




## Proposed standardized baseline submission form (Version 03.0)

*To be used by a designated national authority (DNA) when submitting a proposed standardized baseline in accordance with the "Procedure: Development, revision, clarification and update of standardized baselines" (CDM-EB63-A28-PROC).*

### INFORMATION TO BE COMPLETED BY THE DNA

<b>Title of the proposed standardized baseline:</b>	<b>Standardized baseline for efficient charcoal production in Senegal</b>
<b>Name(s) of the Party or Parties to which the proposed standardized baseline applies:</b>	<b>Republic of Senegal</b>
<b>DNA submitting this form:</b>	<b>Ministère de l'Environnement et du Développement Durable (MEDD), Direction de l'Environnement et des Établissements Classés Senegal</b>
<b>Is the proposed standardized baseline submitted by a single Party or group of Parties?</b>  <i>(If the Party had 10 or fewer registered CDM project activities as of 31 December 2010, or each Party of the group of Parties had 10 or fewer registered CDM project activities as of 31 December 2010, has the Party or each Party of the group of Parties used the option to omit the assessment report more than twice in past submissions of a proposed standardized baseline?)</i>	<input checked="" type="checkbox"/> Single Party <input type="checkbox"/> Group of Parties  The Party has not used the option to omit the assessment report more than twice in past submissions of a proposed standardized baseline.
<b>Attachments:</b>	
<input checked="" type="checkbox"/> Additional documentation supporting the submission (e.g. relevant data, statistics, studies, calculation tables, quality control report, etc.), where applicable	
<b>Additional documents</b> <ul style="list-style-type: none"> <li>BRADES, 2015. Brève présentation du projet d'industrialisation de l'unité de production de biocharbon.docx</li> <li>Knoema, 2015a. UN Statistics Division Energy Statistics Database, 2015. Senegal, charcoal – Final consumption, 2012</li> <li>Knoema, 2015b. UN Statistics Division Energy Statistics Database, 2015. Gambia, charcoal – Final consumption, 2012</li> <li>Republic of Senegal, 2012. Arrêté Ministériel n°1227. 8 February 2012. Dakar, Senegal.</li> <li>Republic of Senegal, 2013a. Bilan de la campagne d'exploitation forestière 2012 au 10 mars 2013.docx</li> </ul>	
<input type="checkbox"/> Data used to establish the proposed standardized baseline in a sector-specific data template	
<input type="checkbox"/> An assessment report prepared by a designated operational entity (DOE)	
<input type="checkbox"/> Letters of approval of all the DNAs of the Parties to which the proposed standardized baseline applies, where the standardized baseline applies to a group of Parties	

where the standardized baseline applies to a group of Parties	
<b>Name of authorized officer signing for the DNA:</b>	Mariline DIARA / Madeleine DIOUF SARR
<b>Date (DD/MM/YYYY) and signature for the DNA:</b>	
<b>Contact information of the focal point(s) of the DNA:</b> (Names, e-mail addresses and phone contacts for procedural and technical communication on the submission)	<p>Mariline DIARA  <u>marilinediara@yahoo.fr</u>          Mobile : +221 77 639 96 31</p> <p>Madeleine DIOUF SARR  <u>madodioufsarr@yahoo.fr</u>  <u>rosemadiouf@gmail.com</u>          Mobile 1: +221 77 068 25 33          Mobile 2: +221 77 552 44 32</p>
<b>Name(s) of the proponent(s) of the proposed standardized baseline:</b>	The Designated National Authority (DNA) of Senegal
<b>Affiliation of the proponent(s):</b> (The definition of "admitted observer organization" can be found at <a href="https://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf">https://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf</a> )	<input checked="" type="checkbox"/> Party <input type="checkbox"/> Project Participant (PP) <input type="checkbox"/> International Industry Organization <input type="checkbox"/> Admitted Observer Organization
<b>Contact information of the focal point(s) of the proponent(s):</b> (Names, e-mail addresses and phone contacts for procedural and technical communication on the submission. This section does not need to be completed if the DNA(s) is(are) the proponent(s) of the proposed standardized baseline.)	N/A
<b>INFORMATION TO BE COMPLETED BY THE SECRETARIAT AND THE PROPONENT(S)</b>	
Further inputs requested from the proponent(s) on the proposed standardized baseline: <i>(List of additional information and/or modifications that are required to prepare a draft standardized baseline, if applicable.)</i>	
Response from the proponent(s): <i>(If there are changes in the proposed standardized baseline form as a result of changes carried out, submit the changes in the highlighted text).</i>	



## Proposed standardized baseline submission form CDM-PSB-FORM (Version 03.0)

Title: Proposed standardized baseline for efficient charcoal production in Senegal

Submission date: **23 NOV. 2015** Version number: **01.0**

## Approaches

*Check below all the approaches used to develop the proposed standardized baseline and state the version and/or the reference (number, title, version) if applicable.*

- ☒ The approach contained in the “Guidelines for the establishment of sector specific standardized baselines” (Version: 02.0)
- ☒ A methodological approach contained in an approved, proposed new or revised baseline and monitoring methodology (reference: AMS-III.BG - Emission reduction through sustainable charcoal production and consumption, version 03.0)
- ☐ A methodological approach contained in an approved, proposed new or revised methodological tool (reference : \_\_\_\_\_)
- ☐ The approach contained in the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” (version: \_\_\_\_\_)

## Combination of the approaches (if applicable)

*Provide a justification for the necessity and the appropriateness of the combination if more than one approach was used for the development of the proposed standardized baseline.*

The approaches contained in the “Guidelines for the establishment of sector specific standardized baselines” and in the approved baseline and monitoring methodology “AMS-III.BG Emission reduction through sustainable charcoal production and consumption” are combined as follows:

- The 'Guidelines' approach is applied to standardize additionality and baseline scenario identification, since no charcoal sector methodology-specific additionality or baseline determination provisions apply.
- The 'Methodological' approach is applied to standardize baseline emissions determination, based on the various available choices between default value parameters embodied in methodology AMS-III.BG.

Therefore, it is deemed that the combination of both approaches is appropriate since they concern complementary components of the Proposed Standardized Baseline and respectively contribute to a rigorous and detailed standardization process of the efficient charcoal production baseline in Senegal.

**New or revised methodology or methodological tool (if applicable)**

*This section is applicable to the following situations:*

1. *If there is no approved methodology or methodological tool available that can be used for the development of the proposed standardized baseline, and if the proponent wishes develop a new methodological approach by submitting a new methodology or methodological tool or revise the approach contained in an approved methodology or methodological tool, and/or*
2. *If there is no approved methodology available to be used together with the proposed standardized baseline for the estimation of emission reductions, and the proponents wishes to develop new methodology or revise the existing approved methodology.*

*Check below how the new or revised methodology or methodological tool is/was submitted for approval by the CDM Executive Board and for what purpose in accordance with the “Procedure: development, revision and clarification of baseline and monitoring methodologies and methodological tools”. In this case, indicate below the title of the new or revised methodology or methodological tool if applicable:*

- *New or revised methodology or methodological tool<sup>1</sup>:*

- ☐ New methodology (title: \_\_\_\_\_)
- ☐ Revised methodology (title: \_\_\_\_\_)
- ☐ New methodological tool (title: \_\_\_\_\_)
- ☐ Revised methodological tool (title: \_\_\_\_\_)

**N/A**

- *Purpose:*

- ☐ For using the methodological approach in new/revised methodology/methodological tool for development of the proposed standardized baseline
- ☐ For using the new/revised methodology together with the proposed standardized baseline to estimate emission reductions

**N/A**

- *Process:*

- ☐ Methodology(ies)/methodological tool is/was proposed through the bottom-up process
- ☐ Request the secretariat to seek a mandate from the CDM Executive Board for its top-down development (if this option is selected, provide justification below)

(Justification: \_\_\_\_\_)

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<sup>1</sup> The proposed new or revised methodology or methodological tool for the purpose of developing a proposed standardized baseline, or the proposed new or revised methodology or methodological tool that will be used together with the proposed standardized baseline, may be submitted to the secretariat at the same time with the proposed standardized baseline in accordance with the “Procedure: development, revision and clarification of baseline and monitoring methodologies and methodological tools”.

