq) of GHG emission by 2030 relative to the business-as-usual scenario of 143 MtCO<sub>2</sub>eq. Emissions from domestic woodfuel and charcoal use are counted under the “LULUCF<sup>8</sup>” sector. The Kenyan NDC has identified ICS as a priority area for contributing towards these emission reduction targets. The specific NDC target for cooking energy is an abatement of 2.8 MtCO<sub>2</sub>eq in 2030.

According to EnDev, about 3.7 million households in 2017 were using one or several ICS. To meet the NDC target, EnDev calculates that cumulatively, 15.66 million ICS should be sold between 2020 and 2030 to ensure regular replacement of the stoves, assuming a 80-20 split between wood fuel and charcoal stoves.

Table 1. Estimates of GHG emission trends for Kenya. Source : NEMA, 2015

Sector	Baseline Emissions (MtCO <sub>2</sub> e)							
	1995	2000	2005	2010	2015	2020	2025	2030
Agriculture	24	23	26	30	32	34	36	39
Electricity Generation	0	1	1	1	1	12	24	42
LULUCF	10	21	18	21	26	25	23	22
Transportation	4	4	4	7	9	12	16	21
Energy Demand	4	5	5	6	7	8	9	10
Industrial Processes	1	1	1	2	3	4	5	6
Waste	1	1	2	2	2	3	3	4
<b>TOTAL</b>	<b>44</b>	<b>55</b>	<b>57</b>	<b>70</b>	<b>80</b>	<b>96</b>	<b>115</b>	<b>142</b>

## 2.4 Need for climate-friendly cooking solutions in Senegal

#### a) Socio-economic overview

Senegal’s population is estimated at 16 million, consisting of about 1.6 million households, and is growing rapidly at 2.9% per year. Senegal is one of the world’s least developed countries. The economy relies heavily on cash crops and fishing, both of which are vulnerable to climate change. Those living in

<sup>8</sup> Land Use, Land-Use Change and Forestry

urban areas have far better access to resources than those in rural areas; a quarter of people living in the capital, Dakar, are poor, compared with two-thirds of those living in the countryside. Senegal suffers from persistently high poverty rates, currently at 46.7%. Overall, 17 % of people are food insecure, and in some – mostly rural – parts of the country, the prevalence of global acute malnutrition is critical.

More detailed information on the country’s socio-economic and environmental baseline situation is presented, as relevant, in each of the thematic sections of the present report.

### **b) Environmental impact of biomass use for cooking**

Over 86% of the rural population relies on fuel wood for domestic needs, and cooking fuel consumption is increasing by 3.1% per year. The FAO estimates that an annual 40,000 ha of forest are being lost because of the overexploitation of the forest resources. The UNFCCC estimates the fraction of non-renewable biomass in total biomass consumption in Senegal at 85%, meaning that 85% of fuelwood is being used unsustainably and leads to net GHG emissions. Senegal’s Third Communication to the UNFCCC (MEDD, 2015), shows that biomass is an important source of GHG emissions (see Table 2. below). In 2005, domestic use of biomass energy was estimated to generate 4.6 MtCO<sub>2</sub>eq/year of GHG emissions.

### **c) Climate targets and ICS**

Current total GHG emissions in Senegal are in the order of 20 MtCO<sub>2</sub>eq/year and are expected to increase to 30 MtCO<sub>2</sub>eq in 2030 (Ministère de l’Environnement, 2015). In its NDCs, Senegal has committed to reducing its GHG emissions by at least 5% (non-conditional option) in 2030 compared to the BAU scenario (Ministère de l’Environnement, 2015). To this end, among other measures, the NDC defines an explicit target of 8.4 million improved cookstoves (ICS) sold cumulatively between 2010 and by 2030, and interventions for reducing the use of non-renewable wood as fuel for domestic cooking, such as (1) increased efficiency in charcoal production, (2) increased sustainable wood-fuel production and (3) diversification of household fuels.

**Table 2. Estimates of GHG emission trends in Senegal. Source : MEDD, 2015**

<b>Emissions in tonsCO<sub>2</sub>eq</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Emissions from fossil fuels	4,537	5,142	5,990	6,977	8,126	9,465
Emissions from biomass	7,855	9,963	11,956	14,349	17,221	20,667
<b>Total Emissions</b>	<b>12,392</b>	<b>15,105</b>	<b>17,946</b>	<b>21,326</b>	<b>25,347</b>	<b>30,133</b>

## **2.5 Baseline EnDev projects**

The GCF project builds upon successful ICS promotion projects implemented by the EnDev<sup>9</sup> partnership in Kenya and Senegal. In these so-called “baseline” projects, EnDev is working with a large network of local partners, institutions and NGOs, and has developed a good knowledge of the sector and an understanding of the needs of the targeted beneficiaries. The ambition of the proposed GCF project is to scale up, reinforce and geographically expand EnDev’s current actions in the ICS sectors in Kenya and Senegal.

<sup>9</sup> Energising Development (EnDev) is an energy access partnership currently financed by six donor countries: the Netherlands, Germany, Norway, United Kingdom, Switzerland and Sweden. EnDev promotes sustainable access to modern energy services that meet the needs of the poor - long lasting, affordable, and appreciated by users. EnDev works in 25 countries in Africa, Asia and Latin America. Since 2005, EnDev has taken a leading role at promoting access to Sustainable Energy for All. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) cooperates closely with the Netherlands Enterprise Agency (RVO) on the global programme level.



The EnDev project in Kenya started in 2005 and is implemented in three major clusters of Kenya: Lake Victoria, Western and Central cluster, addressing ICS demand in 22 focal counties and starting to expand to seven growth counties. EnDev Kenya has a long-lasting working relationship with different partners in the sector in Kenya, starting from different ministries (MoE, MoA, MoH etc.), different county governments, national institutions for standards and testing, research institutions, national and international NGOs.

EnDev Senegal has been working since 2006 to develop the ICS sector in Senegal, especially through the FASEN project (Foyers Améliorés au SENégal). Starting with a focus on local artisanal production for local markets, EnDev has developed a professionalization strategy to transform the ICS sector, working closely with all ICS producers and is supporting their development to higher levels of organization and efficiency. EnDev supports the Ministry of Petroleum and Energy in the development of the sector and is working together with among others the Ministry of Environment and Sustainable Development, local authorities and Chambers of Craft, and local as well as national NGOs.

## 2.6 The current Improved Cookstoves sector

### 2.6.1 Traditional cooking solutions

The picture below shows the basic cooking solutions which are still used by most households in Kenya. The three-stone fire and mud stove are home-made and the metal charcoal stove costs only a few EUR. Their thermal efficiency is lower than 15%.

Figure 1. Basic cooking solutions – Kenya



### 2.6.2 Improved Cook Stoves


The pictures below show the ICS which are currently promoted by the baseline EnDev projects. These ICS reach 30% fuel savings or more compared to open fires or basic charcoal stoves, and their price (from 5 to 60 EUR), ease of use and easy production processes are well suited to the needs of consumers (ranging from the more basic and cheap domestic stoves, to the more advanced “institutional” stoves).



**Figure 2. Promoted ICS – Kenya**

			
<b>Jiko Kisasa, two pots</b>	<b>Rocket stove with insert, one pot</b>	<b>Rocket stove with brick and cement, one pot</b>	<b>Jiko Kisasa Portable</b>

**Figure 3. Promoted ICS – Senegal**

			
<b>Jambar charbon</b>	<b>Jambar bois</b>	<b>Taaru charbon</b>	<b>Sakkanal multi-marmites charbon et bois</b>
			
<b>Sakkanal mono-marmite, charbon et bois</b>	<b>Banco bois</b>	<b>Roket bois institutionnel</b>	<b>Jojo bois institutionnel</b>

In Kenya, a small number of households also use industrial ICS which are produced in Kenya or imported.

**Figure 4. Industrial stoves used in Kenya**

	
<b>Jiko Bora (Ecozoom)</b>	<b>Super Saver (Envirofit)</b>

### 2.6.3 ICS production

Portable ICS, such as Jiko Kisasa and Jambar, consist of a ceramic insert with metal cladding, which is generally painted. Production can be separated into pottery and metalwork (smiths). Currently, ICS production generally consists of the following steps:

- sourcing of materials such as clay, loam and sand
- soaking clay
- mixing clay and sand, and kneading the material (usually with the feet)
- shaping the liner either with a mold or by hand
- baking the liners in a kiln
- making the metal casing
- painting the metal casings.

Some producers are specialized in ceramic liners, others in metalwork and painting. Only a few larger producers perform both activities. The following types of enterprises exist in the ICS production chain:

- individuals artisans producing only ceramic liners (potters)
- individual artisans producing final ICS (whitesmiths who also make liners, or else buy liners from others)
- cooperative-like groups (mostly of women) producing only liners, but sometimes (in Kenya) sub-contracting the metalwork, thereby becoming end producers of ICS;
- larger “workshops” producing final ICS, who may produce ceramic liners and/or buy them from other producers, depending on demand
- industrial importers or manufacturers (who cover about 5% of the market, only in Kenya, with more expensive stoves).

Besides, there are individual producers who directly build stoves in the client’s kitchen (“rocket” stoves in Kenya, “foyers banco” in Senegal).

For the purpose of the project, the following categorization of (non-industrial) ICS producers has been adopted to capture different sizes and production levels. These categories are further used in structuring the project assistance to these producer groups:

- Artisanal (small) level production (1-5 workers) of up to 100 stoves per month;
- Professional (medium) level production (3-10 workers) of 100 to 1,000 stoves per month; and,
- Business class (large) producers (> 7 workers) of over 1000 stoves per month.

Even the larger production centres are merely large workshops, often without stone buildings. Kilns are in the open, with sometimes just a roof (see photographs hereafter). Mechanization is currently very limited. Some workshops have small hand-held machinery for painting or welding. The photographs show the only two large production centres which resemble factories, and are located in Senegal. One is a 2-storey building, and the other one has machines for kneading and measuring clay.

All categories of producers may employ workers part-time or full-time, on a casual basis or more permanently, although in the current situation, ICS production takes place in the informal economic sector and workers have no contract. Workers are called in on a day-by-day basis, and paid either per day or per piece produced. Unskilled workers perform heavy tasks such as clay and sand unloading and kneading with feet, and skilled workers have more permanent work in pottery or metal cladding. Producers may even pay skilled workers when there is no production, so that they do not seek work elsewhere. Whitesmiths, for instance, can easily find other work.



Figure 5. Production processes (1)



Clay soaking (Jiko Kisasa, Kenya)



Clay and sand mixing (Jiko Kisasa, Kenya)



Kiln (ceramic liners, women production group, Kenya)



Cutting the liner with a template



Pape Faye mechanized liner production (Senegal)



Liner storage (Kenya)



Small-scale mechanical equipment (Kenya)



Production of Jiko Kisasa – metalwork/painting area (Kenya)



Figure 6. Production processes (2)



Figure 7. ICS Producers of different categories



### 2.6.1 ICS sales and Last-Mile-Entrepreneurs (LME)

The sales are either directly to the end client, or to a range of intermediaries such as wholesalers, traders on the weekly markets, retailers who also sell other products, such as ironmongers, NGOs, women groups in villages. Some of the intermediaries may also sell to other intermediaries and not only to the final client.

It is to be noted that the ICS market is seasonal, as the possibility for customers to buy a (new) stove depends on agricultural revenues.

### 2.6.2 Annual production and number of stakeholders in the ICS supply chain

In Kenya, there are approximately 130 (non-industrial) producers and 4,000 last-mile entrepreneurs (LMEs). Their annual level of ICS sales is 240,000 - 300,000 stoves.

Senegal has no industrial producers and there are hardly any stove imports. There are a little more than 250 producers, which currently supply the market with about 200,000 ICS/year. In Senegal, former projects have often disseminated stoves via NGOs and women groups, and there are no individual LMEs currently supported by the project as is the case in Kenya.

The table below summarizes the numbers of ICS producers, which are the focus of the project. Nearly 90% of the ICS producers are small-scale stove artisans with an output less than 100 stoves per month.

**Table 3. ICS producers per category in Kenya and Senegal**

	Name of level	Monthly stove production	Number of enterprises (2017) Kenya	Number of enterprises (2017) Senegal
Artisanal	Occasional or individual	Less than 10	56	77
Artisanal		10 to < 30		69
Artisanal	Family or group	30 to < 100	46	82
Professional	Small	100 to < 300	23	23
Professional	Large	300 to < 1000	3	2
Business class	1	1000 to < 1500	1	2
Business class	2	1500 to < 3000	1	
Business class	3	3000 and more	0	1
		TOTAL	130	256

### 3 Project description and direct project impacts

#### 3.1 Project objectives: increase the use of improved cookstoves by accelerating sustainable market growth

The current modest growth of ICS sales (5% per year in Kenya and 1.5% per year in Senegal) is insufficient to meet increasing household demand and reach the NDC targets. On the supply side, the ICS sector is not capable of securing the investment required to scale up ICS production and sales, whereas the demand for ICS remains concentrated in a limited geographic location and among more affluent and better-informed consumer groups.

The project **paradigm shift objective** is therefore to **accelerate** the growth of the ICS sector, in particular in more remote and rural locations. **The project** will transform the sector from the one which is dominated by a number of small, artisanal, under-capitalised, and informal ICS producers into a much stronger economic sector with sufficient a technological basis and business management capacities, access to commercial capital and ability to deliver better quality products to a bigger number of consumers, in particular in remote rural areas. The intended outcome of the project is to double annual ICS production and sales volume by the project end (after 5 years) and achieve a 3-fold increase by 2030; the scale required for both countries to substantially reach their ICS-related NDC targets **and to achieve ODA-independent growth**.

To reach this paradigm shift objective, the projects works on the ICS market development:

- by professionalising the ICS production, expanding the distribution and retail chains and facilitating access to market-based finance (supply side activities) and
- by raising consumer awareness and creating an enabling market environment (demand side activities).

#### 3.2 Project outputs and sub-components

The project consists of two national-level outputs and one global output (excluding project management):

- Output 1: Accelerated market development for climate-friendly cook stoves in Kenya (GCF finance: ca. EUR 20 million; co-finance: ca. EUR 10 million)
- Output 2: Accelerated market development for climate-friendly cook stoves in Senegal (GCF finance: ca. EUR 18 million; co-finance: ca. EUR 8 million)
- Output 3: Improved knowledge on climate-friendly cooking solutions and their contribution to NDCs (GCF finance: ca. EUR 1 million; co-finance: ca. EUR 1.5 million)

Co-finance will essentially be provided by the German Ministry for Cooperation and Economic Development (BMZ) (see details in Figure 15. on p.38).

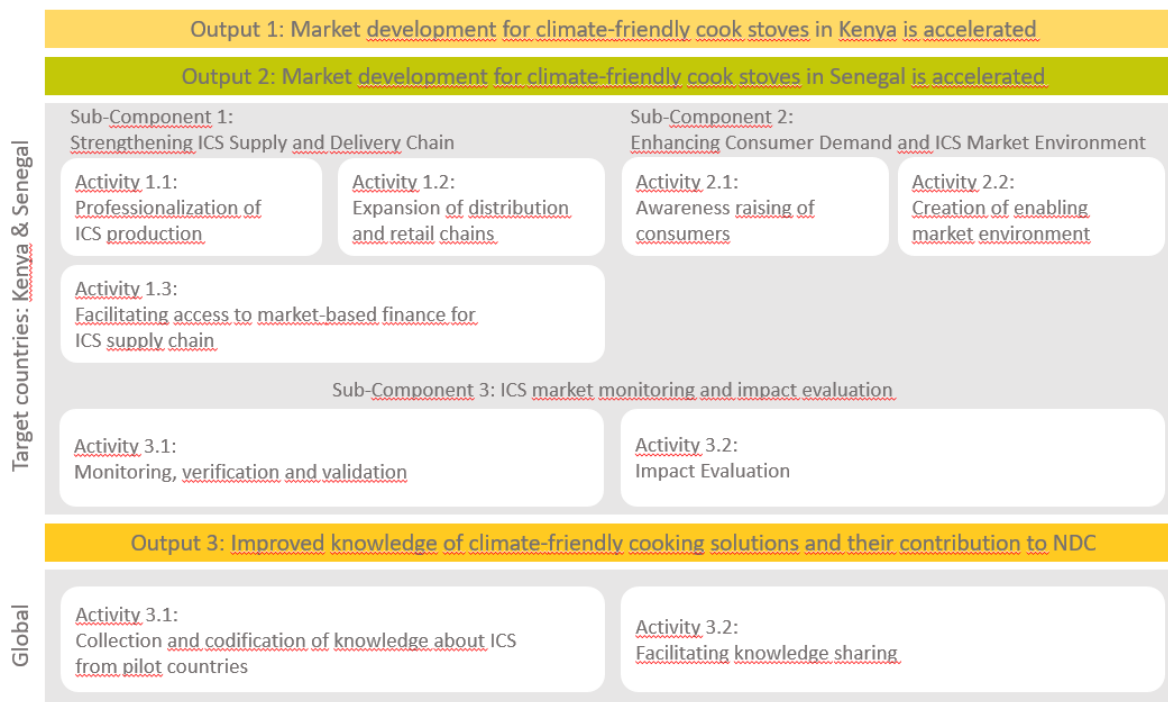
Outputs 1 and 2 each have the following sub-components:

- Sub-component 1 “Strengthening ICS supply and delivery chain” is aimed at producers and retailers.
- Sub-component 2: “Enhancing consumer demand and ICS market environment” targets customers and the institutional framework.

- Sub-component 3: “ICS market monitoring and impact evaluation” is the monitoring and evaluation component.

The general project structure is presented in the figure below.

**Figure 8. Overview of project structure and outputs**



### 3.3 Generic description of Outputs 1 and 2

The paragraphs below provide the generic description for Outputs 1 and 2; description of country-specific activities is then given in sections 3.4 and 3.5.

#### 3.3.1 Sub-component 1: Strengthening ICS supply and delivery chain

##### **Activities 1.1.1. and 2.1.1 Improvement of the professionalization level of stove producers**

The project will implement a performance-based support scheme to enable artisanal and professional producers to significantly increase their production and sales levels.

Assistance packages will be provided in the form of “professionalization kits”. These have been designed by EnDev based on needs and development stage of different categories of ICS producers:

- **Artisanal professionalization kits** will comprise a set of hand tools (e.g. pliers, hammer), manual machines (e.g. roller, jenny, cutting machine), electric machines (e.g. welding machine, compressor for spray painting), safety gears, workshop furniture, container (for storage) etc. This standardized kit is designed to enable the growth of an artisanal ICS producer from an average sale volume at 25 ICS/month up to 100 ICS/month.
- **Support kits for professional ICS producers** will be tailored to the specific needs and individual development plan of each producer and may include hand tools, manual machines, electric machines (e.g.

drilling machines, electric jenny), safety equipment, workshop furniture, containers for storage etc. The “kit” is designed to enable the growth of a professional ICS producer to a business level from an average sale volume at 100 ICS/month up to 1,000 ICS/month. A business development consultant will support each producer with preparation of a business plan for the expansion. Tailor-made “kits” will be based on the details of the business plan.

Under the professionalization kits, specific trainings will be provided, covering among others:

- Correct use of new equipment
- Improved workshop organisation
- Labour and working conditions
- Occupational health and safety
- Environmental management
- Safety of surrounding residents
- Business and legal advisory services to professionalise and potentially formalise the businesses.

The project has included a budget under the “kits” to allow for adaptation of two workplaces per country for people with disabilities.

The kits will be provided in tranches, in-line with agreed-upon business plan and result-based criteria and milestones. Eligibility of ICS producers to enter the scheme will be established based on past performance, with slightly different criteria for Kenya and Senegal, adapted to the local situation.

