Review of existing MRV systems of Burkina Faso

Sweden
Sverige

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EXECUTIVE SUMMARY

As part of the study on existing Measurement, Reporting and Verification (MRV) systems in Burkina Faso, the following information has been collected:

From 2001 to 2020, Burkina Faso made an Intentionally Nationally Determined Contribution (INDC); three National Communications (CN) – of which the third is under development; three greenhouse gas inventories (GHGI); one national adaptation plan (NAP); one national adaptation program of action (NAPA); and one Biennial Updated Report (BUR).

Submission to the Secretariat of the United Nations Framework Convention on Climate Change occurred on the following dates:

i. In 2015: the INDC (October), the NAP (October), and the second NC (April);
ii. In 2007: the NAPA (November); and
iii. In 2002: the first CN (May), and a national GHG inventory report (May).

Three Greenhouse Gas Inventories (GHGI), from the years 2001, 2007 and 2019, were used as the basis for the preparation of the above-mentioned reports.

The international community approved financing for adaptation and mitigation projects, for a total of 145.5 million USD. Currently, 36.6 million USD (or 25% of the total financed amount) have already been disbursed. On the other hand, 28.3 million USD[1] (equivalent to 19.4% of the approved amount) fell into lost funds, due to the end of the funding period. The remaining 55% of the financed amount is either running or awaiting start-up.

As part of this study, the existing MRV systems in Burkina Faso were found to not be formalized. A set of weaknesses was also noted:

i. Very little or no institutional arrangements;
ii. A lack of procedural arrangements;
iii. Weak legal and regulatory arrangements;
iv. Weak backup and archiving system;
v. There is a critical mass available, committed, and motivated for the development of skills. However, this is coupled with the lack of a strategic plan for skills development within governmental structures, particularly those involved in the development of GHGI[2].

It is important to note that some significant strong points were also noted:

i. A strong mobilization of the governing bodies in the development of GHGI and reports to be submitted to the secretariat of the UNFCCC;
ii. Deconcentrating of the statistical services, with a general directorate of statistics within the various ministries;
iii. The availability of technical skills within the National Institute of Statistics (Institut National de la Statistique et de la Démographie - INSD), as well as at the university research centers, to participate in the development of country specific parameters;
iv. An improvement in the GHGI methodology used, as well as greater sectoral coverage due to the acquisition of new skills and to an increase in the pool of national experts;
v. The availability of TFPs to support the development and implementation of a formalized and effective MRV system in Burkina Faso;
vi. The country's strong mobilization to fulfill its commitments under the United Nations Framework Convention on Climate Change and the Paris Agreement.

[1] Source: Climate Funds Update (www.climatefundsupdate.org).

[2] For more details on Burkina Faso's GHGI, refer to Annex 1.