N/A

**Elements to be standardized**

*Check below all the elements to be standardized by the proposed standardized baseline:*

- ☒ Additionality
- ☒ Baseline/baseline land-use scenario
- ☒ Baseline emission/removal parameter
- ☐ Land eligibility (applicable only to afforestation and reforestation project activities)

**SECTION A: PROPOSED STANDARDIZED BASELINE DEVELOPED USING THE APPROACH CONTAINED IN THE “GUIDELINES FOR THE ESTABLISHMENT OF SECTOR SPECIFIC STANDARDIZED BASELINES”**

*Complete this section only when the proposed standardized baseline is developed using the approach contained in the “Guidelines for the establishment of sector specific standardized baselines”.*

**Applicability of the proposed standardized baseline**

*Provide the following information:*

- The host country(ies) or region(s) within a host country to which the proposed standardized baseline is applicable. In case of disaggregation by region(s) within a host country, document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc.).*

**Senegal**

- Other factors for disaggregation (e.g. output capacity, age of facilities) relating to the applicability of the proposed standardized baseline, if applicable.*

**N/A**

- The sector(s) to which the proposed standardized baselines is applied. Note that a sector refers to a segment of a national economy that delivers defined output(s) (e.g. clinker production, domestic/household energy supply). The sector is characterized by the output(s)  $O_i$  it generates.*

**Household energy supply**

- The output to which the proposed standardized baseline is applied, i.e. the goods or services with comparable quality, properties, and application areas (e.g. clinker, lighting, residential cooking).*

**Charcoal**

- The measure(s) to which the proposed standardized baseline is applicable is/are:

☒ Fuel and feedstock switch

☒ Switch of technology with or without change of energy source (including energy efficiency improvement)

☒ Methane destruction

☐ Methane formation avoidance

<b>Additionality standardization</b>
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*Explain how the “Guidelines for the establishment of sector specific standardized baselines” were applied to standardize the additionality criterion of project activities or programmes of activities that are deemed additional. Document all underlying data, data sources, assumptions, steps and outcomes in a clear and transparent manner.*

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## INTRODUCTION

### Charcoal production in Senegal

According the UN Statistics Division Energy Statistics Database 2015, the final charcoal consumption in Senegal, for the year 2012, was 576,000 tonnes (Knoema, 2015a).

The total charcoal production in Senegal is, however, higher than the consumption level, because of the well-known exportation of charcoal to The Gambia.

The UN initiative “Sustainable Energy for All” has published a report entitled “Rapid Assessment and Gap Analysis – Gambia” (Sustainable Energy for All, 2012), in which is it stated that: “In The Gambia the production of charcoal is technically illegal since charcoal production was banned in February 1977 by a Presidential Decree. However, the law is loosely defined and it is generally not conformed to. Thus charcoal is easily produced as several villages in the West Coast Region. However, it must be emphasised that the bulk of the charcoal is imported from the Casamance region in southern Senegal”.

As the Merriam-Webster dictionary (Merriam-Webster, 2015) defines bulk as follows: “The bulk: most of something : the largest part of something”, the project team estimates that it is fair to say that “the bulk of the charcoal” should correspond to the conservative value of 2/3.

According to the UN Statistics Division Energy Statistics Database 2015, the final charcoal consumption in Gambia, for the year 2012, was 62,800 tonnes (Knoema, 2015b).

Upon applying the ratio of 2/3 to the consumption figure, it can be calculated that 41,867 tonnes of charcoal used in The Gambia is imported from Senegal.

Therefore, the best estimates of the total production of charcoal in Senegal is the domestic charcoal consumption of 576,000 tonnes (Knoema, 2015a), plus the exports to The Gambia of 41,867 tonnes for a total of **617,867 tonnes**.

### Charcoal production in the “managed forests”

Before 2008, the charcoal production in Senegal was driven by demand, and was done through associations, cooperatives and/or private firms.

In 2008, a more organized approach to charcoal production was introduced. Ministerial Decrees from the Water & Forests Directorate of the Ministry of Development and Sustainable Development (MEDD) are issued each year to organize the next “forestry exploitation campaign”.

The latest available Ministerial Decree is dated 8 February 2012 (Republic of Senegal, 2012), and covers the 2012 forestry exploitation campaign.

The Decree establishes the following conditions for charcoal production:

- Charcoal production is only allowed in the managed forests or “*Forêts aménagées*”.
- The exclusive use of one kiln technology (i.e. the Casamance kiln) became mandatory as early as 2008<sup>2</sup>.
- Surrounding villages have become more organized to facilitate the exploitation and distribution of charcoal.
- Production procedures have been put in place (e.g. type of fuel/feedstock: only woody biomass from species classified in the category “wood energy”; location: only in designated areas of the managed forests).
- Sanctions were established for non-compliance with the mandatory use of the “Casamance Kiln” for charcoal production.
- Strict conditions for the exploitation of charcoal (e.g. mandatory forest producer permit; payment of taxes and other charges).

The Decree also states the estimated volume of charcoal that can be produced. The estimated volume of charcoal is linked to (1) the efficiency of the Casamance kiln (37 % vs 27% for the traditional kilns (PERACOD, 2010)), and (2) the capacity of the managed forests of Tambacounda, Kolda, Sédhiou, Ziguinchor, Kaolack, Kaffrine and Fatick, which has been determined to be 328,615 m<sup>3</sup>.

For the 2012 forestry exploitation campaign, the estimated volume of charcoal that can be produced in the managed forests of Senegal was 770,158 quintals (where a quintal is a unit of weight equal to 100 kg) or **77,015.8 tonnes** (Republic of Senegal, 2012, Article 21).

The official assessment of the 2012 forestry exploitation campaign, from the Water & Forests Directorate (Republic of Senegal, 2013a), mentions the same estimated volume of charcoal found in the Decree (i.e. 77,015.8 tonnes) but shows the actual number of (1) the estimated volume shared by region and (2) the charcoal produced.

Total estimated volume of charcoal in the managed forests, as per the Ministerial Decree (Republic of Senegal, 2012)	Total volume of charcoal produced in the managed forests (Republic of Senegal, 2013a)
77,015.8 tonnes	<b>70,175.1 tonnes</b>

**Table 1 – 2012 forestry exploitation campaign assessment**

This shows that the Ministerial Decree gives an estimated volume of charcoal that can be produced in a year the actual final production can be different for many possible reasons such as lack of money or equipment to carry out the production.

According to the official assessment of the 2012 forestry exploitation campaign, from the Water & Forests Directorate (Republic of Senegal, 2013a), in Senegal, the total volume of charcoal produced, in the managed forests, in 2012 is **70,175.1 tonnes**.