GCF funds will cover up to 80% of the total value of the kit, and the ICS producers will provide at least 20% own-contribution. The GCF will directly finance neither construction of buildings, nor means of transportation, but these may be partially funded by other co-financing partners. The financial commitment from the entrepreneurs to the kits and their total investment needs ensures that only producers with serious business development motivation can benefit from the scheme.

An **Operation Manual** will be developed with conditions for each country before project commencement, to guide the implementation of result-based support scheme.

#### **Activities 1.1.2. and 2.1.2 Expansion of the ICS distribution and retail chain**

Under this sub-component, support is provided to LMEs as follows:

- Distribution equipment and assets for producers who sell directly, to increase their flexibility, outreach and sales.
- Starter kits (including flyers, advertisement materials, shelf, large umbrella, mobile pavilion) for LMEs to increase their outreach and advertisement.
- Mini-financial incentives
- Entrepreneurship trainings for new and existing LMEs
- Development of trainings at formal training institutions (youth polytechnics and Vocational Training Centres (VTC))

Special attention is provided under this sub-component to improve the involvement of all age and gender segments in the LME business, which is important not only to meet the specific social needs of the countries (youth employment, gender equality), but also to ensure the success of marketing activities. Women groups in particular are a strong focus of this sub-component.



### **Activities 1.1.3 and 2.1.3 Facilitation of access to market-based finance and other forms of capital for business class producers**

It is envisaged that around 20 companies in Kenya and 25 companies in Senegal will “graduate” with business status after receiving professionalization kits and will be ready to access market finance by the project end. The project will work with these “business graduates” to understand their credit profile, assess investment needs and business plans and specific barriers faced to access non-grant financing, and provide them with targeted trainings on financing to increase their “bankability.”

### **3.3.2 Sub-component 2: Enhancing consumer demand and ICS market environment**

#### **Activities 1.2.1 and 2.2.1 Raising consumer awareness**

Awareness campaigns with nation-wide outreach as well as local and regional events shall sensitise customers to the benefits of ICS, and bring behavioural change messages across. Different partners and networks are involved in the campaigns. Interventions will be designed following a customer segmentation approach (such as gender-sensitive consumer awareness/behaviour change campaigns, and tailored marketing of cleaner and efficient stoves for specific target groups in unserved rural areas).

#### **Activities 1.2.2 and 2.2.2 Creation of enabling market environment**

This sub-component will also help finalise and streamline the institutional and policy frameworks governing clean cooking sector, improve sector coordination and develop roadmaps and monitoring systems for sectoral mitigation targets. It will assist countries to develop and strengthen quality assurance frameworks, including national standards and testing capacity. It will also support the sector at country level, among others by securing long term training capacity, a functioning sector association, and collection of sector data. Various institutions are involved in building this enabling environment from the national down to the county/regional level.

### **3.3.3 Sub-component 3: ICS market monitoring and impact evaluation**

#### **Activities 1.3.1 and 2.3.1 Monitoring, verification, and validation**

In each country, a common monitoring platform will be developed for all Executing Entities and Implementing Partners (including system maintenance over project period).

#### **Activities 1.3.2 and 2.3.2 Impact Evaluation**

The project will undertake regular ICS market monitoring during and after the completion of the GCF project to collect evidence and record the progress in market transformation. To this end, EnDev will use its own previously successfully applied monitoring, reporting and verification (MRV) system. The MRV system provides reliable sales data and tracks progress on project level, including via regularly meeting and consultation with producers, LMEs and users. The project will also use the EnDev Market Development Scorecard to analyse ICS market evolution in the targeted countries. By doing so, it will make it possible to understand the exact stage of ICS market development and the progress towards its inflection point, i.e. when external support is no longer needed to sustain growth, and the market can develop further without ODA.

The project will further implement studies to verify the impacts of the project on GHG emission reductions, but also the health, gender and other co-benefits.

- assessment of the adaptation impacts of the GCF project based on a proxy-indicator methodology of EnDev

- assessment of actual reductions of wood-fuel-use through the adoption of ICS in households
- assessment of the quality of the cooking energy systems in all regions of Kenya (CES methodology of EnDev)
- gender-sensitive impact monitoring as defined in the Gender Action Plan,
- E&S monitoring as defined in the ESMP

The project will further undergo external evaluations (mid-term and final), including gender surveys.

### 3.4 Specific project activities in Kenya (Output 1)

#### 3.4.1 Sub-component 1 for Kenya: Strengthening ICS supply and delivery chain in Kenya

##### **Activity 1.1.1 Professionalization of ICS production**

The project will upgrade about 52 local cookstove entrepreneurs from the artisanal level to the professional level, and 18 from the professional level to the business class level. The project will also support establishment of 20 new production centers in new target areas. The project will further improve productivity and stimulate innovation for all the producers.

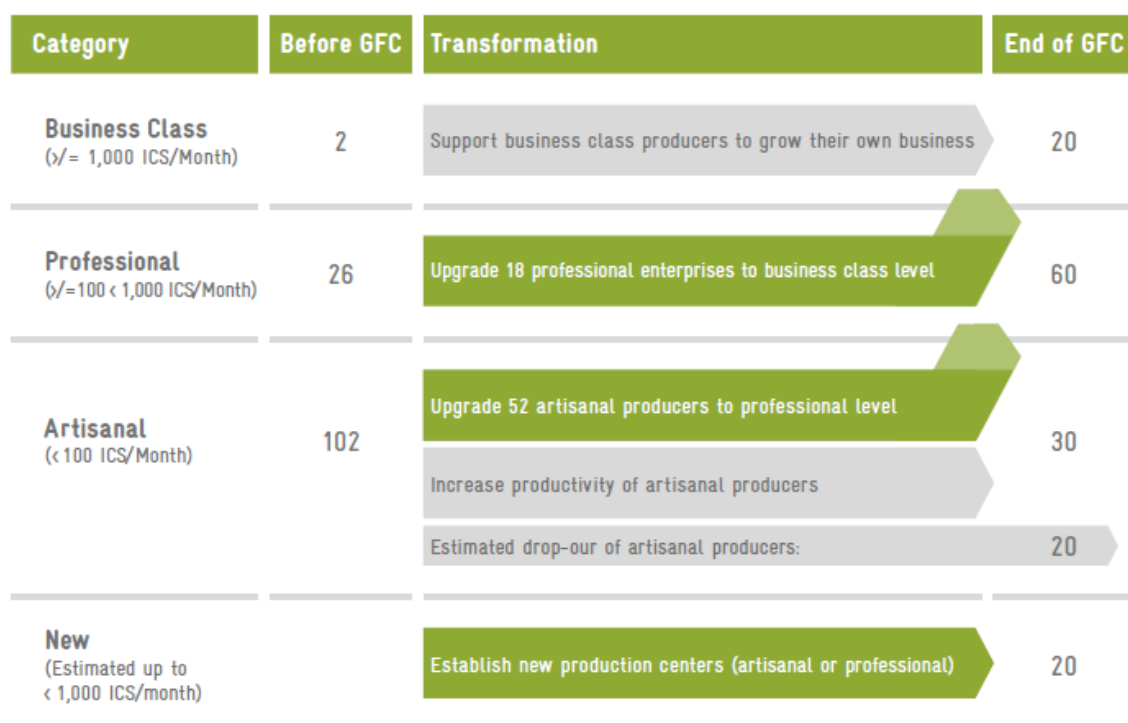
Besides this support to producers, a number of universities will be engaged as Stove Innovation Centers (SIC) and they will work and cooperate with the stove producers and/or artisans to improve technical performance of the artisanal stoves (e.g. on thermal efficiency, combustion efficiency, durability, quality of materials and aesthetic design among others). The innovation process will also involve designing and constructing machines and/or tools for stove production processes. EnDev Kenya intends to support the development of new types of stoves, as the prototypes shown below.

Other elements that will be offered additionally to the performance based-kits will be: a) analysis to improve workflow processes during production, building on the experiences and best practices of other small-scale businesses or semi-industrial enterprises with similar processes; b) support to achieve Kenya Bureau of Standards (KEBS) quality standards (stamp/sticker mark of quality and QR code for verification), and to develop brands (name/logo, etc. on basis of KEBS mark) to communicate the quality of their products to consumers.

**Figure 9. Prototypes currently under development in Kenya**



**Figure 10. Kenya: ICS Market Transformation Approach**



#### **Activity 1.1.2 Expansion of distribution and retail channels**

Besides the activities described in the generic approach, distribution will be enhanced by training the 4000 existing LMEs, plus an additional 2000 distributors (stove installers, marketers and vendors), particularly in new areas.

#### **Activity 1.1.3 Facilitating access to market-based finance for business class producers**

*See generic description.*

### **3.4.2 Sub-component 2 for Kenya: Enhancing consumer demand and ICS market environment in Kenya**

#### **Activity 1.2.1 Raising consumer awareness**

The project will – in close collaboration with the Clean Cooking Association of Kenya (CCAK) – support the government agencies particularly, the Ministry of Energy, Ministry of Health and Ministry of Environment both at national and county level on developing and implementing the behavioral change campaigns. The existing networks of Community Health Volunteers (CHVs), Community Forest Associations (CFAs), agricultural extension officers and Water Users Associations (WUAs) and women groups among others, will be specific channels in Kenya for targeted local campaigns.

#### **Activity 1.2.2 Creation of enabling market environment**

The project will support the clean cooking sector in collaboration with the government, the private sector and other development partners. In particular, the project will support and strengthen the Clean Cookstove Association of Kenya (CCAK).

The Ministry of Environment and Forestry (MoE&F), which hosts the Climate Change Directorate, will be supported in strengthening the monitoring of NDC targets for the climate friendly cooking sector. The project will also support the Ministry of Health (MoH) on indoor air quality guidelines with specific input from clean cooking perspective.

EnDev Kenya will finalize and facilitate enforcement of cooking sector regulations and standards by working closely with the Energy Regulatory Commission (ERC) and Kenya Bureau of Standards (KEBS), including the development of a national ICS quality label. Technical assistance will be provided to strengthen stove testing capacities in line with established standards in existing stove testing centers including upgrading of Kenya Industrial Research Institute (KIRDI) stove testing center to a reference center and laboratory in Kenya and the region. In addition, the project will support establishment of new stove testing centers, preferably in academic and research institutions, to complement KIRDI.

The project will closely collaborate with the County governments on awareness creation at grass root levels. This will also include providing technical support for the County governments to plan and include clean cooking interventions and related implementation strategies in their development and financial plans.

### **3.4.3 Sub-component 3: ICS market monitoring and impact evaluation in Kenya**

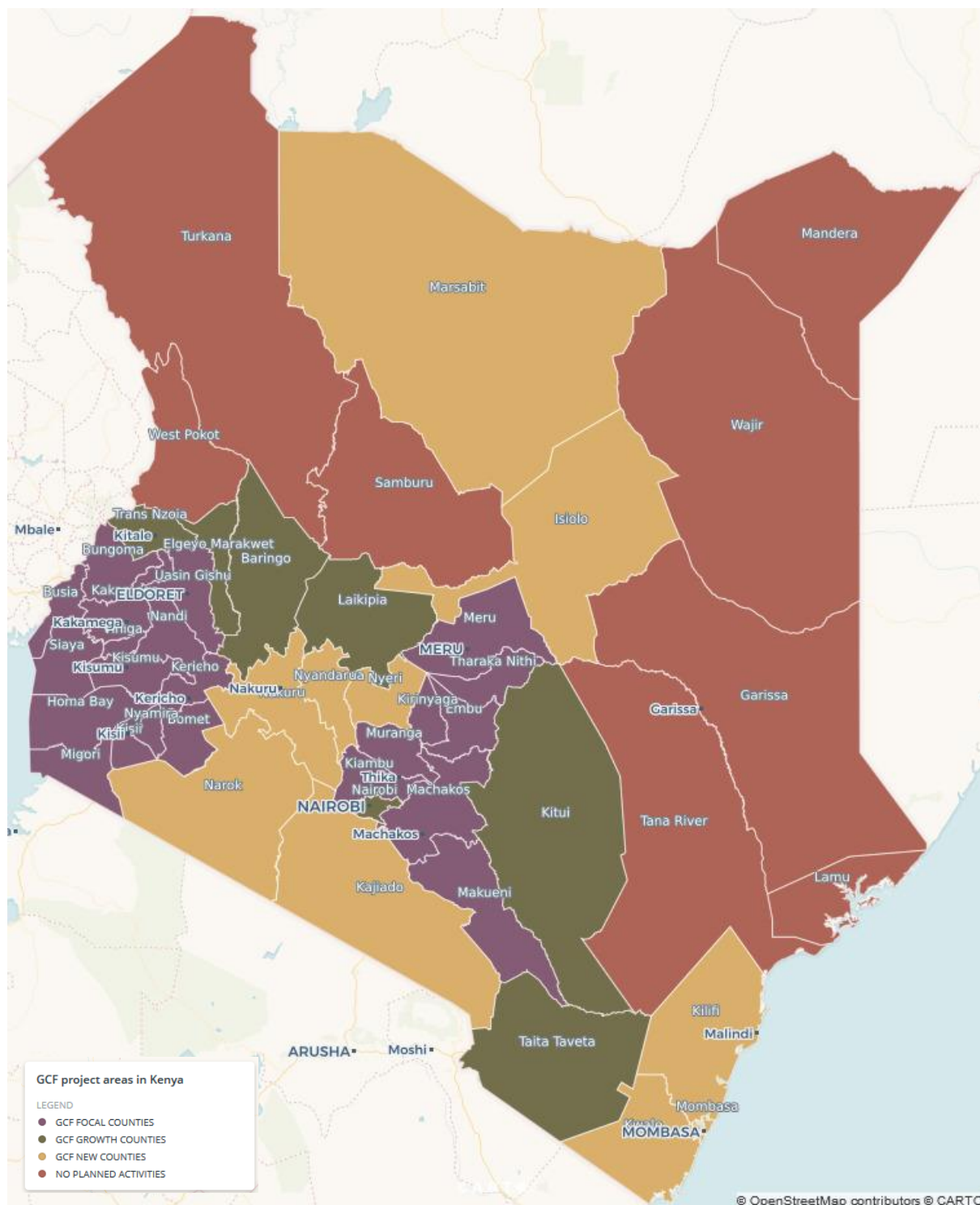
*See generic description.*

### **3.4.4 Geographic coverage – Kenya**

The project will deepen the activities within the current focal areas (22 counties) of EnDev Kenya, but also venture into seven growth counties, where initial outreach took place, and eight so-called underserved counties in the parts of Rift Valley, Central region, Coastal region and Northern Kenya:

- Current EnDev focal areas with different levels of activities and adoption but a need for deepening (22 counties): Kakamega, Bungoma, Busia, Vihiga, Nandi, Uasin Gishu, Homabay, Kisumu, Migori, Bomet, Kericho, Siaya, Kisii, Nyamira, Kirinyaga, Meru, Tharaka Nithi, Kiambu, Muranga, Embu, Makueni, Machakos
- New focal areas (new markets): growth counties: Trans Nzoia, Elgeyo Marakwet, Nakuru, Nyandarua, Kajiado, Laikipia, Nyeri;
- New (underserved) counties: Marsabit, Kilifi, Kwale, Baringo, Taita Taveta, Isiolo, Kitui, Narok
- New focal areas but implementation subject to security situation in the region: Samburu, West Pokot, Lamu, Wajir, Mandera, Turkana, Tana River, Garissa.

Figure 11. Geographic project coverage in Kenya



### 3.5 Specific project activities in Senegal (Output 2)

#### 3.5.1 Sub-component 1 for Senegal: Strengthening ICS supply and delivery chain in Senegal

##### **Activity 2.1.1 Professionalization of ICS production**

The project will upgrade about 57 local cookstove entrepreneurs from the artisanal level to the professional level, and 22 from the professional level to the business class level. The project will further improve productivity and stimulate innovation for all the producers.

The distribution of the kits to artisanal producers in Senegal occurs in a two-step approach, and will be implemented with the help of the regional “Chambers of Crafts” (Chambres des Métiers), which are professional associations to which producers are affiliated.

**Figure 12. Senegal: ICS Market transformation approach**



##### **Activity 2.1.2 Expansion of distribution and retail channels**

650 retailers ('last-mile entrepreneurs'), distributed across the regions of Senegal, will be supported to improve the access of rural households to ICS (training and provision of starter kits).

In Senegal, the project will have a particular focus on six under-served regions with lowest sales level. Various distribution models including direct sales, third party dealer-distributor networks, micro-franchisees, social sector partners, and institutional sales will be supported. The project will select young people in rural settlements to start retailing ICS in their communities as LMEs. They will receive training, marketing materials and some result-based financial incentives to start their business. These LMEs are bridging the gap between the existing suppliers of ICS in the weekly markets and the rural communities that surround these markets. The most important vehicle to connect rural households with ICS markets will be the women groups. They are found in almost every village and many of them have traditional 'tontine' savings system that allows women (including female heads of households) to overcome investment barriers through the solidarity of the group. The project will reach out to at least half of all 15,000 villages through the village leadership to sensitise and convince women groups becoming retailers

of ICS both for their own members as well as to the outside of their group. The project will also intensify the collaboration with women's associations to reach poorer populations in villages better. In parallel, an output-based performance incentive will be implemented for participating distributors if they achieve defined performance benchmarks.

**Activity 2.1.3 Facilitating access to market-based finance and other sources of capital**

*See generic description.*

**3.5.2 Sub-component 2 for Senegal: Enhancing consumer demand and ICS market environment in Senegal**

**Activity 2.2.1 Awareness raising of consumers**

In Senegal, the project will focus on expanding the market of informed consumers into the remaining six regions in the South and East of the country.

In Senegal, about two thirds of the annual stove production is sold in urban areas. The rural areas are not yet well aware of the ICS products. More than 50% of the population is living in these rural areas in around 15,000 villages. Reaching out to the 8 mln rural people requires a substantial investment. EnDev experiences have shown that these predominantly farming communities are best convinced through direct interaction. Awareness raising will be done in particular through women groups (in 8,000 villages) and on weekly markets in rural areas (1,500 rural markets). In the six new regions, the population in peri-urban areas will be mobilised. 500 caravan events with theatre performances (on ICS benefits), music and ICS presentations shall be performed in densely populated areas. The direct interventions are complemented with spots in local and national radio stations as well as on national TV.

The project will establish partnerships for marketing with existing services and projects working on the ground. These partners will also come from outside the energy sector, such as in the sector of health or food and nutrition security.

**Activity 2.2.2 Creation of enabling market environment**

The project will work closely with relevant national authorities to ensure regular exchange of information about ICS market development and will support the development and application of a joint monitoring system for the sector, as well as its linkage with national MRV (Measurement, Reporting and Verification) for the NDC. It will also provide assistance to the Government in the development of an investment plan for the domestic energy sector, including estimation of the investment requirements and potential sources to finance it, including liaison with donor community and other financing source to secure their interest and commitments.

Specific for Senegal will also be the organization of annual stove camps for innovation sharing and joint learning for all stakeholders of the sector in Senegal, inter alia, to promote sharing of knowledge on gender mainstreaming experience with relevant national and local institutions.