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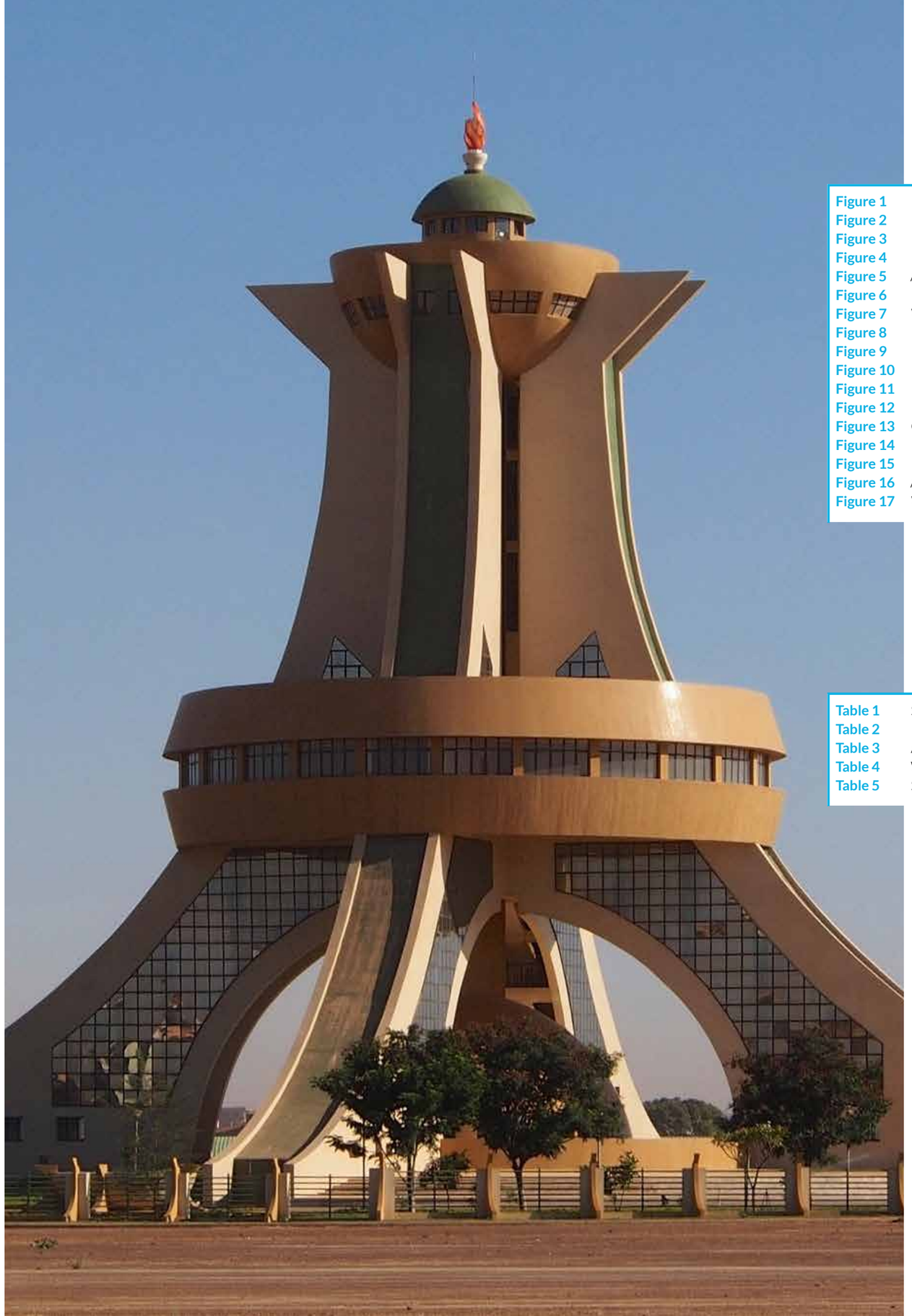

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ACRONYMS

ABER	Burkinabe Agency for Rural Electrification
AFOLU	Agriculture, Forestry and Other Land Use
BTR	Biennial Transparency Report
BUR	Biennial Update Report
CBIT	Capacity-building Initiative for Transparency
CO_2	Carbon Dioxide
COVID-19	Coronavirus disease 2019 (pandemic)
CTVD	Waste Treatment and Recycling Centers
DCCI	Department of International Conventions Coordination
DGEVCC	General Directorate of Green Economy and Climate Change
eq.	equivalent
FAO	Food and Agriculture Organization
FIP	Forest Investment Program
GDP	Gross Domestic Product
GEF	Global Environment Facility
Gg.	Giga gramme
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GHGI	Greenhouse gas Inventory
Gwh	Giga watt hour
GWP	Global Warming Potential
INDC	Intended Nationally Determined Contribution
INSD	National Institute of Statistics and Demography
IPPU	Industrial Process and Products Uses
KP	Kyoto Protocol
LDC	Least Developed Countries
MEEVCC	Ministry of the Environment, Green Economy and Climate Change
MRV	Measurement Reporting and Verification
N_2O	Nitrous oxide
NAI	Non-Annex I
NC	National Communication
NDC	Nationally Determined Contribution
ONASENE	National Office of Maintenance, Cleaning and Beautification Services
PA	Paris Agreement
PCC	Intergovernmental Panel on Climate Change
PFNL	Non-Timber Forest Products
PNDES	2016-2020 National Plan for Economic and Social Development
PTBA	Annual Work and Budget Plan
TFP	Technical and Financial Partners
QA	Quality Assurance
QC	Quality Control
REDD+	is an international and transnational initiative launched in 2008. It aims to combat global warming caused by greenhouse gas emissions caused by the degradation, destruction, and fragmentation of forests.
Ref.	Reference
SONABEL	National Society of Electricity of Burkina Faso
SONABHY	Burkinabe National Hydrocarbon Company
SP-CNDD	Permanent Secretariat of National Council for Sustainable Development
SWOT	Strengths Weaknesses Opportunities and Threats
Tiers (1 to 3)	Tiers (1 to 3): Methodological approaches for estimating the GHG emissions
ToR	Terms of Reference
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar

METHODS AND APPROACHES

This study, the "Interim report of the review of existing MRV systems of Burkina Faso", is the first deliverable of the overall assignment, and aims to provide the roadmap for a Burkina Faso greenhouse gases (GHG) National Inventory MRV System. The details of the assignment are documented in the Terms of Reference titled "MRV Rapid Assessment" (Ref. No: 100003782).

The purpose of this study is to assess the current situation of Burkina Faso's National GHG Inventory process in regard to the enhanced MRV system, as required under the Paris Agreement.

The study's methodology was built on an inclusive, participative, collaborative, and accountable approach within the framework of the DEMING Cycle of continuous improvement.

In order to successfully fulfil this assignment, the following main steps were taken:

i. Organization of the steering team, combined with a revision of the ToRs' most important points;
ii. Developing the work tools and writing the bibliographic list;
iii. Identifying the stakeholders;
iv. Developing questionnaires including comments provided by headquarters;
v. Developing the schedule of meetings / interviews;
vi. Executing the schedule of meetings / interviews;
vii. Analyzing and synthesizing the data collected, following up with writing the reports.

The methodology was deployed under the management of a Steering team, constituted by the following members:

i. International Consultant;
ii. National Consultant;
iii. GGGI's Project Coordinator;
iv. GGGI's Administrative Affairs representative.

An extended scoping meeting, which was attended by both GGGI's Burkina Faso and headquarter teams, was organized on Friday, April 3rd, 2020. It enabled the consultants to better understand the ToRs, align the Steering team with the project's main objective, and adopt an adequate work schedule.

The meeting was also an opportunity to obtain available information with the project's Steering Team, in order to facilitate the review process.

The Steering team established bi-weekly Coordination and Follow-up meetings. Even outside of meetings, participants were connected on a regular basis via emails and phone calls.

During the project's early stages, support was solicited from the Permanent Secretariat of the National Council for Sustainable Development (Secrétariat Permanent du Conseil National pour le Développement Durable - SP-CNDD), as the legal official institution involved in coordination, as well as from the UNFCCC and GGGI offices in Burkina Faso. The goal was to get a broad idea of the Greenhouse Gas Inventories (GHGI) carried out, as well as of the existing MRV systems in the country.

COUNTRY CONTEXT

Burkina Faso - meaning "land of honest men" - is a landlocked Sub-Saharan African country, with an area of 274,200 km^2. The country is a former French colony, which gained its independence in 1960, as the Republic of Upper Volta.

It shares 3,193 km of land border with its six neighboring countries: Mali, Niger, Benin, Togo, Ghana, and Côte d'Ivoire.

Burkina Faso has a Sudan-Sahelian tropical climate, with significant rainfall variations. In the north of the country, where the Sahel is located, there is little rain and temperatures vary between 15 and 45 ° Celsius. In the south, rains are more frequent, and the temperatures are slightly cooler.