<sup>2</sup> The use of the Casamance kiln was regulated after pilot projects were conducted to test the use of several kilns such as “Easy Light” and “Adams kiln”.



**Charcoal produced using alternative feedstocks (i.e. mixed agricultural wastes)**

In Senegal, the data on the amount of charcoal supplied to household users that is produced from alternative feedstocks (i.e. other than the purely woody biomass), such as mixed agricultural wastes, is anecdotic. Furthermore, the production of this charcoal has always been the result of supported efforts from international donors.

As seen in “Development policy of biomass energy in Senegal” (Niang, 2008), all the producers of charcoal in Senegal who use raw material other than woody biomass to produce charcoal, known as bio-charcoal, are listed and their activities are described. The technical processes involved are either carbonization of biomass briquettes, or briquetting of charcoal dust waste.

The same producers are listed and their activities are described in a more in-depth report in the magazine VIE (Thioune, 2009). The report looks at the opportunities for bio-charcoal in Senegal and is entitled: “*Le biocharbon - Quelles opportunités pour le Sénégal ?*” [Bio-charcoal – What opportunities for Senegal?].

There is no more recent documentation available (i.e. PowerPoint presentations or reports) on bio-charcoal since 2009, because the interest of donors has decreased after finding out that the production of charcoal from alternative feedstocks, was not financially viable.

Consequently, the initiatives that started around 2008 and 2009 have closed one after the other (See Table 2), leaving BRADES as the only producer still in operation.

However, the current status of the bio-charcoal production in Senegal was provided to us, in an interview with the owner of BRADES, Mr. DIARRA (DIARRA, 2015).

Mr. DIARRA is a bio-charcoal producer, the “President of the charcoal producer cooperative of the Senegal river”, and member of the “National Union of Forest Producer Cooperatives of Senegal”.

The results of the interview are shown in Table 2, below:

NAME OF PRODUCER	TYPE OF PRODUCTION	PRODUCTION / YEAR	TYPE OF SOURCE	FUNDING	CURRENT STATUS OF OPERATION
BRADES In St-Louis	Semi-artisan	280 t /year (based on 140Kg /hour & 2000 hours /year).	Charcoal residue, clay and plants (i.e. wild grass and stalks of maize, millet, cotton and typha).	Support from the PERACOD program. GIZ, Germany.	In operation
PRO-NATURA In St-Louis	Semi-industrial	1,125 t /year (based on 4.5 t /day & 250 days /year).	Straws, rice husks, wood sawdust and cotton stalks of millet and corn.	Support from the NGO “Pro-Natura International”, France.	Has ceased its operation
CARBOSEN	Industrial	1,800 t /year	Peanut shells.	Support from the	Has ceased its

In Kaolak				private firm CARBO, Netherlands.	operation
BIOTERRE In Ross Béthio & in Ndem	Semi- industrial	650 t /year	Rice husks, peanut shells and clay.	Support from the “International Relations Office” Walloon region, Belgium.	Has ceased its operation since 3 years. Has been taken over by a new operator this year, but no production yet.

**Table 2: Current status of bio-charcoal production in Senegal (DIARRA, 2015)**

Table 2 shows that the only bio-charcoal producer still in operation in Senegal is BRADES, and that the total volume of charcoal produced using alternative feedstocks (i.e. mixed agricultural wastes) amounts to **280 tonnes / year**.

In August 2015, Mr. DIARRA, the owner of BRADES, submitted a request for funding (BRADES, 2015) to several stakeholders, in order to be able to increase his bio-charcoal production of BRADES, from the current 280 tonnes / year to 480 tonnes / year for 2016 & 2017, to 720 tonnes / year for 2018 to 2020, and to 900 tonnes / year for 2021 to 2035. No funding has yet been committed.

## MEASURE 1: FUEL AND FEEDSTOCK SWITCH

### Non-renewable vs renewable biomass

In this project and in this proposal, the term “renewable biomass” is used in accordance with the UNFCCC document entitled: “Definition of renewable biomass” (UNFCCC, 2015a).

According to the UNFCCC document, biomass is **renewable** if ONE of the following applies:

1. Biomass is originating from land areas that are forests

Where:

- Land area remains forest.
- Sustainable management practices are enforced to maintain carbon stock level.
- In compliance with forest regulations.

2. Biomass is woody biomass and originates from croplands and/or grasslands

Where:

- Land area remains cropland and/or grasslands or is reverted to forest.
- Sustainable management practices are enforced to maintain carbon stock level.
- In compliance with forest regulations.

3. Biomass is non-woody biomass and originates from croplands and/or grasslands

Where:

- Land area remains cropland and/or grasslands or is reverted to forest.
- Sustainable management practices are enforced to maintain carbon stock level.
- In compliance with forest regulations.

4. Biomass is a biomass residue (i.e. biomass by-products, residues and waste streams from agriculture, forestry, and related industries)

Where:

- Its use in the project activity does not involve a decrease of carbon pools.
5. Biomass is the non-fossil fraction of an industrial or municipal waste (e.g. cardboard & paper waste and garden waste)

Biomass is **non-renewable** where none of the 5 conditions above applies.

### Charcoal produced in the managed forests

In the managed forests, the fuel/feedstock used is woody biomass from species classified in the category “wood energy”, as stated in the February 2012 Ministerial Decree (Republic of Senegal, 2012, article 5).

This biomass is renewable in theory, because it meets “Condition 1”, described in the document “Definition of renewable biomass” (UNFCCC, 2015a), being woody biomass taken from land areas that are forests that will remain forests and that are “officially” under sustainable management practices. However, the enforcement of the sustainable management practices in the managed forests in order to maintain the same level of carbon stock remains a question mark.

Incidentally, in the official assessment of the 2012 forestry exploitation campaign from the Water & Forests Directorate (Republic of Senegal, 2013a, pp 17-18.), several issues are put in the forefront, and among them:

- Insufficient monitoring system of exploitation on the parcels or «Insuffisance du système de suivi de l’exploitation sur les parcelles »
- Fraudulent exploitation or « *Exploitation frauduleuse* ».

In the current demonstration of the renewable status of the biomass, a conservative approach is taken: it is assumed that the managed forests meet the condition of « sustainable management practices » “Condition 1”, described in the document “Definition of renewable biomass” (UNFCCC, 2015a).

Therefore, the charcoal produced in the managed forests is considered to be using **renewable biomass**, and would amount to **70,175.1 tonnes** (See Table 1) out of the total amount of 617,867 tonnes, or **11.4 % of the total production**.

### Charcoal produced using alternative feedstocks (i.e. mixed agricultural wastes)

In Senegal, the charcoal produced using alternative feedstocks (i.e. mixed agricultural wastes) also named bio-charcoal, as described above is renewable for the most part as it meets “Condition 4”, described in the document “Definition of renewable biomass” (UNFCCC, 2015a), being biomass residues such as charcoal residues, sawdust, rice husks, peanut shells and clay which in these cases, do not involve a decrease of carbon pools.

The use of plants (e.g. wild grass and stalks of maize, millet, cotton and typha) would not be considered renewable.

The proportion of charcoal produced using bio-charcoal alternative feedstocks (i.e. mixed agricultural wastes) is anecdotic and will be considered to be using **renewable biomass**, and

would amount to a small 280 tonnes / year (See Table 2) out the total amount of 617,867 tonnes or 0.05 %.