**3.5.3 Sub-component 3: ICS market monitoring and impact evaluation in Senegal**

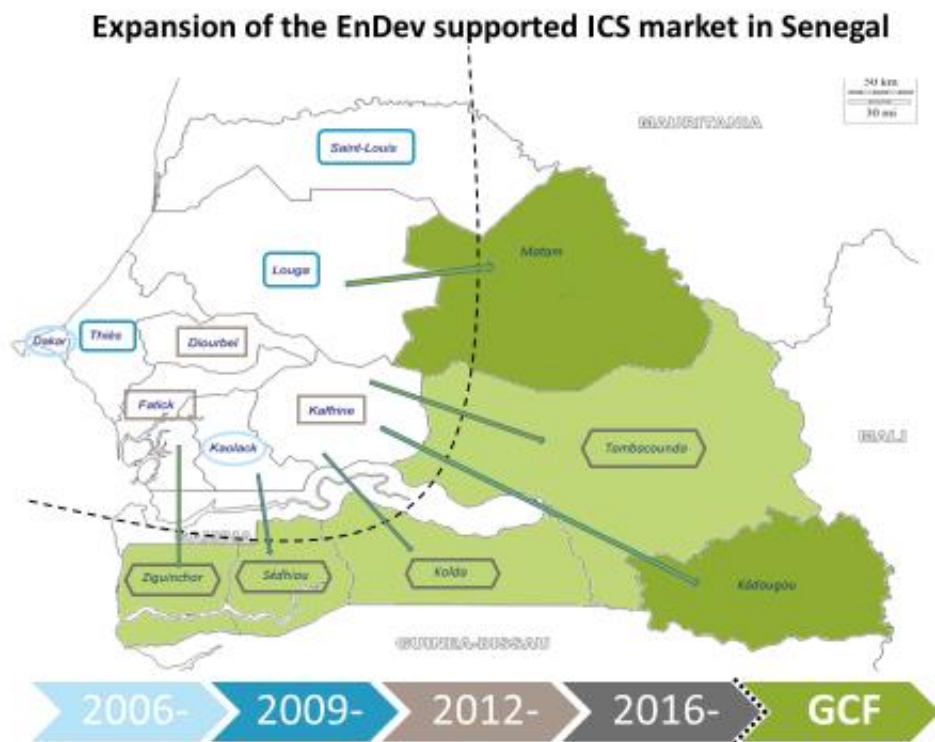
*See generic description.*



### 3.5.4 Geographic coverage in Senegal

Until now, the baseline project has established supply-demand systems for ICS in 8 of the 14 regions of Senegal. Most recently the project has supported first supply and demand structures in four more regions: Ziguinchor, Sédhiou, Kolda and Tambacounda. However, sales levels are still very small and market structures remain fragile. Under the GCF project, the project will expand the ICS market in the four regions they most recently started to support, as well as in the remaining two regions which do not yet have ICS markets. At the end of the project, the minimum annual market volume should be 10,000 ICS in each of the 14 regions of Senegal.

Figure 13. Geographic project coverage in Senegal





### **3.6 Output 3: Improved knowledge on climate-friendly cooking solutions and their contribution to NDCs**

The global output 3 will use the results, knowledge and experience generated through the Outputs 1 and 2, as well as EnDev/GIZ global network of partners, to improve understanding of ICS sector transformation strategies and the contribution such strategies can make to NDCs. The project supports the following activities:

#### **Activity 3.1 Collection and codification of knowledge on ICS market development from pilot countries**

This activity includes the compilation of data generated at national level as results of Outputs 1 and 2, including project results and impacts, with particular attention to gathering knowledge and evidence of the climate change benefits and impacts of the ICS sector in the form of GHG emission reductions and adaptation to climate change impacts. The project will conduct regular ICS market studies, surveys and other analyses to assess the effectiveness of the project ICS market transformation strategy and identify lessons learnt and best practices including gender aspects.

Jointly with the World Bank, Clean Cooking Alliance (CCA) and other relevant partners, the project will review and assess implementation approaches and compare their effectiveness, opportunities for complementarity and synergies; it will also seek to identify lessons learnt and best practice for most cost-effective approaches in delivering climate benefits. A standardised guidance on their replication (e.g. How-to Guide or similar guidance document) will be developed.

#### **Activity 3.2 Facilitating knowledge sharing**

Under this activity, the project will facilitate knowledge sharing among existing global and national ICS sector stakeholders, as well as support identification of new national and international partners who are able to scale up experiences and approaches of the project activities in the targeted countries and other countries with similar market conditions. In doing so, the project will build on and utilise EnDev’s partnerships with major international initiatives among them the Global Alliance for Clean Cookstoves (GACC), Sustainable Energy for All (SE4All), the World Bank/ESMAP programme and the Africa-EU Energy Partnership (AEEP). The project will conduct consultations and identify optimal knowledge sharing modalities/platforms; it will develop and implement jointly with relevant partners knowledge sharing strategy and action plan.

### **3.7 Project implementation arrangements**

The project implementation structure consists of a general governing structure, Executing Entities for each country, and additional implementation partners.

#### **3.7.1 General project governing structure**

##### **Project Governing Board**

The project uses the already existing EnDev governing board structure for the overall governance. Members of the board are representatives of the Directorate-General for International Cooperation of the Dutch Ministry of Foreign Affairs (MFA NL), the German Federal Ministry for Economic Cooperation and Development (BMZ), the Norwegian Agency for Development Cooperation (NORAD), the UK Department for International Development (DFID), the Swiss Agency for Development and Cooperation (SDC), and the Swedish International Development Cooperation Agency (SIDA). Meetings take place twice per year. GIZ is invited to these meetings for regular reporting on project impacts, outcomes, outputs and implementation progress.

### **Project Advisory Board (PAB)**

The project uses the existing EnDev Project Advisory Board (PAB) for overall guidance and advice on project implementation in the country. In Senegal, this committee still needs to be formed for the GCF project. Members of the committees in both countries are representatives of the following institutions:

**Table 4. Project Advisory Board members**

Kenya	Senegal
<ul style="list-style-type: none"> <li>• Ministry of Energy</li> <li>• Ministry of Environment and Forestry</li> <li>• Ministry of Agriculture</li> <li>• Ministry of Health</li> <li>• Climate Change Directorate (CCD)</li> <li>• Council of Governors (representing the counties, in which the project is active)</li> <li>• SNV</li> <li>• GIZ</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Petroleum and Energy</li> <li>• Ministry of Environment and Sustainable Development</li> <li>• Ministry of Finance</li> <li>• National Designated Authority</li> <li>• GIZ country director</li> </ul>

The PABs meet twice a year and have the following mandate/tasks:

- Provide overall guidance to the project, in particular regarding aspects of targeting the most vulnerable, gender balance and sustainability.
- Provide review and feedback of/on annual work plans, annual reports and audits.
- Ensure programme synergy and coherence with the evolution of the international and national context, including overall national adaptation planning.
- Review programme adherence with safeguards and Gender Action Plan objectives
- Support the coordination of project activities across different line ministries and between private sector, public sector and civil society.

NB. The UNFCCC National Designated Authority (NDA) for Kenya is the National Treasury; the NDA for Senegal is the Ministry of Environment and Sustainable Development (MEDD).

### **Project Coordination Committees (PCCs)**

On operational level, the establishment of new Project Coordination Committees (PCCs) ensures structured implementation of project activities and across the project components. Members of the PCCs are representatives of the respective EEs in both countries, as well as the World Bank to ensure coordination with the World Bank KOSAP project also funded by GCF. The PCCs will meet weekly.

**Table 5. Project Coordination Committee members**

Kenya	Senegal
<ul style="list-style-type: none"> <li>• GIZ/EnDev (Lead Executing Entity with coordination and decision making mandate)</li> <li>• SNV</li> <li>• Ministry of Energy</li> <li>• World Bank (WB representative to ensure coordination with the partnering WB GCF project)</li> </ul>	<ul style="list-style-type: none"> <li>• GIZ/EnDev (Lead Executing Entity with coordination and decision making mandate)</li> <li>• EE: (Cluster Management Unit North)</li> <li>• EE: (Cluster Management Unit West)</li> <li>• EE: (Cluster Management Unit Central)</li> <li>• EE: (Cluster Management Unit South)</li> <li>• EE: (Cluster Management Unit South-East)</li> </ul>

The PCCs meet monthly with the following tasks:

- Enhance common understanding amongst EE of the theory of change and how the ICS sector in both countries shall be transformed
- Promote synchronization of between the EEs to ensure that supply and demand for ICS grow simultaneously
- Define, monitor and coordinate work plans
- Ensure that budgets and work plans are on track and monitor project progress
- Identify and resolve bottlenecks and implementation challenges relevant on project level
- Monitor adherence to environmental, social and fiduciary safeguards; monitor implementation of the Project Environmental and Social Management Plan and Gender Action Plan (GAP), and steer review of these plans if needed
- Identify issues required to be brought to the attention of the PCC and/or political decision makers
- Agree on terms of reference, recruitment of experts
- Discuss outcome and impact monitoring processes and results
- Discuss reporting to the PAB and the overall project management

### **3.7.2 Executing Entities in Kenya**

The project Executing Entities (EE) in Kenya are the Ministry of Energy (MoE), SNV, and GIZ/EnDev Kenya. GIZ/EnDev Kenya implements activities at overall sector level:

#### **Sector coordination**

- Coordination of the Project Coordination Committee on regular basis
- Consultation of the Project Advisory Board on regular basis
- Coordination with Policy advice, development of policy documents
- Contribution to the implementation of the stove regulation and the national stove standards
- Coordination of the implementation of the national awareness campaigns

#### **Professionalization of ICS producers**

- (Co-)Investment into production assets
- (Co-)Investment into distribution assets
- Linkage and capacity development to enable access to finance
- Technical training on stove production and business development
- Advise on work norms (social, health and environmental standards)
- Coordinating Quality assurance, quality control, testing and branding
- Extensive business training and coaching

The Ministry of Energy (MoE) has 16 energy centres throughout the country with 160 staff members. Since 2009, the MoE is the lead political partner of EnDev and is chairing the EnDev Project Steering Committee (PSC). MoE has the following experience in the ICS sector:

- Provision of training of local artisans via the 16 energy centers
- Development of the Kenyan ICS standard, coordinated by the Kenyan Bureau of Standards
- Development of Regulations for improved cookstoves
- MoE is the chair of the Interministerial Committee on clean cookstoves

The MoE has the following task in project implementation:

- Chairing the Project Advisory Board of the project

- Finalisation and implementation of policy and regulation via the 47 county governments
- Development (jointly with EnDev, SNV, Ministry of Health) of awareness and behaviour change messages and strategy and coordination of the implementation via the counties governments and via the local associations
- Implementation of awareness creation measures and stove demonstration/exhibition through their 16 energy centers
- Contribution to training and capacity development of stove producers and distributors
- Provision of the platform for coordination, collaboration and knowledge sharing between the two GCF projects of GIZ and WB.

SNV Development Organisation (“Stichting Nederlandse Vrijwilligers”, the Netherlands) is a non-for-profit international development organization. SNV is working with GIZ EnDev program in Kenya since 2012. SNV is implementing the Sector Support project, aiming at coordinating the cooking sector of Kenya and strengthening the Clean Cooking Alliance of Kenya (CCAK). SNV has established collaboration with banks, MFIs and other financial institutions for access to finance. SNV will be responsible for:

- Capacity building and results-based-financial incentives, access to finance
- Support awareness creation and marketing to enhance demand, in cooperation with other actors
- Capacity development and technical as well as business trainings along the supply chain for the distributors of improved cook stoves

### 3.7.3 Executing Entities in Senegal

In Senegal, the EEs are GIZ/EnDev Senegal and several larger NGOs for regional interventions.

National level sector-wide interventions will be implemented by GIZ/EnDev Senegal as the leading EE of the project. This entails all activities concerning the professionalization of the ICS production, large-scale distribution, and measures to improve the coordination of the sector.

#### **Sector coordination:**

- Information of concerned ministries (including field visits)
- Meetings of stakeholders of the ICS sector (including annual “stove camp”)
- Policy advice, development of policy documents and relevant studies
- Development and application of monitoring system for the ICS sector and its contribution to the NDC targets
- National Media campaigns (TV, radio)

#### **Professionalization of ICS producers:**

- (Co-)Investment into production and distribution assets
- Technical training on stove production, workshop organization
- Improvements of stove design and production processes, materials and tooling
- Advice on work norms (social and health standards)
- Extensive business training and coaching
- Linkage to finance sector (improve access to credit)

For reaching out to most of the 15,000 villages in the 14 regions of Senegal for awareness raising and last mile marketing support, the Senegal regions will be grouped into clusters of 2-5 regions. The project activities in these clusters will be implemented by several NGOs with EE functions (Cluster Management

Unit, CMU) and the GIZ. The EE have been selected together with the Ministry of Petroleum and Energy via a competitive Expression of Interest process, and have undergone due diligence:

- ENDA ENERGIE exists since about 30 years in Senegal. Their work is focusing on access to energy, climate change, desertification and ‘gender in energy’.
- ENDA ECOPOP has 25 years of experiences in good governance in rural areas of Senegal. They work intensively with local authorities to improve the quality of their services to the communities.
- CONCEPT is working in Senegal since more than 20 years. They are active in 6 regions for the development of grassroots initiatives, the strengthening of expertise, and the recognition and participation of stakeholders in the choice of development policies and projects.

The regional management units will implement, procure and supervise services for the following activities:

- Awareness campaigns (cooking demonstrations, theatre plays, local authorities etc.)
- Local distribution (Last mile entrepreneur, weekly markets, women groups)

### 3.7.4 Additional implementation partners

In both countries, additional **implementation partners** were identified to implement specific activities under service or financial contracts, in case the EEs do not implement these activities themselves, as in the table below.

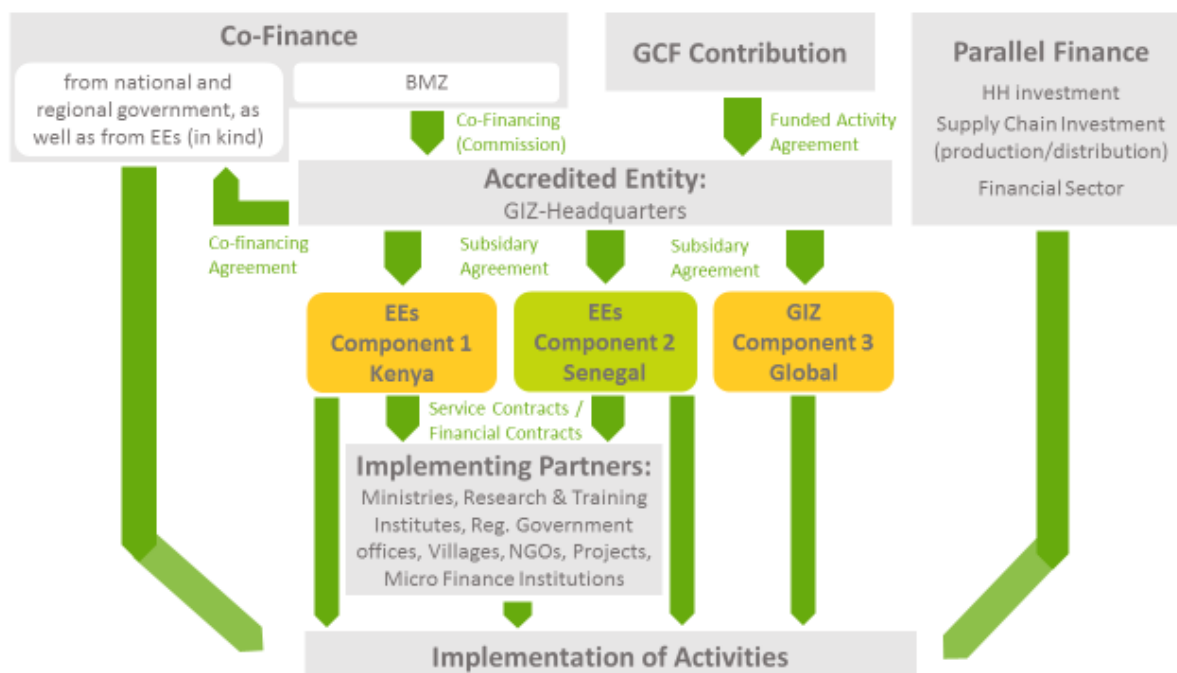
Table 6. Additional implementation partners and tasks

Implementation partners	
Research	Quality assurance, testing of innovations, national stove camp events...
Training Institutes	Stove production methods, business training and coaching, social and health standards, distribution and marketing approaches, environmental management, social management, and gender mainstreaming
(micro-)Finance Institutes	Access to credit, training on application
Suppliers of tools and machines	Local production of tools and machines for ICS production, supply structure,...
NGOs	<p>Use of existing extension structure for food security, environment, energy, forest etc. to reach out to households. EnDev has already identified NGOs in both countries, which are willing to add ICS promotion through cooking demonstrations etc. on their normal work portfolio and use their social capital to create demand for ICS.</p> <ul style="list-style-type: none"> <li>• Women groups will be motivated to promote ICS within their group and beyond.</li> <li>• Producers and local retailers will be linked to the identified demand (e.g. women groups).</li> <li>• Last mile entrepreneurs will be identified, trained, equipped and supported in reaching villages.</li> <li>• Additional tasks will be identified in the course of project implementation</li> </ul>

Figure 14. Project Implementation Structure



Figure 15. Overview of flow of funds



### 3.8 Direct project impacts

The direct project impact is a sustainable growth of the ICS market. The achievable market growth has been estimated with the help of a financial model, representing how supported producers could increase their production with the help of training, process improvement and additional equipment.

In Kenya, project interventions will lead to continuous growth of the ICS market of 36% per year (2020-2024), and further growth of about 10% per year after the end of the GCF support (2025-2030).

In Senegal, project interventions will lead to continuous growth of the ICS market of 24% per year (2020-2024), and further growth of about 11% per year after the end of the GCF support (2025-2030).

The project will result in a cumulative 1.91 million additional ICS sales in Kenya and 0.950 million in Senegal during the 5-year project duration (see table below). ICS sales will continue to increase after the end of the project to reach 9.208 million additional ICS sales in Kenya, and 4.737 million additional ICS sales in Senegal by 2030.

**Table 7. Cumulated ICS sales with and without project. Source: GIZ feasibility study (December 2018)**

	Initial	GCF Project Period		GCF Post-project to NDC target		Cumulated since 2017
	2017	2020	2024	2025	2030	
<b>KENYA</b>						
<b>Baseline</b>	4,010,000	4,262,000	5,402,459	5,724,082	7,590,110	3,580,110
<b>With project</b>	4,010,000	4,336,400	7,321,679	8,549,962	16,798,632	12,788,632
<b>Difference</b>		74,400	<b>1,919,220</b>	2,825,880	9,208,522	9,208,522
<b>SENEGAL</b>						
<b>Baseline</b>	1,000,000	1,203,000	2,045,910	2,264,599	3,408,242	2,408,242
<b>With project</b>	1,000,000	1,248,000	2,996,013	3,646,833	8,145,866	7,145,866
<b>Difference</b>		45,000	<b>950,103</b>	1,382,234	4,737,624	4,737,624

The table shows that the project will allow total cumulated sales in 2030 to reach:

- 16.8 million ICS in Kenya, which is 107% of the NDC target of 15.7 million cumulated ICS sales;
- 8.1 million ICS in Senegal, which is nearly the NDC target of 8.4 million.

The project feasibility study further conservatively calculates that:

- each woodfuel ICS adopted under the project, during its lifetime (2-3 years), saves 260 to 480 kg of wood biomass per year compared to traditional cooking on fire;
- each charcoal ICS saves 1,310 to 1,500 kg of wood biomass per year compared to a basic charcoal stove.

In total, the project would thereby avoid the consumption of 4.7 Mton (Megatonnes) of wood in Kenya by the end of the project, and almost 22.6 Mton by 2030. For Senegal, wood biomass savings would amount to 1.4 Mton by the end of the project, and almost 7 Mton by 2030.