Two main seasons determine the country's climate: from November to May, the country receives its dry season. This season is characterized by the presence of the Harmattan (a warm wind from the Sahara) between December and February, and also by significant heat from March to May. The second main season is the rainy season, which extends from June to October.

Burkina Faso is drained by five national hydrographic basins - Comoé, Mouhoun, Nakanbé, Nazinon, and Niger. Except for these rivers, which are located mainly in the southwest of the country, all of Burkina Faso's rivers are temporary.

Water use is divided in two main categories: domestic use and irrigation. The pressure from both uses, combined with high evaporation, are the main reasons for the premature drying up of wetlands (which occurs between December and January). This phenomenon leads to the disappearance of fishery resources and the crusting of soil in the beds of watercourses[3].

FIGURE 1 Map of Burkina Faso

[3] Source : http://www.fao.org/nr/water/aquastat/countries_regions/BFA/printfra1.stm

With a population close to 20.7 million inhabitants - most of which are young people (65% of the population are under the age of 25) - Burkina Faso has been experiencing the growth of its cities. The annual urban growth rate stands at 5%, with 31% of the country's population living in the cities. Burkina Faso's capital and largest city is Ouagadougou, which boasts around 2.8 million inhabitants. The second most populated city is Bobo Dioulasso, with the latest estimates pointing to a population close to 1 million inhabitants. Most of Burkina Faso's population is concentrated in the center and south of the country.

Burkina Faso is a low-income country, with limited natural resources. Cotton and gold are the country's key exports, with gold accounting for about three-quarters of the country's total export revenues. Cotton is the country's most important cash crop. Burkina Faso's economic growth and revenue depends largely on production levels and global prices for these two commodities.

According to data from 2017, Burkina Faso's GDP grew at a rate around 6.4%. The country's economy relies heavily on agriculture, with close to 80% of the active population employed in this sector.

In 2016, the government adopted a new development strategy, set forth in the 2016-2020 National Plan for Economic and Social Development (PNDES), that aims to reduce poverty, build human capital, and satisfy basic needs.

The main objective of the PNDES is to structurally transform Burkina Faso's economy by using two complementary levers:

i. Strengthening the industrial development support sectors, in particular, the energy, transport infrastructure, technology sectors; reforming the education system and improving the primary sector's productivity;
ii. Building a competitive and sustainable industrial fabric.

Burkina Faso remains vulnerable to climatic shocks related to changes in rainfall patterns, as well as to fluctuations in the prices of its export commodities on world markets. Its economic and social development will be contingent on the subregion – and ultimately the country's - stability. This is particularly critical in a moment in which the world is struggling with the COVID-19 pandemic, which brings about devastating effects on both human life and the economy.

The country has experienced terrorist attacks, and continues to do so today, particularly in the northern and eastern regions. According to the United Nations, in the first quarter of 2020 alone, these attacks were responsible for the deaths of over 1,800 people, causing more than 850,000 internally displaced people.

THE STATE AND THE ECONOMIC SECTORS

In Burkina Faso, regulations on the environment and climate change are defined by the following legislations:

i. Environmental Code;
ii. Forest Code;
iii. Sustainable Development Law; and
iv. Law Prohibiting Plastic Bags.

The following laws related to MRV systems are also worth noting:

i. Law No. 010/98 / AN on-State intervention modalities and distribution of competencies between the State and other development actors;
ii. Law No. 034-2018 / AN on piloting and management of development;
iii. Law No. 008-2013 / AN on the code of transparency in the management of public finances;
iv. Law No. 012-2014 / AN of April 22, 2014 on the orientation law relating to the prevention and management of risks, humanitarian crises, and disasters;
v. Ordinance No. 85-47 regulating bush fires, the exploitation of firewood and charcoal and the roaming of domestic animals.

At the highest executive summit, the Head of State appointed a special envoy for resource mobilization for the SDGs and climate change.