However, in this report, all the values are rounded to the nearest tenth of a percent in order to simplify, so the final value for the proportion of bio-charcoal is **0.1% of the total production**.

### Charcoal produced in the informal sector

In Senegal, outside of the managed forests, the charcoal production is done in the informal sector. The fuel/feedstock used (besides the 280 tonnes / year of bio-charcoal) is woody biomass from natural forests, taken where it is accessible.

This biomass is non-renewable, because it does not meet any of the five conditions described in the document "Definition of renewable biomass" (UNFCCC, 2015a).

As mentioned above, the proportion of charcoal produced in the managed forests is 11.4%, and the proportion of bio-charcoal is 0.1%. Consequently, the rest of the charcoal produced in Senegal, which is therefore in the informal sector, amounts to **88.5%**.

### Proportion of charcoal produced using renewable vs non-renewable biomass in Senegal

Charcoal production type	Using renewable biomass	Using non-renewable biomass
Produced in the managed forests	11.4%	
Produced using alternative feedstocks (i.e. mixed agricultural wastes)	0.1 %	
Produced in the informal sector		88.5%
Total	11.5%	88.5%

**Table 3 - Proportion of non-renewable vs renewable biomass in Senegal**

### Threshold values

According to the document "Guidance note - Standardized baselines" (UNDP, 2013), at CDM-EB 65, the UNFCCC Executive Board approved the threshold limits (additionality Ya and baseline Yb) at 80% for priority sectors (i.e. energy for households and energy generation in isolated systems), and 90% for all other sectors.

These values have been set on an interim basis, while agreeing to develop options for threshold values in consultation with relevant stakeholders and experts. As the relevant sector is a priority sector - energy for households – the threshold value of 80% is applied.

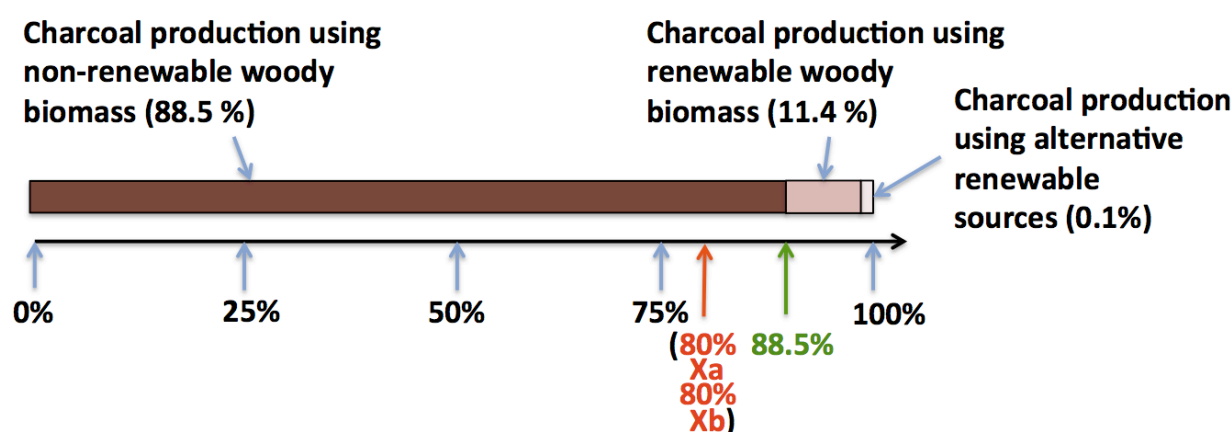


### Demonstration of additionality

In accordance with the Guidelines for the establishment of sector specific standardized baselines, version 02.0 (UNFCCC, 2015d), the cumulative percentage of the output “Charcoal production for residential cooking”, based on the available fuels / feedstocks, is arranged in descending order of carbon intensity of the fuels / feedstocks.

Fuels / feedstocks which have a lower carbon intensity than all the fuel/feedstock used to produce aggregately more than the approved additionality threshold  $X_a$  of 80% for the energy for households and energy generation in isolated systems, but facing barriers or that are less commercially attractive should be included in the positive list of fuels / feedstocks. A switch to any of the fuels / feedstocks in the positive list is deemed to be additional.

**Figure 1** below shows the percentage of the total output produced by each of the fuels / feedstocks, and the additionality threshold  $X_a$  (80%).



**Figure 1 – Proportion of charcoal produced by type of feedstock**

In Senegal, non-renewable biomass is used to produce more than 80% of charcoal production (i.e. **88.5%**), consequently the lower carbon incentive feedstocks (i.e. **renewable woody biomass and alternative renewable sources**, such as agricultural wastes), are included in the **positive list of fuels / feedstocks**.

A switch to renewable woody biomass or alternative renewable sources is therefore deemed to be additional.

### MEASURE 2: SWITCH OF TECHNOLOGY WITH OR WITHOUT CHANGE OF ENERGY SOURCE (INCLUDING ENERGY EFFICIENCY IMPROVEMENT)

Interviews were conducted with the Senegalese Water and Forests Directorate and with National Union of Forest Producer Cooperatives to gather information about charcoal production technologies used in Senegal. The interview conclusions are presented below.

## Water & Forests Directorate

Interviews with officials from the Water & Forests Directorate of the Senegal Ministry of Development and Sustainable Development (MEDD), demonstrated that the Directorate acknowledges that producers do not comply with the mandatory use of Casamance kilns and that there is widespread illegal use of traditional earth mound kilns in the designated areas, in the managed forests.

Officials also acknowledge that there is no official data (surveys, studies or reports) about the types of kilns used to produce charcoal in the managed forests, and about their penetration rates.

However, in the official Water and Forests Directorate's assessment of the 2012 forestry exploitation campaign (Republic of Senegal, 2013a, pp 17-18.) several issues tend to support the general expectation that charcoal is not produced in the regulated manner:

- Inadequate training on cutting techniques / carbonization techniques or *"Insuffisance de la formation en techniques de coupe/carbonization"*.
- Fraudulent exploitation or *"Exploitation frauduleuse"*.
- Systematic non-compliance of the use of the Casamance kiln or *"Non respect systématique de l'utilisation de la meule Casamance"*.

The systematic non-compliance of the use of the Casamance kiln is therefore confirmed by the authorities, however without any specific numbers.

## National Union of Forest Producer Cooperatives / Union Nationale des Coopératives et des Exploitants Forestiers du Sénégal

In Senegal, the main actors of the charcoal production in the managed forests are the forest producer cooperatives. The lack of training from the authorities (i.e. Water & Forests Directorate) on the use of the Casamance kilns results in a continued lack of understanding by the charcoal producers about why they should use Casamance kilns, instead of traditional earth mounded kilns in the managed forests. The producers continue to use traditional kilns because they:

1. Are not convinced that the Casamance kiln would be more efficient.
2. Are not convinced that the Casamance kiln would eventually compensate for the additional cost of the chimney.
3. Have issues with the transportation of the chimney.
4. Do not fear any sanctions for not using the Casamance kilns because, as it is often the case in Senegal, the sanctions for non-compliance are not enforced.

According to the National Union of Forest Producer Cooperatives, only 20 to 30% of the producers currently use the Casamance kilns in the managed forests. Furthermore, the charcoal production in the "informal sector" (i.e. outside of the managed forests) is all done using the traditional earth mound kilns.

## Production of charcoal using Casamance kilns

In Senegal, the "official" charcoal production (the one done in the managed forests) is known through the Ministerial Decrees that are issued each year to organize the next "forestry exploitation campaign".