It follows that during project lifetime, GHG emission reductions are estimated 6.76 million tons of carbon dioxide equivalent (MtCO<sub>2</sub>eq) during project period, and an additional 25.9 (MtCO<sub>2</sub>eq) in the project



influence period until 2030<sup>10</sup>. The assumptions used for the calculations are conservative (see table below, and discussion of the assumptions in section 6.2).

By using average observed ICS lifetimes of 3.5 years for Kenya and 2 years for Senegal (statistically observed on previous projects), the feasibility study estimates that the additional ICS sales will result in additional adoption of ICS by 1.91 million, mainly rural, households, representing 11.23 million people, 605,000 women-headed households, and 5.57 million children, to whom access to ICS will bring direct health impacts. These numbers are additional compared to the business-as-usual ICS market growth. The table below also shows numbers of beneficiaries up to 2030, after project lifetime.

Other co-benefits of the project include employment, comfort, time savings, increased household purchasing power, improved gender equality, and benefits for elderly and sick people. These benefits will be discussed in the relevant sections of the E&S assessment.

**Table 8. Summary of project benefits (source: GIZ feasibility study, 20 December 2018). NB. Indirect impacts are impacts obtained after project duration, i.e. 2025-2030.**

	Sénégal	Kenya	Total
<b>Direct GHG Emission reductions, tCO2</b>	<b>1,454,736</b>	<b>5,300,980</b>	<b>6,755,716</b>
Indirect GHG emission reductions, tCO2	5,799,210	20,133,409	<b>25,932,619</b>
<b>Total GHG emission reductions, tCO2</b>	<b>7,253,945</b>	<b>25,434,389</b>	<b>32,688,335</b>
<b>Direct: project life-time:</b>			
Total # households	315,719	1,595,607	<b>1,911,327</b>
Total # beneficiaries	3,251,907	7,978,037	<b>11,229,944</b>
Total # female beneficiaries	1,609,282	3,911,351	<b>5,520,633</b>
Share of beneficiaries in total population, %	21%	16%	-
Total # women-headed households	94,716	510,594	<b>605,310</b>
Total # children	1,420,736	4,148,579	<b>5,569,315</b>
<b>Indirect: post project to 2030</b>			
Total # households	808,482	4,366,744	<b>5,175,226</b>
Total # beneficiaries	8,327,368	21,833,718	<b>30,161,086</b>
Total # female beneficiaries	4,120,993	10,704,303	<b>14,825,296</b>
Share of beneficiaries in total population, %	54%	45%	-
Total # women-headed households	242,545	1,397,358	<b>1,639,903</b>
Total # children	3,638,170	11,353,533	<b>14,991,704</b>

<sup>10</sup> These estimates are from the December 2018 feasibility study, calculated following Version 6 of the UNFCCC Clean Development Mechanism methodology. Version 10 of the CDM methodology has been used in the final project proposal, but the resulting changes are minor, and do not change the conclusions of the present ESA.



## 4 Impact screening

### 4.1 GCF requirements and applicable standards

In conformity with GCF’s environmental and social policy dated March 2018, project activities have been assessed against GCF’s interim environmental and social safeguards (ESS1 to ESS8)<sup>11</sup>. The interim standards of the GCF are the IFC Environmental and Social Performance Standards (PS), and are shown in the table below. They will be referred to indistinctively as ESS or PS.

Table 9. GCF’s E&S safeguards

Interim GCF standards	IFC Environmental and Social Performance Standards
ESS1	PS1: Assessment and management of environmental and social risks and impacts
ESS2	PS2: Labour and working conditions
ESS3	PS3: Resource efficiency and pollution prevention
ESS4	PS4: Community health, safety and security
ESS5	PS5: Land acquisition and involuntary resettlement
ESS6	PS6: Biodiversity conservation and sustainable management of living natural resources
ESS7	PS7: Indigenous peoples
ESS8	PS8: Cultural heritage

The assessment is also based on IFC’s set of eight Guidance Notes, corresponding to each Performance Standard, and the additional Interpretation Note on Financial Intermediaries. Through the assessment, special attention has given to (i) gender and (ii) human rights, which are cross-cutting in the ESS, and are quoted separately in GCF’s environmental and social policy.

The project has also been assessed for compliance with GIZ’s Safeguards and Gender (S+G) management system. GIZ’s safeguards and gender management system includes:

- (i) environment and climate safeguard
- (ii) human rights safeguard
- (iii) context and conflicts sensitivity safeguard
- (iv) gender impacts and mainstreaming.

To ensure full conformity with GCF’s environmental and social policy, as well as with GIZ’s policy on gender impacts and mainstreaming, a separate gender assessment has been conducted for the project, and a Gender Action Plan has been developed. Both are disclosed on the GCF’s website.

<sup>11</sup> GCF uses the 2012 IFC Performance Standards (PS) as interim ESS. These standards are available in English and French on [http://www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC\\_Performance\\_Standards.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC_Performance_Standards.pdf?MOD=AJPERES)

## 4.2 Impact screening and project categorization

The table below provides a screening of negative and positive risks and impacts to be expected from the different project components, as well as other potential requirements of the E&S safeguards. The screening identifies which issues require a more detailed assessment.

**Table 10. Project E&S impact screening**

E&S Safeguard	Screening results	Detailed assessment
ESS1: Assessment and management of environmental and social risks and impacts	Potential <u>unintended negative risks and impacts of the activities</u> are limited to minor impacts and nuisances from stove production.	X
	<u>E&amp;S management capacity</u> of the GIZ project teams is assessed as good. All project partners are subject to a due diligence which includes an assessment of their E&S management capacity.	X
	EnDev has a very good track record of ongoing <u>stakeholder engagement</u> in the “baseline projects”. The GCF project design builds on extended consultation with stakeholders and provides for participation of all groups.	X
	In Kenya, <u>conflict and security risks</u> require a detailed assessment.	X
	The project is beneficial to <u>poor and vulnerable persons</u> . Experience of similar projects show that some stakeholder may question the project’s market approach because they fear that the poorest households will lack the <u>ability to pay</u> for stoves in the market.	X
	The involvement <u>of financial intermediaries</u> triggers the need to assess their E&S management capacity.	X
ESS2: Labour and working conditions	Assessment against PS2 required for: <ul style="list-style-type: none"> <li>workers directly engaged by the project partners (EE and service providers)</li> <li>workers in the ICS supply and distribution chain</li> </ul>	X
	Sand and clay extraction may occur under very poor safety conditions (artisanal underwater mining)	X
	<u>Equal opportunity and non-discrimination</u> : the project provides opportunities for inclusion of vulnerable persons in the ICS supply chain. Gender equality in employment is managed via the Gender Action Plan.	
ESS3: Resource efficiency and pollution prevention	The project has a very significant positive impact on resource efficiency and pollution prevention, by saving fuel and reducing smoke.	X
	ICS production activities have a limited impact on the use of natural resources and a very low potential for generating pollution.	
	Extraction of materials from riverbeds and coastal zones has a potential negative environmental impact.	X
ESS4: Community health, safety and security	The project has a significant positive impact on community health, by reducing smoke emissions from open fires.	
	Stove production could generate minimal impacts on nearby residents, such as noise or kiln smoke.	

E&S Safeguard	Screening results	Detailed assessment
	Safety risks from stove transport are limited and could be managed only by non-industrial producers, who can include safety requirements in transport contracts. ICS will be produced as locally as possible.	
ESS5: Land acquisition and involuntary resettlement	Only minor issues expected in cases when production site extension would require eviction of nearby dwellers or land users. This risk is low; the issue is further explained in a separate section.	X
ESS6: Biodiversity conservation and sustainable management of living natural resources	The project has a very significant positive impact on <u>biodiversity conservation</u> by saving forest resources. It is necessary however to verify if the intensive use of ICS will not lead to increased use of woodfuel.  Potential unintended negative impacts would result in a very small scale and only locally from <u>sand and clay extraction</u> , and are covered under ESS3.	X
ESS7: Indigenous peoples	<u>Indigenous peoples</u> are present in Kenya and Senegal and not systematically recognized in policy and practice. The project does not affect these peoples negatively, but by reducing the pressure on firewood, may contribute to preserving their vital natural resources and reduce conflict potential.	X
ESS8: Cultural heritage	No issues expected; project staff will be trained on the requirements for ESS8, which would apply in conjunction with ESS5 only in cases of extending/building production centres., or in case of material extraction from riverbed.	

### 4.3 Project risk categorization

In GIZ’s Safeguards and Gender management system, the project is automatically categorized as B under the “Conflict and Context Sensitivity Safeguard” for Kenya. From an environmental and social point of view and according to the GCF’s categorization, the project could in principle be categorized as C<sup>12</sup>. However, the large geographical extent of the project, which covers two entire countries, the human rights context of the countries, as well as the number of partners involved, makes a full prior complete identification of risks relatively difficult, and the project is therefore categorized B as a precaution, with implementation of a full E&S management plan.

<sup>12</sup> The environmental and social risk categories as defined in the ESS of the GCF apply to activities financed by the GCF as follows (GCF, 2016):

- Category A. Activities with potential significant adverse environmental and social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented;
- Category B. Activities with potential mild adverse environmental and social risks and impacts that, individually or cumulatively, are few, generally site-specific, largely reversible and readily addressed through mitigation measures; and
- Category C. Activities with minimal or no adverse environmental and social risks and/or impacts.

## 5 Compliance with national legislations in Kenya and Senegal

Project compliance with the national environmental and labour legislation is an essential requirement of all project activities. This compliance is the responsibility of the supported producers and of the intervening project partners. The project E&S officers who are created under the project ESMP can advise them to this end if needed.

### 5.1 Labour legislation

The project will verify that all workers directly engaged by the project partners are in compliance with the national labour laws. Compliance of workers in the ICS supply chain, or engaged by service providers, and who are not engaged directly by the project, with the project E&S requirements, is discussed under section 6.5 on “labour and working conditions in the ICS supply chain”.

### 5.2 Environmental legislation

ICS producers have to respect national environmental legislation and standards, such as standards on dust emission and noise levels, and be compliant with the environmental permitting legislation.

The creation of a new production centre, the significant extension of an existing centre, or the opening of a clay extraction location, could fall under the national requirements for an environmental permit or an EIA. Even if the said activity is not directly financed by the project, all supported producers will have to be compliant with the permitting requirements and with national standards.

#### a) Kenya

In Kenya, environmental licensing is the responsibility of the National Environmental Management Agency (NEMA) of the Ministry of Environment and Forestry. NEMA issues a range of environmental licenses and permits under the Kenyan environmental regulations. These include licenses on, among others, Environmental Impacts Assessment (EIA), effluent discharges, waste management, and permits for, among others, sand harvesting, sale and transportation.

Legislation on EIA is inscribed in the Environmental Impact Assessment/Audit (EIA/EA) Regulations of 2003<sup>13</sup>. Projects to be subjected to EIA are specified in the Second Schedule of EMCA 1999, amended 2015. Under these regulations, an EIA is required for instance for new processing and manufacturing industries including *large scale* brick and earthenware manufactures, as well as for *commercial large scale* harvesting of sand or clay. Under Kenyan legislation, an environmental license could be required for installation of new producers, depending on their size, but probably not for site extensions. In any case, producers will be encouraged to apply to NEMA for any change in scale, or for any new construction, to verify if a permit is required and what are the conditions of the permit. NEMA will issue a permit with conditions to be respected, which would include at minimum compliance with Kenyan standards on noise, air quality, effluents and waste.

#### b) Senegal

Environmental permitting in Senegal falls under the responsibility of the Ministry of Environment and Sustainable Development (in French “MEDD”). Environmental legislation is described in the Environmental Code of Law N° 2001 - 01 dated 15 January 2001. The Senegalese permitting system is based on the concept of “Installations Classées pour la Protection de l’Environnement (ICPE)”, which

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<sup>13</sup> New regulations are being drafted in 2018.

covers any activity/establishment with a potential environmental impact. The system is two-tiered, with 2d class ICPE requiring only a declaration, and 1<sup>st</sup> class ICPE requiring an EIA and a special license. Producers will be encouraged to apply to the MEDD for any change in scale, or for any new constructions, to verify if a permit is required and what are the conditions of the permit. However, as there are no new large production centres to be created, it is unlikely in Senegal that an EIA will be required for a producer. Producers will still be required to comply with Senegalese standards on noise, air quality, and liquid and solid effluents.

**c) Sand and clay extraction**

Legislation on sand and clay harvesting, and application to the project activities, is further discussed in section 6.4.2 “Impacts from materials sourcing”.

## **6 Impact assessment and proposed mitigation and compensation measures**

### **6.1 Assessment and management of potential unintended negative E&S impacts and risks**

#### **6.1.1 Purpose**

The ESS1 standard on “Assessment and Management of Environmental and Social Risks and Impacts” requires (i) to identify the environmental and social impacts, risks, and opportunities of projects; (ii) to ensure effective stakeholder engagement; and (iii) to manage environmental and social performance throughout the life of the project.

#### **6.1.2 Identification of environmental and social impacts**

The present E&S assessment has identified potential anticipated unintended risks and impacts from the project activities.

Potential unintended negative environmental impacts are limited to minor impacts from larger-scale stove production workshops.

Regarding potential unintended negative social impacts, EnDev evaluations as well as consultations with beneficiaries and project partners have shown that the introduction of ICS brings beneficial changes into the households, especially benefitting and empowering women. However, due to the large geographical scale of the project, the extension into remoter areas with different cultures, and the fact that interventions will impact the micro-level of households, some unforeseen cultural negative impacts may occur. There is a minor risk that project partners, including government institutions, will not implement awareness raising and behaviour change activities in a manner that is culturally appropriate for minorities and indigenous peoples. Besides, the project intervenes in an economic sector with informal labour conditions, so that non-infringement of human rights in this sector requires particular care. Finally, there is a security risk for employees of the project partners especially intervening in Kenya, and it will be necessary to ensure that all employees benefit from the same level of safety, from the main project partners down to small companies sub-contracted by local partners (see corresponding detailed assessments below).

#### **6.1.3 Management of E&S performance throughout the project**

Residual unintended negative risks and impacts, as well as opportunities, will be managed through an Environmental and Social Management Plan (ESMP) for the project, presented in the next chapter.

For this type of project with a large geographical coverage, a large number of partners involved, and a large number of small project activities, it is necessary to implement an E&S management structure to continue identifying and managing possible upcoming risks and impacts while the project expands.

This management structure and the ESMP have been incorporated in the project implementation arrangements and in the project activities during proposal development.

#### **6.1.4 E&S management capacity**

The E&S management capacity of EnDev teams is good. The teams are not yet trained for E&S management, but have been shown to adequately follow up on environmental and social issues. The project teams also have a very good track record of ongoing stakeholder engagement in the “baseline projects”.

The E&S management capacity of future Executing Entities has been assessed rapidly in a way commensurate to the risks related to activities to be implemented, and no particular sources of concern have been identified. The EEs will be further subject to a due diligence by GIZ which will also include E&S aspects. Guidance on this due diligence is provided in Annex 2. For this project, the E&S aspects to be managed or monitored include:

- labour and working conditions for all staff of project partners
- when relevant depending on activities: HSE (health, safety and environment)
- good conduct.

Besides, GIZ/EnDev will verify that all current and future additional implementing partners have a sufficient capacity to manage labour and working conditions of staff and, when relevant, health, safety and environment practices (for laboratories, suppliers and trainers of ICS producers), as well as good conduct (for staff with local interventions). Financial intermediaries will necessarily be subject to a due diligence (see section 6.1.8).

The capacity of the organizations to implement **security management** is not assessed, as this falls outside the scope and capacity of the E&S consultant. GIZ has a corporate security risk management unit which will be involved in managing security risks (see section 6.8 and ESMP).

**Table 11. Rapid assessment of E&S management capacity of EEs. For details on EE's, see section 3.7**

Partners	E&S management capacity (including gender)	Actions required
<b>GIZ</b>	E&S and gender policies in compliance with GCF requirements. Accredited by GCF for Category B projects	-
<b>GIZ/EnDev Kenya and GIZ/EnDev Senegal</b>	Good practical capacity for solving arising E&S issues, thanks to continuous monitoring of producers and consultation with all stakeholders. One staff member of EnDev Senegal has a background in environmental management. Several staff members have training in gender mainstreaming.  For instance, a case whereby residents have complained about noise from a producer has been solved when the producer has adapted working hours after consultation with local stakeholders, and another case of localized pollution by used oil firing in a kiln has been solved by technical adaptation of the kiln.	Complementary training of staff on E&S management applied to the ICS production sector
<b>Ministry of Energy (MoE) (Kenya)</b>	A due diligence has been performed on the MoE. The MoE adopts the environmental management policies of the National Environment Management Authority (NEMA), and the gender policy of the National Gender Equality Commission. The E&S management capacity of the 16 local centers is unknown and will have to be managed and monitored.	Regular consultation between MoE and other project partners to align local interventions with international best practice and make sure all interventions are culturally appropriate.  Monitoring of local centres capacity by project E&S officers  Training of trainers on E&S management in production
<b>SNV</b>	No corporate E&S policy, but good practice of social and gender management. Code of conduct for employees. Environmental management not required for the activities to be executed.	-

Partners	E&S management capacity (including gender)	Actions required
EE (regional management units) ENDA ENERGIE ENDA ECOPOP CONCEPT	Selected based on a tender procedure including E&S aspects. Good practice of social management. Environmental management not required for the activities to be executed.	E&S management to be monitored by GIZ/EnDev and SNV. This includes at least labour and working conditions, health and safety of employees, and code of conduct of employees.  An E&S due diligence will be carried out for these partners, see Appendix 2 for guidance.
<b>Additional implementation partners (yet to be defined)</b>		
Research institutes	Not yet verified  An E&S due diligence will be carried out for financial intermediaries.	GIZ/EnDev to verify the capacity of the partners to manage labour and working conditions of staff and, when relevant, health, safety and environment practices (for laboratories, suppliers and trainers of ICS producers), as well as good conduct (for staff with local interventions).  See also section on “financial intermediaries”.  See Appendix 2 for guidance on the E&S due diligence.
Training institutes		
(micro-) Finance institutes		
Suppliers of tools and machines		
NGOs		

### 6.1.5 Stakeholder engagement

#### a) Stakeholder engagement during project preparation

The GCF project is embedded into on-going EnDev programs in Kenya and Senegal where the core project implementation structure is already in place. These programs have a very good track record of stakeholder engagement. They regularly consult with project partners, institutions and NGOs. Project teams also exert a very close monitoring of beneficiaries and of supported ICS producers, usually in cooperation with grassroots level organizations, such as the Agricultural Services in Kenya who meet every 2 months with LMEs to monitor their sales. This practice of regular stakeholder engagement has been used during preparation of the GCF proposal. This proposal has further been designed and informed by a series of stakeholder consultations in Kenya and Senegal, as summarized in the table below.