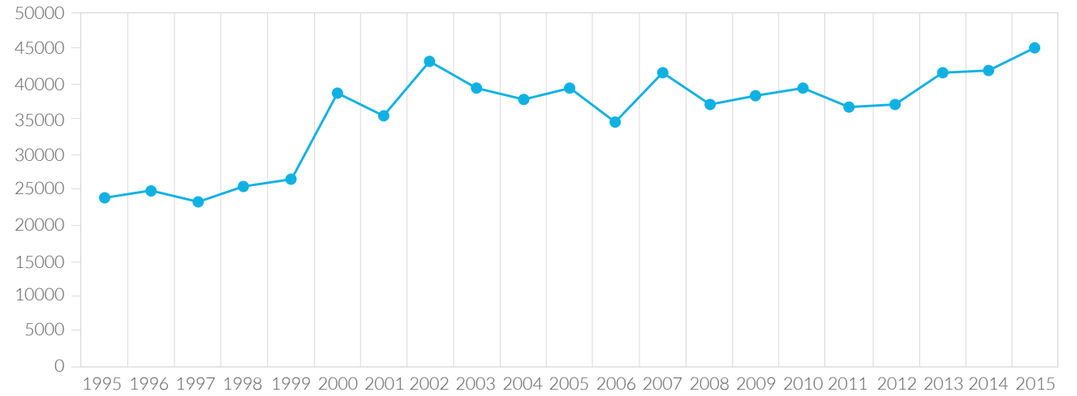
Burkina Faso's economy is heavily dependent on natural resources. Indeed, the ecosystem services provided by these resources are the basis for the activities of almost all socio-economic sectors.

Livestock farming is the population's second most common economic activity, with records showing it contributed with 11.21% to the GDP in 2015. In addition to its role in supporting agro-pastoral production, the forestry, fishing, and hunting sector has contributed 3.7% to the GDP in 2015.

Burkina Faso's current industry sector is comprised mainly of food processing, textiles, wood, mining, buildings and public works, electricity, gas, and water. The mining sector has been booming in recent years.

In terms of energy, the country is supplied with traditional energy (mainly wood and charcoal), hydrocarbons and electricity. However, between 1995 and 2015, national GHG emissions have shown an increasing trend. Indeed, emissions increased from 23 812 Gg. CO_2 eq. in 1995 to nearly 45 433 Gg. CO_2 eq. in 2015.

FIGURE 2 Burkina Faso's GHG Emissions (Gg. CO_2 eq.)[4]