As mentioned above, according to the producers themselves, it is estimated that the Casamance kilns, are only used in the managed forests, in a proportion of 20 to 30%, which is in line with the “Systematic non-compliance of the use of the Casamance kiln” outlined in the official assessment of the 2012 forestry exploitation campaign from the Water & Forests Directorate (Republic of Senegal, 2013a, pp 17-18.).

Therefore, although there is national regulation mandating the use of the Casamance kiln, these regulations are NOT enforced and the mandated technology has a low level of actual penetration.

On the basis of the official Water and Forests Directorate’s assessment of the 2012 forestry exploitation campaign (Republic of Senegal, 2013a), stating that there is systematic non-compliance of the use of the Casamance kilns in the managed forests, and on the basis of the testimony of the National Union of Forest Producer Cooperatives stating that there is only 20 to 30 percentage of use of the Casamance kilns in the managed forests, a conservative value of 30 percentage is applied.

As mentioned above, in Senegal, the latest data available is related to the 2012 forestry exploitation campaign, and the total volume of charcoal produced, in the managed forests, was 70,175.1 tonnes.

By applying the more conservative value of 30 % of use of the Casamance kilns in the managed forests, the estimated volume of charcoal production done by the Casamance kilns would then be: **21,052.53 tonnes** or **3,4%** of the total production.

However, it is important to take note that the official “estimated” volume of charcoal produced in the managed forests, as per the Ministerial Decrees, is calculated assuming that the kilns used are all of the Casamance type (Republic of Senegal, 2012, Article 21).

A study from the GIZ PERACOD program in Senegal (PERACOD, 2010, p. i) compares the efficiency of the Casamance kilns vs the traditional kilns, and states that, on average, the mass yield of the Casamance kiln on dry wood was 37%, and the one of the traditional kiln was 27%. Furthermore, it states that the efficiency of the Casamance kilns is therefore 29% higher than the efficiency of the traditional kilns.

Consequently, the total estimated volume of charcoal in the managed forests should be lower than the official data allocated in the Ministerial Decree, because 70% of the charcoal production is done with traditional kilns, which are less efficient. The value of the proportion of 30% of use of the Casamance kilns in the managed forests would then also be lower.

### **Production of charcoal using other improved kilns**

In Senegal, there have been some studies on and experiments with other “improved technologies” besides the Casamance kiln such as “Easy Light” and “Adams kiln”.

Stakeholders interviewed confirmed that, to their knowledge, none of these “improved kilns” are still in use. This is mainly caused by the same reasons that led the charcoal producers to abandon the Casamance kilns in significant numbers. These reasons include producers not being convinced that alternative kilns are more efficient, and that they would eventually compensate for the additional costs. The transportation issue of the chimney used with the Casamance kiln has also been raised.

As all stakeholders interviewed confirmed that no other efficient kiln technologies are in use, it is estimated that the penetration rates of these other technologies is conservatively estimated as **1%** of the total production.

### **Production of charcoal using the traditional kilns**

The proportion of charcoal produced with traditional kilns is calculated by subtracting the proportion of charcoal produced using the Casamance kilns (3.4%) and the proportion of charcoal produced using other improved kilns (1%), from the total.

In Senegal, the production of charcoal using the traditional kilns amounts to **95.6%**

### **Percentage of output (charcoal) produced by kiln technologies**

<b>Technology</b>	<b>Production</b>	<b>% of the total of 617,867 tonnes</b>
<b>Casamance kilns</b>	<b>21,053 tonnes</b>	<b>3.4%</b>
<b>Other improved kilns</b>	<b>6,179 tonnes</b>	<b>1 %</b>
<b>Traditional earth mound kilns</b>	<b>590,681 tonnes</b>	<b>95.6%</b>

**Table 4 - Percentage of output produced by each of the technologies**

### **Demonstration of additionality**

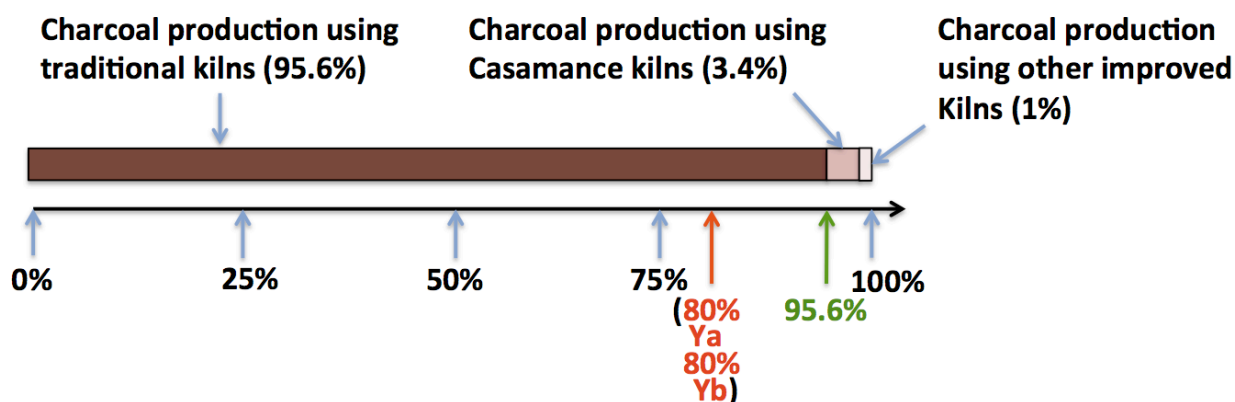
Measure 2 of the “Guidelines for the establishment of sector specific standardized baselines, version 02.0” (UNFCCC, 2015d), is entitled “Switch of technology with or without change of energy sources (including energy efficiency improvement)”.

In accordance with the Guidelines, the cumulative percentage of the output “Charcoal for residential cooking”, based on the available technologies, is arranged in descending order of carbon intensity of the technologies

The technologies which have a lower carbon intensity than all the technologies used to produce aggregately more than the approved additionality threshold Ya of 80% for the energy for households and energy generation in isolated systems, and are less commercially viable as these, are additional.



**Figure 2** below shows the percentage of output produced by each of the technologies, as per Table 4, and the additionality threshold  $Y_a$  (80%).



**Figure 2 - Proportion of charcoal produced by technology**

In Senegal, the traditional earth mound kiln is the single technology which produces more than the additionality threshold  $Y_a$  (80%) of the total output, producing **95.6%** of the country's charcoal.

**The Casamance kilns and other improved kilns** are less carbon intensive than the traditional kilns, and therefore are **additional**.

### MEASURE 3: METHANE DESTRUCTION

In Senegal, there is neither a mandated, nor enforced destruction of methane associated with any technology.

Without the CDM, there is no economic incentive for the destruction of methane associated with the production of charcoal.

The Senegalese DNA confirms in an official letter (Republic of Senegal, 2015), that there is no legal requirement for capture and destruction of methane in charcoal production facilities.

Consequently, **any capture and destruction of methane emitted** during the pyrolysis process is **additional**.