Table 12. Summary of stakeholder consultations held in Senegal

Stakeholder	Dates	Summary of consultations
Ministry of Petroleum and Energy	June 2017, June – July 2018	<p>Meeting with Director of Hydrocarbons who is responsible for the households fuels:</p> <ul style="list-style-type: none"> <li>• Presentation of concept of the GCF project</li> <li>• Discussion of the political endorsement of the GCF project</li> </ul> <p>Meeting with the Director of the Cabinet :</p> <ul style="list-style-type: none"> <li>• Presentation of concept of the GCF project</li> <li>• Discussion on the own contribution of the Ministry to the GCF Project</li> </ul> <p>Meeting with the General Secretary :</p> <ul style="list-style-type: none"> <li>• Presentation of concept of the GCF project</li> <li>• Discussion on the own contribution of the Ministry to the GCF Project</li> </ul> <p>Meeting with Director of Hydrocarbons:</p> <ul style="list-style-type: none"> <li>• Report on Progress with the GCF proposal</li> </ul>



Stakeholder	Dates	Summary of consultations
		<ul style="list-style-type: none"> <li>Organisational structure of the GCF project</li> <li>Presentation on the process and progress of the selection of the 5 EE ;</li> <li>Discussion on the own contribution of the Ministry to the GCF Project</li> </ul>
<b>Stakeholders in the cookstove sector in Kaffrine, including women groups</b>	Koungheul (Kaffrine), July 18th, 2018	<p>Consultation on GCF project and proposed gender action plan with representatives of:</p> <ul style="list-style-type: none"> <li>26 women stove producers groups of Kaffrine region</li> <li>a women group working in agricultural production (GIE Xaritu Xaleyi)</li> <li>the regional Women Committee of Kaffrine</li> <li>the municipal Women Committees of Lour Escalé and Ida Mouride</li> <li>Kaffrine’s local artisanal ICS producer committee (ARFPFA)</li> <li>Kaffrine Crédit Mutuel du Sénégal bank</li> <li>the press</li> </ul>
<b>Chambers of Crafts and ARFPFA</b>	August 23 – 25, 2017 (Kaolack, Fatick, Diourbel and Kaffrine) September 18 – 21, 2017 (Thiès, Louga et Saint Louis)	<p>Explaining the strategy of professionalization of the ICS sector under the GCF project and its components/elements</p> <p>The Role of the regional Chambers of Craft (follow-up activities and ICS producers, registration of ICS producers, improvement of organizational management of ICS producers)</p> <p>A variety of stakeholders of the ICS supply and retailing structures were present such as regional associations of ICS producers, women groups, local environmental projects, a local radio station, different actors of the chamber of crafts and even a technician of the chamber of commerce.</p> <p>Participants identified their different roles in the implementation of the GCF project. They emphasised the need of women entrepreneurs to introduce efficient devices for their fish smoking businesses.</p> <p>Recommendation to searching partnerships with new stakeholders for reaching the population of villages.</p>
<b>Women Groups, Kaffrine</b>	April and July 2018	<p>Presentation and exchange on the strategy for the dissemination of ICS for households under the GCF project:</p> <p>Introducing EnDev FASEN, the range of ICS, the intervention strategy of EnDev Senegal.</p> <p>Introducing the approaches under which EnDev FASEN is currently promoting ICS and the success of this strategy in other regions so far.</p> <p>Outlook on the way forward of this project under the GCF project then in all 14 regions of Senegal.</p> <p>The central role of women groups in the strengthening of the distribution of ICS in rural areas.</p> <p>The role of Gender in the development and transformation in the ICS market</p>
<b>Ministry of Petroleum and Energy, gender focal person</b>	Dakar, July 3d, 2018	<p>Meeting with the gender focal point in the ministry</p> <p>Consultation on GCF project and proposed gender action plan</p>
<b>Research Center for Renewable Energy (CERER)</b>	September 2017, July 2018	<p>Presentation of concept of the GCF project and identification of the collaboration areas :</p> <ul style="list-style-type: none"> <li>Verification of innovative stove products</li> <li>Tests on performance (fuel use, emissions, safety) in the lab, and on acceptability and performance (fuel use) and in the field</li> <li>Hosting Annual Stove camp on their premises</li> </ul>
<b>Workshop with representatives of potential Executing Entities (EE)</b>	August 2018	<p>Exchange about the GCF Concept Note (CN) and next planning steps</p> <p>Roles and requirements for potential EEs</p>

**Table 13. Summary of stakeholder consultations held in Kenya**

Stakeholder	Dates	Summary of consultations
<b>Stakeholders Consultation Workshop of the clean cooking sector convened by the CCAK</b>	28 July 2017; Nairobi	Presentation of the initial concepts, with the objectives to: <ul style="list-style-type: none"> <li>• Obtain initial feedback on the concept</li> <li>• Synthesize priorities for the sector</li> <li>• Develop a list of recommendations for potential inclusion in proposals</li> </ul>
<b>Consultation of the EnDev Project Steering Committee (PSC)</b>	April 5th 2018, Nairobi	Consultation of PSC on the GCF Concept Note (CN) and next planning steps, Request the EnDev PSC for their willingness to serve as GCF Project Advisory Board Follow up on commitment letters and support.
<b>Consultation of the Kenyan Treasury (NDA)</b>	April 5th 2018, Nairobi	Feedback on the EnDev Concept Note Recommendations for the Full Proposal, stakeholder engagement and implementing partners
<b>Workshop with representatives of potential EEs and Implementing Partners</b>	April 6th 2018, Nairobi	Exchange about the GCF Concept Note (CN) and next planning steps, Roles and requirements for potential EEs and IP.
<b>Gender focus group consultations</b>	EnDev offices in Kisumu, July 18th, 2018	Group of 15 women, trainers and builders of rocket stoves
<b>Gender focus group consultations</b>	Kisumu county, July 18th, 2018	<ul style="list-style-type: none"> <li>• Group of 6 fish restaurant owners, 5 women and 1 man</li> <li>• Keyo women pottery enterprises, 11 women</li> <li>• Group of stove users (about 20 women and 2 men), Ulalo and Niahara villages</li> <li>• Group of women stove users including 2 widows, Ladygay</li> </ul>
<b>JOYWO</b>	Karen, Nairobi, July 19th, 2018	Gender aspects of table top financing
<b>CCAK</b>	Nairobi, July 19th, 2018	Recommendations for gender action plan
<b>National Gender and Equality Commission</b>	July 20-23, 2018	E-mail exchanges on gender action plan

The consultations were aimed (1) at discussing the project contents and implementation arrangements with the proposed project partners, (2) verifying the acceptance of the project by ICS users and producers and (3) assessing potential E&S (and gender) issues to be managed during project implementation. The project has a very high degree of acceptance; ICS users are overwhelmingly satisfied, generally ask for more stoves and provide ideas for technical stove improvements. The ICS producers who were met were satisfied with the level of support they have received, were interested in exchanging experience with larger and more mechanized factories, especially abroad, and were generally aware of environmental issues such as the needs for forest conservation, river conservation and waste management.

Figure 16. Consultations of ICS producers and ICS users



Workshop in Koungheul, Senegal, July 2018



Workshop in Kaffrine, Senegal, April 2018



Meeting with ICS users, Kisumu, Kenya, July 2018



Meeting with ICS producers, Kisumu, Kenya, July 2018



Meeting fish restaurants owners, Kenya, July 2018



Last-mile-entrepreneurs, Kisumu, July 2018

## **b) Stakeholder engagement plan**

The regular stakeholder engagement and consultation practice of the "baseline" projects will also be set forth during project operation, and formalized under a Stakeholder Engagement Plan (SEP).

The Project Advisory Board (PAB), which meets twice a year, guarantees the engagement of the national institutional stakeholders. The Project Coordination Committees (PCCs), which meet monthly, ensures engagement of representatives of the respective EEs in both countries. Activities for knowledge exchange on a global level which are the focus of Component 3 will allow for engagement with international stakeholders. Stakeholder engagement with ICS users, with producers and with LME's, is embedded into the programme activities, among others in the form of regular consultations.

Additional gender-sensitive consultations will be held to ensure that gender needs are featured into all the project components, including awareness raising, marketing, product design and production methods.

### **6.1.6 Grievance redress mechanism**

The project teams have been discussing how to set up an effective grievance mechanism, as required under ESS1. The project has a large scale of intervention (both geographically and in terms of number of beneficiaries) and a very low potential for negative impacts. For category A projects, grievance mechanisms can take different forms, for instance a general phone number, e-mail address, and local communication centres where people can log potential complaints. But such mechanisms are not adapted for an ICS market growth acceleration project, as they could be confused with after-sales services for stoves. Project grievance mechanisms should be adapted to collecting and treating complaints which are directly related to potential negative project impacts. Although it is not possible to foresee all potential reasons for complaints, some of them could be:

- environmental degradation, nuisances or improper land use from supported producers
- unfair competition from supported entrepreneurs
- misuse of financial support by entrepreneurs
- inappropriate conduct of project staff
- etc.

Regarding the latter, it is to be mentioned that project partner SNV carries out internal and external audits which show that risks are low and that rare cases are treated appropriately<sup>14</sup>.

Seen the context of informal employment in the ICS sector, it is also essential that employees will have access to a grievance mechanism, although non-contractual employees only very rarely express complaints.

Since the project teams have a very good track record of regularly consulting beneficiaries and following up with them on any potential project-related issues, it was decided that the project grievance mechanism would mainly be based on the experience of these consultations. The project therefore includes a triple grievance mechanism:

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<sup>14</sup> In 2017, 15 fraud and corruption allegations were reported (2016: 17). Of these 15 cases, ten cases were closed during the year, and the remaining five were thereafter closed in the first months of 2018. Alleged improprieties include breach of procurement procedures, fraud, conflict of interest and complaints on preferential treatment of staff. In all confirmed cases, disciplinary measurements (including dismissals) have been taken against involved staff. In 2017, SNV did not receive any reports regarding alleged sexual misconduct (SNV, 2018).



- a project-scale grievance mechanism whereby possible complaints are regularly collected by the EEs during their consultations of beneficiaries, producers, workers in the supply chain, and project staff;
- large scale ICS producers with potential local impacts and nuisances will be required to have their own local mechanism, for instance a contact phone number advertised at the factory entrance;
- finally, complaints in writing will be accepted and treated by the EnDev country teams (see contact details at the beginning of this document).

NB. The gender assessment identifies **gender-based violence** as an important issue in the beneficiary countries. This issue is not considered related to the project, but in some exceptional cases, women empowerment or decision-making about ICS may trigger or exacerbate conflicts in households. Some project implementing partners have experience in dealing with gender-based violence, and knowledge will be shared between all project partners to improve the handling capacity of project staff in such situations.

#### 6.1.7 Information disclosure

In conformity with GCF's policy for information disclosure, the present ESA is disclosed, at least 30 days in advance of the GCF Board:

- on the GCF's website,
- on GIZ's website,
- in locations convenient to affected people.

To this end, the ESA is published on GIZ's EnDev websites for Kenya and Senegal, and hardcopies of the ESA are made available at EnDev offices in Nairobi and Dakar.

#### 6.1.8 Financial intermediaries

##### a) Requirements applicable to the project

The project could involve financial intermediaries for providing small-scale finance.

According to the GCF's environmental and social policy, categories of activities involving investments through financial intermediation functions or delivery mechanisms involving financial intermediation are divided into the following three levels of risk:

- High level of intermediation, I1. When an intermediary's existing or proposed portfolio includes, or is expected to include, financial exposure to activities with potential significant adverse environmental and social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented;
- Medium level of intermediation, I2. When an intermediary's existing or proposed portfolio includes, or is expected to include, substantial financial exposure to activities with potential limited adverse environmental or social risks and impacts that are few, generally site-specific, largely reversible, and readily addressed through mitigation measures; and includes no activities with potential significant adverse environmental and social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented; and
- Low level of intermediation, I3. When an intermediary's existing or proposed portfolio includes financial exposure to activities that predominantly have minimal or negligible adverse environmental and social impacts.

In the present case, the financial intermediaries would be micro-finance institutions or in some cases, commercial banks. Most are expected to fall under category I3.

#### **b) Due diligence**

To comply with GCF’s requirement, the financial intermediaries will be subject to:

1. categorization under I1, I2 or I3
2. a due diligence of their E&S management capacity
3. regular monitoring of their E&S performance.

We have used IFC’s guidance note on Financial Intermediaries to determine the items to be covered by the due diligence and the monitoring. These are given in Annex 2.

## **6.2 Impact on GHG emissions and on forest resources**

### **6.2.1 GHG emissions reductions and wood biomass savings**

By improving the woodfuel efficiency of cooking by at least 30% for almost 2 million households formerly not equipped with ICS (by 2024), and for an additional 5 million households by 2030, the project leads to significant GHG emission reductions compared to the BAU scenario. The reduction of biomass consumption will likewise help to reduce the pressure on forest resources, which is currently high in both countries.

Project impacts on solid biomass use, and hence on GHG emissions, have been estimated in the project feasibility study, and are presented in section 3.8 on direct project impacts. These numbers remain relatively rough estimates, first because it is still difficult to obtain reliable source data, second because the variability of parameters such as charcoal-to-wood conversion, calorific value, combustion efficiency etc. are highly variable depending on wood type and combustion conditions. The feasibility study has made conservative assumptions for average values of these parameters, so that project impacts are expected to be underestimated in the calculations, and that, even with uncertainty on some of the input data, there is no doubt that the overall project impact is beneficial.

The project Measurement, Reporting and Verification system (MRV) will continuously monitor the project impact during project implementation, and update the numbers when needed. The project will also verify some assumptions, to avoid risks which could lessen the project impact. For instance, the impact calculations assume that the proportion of households using different fuels (wood, charcoal, LPG) will remain the same over project duration. This is an important assumption, since the use of charcoal for cooking, even with efficient stoves, is generally known to use a little bit more wood biomass, and emit more GHGs over the entire cycle, than the use of woodfuel<sup>15</sup>, although this result is not always straightforward and depends on local conditions. EnDev estimates that “fuel swaps” are relatively unlikely under current conditions. In the rural areas targeted by the project, when woodfuel is available, households will normally not be very prone to swapping from wood to charcoal, because charcoal is not available and/or more expensive. A GIZ Independent Evaluation Unit study (Bensch and Peters, 2011) found that people in urban areas who used both LPG and charcoal for cooking, would replace some LPG cooking with charcoal cooking when efficient charcoal ICS were adopted. But the GCF project targets rural areas, where such behavior is unlikely.

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<sup>15</sup> See for instance Table 8 in GIZ HERA Cooking Energy Compendium:  
([https://energypedia.info/wiki/La\\_Production\\_du\\_Charbon\\_de\\_Bois](https://energypedia.info/wiki/La_Production_du_Charbon_de_Bois))



Second, there is the risk of people starting to cook more when cooking is easier and cheaper, leading to a so-called “rebound effect” which could lessen the project impact. The aforementioned study found that, in urban areas, such a “rebound” effect could happen when households were using charcoal stoves for side dishes (and using LPG for the main dish): these people would tend to cook more side dishes when charcoal stoves became easier to use and more efficient. This effect was not observed for people cooking their main dish with charcoal. However, taking into account the improved charcoal ICS efficiency, the general effect on charcoal consumption was still positive.

To identify such possible risks, the project will monitor the changes in cooking methods under beneficiary households, under activities 1.3.2 (Kenya) and 2.3.2 (Senegal) on impact evaluation. Results of the monitoring will serve to adapt project activities if needed, for instance by adapting the training and awareness raising component. GIZ EnDev has developed, and will further improve during the GCF project, the “Cooking Energy System” (CES), a tool which assesses the quality of access to cooking energy, and also provides information about cooking behaviors that influence fuel consumption and health benefits. It is one of the purposes of the project (under sub-component 3) to collect this kind of knowledge and use it for improvement of the project, and of future projects and programs in Kenya, Senegal or other countries.

#### 6.2.2 Impact on forest resources

As stated above, and in section 3.8 on direct project impacts, the project will reduce fuelwood consumption, which should have a positive impact on forest resources. For 2012-2017, the UNFCCC estimated that 85 of the wood biomass used in Senegal, and 92% of the wood biomass used in Kenya, is non-renewable<sup>16</sup> (used in a way leading to net GHG emissions), and there is an urgent need in these countries (i) to reduce fuelwood use and (ii) to make the fuelwood sector more sustainable.

Since the project intervention is a country-wide intervention, it is however difficult to “translate” project impacts into a direct impact on local forests. Kenya’s forest cover is currently 7% only, or about 4 million ha, but the country’s goal is to increase it to 10% (as stated in the 2010 Constitution). The project will avoid the consumption of about 4.7 million tons of wood by the end of the project, and almost 22.6 Mton by 2030. NEMA (2015) reports that current consumption of biomass and charcoal in Kenya has been relatively stable between 1995 and 2010, around 11.7 million tons and 2 million tons respectively. The report also states that wood removal from forests was about 14 million tons dry matter in 2010 for wood fuel, and 12 million tons for charcoal, which seems relatively consistent, since the wood to charcoal conversion ratio varies from about 1/5 to 1/10 depending on data sources. The NEMA 2015 report however further states (on p. 82) that uncertainties are very high “to ascertain the amount of biomass (fuelwood, wood for charcoal, commercial harvesting) that is removed from forests and their geographic distribution” and that “estimates of wood removal from forests for woodfuel and charcoal are unreliable and not based on recent surveys”.

The national “Kenyan Climate Change Action Program Mitigation report” of 2012 states that most deforestation in Kenya is due to conversion of forest land into arable land, and not to fuelwood consumption.

In Senegal, wood biomass savings would be in the order of 1.4 Mton by the end of the project, and almost 7 Mton by 2030. Senegal is a country with an important forest cover: 11.9 million ha or 60% of the country in 1990, of which about half is protected, decreasing by about 40,000 ha per year. According to Senegal’s second communication to UNFCCC, and similarly as what is observed in Kenya, deforestation is

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<sup>16</sup> <http://cdm.unfccc.int/DNA/fNRB/index.html>

due to different causes, including poor forestry methods, conversion to agricultural land, forest fires and non-sustainable grazing. The report mentions that woodfuel production was 1.10 Mtons in 2004, and that a further 1.6 Mtons of wood were used to produce charcoal.

These remarks show that it is difficult, for a country-wide intervention, to precisely relate the decrease in fuelwood consumption to impacts on forest conservation. This is also observed in EnDev’s 2016 Impact Study (EnDev, 2016). It should however be noted that the project could reduce both forest degradation as well as deforestation, two types of impacts which are positive for biodiversity.

### 6.2.3 Contribution to sustainable fuelwood production

Although there is a strong need in both Kenya and Senegal to increase the sustainability of fuelwood production, the GCF project will primarily focus on the use of improved cookstoves, and will not include direct interventions for the development of a sustainable fuelwood industry. However, the project will use its network of partners, and its capacity to work at grassroots level, to encourage and support other stakeholders in the implementation sustainable fuelwood policies and actions. This goal is included under activities 1.2.2 and 2.2.2 “Creation of enabling market environment for ICS”. The project is also expected to make a significant contribution to knowledge development on reductions of wood-fuel-use through the adoption of ICS in households, under its activities 1.3.2 (Kenya) and 2.3.2 (Senegal) on impact evaluation, and share this knowledge with the relevant stakeholders.

In Kenya, deforestation and forest degradation are being addressed at the systemic level under the REDD+ programme. Kenya is currently implementing the readiness phase of the REDD+ programme<sup>17</sup>, through support from the Forest Carbon Partnership Facility of the World Bank. Implementation is carried out by a multi-stakeholder team steered by the Kenyan Ministry of Environment and Forestry and the UNDP, and will close in December 2020. It will be followed by the implementation of the national strategies and results-based demonstration activities and then results-based actions. Other projects implemented by the GIZ in Kenya, with funding from German ODA, address land-use changes related to forest degradation, so that the GCF project can dialog with the main actors in this sector in opportunities to integrate fuel-supply activities in the REDD+ or other forestry and land-use initiatives coordinated by the Ministry of Environment and Forestry.

In Senegal, EnDev has discussions with the World Bank, and has been made aware the third phase of their PROGEDE project will now focus on sustainable forest management (countrywide). The proposed GCF project will be able to collaborate and share knowledge on forestry issues through the Ministry of Environment and Sustainable Development in the Project Advisory Board. EnDev will also support, outside of the GCF proposal, pilot initiatives on forest management and on alternative fuels, in cooperation with the Forest and Water Department.