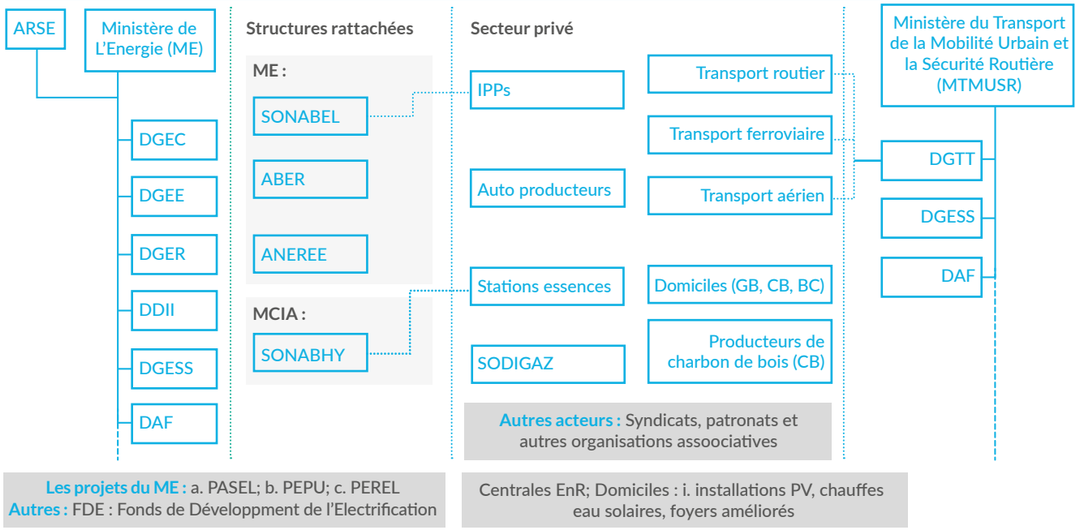
3.1 The Energy Sector

The Ministry of Energy (Ministère de l'Énergie - ME) is responsible for ensuring the implementation and monitoring of the Government's energy policy, and the Ministry of Transport, Urban Mobility and Road Safety (Ministère du Transports, de la Mobilité Urbaine et de la Sécurité Routière - MTMUSR) is in charge of ensuring the implementation and monitoring of the Government's transport policy.

These two ministries are key players in the energy sector, but others are also involved. For example, the Ministry of the Environment, Green Economy and Climate Change (Ministère de L'Environment, de l'Économie Verte, et du Changement Climatique - MEEVC), through its General Directorate of Water and Forests (Direction Générale des Eaux et Forêts - DGEF), oversees the production and consumption of charcoal, as well as firewood. Others include the Ministry of Trade, Industry and Handicrafts (Ministère du Commerce de L'Industrie et de L'Artisanat - MCIA), and the supervisory ministry of the Burkinabe National Hydrocarbon Company (Société Nationale Burkinabè d'Hydrocarbures – SONABHY), which has a monopoly on imports of fossil fuel and whose annual consumption is estimated at more than 500,000 tons.

Other major players in the field are the National Society of Electricity of Burkina (Société Nationale d'Electricité du Burkina – SONABEL), Burkinabe Agency for Rural Electrification (L'Agence Burkinabé de l'Electrification Rurale - ABER) and the Regulatory Authority of the Electricity sub-sector. For more details, refer to the figure below.

FIGURE 3 Energy Sector Cartography



Acronymes : ABER : Agence Burkinabé d'Electrification Rurale ; ARSE : L'Autorité de Régulation du sous secteur de l'Electricité ; ANEREE : Agence Nationale des Energies Renouvelables et de l'Efficacité Énergétique ; BC : Bois de chauffe ; DAF : Direction d e l' Administrati on et des Finance s ; DGEC : Direction Générale de l'Energie Conventionnelle ; DGEE : Direction Générale de l'Efficacité Energétique ; DGER : Direction Générale des Energies Renouvelables ; DGESS : Direction Générale des Etudes et des Statis tiques Sectorielles ; DDII : Direction du Développement Institutionnels et de l'Innovation ; EnR : Energie Renouvelables ; GB : Gaz Butane ; IPPs : Independants Power Producers (Producteurs indépendants ; MCIA : Ministère du Commerce de l'Industrie et de l'Artisanat ; PV : Photovoltaïque ; SONABEL : Société Nationale d'Électricité du Burkina ; SONABHY : Société Nationale Burkinabé des Hydrocarbures .

[4] **Source:** 2019 GHGI Preliminary Report.

The general population mainly uses traditional biomass (charcoal and firewood) for their cooking needs. Household access to butane gas stands at an overall national rate of 4.8%, with approximately 12.2% of households using improved cooking stoves. Over 90% of the population lacks access to modern cooking fuels.

Burkina Faso's electrical coverage rate stands at 28.6%. There is a significant disparity between urban and rural areas, with an urban electrification rate of 48%, while rural areas have a much lower electrification rate of just 3%. This is particularly serious, because more than 70% of Burkina Faso's population is rural.

The country is currently experiencing high energy demand, due to the development of its economic activities and population growth.

Burkina Faso imports all of its fossil fuel and, because of the country's landlocked position, its supply costs are high. The country is distinguished by:

i. A predominance of the use of biomass energies;
ii. A dependence on fossil fuels;
iii. Poor access to modern energy and a high level of inequitable use;
iv. Very low valuation of endogenous renewable energies.