### Baseline identification

*Explain how the “Guidelines for the establishment of sector specific standardized baselines” were applied to identify the baseline. Document all underlying data, data sources, assumptions, steps and outcomes in a clear and transparent manner.*

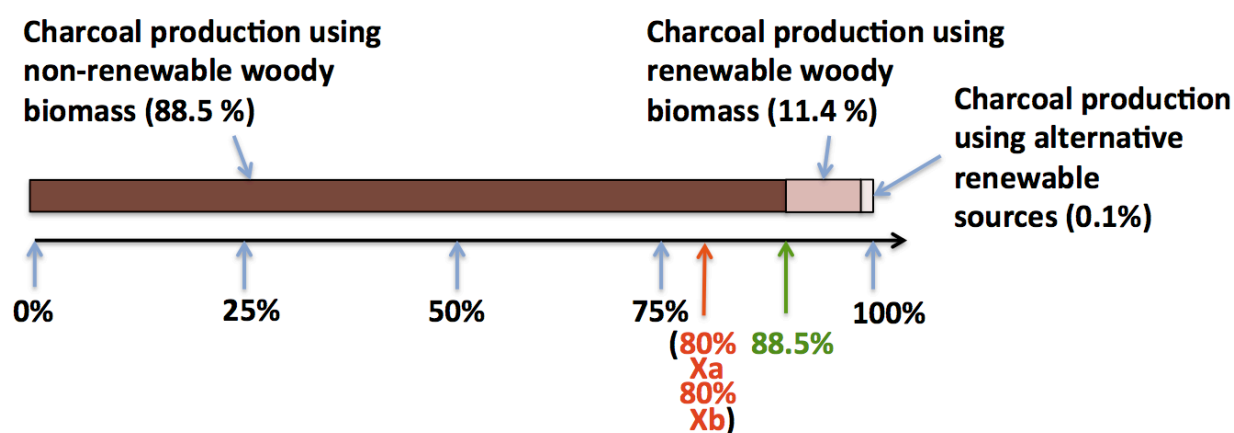
#### MEASURE 1: FUEL AND FEEDSTOCK SWITCH

In accordance with Guidelines for the establishment of sector specific standardized baselines, version 02.0 (UNFCCC, 2015d), the cumulative percentage of the output “Charcoal production for residential cooking”, based on the available fuels /feedstocks, is arranged in descending order of carbon intensity of the fuels / feedstocks.

The fuels/feedstocks with the highest carbon intensity and contributing to produce aggregately more than the approved baseline threshold Xb of 80% for the energy for households and energy generation in isolated systems are identified.

The fuel/feedstock with the lowest carbon intensity among them is the baseline fuel.

**Figure 1** below shows the percentage of the total output produced by each of the fuels/feedstocks, and the baseline threshold Xb (80%).



**Figure 1 - Proportion of charcoal produced by type of feedstock**

In Senegal, the fuel/feedstock used to produce more than 80% of the charcoal production is non-renewable biomass at **88.5%**.

Since it is the only fuel/feedstock to do so, **non-renewable woody biomass** is the **baseline fuel**.

## MEASURE 2: SWITCH OF TECHNOLOGY WITH OR WITHOUT CHANGE OF ENERGY SOURCE (INCLUDING ENERGY EFFICIENCY IMPROVEMENT)

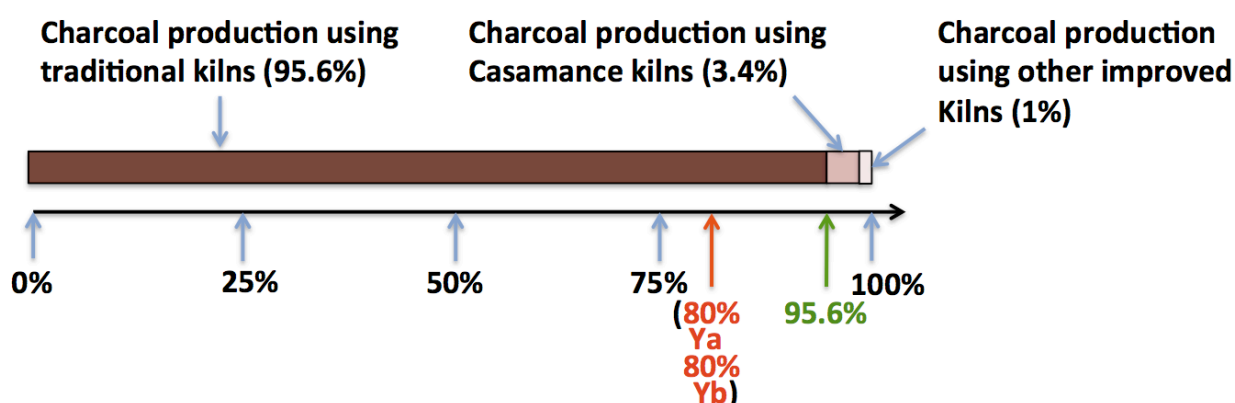
Measure 2 of the “Guidelines for the establishment of sector specific standardized baselines, version 02.0” (UNFCCC, 2015d), is entitled “Switch of technology with or without change of energy sources (including energy efficiency improvement)”.

In accordance with the Guidelines, the cumulative percentage of the output “Charcoal for residential cooking”, based on the available technologies, is arranged in descending order of carbon intensity of the technologies.

The technologies with the highest carbon intensity and contributing to produce aggregately more than the approved baseline threshold Yb of 80% for the energy for households and energy generation in isolated systems are identified.

The technology with the lowest carbon intensity among them is the baseline technology.

**Figure 2** below shows the percentage of output produced by each of the technologies, as per Table 2, and the baseline threshold Yb (80%).



**Figure 2- Proportion of charcoal produced by technology**

As previously noted, although regulations mandate the use of the Casamance kiln, it has been demonstrated that this regulation is not enforced.

In Senegal, traditional kilns are used to produce more than 80% of the charcoal production, producing **95.6%** of the output.

**The traditional kiln** therefore is the **baseline technology**.

**MEASURE 3: METHANE DESTRUCTION**

In Senegal, there is neither a mandated, nor enforced destruction of methane associated with any technology.

Without the CDM, there is no economic incentive for the destruction of methane associated with the production of charcoal.

The Senegalese DNA confirms in an official letter (Republic of Senegal, 2015), that there is no legal requirement for capture and destruction of methane in charcoal production facilities.

Consequently, **the baseline is the lack of destruction of methane emitted** during the pyrolysis process.

<b>Baseline parameter standardization</b>
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*Explain how the “Guidelines for the establishment of sector specific standardized baselines” were applied to standardize a baseline parameter (e.g. baseline specific energy consumption, baseline fuel emission factor, baseline emission factor). Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.*

**N/A**

<b>Use of the proposed standardized baseline with approved or proposed new or revised methodology(ies)</b>
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*Explain how the proposed standardized baseline will be used together with the valid version(s) of a relevant approved methodology(ies) or proposed new/revised methodology(ies).<sup>3</sup> Describe how a standardized baseline derived from the “Guidelines for the establishment of sector specific standardized baselines” will replace the sections of demonstration of additionality, identification of the baseline scenario and/or the determination of baseline emissions in the methodology.*

**N/A**

<b>Validity of the proposed standardized baseline</b>
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*State the period of time for which the proposed standardized baseline is valid taking into account the provisions of the “Standard for determining coverage of data and validity of standardized baselines” and Appendix I to the “Guidelines for the establishment of sector specific standardized baselines”.*

**N/A**

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<sup>3</sup> The “Guidelines for completing the proposed new baseline and monitoring methodologies form” provide guidance on the sections of the proposed new baseline and monitoring methodologies form that should be filled to develop a methodology that will only be used together with a standardized baseline.