## 6.3 Health and safety impacts for communities

The project will have a significant positive impact on respiratory health, by reducing smoke and incomplete combustion from standard cooking methods. This impact will especially benefit women and children, who tend to stay in kitchens more than men.

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<sup>17</sup> REDD+ or “reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries” is a voluntary climate change mitigation approach that has been developed by Parties to the UNFCCC

The project will also improve the safety of cooking. In the current situation, interviews held with customers showed that safety of cooking, especially for children, improves with the use of ICS compared to traditional cooking. The project also includes activities to further develop, and enforce, product standards, in order to guarantee efficiency, improvement of air quality, as well as product safety.

#### **Contribution to standard improvement**

The definition of “standards” is the prerogative of State bodies such as the National Bureau of Standards. The release of new standards or the modification of existing standards is a process which can take several years. EnDev has worked in the past in Kenya and Senegal with the National Standard Bodies and will continue to do so within the GCF funding.

#### **Product health and safety testing and labelling**

In parallel, the project will continue improving product health and safety in a practical way. All stove designs have passed a safety test and an emission tests by National Laboratories. These labs are regularly visiting production centres to verify that the ICS still adhere to the standards. In Senegal, a label on the stove (granted by the lab) is documenting that the producer is still certified and that products are conform. The project will continue developing this approach, also for Kenya, under activities 1.2.2 and 2.2.2 “Creation of an enabling environment”.

#### **Empirical assessment of emissions exposure through the Cooking Energy Systems (CES), and design improvement**

The impacts of cooking on household air pollution are influenced by other factors than the stove design alone. The fuel quality, the handling of the stove and fuel by the cook, the volume and the ventilation of the place of cooking as well as the special behaviour of the cook etc. play an important role in the actual exposure. Activities 1.3.2 (Kenya) and 2.3.2 (Senegal) on impact evaluation include periodic studies on impacts and co-benefits, covering among others the assessment of the quality of the Cooking Energy Systems by the CES methodology developed by EnDev. The CES includes an empirical assessment of all these factors that are influencing the exposure to emissions from cooking. Based on the assessment, recommendations for (a) technology development and (b) user behaviour will be developed and integrated into the awareness raising components on the project<sup>18</sup>.

## **6.4 Environmental impacts of ICS production**

### **6.4.1 Potential negative impacts**

Most ICS production happens at a small artisanal scale and with very few environmental impacts. Professional and business-class production of liners and ICS may generate moderate environmental impacts and nuisances, such as use of non-renewable fuels for kilns, kiln smoke, and paint waste. Machinery, which is only used by business-class producers, can generate noise, as well as limited pollution from fuel used for generators and machines, and lubricating oil. The development of machinery use and technological innovation could lead to an increase of the negative impact potential.

Improved cookstoves hardly generate any waste, since the ceramic liners are made only of clay and sand and can either be disposed without harm, or recycled into new liner production. Metal waste in

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<sup>18</sup> In South America, a typical risk from reducing cooking emissions is that it allows bugs to proliferate in thatched roofs. This risk has not yet been observed during previous project interventions in Kenya and Senegal, but possible similar occurrence will be monitored by the project.

production is minimal and is recycled; metal from discarded stoves is also recycled. Paint is expensive and is currently always used to the last drop. Potential sources of waste when upscaling production would be limited to waste oil from generators and mechanical equipment, as well as paint rests or cleaning solvents from the use of paint sprayers.

Most ceramic kilns are currently fired with wood and charcoal, but one producer is already using a kiln fired with used oil, and it can be expected that more producers will upscale to using kilns working on other types of fuels.

The magnitude of these impacts for the ICS sector is small, because the number of medium-to large-scale enterprises is small: currently only about 25 professional producers in each country, and 1-2 business class producers. These numbers will increase:

- to 80 professional (of which 60 upscaling, and 20 new) and 20 business class producers in Kenya;
- to 60 professional and 25 business class producers in Senegal (all upscaling).

At the country scale, these numbers remain limited, and therefore environmental impacts of ICS production are also limited in scale.

#### 6.4.2 Impacts from materials sourcing

The extraction of primary materials such as sand and clay for the production of ICS may have localized environmental impacts. When clay and sand are sourced in rivers, the river bed is locally degraded and sedimentation processes are disturbed, with detrimental impacts on aquatic life. Clay and sand sourcing may also occur in the river floodplains, which are often wetlands of ecological value. In Senegal, coastal sand extraction causes significant erosion.

The quantities of materials extracted for ICS production are very small overall. They can be estimated from the numbers of additional ICS which will be produced thanks to the project, as estimated in section 3.8: about 950,000 ICS in Senegal and 1,919,000 ICS in Kenya over the 5-year project duration.

In Kenya, Jiko Kisasa inserts are made from 1/3 sand and 2/3 clay. To get an order of magnitude for sand consumption, we have assumed that one liner would require a maximum 5 kg of sand; with a weight of 1.6 tons per cubic meters, this means that about 300 ICS can be made out of 1 m<sup>3</sup> of sand, or 3000 ICS out of 1 lorry of sand. A large-scale producer of 12,000 ICS per year would use 4 lorries of sand per year. Assuming that 200 tons of sand are needed to build a large house, the increase in ICS production from the GCF project would require the same amount of sand as the construction of 45 houses.

A study in Senegal<sup>19</sup> showed that “Jaboot” ceramic inserts weighted about 5.5 kg; they were made from mostly clay, and some firesand<sup>20</sup> – almost no sand is used for these liners. The maximum annual additional production in 2014 is of about 300,000 liners; this would require 1,500 t of clay, or about 0.4% of the annual official clay production in Senegal<sup>21</sup>.

These rough estimates show that the impact of the project on material extraction is negligible.

However, extraction of clay or sand from riverbeds can have a local negative ecological impact. This is shown for instance in the photo below from Kenya, whereby the impact from small artisanal producers is

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<sup>19</sup> PERACOD II, 2009.

<sup>20</sup> Firesand or grog (« chamotte » in French) is a ceramic raw material produced by firing selected fire clays to high temperature before grinding and screening to specific particle sizes.

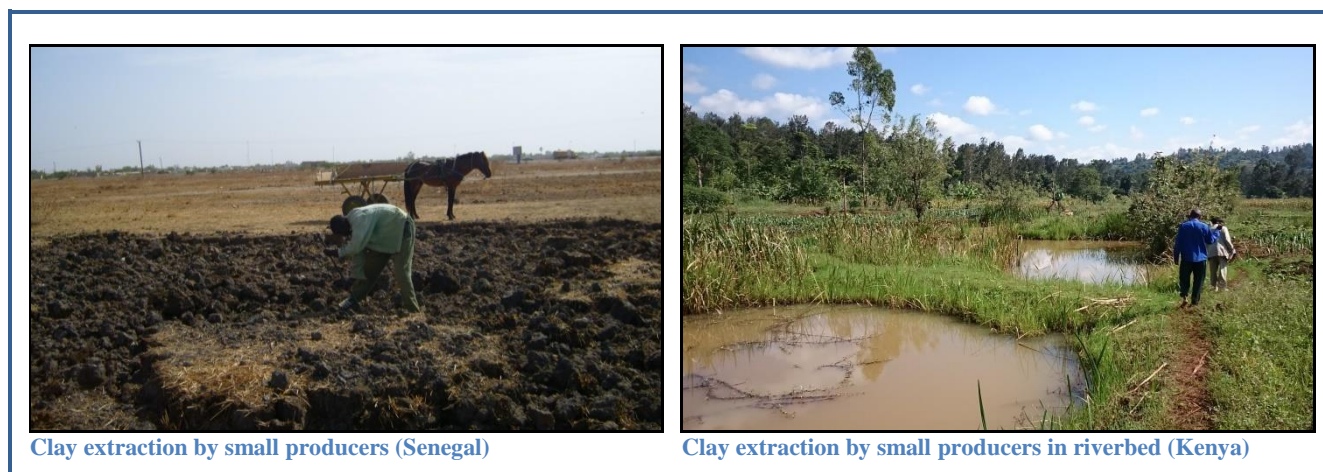
<sup>21</sup> [http://www.dirmingeol.sn/pages\\_utiles/statistique\\_miniere.php](http://www.dirmingeol.sn/pages_utiles/statistique_miniere.php)

already much visible on the river floodplain. But the rehabilitation of such areas is relatively easy, and there are examples in Kenya whereby producers have received support to rehabilitate the extraction areas by planting adapted tree species.

**Table 14. Maximum quantity of sand consumed by production of ceramic liners in Kenya**

	Production increase in Kenya due to GCF project (5 years)	Average annual production from 1 large scale producer
<b>Number of ICS produced</b>	1,919,000	12,000
<b>Sand required in m<sup>3</sup> (if all ICS were Jiko Kisasa)</b>	5997	40
<b>Number of lorries of sand required</b>	600	4
<b>Number of houses that could be built from the same amount of sand</b>	45	0.30

**Figure 17. Clay extraction**



Ceramic liner production also requires water in moderate quantities. One study (PERACOD II, 2009) mentions that one ceramic liner requires about 5 liters of water. Water sourcing has not been mentioned as an issue by producers consulted for the E&S assessment. But with growing mechanization, water needs may become more important for certain manufacturing processes or for cleaning, and water sourcing as well as wastewater effluents will have to be managed carefully under the producer ESMP.

The main issues in sand extraction are social issues:

- some sand is extracted under very poor working conditions, by underwater mining. This has not been observed in relation to the project, but exists in Africa;
- in Kenya, the existence of sand mafias has been reported, with several attacks and violent deaths related to sand theft; such an issue has not been reported in Senegal;
- in both Kenya and Senegal, illegal sand mining occurs.

#### 6.4.3 Mitigation measures

To mitigate potential pollution impacts, the project promotes implementation of basic E&S guidelines for supported business-scale producers, among others to correctly handle hazardous products (see ESMP). In Senegal, techniques will further be developed to reduce fuel use and clay use (cold ceramics).



Measures will be taken through the ESMP to record where materials are sourced from, and to encourage producers to favour sand use from legal sites (this will be compulsory for the large-scale producers) (see ESMP).

## **6.5 Labour and working conditions in the ICS supply chain, including occupational health and safety**

### **6.5.1 Objectives**

ESS2 on Labour and Working Conditions applies to workers directly engaged by the project partners, as well as partially to workers employed by those producers who will receive assistance from the project. These workers are considered “workers engaged by third parties”. The present section examines compliance of labour and working conditions in the ICS supply chain with ESS2.

The objectives of ESS2 are to guarantee (GCF, 2016):

- (a) Fair treatment, non-discrimination, equal opportunity;
- (b) Good worker–management relationship;
- (c) Compliance with national employment and labour laws;
- (d) Protection of workers, in particular those in vulnerable categories;
- (e) Promotion of safety and health;
- (f) Avoidance of the use of forced labour or child labour.

GIZ’s requirements on labour and occupational health and safety are included in GIZ’s Human Rights safeguard.

### **6.5.2 The labour market in Kenya and Senegal**

The labour markets in Kenya and Senegal are characterized by:

- a high degree of informality and vulnerability (e.g. lack of social protection)
- the predominance of self-employment and own-account work over paid employment (wage-earning), which usually includes some form of unpaid and non-market work
- the significance of agriculture, with a high share of low-productivity subsistence farmers and a high exposure to seasonality and weather shocks
- the abundance of labour and the scarcity of human capital
- high youth unemployment and underemployment (for instance, in Kenya, the gap between the youth and adult employment rates reached 43 percentage points)

Individuals in the rural areas typically need to simultaneously engage in different income-generating activities (“multiple job-holding”). The rural non-farm sector is growing. For most rural households, agricultural activities continue to be the most important source of income. Enabling poor individuals to start businesses beyond the agricultural sector can be an important step to diversify their sources of income. In particular, rural non-farm employment can provide a source of income to the landless poor. In addition, these entrepreneurs may create further off-farm employment opportunities for individuals within their business and along the value chain (adapted from RWI, 2015).

In Kenya, more and more workers get access to social security through a recently established voluntary system for which payments amount to 500 KSH per month and per family; workers interviewed in the production sector for the E&S assessment were all able to pay this contribution. In Senegal, a similar voluntary social security system exists since 2008 for non-employed workers; the cost varies from 1000 to



7000 FCFA/year. The EnDev team has already conducted awareness campaigns towards producers to encourage them to adhere to the system.

### 6.5.3 Job creation impact of the project

In the production sector, the project mainly searches to improve productivity, therefore labour creation is limited. However, the support to producers will still lead to an increase in number of employees in production centres. In the distribution sector, the project supports the coming-to-business of a large number of “Last-Mile-Entrepreneurs”, mainly by offering training, which creates work opportunities. The results of a comprehensive EnDev impact evaluation done for Kenya in 2015 (RWI, 2016) suggest that similar interventions with LME’s did not bring them full-time employment, but a new part-time activity next to existing activities such as farming, as well as an additional new source of income.

The feasibility study estimates work opportunities in the production sector by multiplying the number of new producers in a class by the average number of workers in that class (see number of workers per category on page 18).

In Kenya, the number of jobs in the supported production sector is expected to increase by 360 by the end of the project. Besides, 2,000 installers and retailers (last-mile entrepreneurs) will be trained, and it is conservatively assumed that at least sixty percent of them will be involved in ICS sales/distribution. Therefore, the project is expected to create about 1,980 work opportunities in total in Kenya (not necessarily fulltime).

In Senegal, the number of jobs in the supported production sector is expected to increase by 345 at the end of the project. Besides, 650 installers and retailers (last-mile entrepreneurs) will be trained, and it is estimated that at least sixty percent will work as LMEs. Additionally, women groups will be supported for selling ICS. The project is expected to create about 765 work opportunities in the country.

In total, the project is therefore expected to create an estimated 2,745 work opportunities by the project end, including about 705 jobs in ICS production sector, and the rest along the ICS distribution/sales chain.

As also noted by (RWI, 2016) some degree of displacement of jobs induced by the intervention is to be expected, since workers getting the opportunity to work for the project as LME’s may to some extent take work from potential competitors. Also, existent artisanal producers may become employed by larger producers.

For the project monitoring system, EnDev will use an advanced methodology of job monitoring, by counting the stoves produced, and then counting the amount of work necessary for the production of each type of stove, which gives a more accurate estimate of full-time work equivalents. This calculation will depend on the type of stove produced, and can therefore not be done *ex ante*.

### 6.5.4 Employment and gender in the ICS sector

The following paragraphs summarize the available information on shares of men and women in employment in the ICS sector. This information is used for the project Gender Action Plan.

In the ICS production sector, metalwork is done almost exclusively by men. One woman smith is known to work in Kenya. Pottery on the contrary is traditionally a women’s skill, and the men producers met in Kenya said they had received the skill from their mothers, who were potters. Production of ceramic liners is done either by women groups, who may employ a few men for heavy tasks or for metalwork, or by businesses whose owners are exclusively men, and whose employees are mostly men, although a few

women work in these centres. The wife of one of the entrepreneurs met in Kenya helps him with production management, carries out administrative tasks, and manages the centre in his absence.

In Kenya, gender-disaggregated data were available on LME’s, of which 43% were women and 57% were men (EnDev Kenya, 2017), and on individual builders of rocket stoves (considered as LME’s) whereby a little more than 50% were women (RWI, 2016).

In Senegal, gender-disaggregated data were available for the “baseline” FASEN project, which supported 568 men and 375 women as producers or distributors, as in the table below (EnDev Senegal, 2017). In Senegal, the final production of ICS, which is the metalwork, is done exclusively by men.

**Table 15. Gender distribution in the baseline project for Senegal**

Activity	Men	Women	Total	Men (%)	Women (%)
Production of ceramic liners	36	44	80	45%	55%
Production of ICS	266	0	266	100%	0%
Builders of “banco” stoves	87	183	270	32%	68%
Sales	179	148	327	55%	45%
<b>TOTAL</b>	<b>568</b>	<b>375</b>	<b>943</b>	<b>60%</b>	<b>40%</b>

#### 6.5.5 Current working conditions in the ICS sector and compliance with ESS2

According to ESS2, workers in the ICS supply chain fall under the category “workers engaged by third parties”. The table below assesses the gaps between the relevant paragraphs of ESS2, and current labour and working conditions in the ICS sector in both Kenya and Senegal.

**Table 16. Assessment of current and future labour conditions in the ICS supply chain against ESS2**

Paragraph of IFC Performance Standard 2	Compliance assessment (current and future)
<b>Workers Engaged by Third Parties</b>	
<b>24. With respect to contracted workers the client will take commercially reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the requirements of this Performance Standard, except for paragraphs 18–19 (retrenchment) and 27–29 (supply chain)</b>	ICS production currently takes place in the informal sector. This makes current full compliance with paragraph 24 (which refers to all but a few paragraphs of PS2) almost impossible for employed workers.  Many producers are organized as cooperatives, whereby there is no employer-employee relationships, and ESS2 does not apply. In the baseline EnDev projects, the project teams are very regularly monitoring producers. This scrutiny eliminates the risks of child labor and forced labor, which are the most significant risks under ESS2.  The project will require producers to follow ES guidelines or implement an ESMP, which will include measures to improve compliance with ESS2.
<b>25. The client will establish policies and procedures for managing and monitoring the performance of such third party employers in relation to the requirements of this Performance Standard. In addition, the client will use commercially reasonable efforts to incorporate these requirements in contractual agreements with such third party employers.</b>	Will be implemented under the ESMP.

Paragraph of IFC Performance Standard 2	Compliance assessment (current and future)
26. The client will ensure that contracted workers, covered in paragraphs 24–25 of this Performance Standard, have access to a grievance mechanism. In cases where the third party is not able to provide a grievance mechanism the client will extend its own grievance mechanism to serve workers engaged by the third party.	Will be implemented under the ESMP.
<b>Supply Chain</b>	
<p>Paragraphs 27-29 of PS2 concern labour and working conditions in the primary supply chain. These paragraphs require clients to:</p> <ul style="list-style-type: none"> <li>• Identify risks of child labour and forced labour and takes steps to remedy possible cases(par. 27)</li> <li>• Identify significant safety risks and prevent or correct life-threatening situations (par. 28)</li> <li>• When the level of management control or influence over primary suppliers does not allow such remedies, is not possible, shift the project’s primary supply chain over time to suppliers that can demonstrate that they are complying with this Performance Standard (par. 29).</li> </ul>	<p>Requirements 27-29 apply to the supply of primary materials for ICS production. Small producers often source materials locally and are able to know under what working conditions the materials are produced. Large producers often buy materials from larger supplies. In that case, they are not capable of controlling the primary supply chains.</p> <p>Risks of life-threatening situations occur in the sand supply chain in Kenya, because of violent “sand mafias”. Risks may also occur in case of underwater sand mining (not observed yet in the ICS sector). Because control of these risks is difficult for ICS producers, paragraph 29 will apply.</p> <p>Seen the risks identified in Kenya in the sand supply chain, large producers in Kenya will be required to be able to prove that their material comes from legally approved sources. More generally, all producers in Kenya and Senegal will be encouraged to source sand from legally approved sources, where these risks are supposed to be controlled by the national authorities.</p>

### 6.5.6 Occupational health and safety

Occupational health and safety risks in production are currently limited to burns, cuts, minor injuries and strain injuries or muscular diseases. Some risks may increase with mechanization. The project is expected to manage and improve occupational health and safety in the manufacturing processes through activities 1.1.1 (Kenya) and 2.1.1 (Senegal) “Professionalization of ICS production”, which include the provision of better production assets, training on the use of the assets, training in workshop organization, and training on occupational health and safety in the production process.

### 6.5.7 Conclusion and management/mitigation measures

The ICS supply chain is currently not fully compliant with ESS2, but the project provides significant opportunities for letting the sector evolve towards compliance.

In the baseline projects, the constant monitoring of producers eliminates the main risks of poor working conditions (such as child labour and forced labour), and working conditions are better than in sectors not supported by the project. The GCF project will set forward this practice and reinforce it by training of producers and of project staff on best practices in labour management and health and safety. The project includes measures to guarantee compliance with the other paragraphs of ESS2: health and safety, monitoring procedure, and grievance mechanism. These are described in the ESMP; the project will thereby enhance labour conditions and occupational health and safety in the informal economic sectors in Kenya and Senegal, and will contribute to shift larger producers towards formalization.

## 6.6 Potential land acquisition, and requirements of ESS5

Any land acquisition required for the expansion of production sites for a producer supported by the project, or the creation of new production sites for a producer supported by the project, will have to be managed in compliance with ESS5 on land acquisition and resettlement, even if the project does not finance such expansion directly. The main objective of ESS5 is to avoid/minimize adverse social and economic impacts from land acquisition or restrictions on land use (GCF, 2016). To this end, the project should search to:

- (i) Avoid/minimize displacement (of people and economic assets);
- (ii) Provide alternative project designs;
- (iii) Avoid forced eviction;

In case of involuntary resettlement, the project should:

- Improve or at minimum restore livelihoods and standards of living;
- Improve living conditions among displaced persons by providing:
  - (i) Adequate housing;
  - (ii) Security of tenure.

It should be noted that the producers will not use large areas of land, but only small plots, so that potential impacts of land occupation are limited. The detailed requirements of ESS5 involve information and consultation of affected persons, and appropriate compensations. In the baseline projects, project teams have a good track record of managing land issues appropriately, in particular by engaging with the relevant stakeholders. Since the capacity of ICS producers to manage land acquisition according to international standards is thought to be limited, the EnDev project teams will provide guidance to producers on appropriate procedures. GIZ/EnDev staff will be trained on identifying potential risks supporting producers in managing them.

## 6.7 Indigenous people and internally displaced people

### 6.7.1 Kenya

Kenya is a multi-ethnic society with 42 ethnic groups. The Kikuyu are mostly located in Central former Provinces; Luhya in Western; Kalenjin, Turkana, Masai and Kikuyu in Rift Valley; Luo, Kisii and Kuria in Nyanza; Kamba and Meru in Eastern; Somali in North Eastern; and Miji Kenda and Arabs at the Coast. Most Kenyans are Christians (over 80%), Muslims are a minority at 11% (KNBS 2009 Census). Christians are distributed across the country while most Muslims reside at the Coast (60%), North Eastern (15%), and the upper part of Eastern (10%) regions. Muslims at the Coast make about 50% of the entire population in the area (CIA Factbook, 2017).

The Coastal and northern areas, including the ASAL (“arid and semi-arid lands”) are disadvantaged in terms of economy and access to services, and are considered “marginalized areas” by the State. These areas are mostly occupied by pastoralists.

**Figure 3.1 Map of ASALs in Kenya (Source: GoK 2005a)**



Kenya has important numbers of people that can be identified as indigenous according to standard ESS7 on “Indigenous Peoples”. Some of them are officially identified as “marginalized communities” in the report of the National Gender and Equality Commission (NGEC). There are also Internally Displaced Persons (IDPs) in Kenya, partly in the project intervention area, in eight underserved counties in Kenya, where both the World Bank and the GIZ plan to implement project activities. The main issue affecting these communities is access to land. Due to frequent forced displacements of communities during colonial history and after, and the mostly non-existent legal land titling system, there are many land-related conflicts, sometimes violent, affecting these communities (see also section 6.8.1 on Kenya’s context and conflict potential).

The project does not interact with this issue: potential land requirements will concern only the extension or creation of production centres, will concern small patches of land, and can be easily placed outside community land.

### 6.7.2 Senegal

It is more difficult to find information on indigenous people for Senegal. According to World Directory of Minorities and Indigenous Peoples (<http://minorityrights.org/country/senegal/>), statistics are missing for the country. The University of Laval however provides an overview of the major ethnic groups in the country (<http://www.axl.cefanel.ulaval.ca/afrique/senegal.htm>).

- Peuls, Toucouleurs and Sarakolés are the most numerous groups; these Muslim people originally come from desert areas but are present all over the country;
- Wolofs, Lébous and Sérères are the majority groups in Northern Senegal, mostly Muslims, and have been in power since independence. Wolof is the national language. Only Sérères are mostly Catholics. Lébous are former fisher communities, part of the Wolofs.
- Diolas, Balantes, Mandjaques, Mancagnes, Baïnouks, Karoninkas and Pepels are so-called forest people (« forestiers ») from Casamance, a rainforest region in southern Senegal. Diolas consist of numerous groups with different languages, and some of them occupy high-level positions in the country's administration. The other mentioned groups originally come from Guinea-Bissau.
- Mandingues and Bambaras make up about 10% of the population and live near the Malian border. Bambaras (0,5 %) are sometimes called «Niaks», or non-Senegalese.

- Small indigenous peoples live in villages of difficult access, especially in the South-Eastern mountains. Examples are Bassaris, Tendas Bédiks, Coniagués, Diarankés, Niominkas, and Soninkés, a mandingue group originally from Mali.
- foreigners or «Nars» mainly from Mauritania, Algeria, Morocco, Gambia, Guinea-Bissau and Cape Verde, Lebanon. More numerous than the French, they are mainly living in urban centers.

There are no reports of particular issues affecting minority groups in Senegal. The interests of these communities have been included in the project in a generic way to ensure compliance with GCF ESS7.

### 6.7.3 Impacts and management measures

The project is expected to have an overall positive impact on indigenous people, since it will contribute to the preservation of natural resources, which are often vital to them, and reduce conflict potentials over these resources.

Marketing and sales activities are not expected to target indigenous people, but individuals among them may freely decide to become ICS users or producers. This is not expected to affect indigenous people negatively, or affect their culture, knowledge and practices. In Kenya, Internally Displaced Persons are part of target group and will be addressed by sub-component 2 of the project (awareness raising and marketing).

Some indigenous people may not be recognized as such by the governments of Kenya or Senegal, but due to the nature of project interventions, this is not considered as a significant source of risks. However, to manage any residual risk:

- the project teams will be trained to identify indigenous peoples in the respective project areas and to monitor potential project impacts on indigenous peoples (as well as any other marginalized or vulnerable groups);
- the ESMP includes a mechanism to ensure that culturally appropriate approaches, as well as gender-sensitive approaches, are adopted at all times by project partners, including government institutions, when working with communities and households.

## 6.8 Conflict potential and context sensitivity in Kenya

GIZ's safeguard system requires an assessment of conflict potential and context sensitivity for Kenya and of resulting risks and implications for the project.

### 6.8.1 Principal factors for conflict, fragility and violence, and significant infringements of human rights

The following text is the same as the text in the “iPCA matrix”, the name of the format used by GIZ for the assessment, and is based on the “conflict and context analysis for Kenya 2017” prepared by GIZ (GIZ, 2018b).

Kenya is considered a fragile state with a rank of 17 out of 178 countries on the Fragile States Index (Fund for Peace, 2018) and of 146 out of 173 for Transparency International's Corruption Perception Index. The country is characterized by a relatively high degree of internal conflict, as well as impacts of conflicts from neighbouring countries.

The history of internal conflicts dates back to colonization, when ethnic groups with different cultures were governed without consideration of geographical extension and unity, when land was controlled by external rulers (Omani Arab or Europeans) and people forcefully displaced.



Kenya has a robust legal framework since the 2010 constitution, which includes adequate provisions for deterring criminal behaviour, as well as encouraging non-discrimination and participation of SIG (special interest groups) which refers to women, youth, elderly, people with disabilities, and marginalized peoples, a denomination which covers indigenous peoples.

However the rule of law is undermined by impunity within the political class, extra judicial responses by the police, and corruption among other factors (GIZ, 2017).

Ethno-political conflicts reach a climax at each political election, and 2017 has seen a high number of violent deaths. Ethnic affiliation is strategically used for political purposes. The view that the central, more numerous ethnic groups are economically advantaged is exploited by the elite to gain political support. Kenyan politics are characterized by a patron-client nature. Elections are viewed as a means for the group to get access to the state resources. Since the advent of the multi-party system in 1991, political parties have been ethnically based, and obliged to form coalitions to win elections. These coalitions are generally conflictual. Non-power holding ethnic communities are excluded.

Severe land conflicts are historically rooted in the colonial system and the non-recognition of indigenous land rights. The country is stranded in a complex situation with a number of internally displaced persons and unsolved land claims, whereby customary land rights are difficult to recognize legally and the lack of formal title deeds leaves populations exposed to forced evictions. Several communities are engaged in violent border disputes with regular death tolls.

The country is further plagued by conflicts in neighbouring countries, as well as radicalization and (transnational) extremist groups, the most dangerous Al Shahaab, responsible for several heavy terrorist attacks. Several sources consider that the State's violent and often extra-judicial response violates human rights and is contributing to further radicalization (GIZ, 2017).

The proliferation of small arms and light weapons into the region contributes to instability. The traditional custom of cattle raiding is gaining in violence not only due to climate change and exacerbation of the pressure on pastures, but also to the availability of weapons. Disarmement is difficult as pastoralist communities feel insecure in the border areas.

Armed militia operate in the extractive industry, in politics ("*vigilantes*"), and in public transport. The high rates of youth unemployment are thought to help conflict financiers in finding recruits.

Due to the high stakes and the poor control, political actors have a tradition of abusing of political finance.

In terms of conflict actors, the Police Service are widely thought to be partial and favouring the executive and the elite. They are moreover under-financed. The Police is responsible of corruption, robbery, kidnapping, extortion, extra-judicial killings, rape, torture, game trophy handling (GIZ, 2017). The National Security Council makes authoritative high level decision without stakeholder involvement. The Kenyan Defense Forces, traditionally viewed as professional and neutral, have not been exempt from accusations of misbehaviour recently. Independence of the Judiciary power from the Executive and the Legislature has been doubtful historically and is not yet attained and there are severe allegations of corruption.

Gender-based violence is not included in this assessment but is a significant issue in Kenya. It is addressed under the gender action plan.

The relative economic stability of the country, placing it among the middle-income countries since 2015 (although growth has slowed down due to the 2017 elections), as well as the positive advances of the 2010 constitution to provide citizens with more liberty and build a more cohesive society, are positive factors for Kenya's outlook.

Amnesty International’s 2017/2018 report mentions that NGOs Coordination Board threatened organizations working on human rights and governance with closure and other punitive measures after they criticized the electoral process. Irregularities are also reported in the repatriation of refugees (Kenya has been hosting 500,000 refugees from neighbouring countries) and forced evictions of Swenger people.

#### **6.8.2 Project opportunities**

In this context, the project has an important potential for contributing the country’s needs for peaceful and inclusive development, as it:

- reduces pressure on scarce natural resources
- improves gender equality because the diffusion of the usage of ICS eases household chores for women
- benefits the most vulnerable people by reducing their exposure to smoke, and providing employment opportunities that a wide range of disabled persons can participate in
- empowers women, men and vulnerable people thanks to training and work opportunities
- improves the quality of labour for people in the ICS production sector, by (i) increasing their productivity, with possibly higher wages, (ii) improving health and safety and (iii) setting employers under scrutiny and offering a grievance mechanism
- targets employment of youths as last-mile-entrepreneurs.

#### **6.8.3 Needs for management of external risks, and potentials unintended negative project impacts related to the country context**

The project consists of small-scale, mainly „soft“ interventions (training, awareness raising, marketing etc.), implemented by a large number of partners, and in a large geographical area, including areas of current project intervention, and areas which are newer for the project teams. In the context of the country, the project will need to manage the following risks (see risk rating in the table next section):

##### **External risk**

- security risk for project staff if involved in an armed attack, a cattle raid etc.
- security risk for producers who would have happened to be involved in sand transport

##### **Risk for the project to exacerbate an existing sensitive context**

- occurrence of household conflicts between women beneficiaries and their husbands related to women empowerment or culturally non-appropriate awareness campaigns. Monitoring of current baseline projects and consultations in current project target areas has shown that the project tended to have a positive impact on household relationships, but wife-husband relationships may be different in cultural settings of other regions, so that this risk has to be taken into account

##### **Reputational risks**

- risks of being accused of sourcing illegal sand, or risks of conflicts related to sand transport that is used for ICS production;
- risk of being accused of financing a political party if supporting an entrepreneur who is campaigning for a political party, or supporting NGOs which are related to political parties. This risk is existent because:

- it has been observed that some producers, as they raise in entrepreneurship, may also become more prominently active persons socially, and be naturally inclined to taking on political responsibilities;
- it is natural for prominent politicians or their relatives to have interests in social or environmental matters, and take leadership positions in NGOs;
- even if these persons are *bona fide*, the context of Kenya means that the project should be wary of avoiding any reputational risk in these matters.

#### 6.8.4 Risk rating and management/mitigation measures

Table 17. below rates the above identified risks and proposes mitigation measures to be included in the project ESMP. Please note that, although the risks have been identified for Kenya, some of the measures will be extended to Senegal as a precaution.

### 6.9 Human rights

The project was screened with regards to GIZ’s human rights safeguards. The screening was based on the same information collected for the assessment of the project with regards to ESS2 (labour), ESS5 (involuntary resettlement), ESS7 (indigenous peoples) and prevention of discrimination and right to participation (both included under ESS1). This information sufficiently covered GIZ’s safeguard for the considered project activities.

### 6.10 Gender impacts and gender mainstreaming

#### 6.10.1 Baseline situation: gender and special interests groups

Information on the gender situation in the country, as well as on the situation of special interest groups such as youth, older members of society, vulnerable persons, marginalized groups and marginalized communities, can be found in the Gender Assessment (GA) for the project, published on the GCF’s website.

Kenya and Senegal are countries which still show a significant gender equality gap, although with different characteristics in each country. Of special interest for the project is that women participation in the economy is low, that gender-based violence is relatively frequent, and that youth unemployment is high. The gender health and education gaps on the other hand are lower than in other African countries. Elderly members of society tend to have higher employment rates than the youth, but are more prone to suffer from poverty and/or hunger. Characteristic for the countries’ social baseline situation is also the high rate of people working in the informal sector, and/or working several jobs.

**Table 17. Management of risks related to conflict potential and context sensitivity in Kenya/some applicable to Senegal as a precaution**

Type of risk	Risk rating and explanation	Mitigation/management measures
<b>External risks</b>		
<b>Security risk for project staff</b>	Moderate	In-depth security analysis and security management plan by GIZ's Corporate Security Unit  Involvement of staff of project partners in the analysis and management plan
<b>Security risk for producers in sand transport</b>	Very low (producers are seldom involved in sand transport)	Requirement for producers to source legal sand
<b>Risk for the project to exacerbate an existing sensitive context</b>		
<b>Occurrence of household conflicts or other risks related to inappropriate cultural approaches</b>	Very low (non-existent in current project areas)	Risk is low; SNV has significant experience in these matters, but also the MoE will intervene at local level, and it is necessary to make sure that approaches are always culturally appropriate. To this end, sensitization, consultation among project partners (mainly EnDev, SNV and the MoE) and monitoring are required, via project E&S management structure (cf ESMP).
<b>Reputational risks</b>		
<b>Illegal sand sourcing, violence in the sand supply chain</b>	Low, due to the very small sand volumes involved	Requirement for producers to source legal sand
<b>Risk of being accused of financing political campaigns if the project financially supports producers or NGOs who are related to political parties</b>	Probability of occurrence impossible to estimate	Possible cases to be reviewed by GIZ integrity structures  Suspected cases can be reported via the project grievance mechanism

### 6.10.2 Gender assessment

The gender assessment carried out for the project shows that the project has major positive impacts on gender equality, by reducing household work for women and providing opportunities for women to engage in paid work. As women are almost unanimously the main users of cookstoves and are mostly responsible for fuel collection or purchase, they are the ones benefiting most from reduced fuel usage and local emissions.

The project has no negative gender impacts, although some stakeholders have mentioned that care has to be taken to make sure approaches to changing cooking methods in the household are always culturally appropriate, to prevent possible household conflicts.

Surveys of gender impacts of the baseline projects were available for each country and extensive consultations have been held with women organizations in both countries to assess gender aspects of the programme. The most significant outcome of these consultations are that women still feel less confident than men to engage in entrepreneurship and to address administrations or other formal organizations, and less capable of writing and keeping records. This lack of skills and confidence hampers their access to finance, to available assistance programs, and to procurement opportunities.

The gender mainstreaming capacity of the proposed project organization and EnDev teams is good, although there is no staff trained in gender-sensitive budgeting. Several implementing partners have significant experience in working with gender issues at grassroots level and in all regions of Senegal and counties of Kenya. A GIZ gender focal point will be established for each country and each region/country of intervention to coordinate implementation of the Gender Action Plan. The project will further contribute to improving the institutional framework for gender mainstreaming in Kenya and Senegal by disseminating knowledge on gender-related project experience.

Regarding other special interest groups, the project generates significant employment opportunities for youth and may also specially benefit the elderly, who are more likely to spend more time with cooking tasks, or more time in the house. The comfort given by ICS is also particularly important for persons with disabilities or with HIV. As will be explained in the next section, the project will favour employment of people with disabilities and other Special Interest Groups.

Domestic violence is a significant issue in both Senegal and Kenya. The baseline projects have shown that the project has rather a peace-building effect in the households. Partner organization SNV has significant experience in working at grassroots level around the issue of domestic conflicts and their experience will be essential for project implementation. It is also advised to investigate the conflict potential at household level for new project regions if needed. These activities are included in the Gender Action Plan.

### 6.10.3 Gender action plan

A gender action plan (GAP) has been developed for the project. Six gender objectives have been identified which ensure the project conformity with GCF and GIZ's gender policies, and activities have been included in the project to reach these objectives. Specific training of women is an important component of the GAP. Gender-sensitive monitoring is included in the project, and should verify, for instance, that women benefit from equal incomes for equal work.

Table 18. Summary of the project gender action plan

Gender objectives	Activities included in the project
<b>1. Unintended negative gender-related project impacts are prevented</b>	Enhance project partner’s knowledge of gender issues in households to ensure culturally appropriate approaches in all communities
<b>2. Women and men benefit equally from the project</b>	Women and children benefit mostly from health impacts. Ensure project co-benefits of employment and income generation accrue to women equally, by overcoming barriers to economic participation
<b>3. Differentiated needs of men and women are taken in into account in project activities</b>	Differentiated consultation of men and women, equal participation of men and women in decision-making in project activities, and gender-differentiated approaches to awareness raising, design and production
<b>4. Specific roles of men and women are harnessed as agents of change</b>	Work with women groups in awareness raising, design and production
<b>5. Gender mainstreaming capacity in the project teams is increased</b>	Strengthen capacity of project team to carry out gender mainstreaming activities, among others by sharing existing experience of project partners
<b>6. Institutional frameworks for gender mainstreaming are strengthened</b>	Knowledge sharing between the project and national institutions, including regional administrations, ministries and NGOs

## 6.11 Potential project impacts on poor and vulnerable persons (including ability to pay)

### 6.11.1 Access of the poorest households to ICS

The project adopts a market approach that will strengthen the supply chain and guarantee a sustainable supply of competitively priced ICS to all potential customers. The project deliberately does not subsidize end consumers for buying ICS, because this strategy, which has been implemented as soon as the 80s in Senegal, has failed to create a sustainable market for ICS (Bensch and Peters, 2011). The focus of the project is therefore to support producers in setting up sustainable businesses for producing stoves of pre-defined quality. The advantage of selling ICS on full market price is that ICS sales won’t decline in the end of the program, as was often the case in the end of the publicly sponsored ICS distribution programs in the past.