**Deviations from the guidelines (if applicable)**

*Provide descriptions of and justifications for the necessity and the appropriateness of any deviations from the “Guidelines for the establishment of sector specific standardized baselines” to develop the proposed standardized baseline.*

**N/A**

**References and any other relevant information**

**PLEASE SEE THE “FULL LIST OF REFERENCES” AT THE END OF SECTION B.**

**SECTION B: PROPOSED STANDARDIZED BASELINE DEVELOPED USING A METHODOLOGICAL APPROACH CONTAINED IN AN APPROVED OR PROPOSED NEW OR REVISED METHODOLOGY**

*Complete this section only when the proposed standardized baseline is developed using a methodological approach contained in the valid version of an approved methodology or in a proposed new or revised methodology(ies). An example of this is "AM0070: Manufacturing of energy efficient domestic refrigerators" to standardize the specific energy consumption of domestic refrigerators in the host country.*

**Applicability of the proposed standardized baseline**

*State the host country(ies) or region(s) within a host country to which the proposed standardized baseline is applicable. In case of region(s) within a host country, document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc.).*

**Senegal**

**Additionality standardization (if applicable)**

*Explain how the methodological approach contained in the valid version of the approved methodology(ies) or in the proposed new or revised methodology(ies) was applied to standardize additionality criterion for project activities or programmes of activities using the methodology. Document all the underlying data, data sources, assumptions, steps and outcomes in a clear and transparent manner.*

**N/A**

**Baseline identification (if applicable)**

*Explain how the methodological approach contained in the valid version of the approved methodology(ies) or in the proposed new or revised methodology(ies) was applied to identify the baseline. Document all the underlying data, data sources, assumptions, steps and outcomes in a clear and transparent manner.*

**N/A**

**Baseline emission parameter standardization (if applicable)**

*Explain how the methodological approach contained in the valid version of the approved methodology or in the proposed new or revised methodology was applied to standardize the baseline emission parameter (e.g. baseline specific energy consumption, baseline emission factor) of a project activity or programme of activities. Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.*

**PLEASE SEE NEXT SECTION: "Use of the proposed standardized baseline with the approved or proposed new or revised methodology."**

**Use of the proposed standardized baseline with the approved or proposed new or revised methodology**

*Explain how the proposed standardized baseline will be used with the valid version of the approved methodology(ies) or proposed new or revised methodology(ies) to estimate emission reductions. Explain which parts of the methodology(ies) are replaced by the proposed standardized baseline.*

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## INTRODUCTION

The proposed standardized baseline is developed using the approved UNFCCC methodology “AMS-III.BG - Emission reduction through sustainable charcoal production and consumption, version 03.0” (UNFCCC, 2015g).

## CALCULATIONS OF EMISSION REDUCTIONS

For project activities not equipped with capture and destruction of the pyrolysis gases:

### Equation A

$$ER_y = \sum_i Q_{CCP,i,y} \times \left[ \left( CF \times NCV_{wood} \times \frac{NCV_{charcoal,i}}{NCV_{charcoal,default}} \times f_{NRB,BL,wood} \times EF_{projected\_fossilfuel} \right) \right] - PE_{FF,y} - PE_{El,y} - PE_{BC,y}$$

For project activities equipped with capture and destruction of the pyrolysis gases:

### Equation B

$$ER_y = \sum_i Q_{CCP,i,y} \times \left[ \left( CF \times NCV_{wood} \times \frac{NCV_{charcoal,i}}{NCV_{charcoal,default}} \times f_{NRB,BL,wood} \times EF_{projected\_fossilfuel} \right) + (SMG_{y,b} - M_d) \times (1 - f_{NRB,BL,wood}) \times GWP_{CH4,y} \right] - PE_{y,flaring} - PE_{FF,y} - PE_{El,y} - PE_{BC,y}$$

## PROPOSED STANDARDIZED PARAMETER VALUES TO BE USED IN THE CALCULATION OF EMISSION REDUCTIONS

### $f_{\text{NRB,BL,wood}}$

Where  $f_{\text{NRB,BL,wood}}$  is the fraction of biomass of type  $i$  used in the absence of the project activity that can be established as non-renewable biomass.

This parameter value can be determined in accordance with the procedure provided in the approved UNFCCC methodology “AMS-I.E: Switch from non-renewable biomass for thermal applications by the user” or on the basis of the published DNA endorsed default values available on the UNFCCC website.

The standardized value of the parameter  $f_{\text{NRB,BL,wood}}$ , in Senegal is **85%**, and is based on the default value published on the UNFCCC website (UNFCCC, 2015b).

### $M_d$

Where  $M_d$  is the factor to account for any legal requirement for capture and destruction of methane in the charcoal production facility.

The standardized value (unit: t CH<sub>4</sub>/ t of raw material) of the parameter  $M_d$  is **0** in Senegal, and is based on an official letter (Republic of Senegal, 2015) from the Senegalese DNA, which confirms that there is no legal requirement for capture and destruction of methane in charcoal production facilities.

### $SMG_{y,b}$

Where  $SMG_{y,b}$  is the specific methane generation for the baseline charcoal generation process in the year  $y$ .

This parameter value can be determined in accordance with the procedure provided in the approved UNFCCC methodology “AMS-III.K: Avoidance of methane release from charcoal production” or on the basis of the default value mentioned in the approved UNFCCC methodology “AMS-III.BG - Emission reduction through sustainable charcoal production and consumption, version 03.0” (UNFCCC, 2015g).

The standardized value (unit: tonnes CH<sub>4</sub>/t charcoal product) of the parameter  $SMG_{y,b}$  is **0.030** in Senegal, and is based on the default value included in AMS-III.BG.

### $NCV_{\text{charcoal,default}}$

Two default NCVs for charcoal, as seen in AMS-III.B.G., are applied. One NCV is for charcoal produced from woody sources and the other NCV is charcoal produced from other, non-woody, sources.

### Woody sources

Where  $NCV_{\text{charcoal,default}}$  is the net calorific value of charcoal produced from coconut husks, bamboo and other purely woody source of biomass.

As shown in Figure 1 “Proportion of charcoal produced by type of feedstock”, the proportion of charcoal produced using coconut husks, bamboo and other purely woody source of biomass is

the addition of the proportion of charcoal produced using non-renewable woody biomass (94.6%), and the proportion using renewable woody biomass (5.3%) for a total **99.9%**.

The standardized value (unit: Gigajoule/t charcoal (GJ/t)) of the parameter  $NCV_{charcoal,default}$  for charcoal produced from coconut husks, bamboo and other purely woody source of biomass in Senegal, is the IPCC NCV default value for charcoal of **29.5 GJ/tonne**, as shown in table 1.2 of the IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2 – Energy (IPCC, 2006).

In the calculations of emission reductions, a weighting factor of a standardized value of **99.9%** is applied to reflect the proportion of charcoal produced with this feedstock in Senegal.

### Other sources

Where  $NCV_{charcoal,default}$  is the net calorific value of charcoal produced from other sources (e.g. mixed agricultural wastes: agricultural residues and plant waste).

As shown in Figure 1 “Proportion of charcoal produced by type of feedstock”, the proportion of charcoal produced using alternative sources than woody biomass is **0.1%**.

The standardized value (unit: Gigajoule/t charcoal (GJ/t)) of the parameter  $NCV_{charcoal,default}$  for charcoal produced from other charcoal sources (e.g. mixed agricultural wastes: agricultural residues and plant waste) in Senegal, is the UNFCCC default NCV value of **19.47GJ/tonne**, as shown in the approved UNFCCC methodology “AMS-III.BG - Emission reduction through sustainable charcoal production and consumption, version 03.0” (UNFCCC, 2015g).