But, during project preparation, some stakeholders have shown concerns that this supply side approach would prevent the poorest households to benefit from the health, comfort and time saving of ICS, because they may not afford the ICS.

Available assessments show that customer’s ability to pay for good quality ICS of around 10 EUR is relatively good in both countries, especially when taking into account the fuel savings. The ability to pay is lower of course for customers who collect “free” wood. The consultations held for the present E&S assessment also show that customers are willing to pay the initial investment into an ICS, in return for future savings on fuel. Findings of the EnDev’s consumer surveys in a number of Sub-Saharan African countries also show that ability to pay is not a major issue, except for the very poor. 70 to 90% of



customers, including many of those who fall below an income level of USD 1.25 per day, are able to afford paying USD 3–7 for a basic ICS<sup>22</sup>.

The aspect which may negatively affect consumers’ ability to pay is their liquidity constraints. Evidence in the literature on both ICS and analogous energy saving devices, such as solar lanterns, suggests that a target of a two-month or shorter payback period is a strong rule of thumb for minimizing liquidity constraints for the most poor, though the range of acceptable payback for most consumers would likely be between one and six months. Financial analysis of the fuel-saving costs for a range of targeted ICS products in both Kenya and Senegal indicates that pay-back for consumers for an ICS is within the range of 2 to 3 months, even for the more expensive categories of the products, thanks to the fuel savings (source: GCF funding proposal version v3, dated September 4<sup>th</sup>, 2018). A frequent solution to the liquidity constraint is for women to organize group borrowing in the form of “tontines” (in Senegal) or “merry-go-rounds” (in Kenya).

The population which will not gain access to lower cost commercial cooking solutions is therefore small. The market approach is expected to guarantee the sustainability of the ICS market and therefore the positive impact of the project on climate change, as well as guaranteeing the lowest cost for ICS. For the poorest customers, complementary approaches can be implemented by NGOs or other projects, which will take advantage from the expanded scale and the sustainability of the ICS market developed by the GCF project.

#### **6.11.2 Access of the poorest households and other less-advantaged or vulnerable groups to project co-benefits**

The project does not have a specific focus on the poorest households, but will seek opportunities to benefit them wherever possible, mostly by inclusion in the value chain, but also by favouring actions by other partners.

The project provides opportunities for inclusion of all people in the ICS supply chain, including persons from vulnerable households such as poor households or households headed by women, as well as people with disabilities. The nature of activities in the ICS supply chain is adapted to people with a different range of capabilities or availability: for instance, it offers opportunities to work part-time and/or near the house; ceramic works can be done sitting, and is already performed by several people with physical disabilities. The project has set a budget aside to offer the opportunity, via the “professionalization kits”, to adapt workplaces to people with disabilities.

During the consultations, the project partners mentioned that ICS are even more beneficial to people treated for HIV, the treatment tending to make them more sensitive to smoke; ICS have made many people able to cook again, which they couldn’t do on open fires.

Finally, the project has a very important training component, which will help to offer equal access to economic opportunities for all.

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<sup>22</sup> Surveys conducted by GIZ and EnDev ICS promotion programs in Ethiopia, Ghana, Malawi, Tanzania, and Uganda suggest a village-level penetration of 70–90% for US\$4–10 ICS products. In the urban setting, Kenya surveys show a >80% penetration of Kenya Ceramic Jiko (US\$4–8) stoves in such cities as Nairobi. (GIZ/MeGen Power 2011).

## 7 Environmental and social management plan (ESMP)

### 7.1 Rationale and contents

The ESMP has been developed to manage potential unintended negative risks and impacts of the project, as identified through the present ESA:

- *Potential unintended negative environmental impacts are limited to minor impacts from larger-scale stove production workshops.*
- *Regarding potential unintended negative social impacts, EnDev evaluations as well as consultations with beneficiaries and project partners have shown that the introduction of ICS brings beneficial changes into the households, especially benefitting and empowering women. However, due to the large geographical scale of the project, the extension into remoter areas with different cultures, and the fact that interventions will impact the micro-level of households, some unforeseen cultural negative impacts may occur. There is a minor risk that project partners, including government institutions, will not implement awareness raising and behaviour change activities in a manner that is culturally appropriate for minorities and indigenous peoples. Besides, the project intervenes in an economic sector with informal labour conditions, so that non-infringement of human rights in this sector requires particular care. Finally, there is a security risk for employees of the project partners especially intervening in Kenya, and it will be necessary to ensure that all employees benefit from the same level of safety, from the main project partners down to small companies sub-contracted by local partners.*

The ESMP also briefly refers to other environmental and social issues, which are already included elsewhere in the project:

- Gender mainstreaming;
- Promotion of sustainable fuels;
- Monitoring of emission impacts and of co-benefits.

The ESMP management activities have been incorporated in the project activities and in the project costs.

### 7.2 Staffing and organization for E, S and G management

The project comprises an organization for Environmental, Social and Gender management as follows:

1. At national level, GIZ/EnDev will appoint an E&S Officer, or an Environmental Officer and a Social Management Officer. GIZ/EnDev will also appoint a national focal person for gender management. These three functions can be overlapping, depending on available competencies.
2. The project will also have regional focal points for social management and gender mainstreaming. Since ICS production support will be managed from the national level, environmental management will take place at the national level only. In Senegal, these staff can be with EnDev or with the regional EE's; in Kenya, with the EnDev cluster management or with SNV.
3. All EEs and implementing partners will have designated contact persons for environmental and social matters.

This management structure has been incorporated in the project implementation arrangements during proposal development.

## 7.3 General E, S and G management tasks & responsibilities

### a) Responsibilities

General E&S management will comprise the following tasks and responsibilities:

1. GIZ's Head Office oversees compliance with GIZ Safeguards and Gender management system
2. The Project Advisory Board is responsible for overall guidance on the project, including on aspects related to E&S and gender policies, and is informed of programme compliance with E&S safeguards
3. The Project Coordination Committees are responsible for monitoring adherence to environmental, social and fiduciary safeguards; monitoring implementation of the Project Environmental and Social Management Plan and Gender Action Plan (GAP), and steering review of these plans if needed.
4. The national gender focal person coordinates the Gender Action Plan across organizations.
5. The national E&S officer oversees implementation of the ESMP, is responsible for the project grievance mechanism, and annually monitors E&S capacity of EEs and implementing partners.

### b) Staff training on E, S and Gender

The E&S officers and staff are trained on E&S management.

A training program in gender mainstreaming is implemented for the entire project organization, harnessing among others the capacity of EEs and implementing partners (suggestion: in year 1 and in year 3).

The relevant project teams will be trained to identify indigenous peoples in the respective project areas and to monitor potential project impacts on indigenous peoples (as well as any other marginalized or vulnerable groups).

### c) Management of the project grievance redress mechanism (including for workers)

The grievance mechanism is described in section 6.1.6, and includes the following elements:

- possible complaints are regularly collected by the EEs during their consultations of beneficiaries, producers, workers in the supply chain, and project staff;
- business-scale ICS producers with potential local impacts and nuisances will be required to have their own local mechanism, for instance a contact phone number advertised at the factory entrance;
- complaints in writing will be accepted and treated by the EnDev country teams.

The E&S officer holds a register of grievances received, and how they are solved.

### d) Continuous E&S risk assessment

For this type of project with a large geographical coverage, a large number of partners involved, and a large number of small project activities, the project team will continuously identify and manage possible upcoming risks while the project expands.

### e) ESMP updates

The ESMP is updated every six months.

#### f) E&S coordination and monitoring of local partners

The national E&S officer coordinates E&S management with EEs and implementing partners, and annually monitors their E&S capacity. This includes monitoring their compliance with the requirements of PS2 on labour and working conditions.

### 7.4 Implementation of the Gender Action Plan

The Gender Action Plan is provided as a separate document, disclosed on the GCF’s website. Six gender objectives have been identified which ensure the project conformity with GCF and GIZ’s gender policies, and activities have been included in the project to reach these objectives.

**Table 19. Summary of the project gender action plan**

Gender objectives	Activities included in the project
<b>1. Unintended negative gender-related project impacts are prevented</b>	Enhance project partner’s knowledge of gender issues in households to ensure culturally appropriate approaches in all communities
<b>2. Women and men benefit equally from the project</b>	Women and children benefit mostly from health impacts. Ensure project co-benefits of employment and income generation accrue to women equally, by overcoming barriers to economic participation
<b>3. Differentiated needs of men and women are taken into account in project activities</b>	Differentiated consultation of men and women, equal participation of men and women in decision-making in project activities, and gender-differentiated approaches to awareness raising, design and production
<b>4. Specific roles of men and women are harnessed as agents of change</b>	Work with women groups in awareness raising, design and production
<b>5. Gender mainstreaming capacity in the project teams is increased</b>	Strengthen capacity of project team to carry out gender mainstreaming activities, among others by sharing existing experience of project partners
<b>6. Institutional frameworks for gender mainstreaming are strengthened</b>	Knowledge sharing between the project and national institutions, including regional administrations, ministries and NGOs

### 7.5 Code of conduct and adoption of culturally appropriate approaches

Culturally appropriate approaches, as well as gender-sensitive approaches, will be adopted at all times by project partners, including government institutions, when working with communities and households. To this end:

- the Social Management Officer and/or the gender focal person organizes consultations with beneficiary focus groups, as well as regular meetings with project partners, to identify possible sources of concern;
- a code of conduct is developed for all implementing partners staff, and regularly reviewed with the input of all organizations working with communities.

### 7.6 Integrity management

Particularly for Kenya, the project E&S officer will regularly discuss risks identified in the context sensitivity analysis with the GIZ country management and the Compliance and Integrity Office in GIZ headquarters, and review project activities if required.

## 7.7 Security risk management

A security risk management plan will be developed for the project, based on GIZ’s corporate security risk management procedures, and defining the procedures which will be applicable for the EEs and implementing partners.

The EEs will be submitted to a due diligence regarding their security risk management.

Security risk management will be improved by regular feedback from local EEs and implementing partners with experience in risk-prone areas.

## 7.8 E&S monitoring and management of ICS production

The assessment of the baseline projects has shown that the project teams currently exert a very close monitoring of beneficiaries and of supported ICS producers, and more generally of project E&S impacts. Up to now, this practice has successfully allowed for the management of the E&S issues that have emerged. For instance, a case whereby residents have complained about noise from a producer has been solved when the producer has adapted working hours after consultation with local stakeholders, and another case of localized pollution cause by firing used oil in a kiln has been solved by technical adaptation of the kiln, both actions facilitated by the EnDev teams. The project teams also have a good track record of managing land acquisition issues by engaging with the relevant stakeholders.

The ESMP for the project builds forward upon this successful practice of close monitoring and consultation, by further formalizing it and by training project staff on E&S management.

### 7.8.1 Responsibilities

Producers supported by the project are responsible for the compliance of their activities with national legislations. The project E&S officer assists producers in reaching compliance with good international industry practice and applicable GCF E&S standards. To this end, the E&S officer will provide advice on E&S matters, identify possible risks, and encourage supported producers to reach compliance.

The national EnDev E&S officer monitors implementation of producers E&S guidelines and ESMP, advises small businesses, and steps in to assist producers in case of complaint or arising environmental issues, in consultation with local stakeholders.

### 7.8.2 Operations manual

The E&S requirements for producers are described in the project Operations Manual.

### 7.8.3 Activities included in the professionalization kits

The project activities include essential E&S management activities for producers under the “professionalization kits”, as outlined in the table below.

Table 20. Reminder of some E&S activities included in the project

Activity	E&S components included
1.1.1 and 2.1.1 Professionalization of ICS production	Provision of health and safety equipment
	Training on labour and working conditions management, including gender aspects
	Training on environmentally sound manufacturing practices
	Training on the possibility to find archaeological remains and what to do with them
	Awareness raising on land acquisition

#### 7.8.4 E&S guidelines and “producer” ESMP

Through the Operations Manual, all producers will be required to satisfy the E&S guidelines for producers, provided below. Business-scale producers will develop their own ESMP, based on the E&S guidelines. Among others, these large-scale producers will be required to:

- document that the primary materials they use comes from legal sources;
- document how they intend to improve conformity to national labour laws.

#### 7.8.5 E&S guidelines for producers

##### a) Principles

These guidelines for E&S management of production sites include (1) a grievance mechanism, (2) avoidance of negative impacts in case of site extension, (3) health and safety management (4) minimum good practice for management of raw materials, waste and effluents (5) minimum good practice for labour and working conditions. All production sites should adhere to these guidelines.

##### b) Guidelines

- Comply with all applicable national legislation
- Maintain a permits register
- Provide a communication and grievance mechanism for nearby residents, for instance by making a phone number of publicly available on site
- Provide a first aid kit on site
- Provide workers with personal protective equipment and enforce the use of PPE such as: gloves and long sleeves for metalwork and work with machinery, and the use of goggles or masks for welding
- Ventilate painting areas
- Record accidents and report to project E&S officer
- Consult with the project E&S officer before any site extension or construction
- Favour the use of renewable fuels for the kilns
- Minimize emissions from the kiln. For producers of over 1000 ceramic insert/months, have a system for capturing and/or treating emissions from the stack, and regularly measure air emissions, until compliance with the national and WHO air quality standards;
- Record quantities and origin of primary materials, including fuel, sand, clay, water etc.
- For producers of over 1000 ceramic insert/months:
  - for Senegal, provide an authorization for the concession of clay (or sand) resources used
  - for Kenya, prove that the sand complies with the National Regulations for Sand Extraction and that clay is from legally authorized sources
- When clay is sourced locally, monitor the borrow pits and envisage rehabilitation
- Record of quantities of waste produced, and where the waste is disposed
- If available, use specialized companies for removal of hazardous waste (used oil, paint rests, cleaning solvents)
- Ensure fire safety in buildings
- Ensure all workers adhere to a voluntary social security scheme
- Consult with workers about their working conditions and, if feasible, develop a human resources policy or a charter for good working conditions; if feasible also, plan how compliance with national labour laws can be reached in the future



- Verify that all workers receive equal pay for equal work
- Monitor compliance with these guidelines (monthly)

### **c) Review**

The contents of the guidelines can be adjusted in consultation with producers, and should be regularly reviewed.

## **7.8.6 ESMP for business-class producers**

### **a) Preparation**

Professional and business class producers receiving support from the project will be subject to an E&S due diligence, which can be carried out by the E&S project officer after training.

Business-class producers, and some professional producers (as determined by the E&S Officer) will then be required to prepare an ESMP for their production activities. The ESMP will be based on the above E&S guidelines. It will describe the organization and resources put in place by the producer to achieve the above objectives, including verification methods, such as air quality monitoring. The project E&S officer will assist producers in adapting the ESMP to their activities. If applicable, the ESMP shall be included in the producer business/production plans. These procedures will be described in the Operations Manual.

### **b) Auditing/monitoring**

The project E&S officer will quarterly monitor compliance of the business-class producers with their ESMP. External compliance audits will be carried out every two years by GIZ headquarters, on top of possible inspections by national authorities.

## **7.8.7 Labour and working conditions**

The national EnDev E&S staff will regularly monitor labour and working conditions on all production sites, to prevent risks of serious infringements of applicable national and international labour regulations. They will encourage all producers to comply with national labour laws, among others by encouraging them to provide contracts to their workers, and they will provide technical assistance to this end if needed. Producers will verify that all workers adhere to a social security scheme.

## **7.9 Stakeholder engagement plan**

Stakeholder engagement is embedded into the programme activities. A stakeholder engagement (SEP) plan will be prepared at the start of the project and regularly updated. The project E&S staff will ensure that stakeholder activities are planned and carried out regularly, and are reported. For contents of the SEP, please refer to 6.1.5b).

## 7.10 Promotion of sustainable fuels

The project includes activities for the promotion of environmentally sound ICS fuel standards, of sustainable fuels, and contribution to the development of an environmentally sustainable fuelwood industry. These are included in the project as shown in the table below.

**Table 21. ESMP activities directly included in the project regarding promotion of sustainable fuels**

Activity	E&S components included
Activity 1.2.1 and 2.2.1 Awareness raising of consumers	Awareness raising on sustainable fuels and sustainable fuelwood sourcing
Activity 1.2.2 and 2.2.2 Creation of an enabling market environment	Promotion of ICS fuel standards, and encouraging all partners to develop sustainable fuelwood policies
Activity 1.3.2 and 2.3.2 Impact Evaluation	Developing knowledge on fuelwood use
Activity 3.2 Facilitating knowledge sharing	Sharing knowledge with stakeholders implementing sustainable fuelwood policies

## 7.11 E&S Monitoring

Project E&S monitoring will include:

- Monitoring compliance with the present ESMP, through E&S activity reports and yearly E&S monitoring reports;
- Monitoring of project environmental impacts, as well as co-benefits such as health and employment, under activities 1.3.2 (Kenya) and 2.3.2 (Senegal) on impact evaluation
- Gender-sensitive monitoring and evaluation, as included in the Gender Action Plan.

As described under activities 1.3.2 and 2.3.2 on Impact Evaluation, the project will implement studies to verify the impacts of the project on GHG emission reductions, but also the health, gender and other co-benefits.

- assessment of the adaptation impacts of the GCF project based on a proxy-indicator methodology of EnDev
- assessment of actual reductions of wood-fuel-use through the adoption of ICS in households
- assessment of the quality of the cooking energy systems in all regions of Kenya (CES methodology of EnDev)

The project will further undergo external evaluations (mid-term and final), including gender surveys.

## 7.12 ESMP costs

The ESMP activities can be divided into (i) direct project activities, (ii) staff and management, (iii) training and external consultancy. Since ESMP development has started early during project development, the costs of all types of activities are already fully integrated into the project, and are not presented separately here.

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## Annex 2: Guidance for the E&S due diligence

### Purpose

The present guidance provides a list of elements to be verified to assess the E&S management capacity of financial intermediaries in the Category I3 and for low-risk projects. IFC's interpretation note (IFC, 2012) has been used for reference. Compliance with these requirements will be assessed for Executing Entities (compulsory) and for Financial Intermediaries.

### Questionnaire

#### **Environmental and social management**

Verify if the company has the following elements:

- (i) E&S policy
- (ii) gender policy<sup>23\*</sup>
- (iii) internal organizational capacity and competency for E&S management: designated personnel with E&S responsibilities, resources are available for the effective implementation of the ESMS across the organization, training of E&S personnel
- (iv) (for financial intermediaries only): system for monitoring and review of portfolio
- (v) external communications mechanism: publicly available and easily accessible channels (e.g., phone number, website, e-mail address) to receive communications and requests from the public for information regarding E&S issues
- (vi) emergency preparedness and response: fire safety in buildings (when applicable)
- (vii) adherence to a safety and security management system for travelling staff<sup>24</sup>

#### **Labour and working conditions**

Verify if the company maintains:

- (viii) good working conditions and employee relationships through the adoption and implementation of clear and transparent human resources policies and procedures;
- (ix) reasonable conditions of employment (including non-discrimination);
- (x) freedom of association among employees;
- (xi) a grievance process to learn about employees' concerns and suggestions
- (xii) in cases when collective dismissal of employees is unavoidable, a fair retrenchment plan.

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<sup>23</sup> Consultant's additions to IFC requirements to reach compliance with GIZ safeguards  
<sup>24</sup> Id.