In the calculations of emission reductions, a weighting factor with a standardized value of **0.1%** is applied to reflect the proportion of charcoal produced with this feedstock.

### TABLE OF PROPOSED STANDARDIZED PARAMETER VALUES TO BE USED IN THE CALCULATION OF EMISSION REDUCTIONS

Under this standardized baseline, the key standardized parameter values, shown in the table below, are proposed in order to “facilitate the calculation of emission reduction and removals and/or the determination of additionality for clean development mechanism project activities, while providing assistance for assuring environmental integrity” (UNFCCC, 2015d):

Standardized values proposed			
Parameter	Description	Standardized value	Unit
$f_{NRB,BL,wood}$	Fraction of biomass of type i used in the absence of the project activity that can be established as non-renewable biomass.	<b>0.85</b>	%
$M_d$	Factor to account for any legal requirement for capture and destruction of methane in the charcoal production facility.	<b>0</b>	t CH <sub>4</sub> / t of raw material
$SMG_{y,b}$	Specific methane generation for the baseline charcoal generation process in the year y	<b>0.030</b>	t CH <sub>4</sub> /t charcoal

<b>NCV<sub>charcoal,default</sub></b>	1. Net calorific value of charcoal produced from coconut husks, bamboo and other purely woody source of biomass.	<b>29.5</b>	Gigajoule/t charcoal (GJ/t)
	Weighting factor applied to reflect the proportion of charcoal produced from coconut husks, bamboo and other purely woody source of biomass in Senegal.	<b>99.9</b>	%
	2. Net calorific value of charcoal produced from other sources (e.g. mixed agricultural wastes: agricultural residues and plant waste).	<b>19.47</b>	Gigajoule/t charcoal (GJ/t)
	Weighting factor applied to reflect the proportion of charcoal produced from other sources (e.g. mixed agricultural wastes: agricultural residues and plant waste) in Senegal.	<b>0.1</b>	%

#### Validity of the proposed standardized baseline

*State the period of time for which the proposed standardized baseline is valid in accordance with the requirements contained in the “Standard for determining coverage of data and validity of standardized baselines”.*

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This standardized baseline shall be valid for a period of 3 years from the date of approval by the EB. The standardized baseline thereafter will be updated every three years, based on the most recently available data at the time of making the updates, as well as the relevant methodological tool and guidelines.

#### Deviations from the approved methodology (if applicable)

*Provide a description of and justification for the necessity and the appropriateness of any deviation from the valid version of the approved methodology to develop the proposed standardized baseline. Also justify why a revision of the valid version of the approved methodology is not necessary.*

**N/A**



References and any other relevant information
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### **SECTION C: PROPOSED STANDARDIZED BASELINE DEVELOPED USING A METHODOLOGICAL APPROACH CONTAINED IN AN APPROVED OR PROPOSED NEW OR REVISED METHODOLOGICAL TOOL**

*Complete this section only when the proposed standardized baseline is developed using a methodological approach contained in the valid version of an approved methodological tool or in a proposed new or revised methodological tool (an example of this is the application of the “Tool to calculate the emission factor for an electricity system” to estimate the CO<sub>2</sub> emission factor of an electricity grid).*

#### **Applicability of the proposed standardized baseline**

*State the host country(ies) or region(s) within a host country to which the proposed standardized baseline is applicable. In case of region(s) within a host country, document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc.).*

**N/A**

#### **Baseline parameter standardization**

*Explain how the methodological approach contained in the valid version of the approved methodological tool or in the proposed new or revised methodological tool was applied to standardize the baseline parameter (e.g. baseline emission factor). Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.*

**N/A**

#### **Validity of the proposed standardized baseline**

*State the period of time for which the proposed standardized baseline is valid in accordance with the “Standard for determining coverage of data and validity of standardized baselines”.*

**N/A**

#### **Deviations from the approved methodological tool (if applicable)**

*Provide descriptions of and justifications for the necessity and the appropriateness of any deviations from the valid version of the approved methodological tool to develop the proposed standardized baseline. Also justify why a revision of the valid version of the approved methodological tool is not necessary.*

**N/A**

#### **References and any other relevant information**

**N/A**

**SECTION D: PROPOSED STANDARDIZED BASELINE DEVELOPED USING THE APPROACH CONTAINED IN THE “GUIDELINE: ESTABLISHMENT OF STANDARDIZED BASELINES FOR AFFORESTATION AND REFORESTATION PROJECT ACTIVITIES UNDER THE CDM”**

*Complete this section only when the proposed standardized baseline is developed using the approach contained in the guideline “Establishment of standardized baselines for afforestation and reforestation project activities under the CDM”.*

**Applicability of the proposed standardized baseline**

*Provide the information on the host country(ies) or region(s) within a host country to which the proposed standardized baseline is applicable. In case of region(s) within a host country, document transparently the geographical boundaries of the region(s) (e.g. administrative units, geo-referenced coordinates).*

**N/A**

**Additionality standardization**

*Explain how the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” was applied to standardize the additionality criterion for afforestation and reforestation CDM project activities undertaken in the areas of land included under the scope of the proposed standardized baseline. Document all relevant data sources, assumptions, steps and outcomes in a clear and transparent manner.*

**N/A**

**Baseline land-use scenario identification**

*Explain how the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” was applied to identify the baseline land-use scenario of afforestation and reforestation CDM project activities undertaken in the areas of land included under the scope of the proposed standardized baseline. Document all relevant data sources, assumptions, steps and outcomes in a clear and transparent manner.*

**N/A**

**Standardization of baseline carbon stocks and GHG removals estimation (if applicable)**

*Explain how the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” was applied to standardize the estimation of baseline carbon stocks and GHG removals of applicable afforestation and reforestation CDM project activities undertaken in the areas of land included under the scope of the proposed standardized baseline. Document all relevant data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.*

**N/A**

**Land eligibility demonstration (if applicable)**

*Explain whether eligibility of the lands included under the scope of the proposed standardized baseline for the CDM is confirmed by the proposed standardized baseline. If not, explain whether well-defined approaches for demonstrating eligibility of lands for the CDM have been provided which will help the project participants in demonstrating eligibility of the lands under their projects. In either case, document all relevant data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.*

**N/A**

**Validity of the proposed standardized baseline**

*State the period of time for which the proposed standardized baseline is valid.*

**N/A**

**Deviations from the guideline (if applicable)**

*Provide descriptions of and justifications for the necessity and the appropriateness of any deviations from the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” to develop the proposed standardized baseline.*

**N/A**

**References and any other relevant information**

**N/A**

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## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	1 September 2015	Revision to: <ul style="list-style-type: none"> <li>• Reflect updated requirements in the version 04.0 of “Procedure: Development, revision, clarification and update of standardized baselines” (CDM-EB63-A28-PROC) ;</li> <li>• Include editorial improvement.</li> </ul>
02.0	1 December 2013	The document title has changed from “Proposed standardized baseline form” (F-CDM-PSB) to “Proposed standardized baseline submission form” (CDM-PSB-FORM).  Revision to: <ul style="list-style-type: none"> <li>• Reflect updated requirements in the “Procedure: Development, revision, clarification and update of standardized baselines”</li> <li>• Include editorial improvement</li> </ul>
01.0	23 March 2012	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Methodology Keywords: standardized baselines		