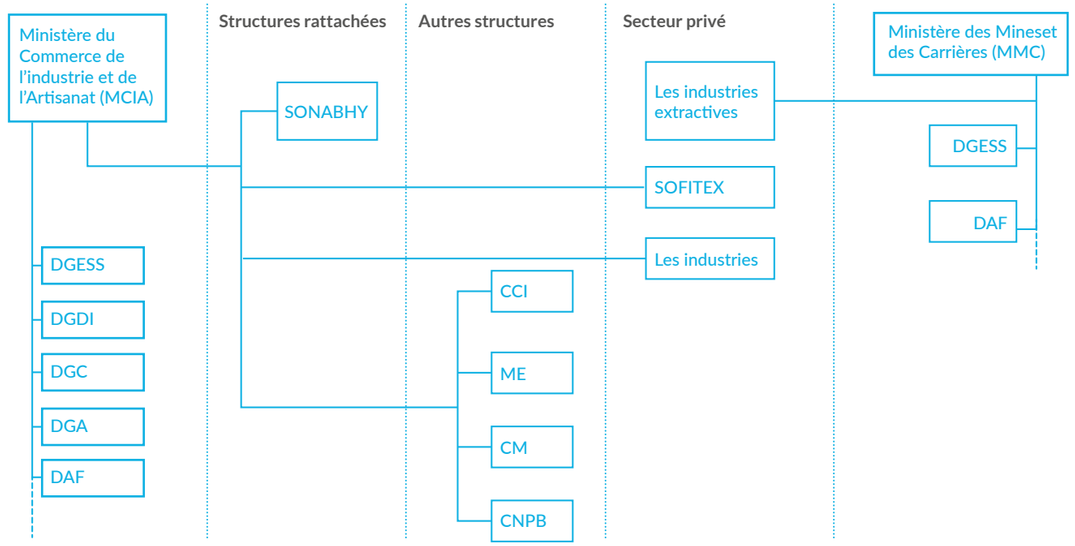
With a view to ensure equal access for all to modern energy and fostering the competitiveness of the economy, Burkina Faso has been undertaking reforms to the energy sector since the year 2000.

These reforms were aimed at:

i. Strengthening national institutional capacities;
ii. Liberalizing the electricity subsector;
iii. Controlling the costs of energy inputs;
iv. Ensuring better energy coverage in the country, particularly in rural areas;
v. Promoting alternative energy sources, and more specifically renewable energy;
vi. Sensitizing the populations to a rational use of energy;
vii. Promoting the use of wood energy resources through the development of sustainable and participatory forest management programs.

3.2 The IPPU Sector

FIGURE 4 IPPU Sector Cartography



Acronymes : CCI : Chambres de Commerces et d'Industries ; CM : Chambre des Métiers ; CNPB : Conseil National du Patronat Burkinabé ; DAF Directeur de l'Administration et des Finances ; DGA : Direction Générale ; DGC : Direction Générale du Commerce DGDI : D irection Générale du Développement Industriel DGESS : Direction Générale des Études et des Statistiques Sectorielles DGM : Direction Générale des Mines ; SOFITEX : Société des Fibres Textile s ; SONABHY : Société Nationale Burkinabè des Hydrocarbures ME : Maison de l'Enterprise.

The Ministry of Trade, Industry and Handicrafts (MCIA) is responsible for the Industrial Processes and Product Use (IPPU) sector. The Ministry of Mines and Quarries (MMC) is also involved, with a majority share of exports, which have been increasing in recent years.

Other sector actors are also worth noting. These include mining companies, industries, chambers of commerce and industry, the company house, the chamber of trades and the National Council of Employers of Burkina Faso (CNPB).

According to the results of the seventh industrial and commercial census, which was conducted by the National Institute of Statistics and Demography (INSD) in 2016, 19% of the companies in Burkina Faso operate in the industrial sector.

The sector is, however, very poorly developed. It is essentially dominated by manufacturing and mining activities. Nevertheless, manufacturing remains at an embryonic stage. Industrial policies are favorable to the exploitation of mining and mineral resources.

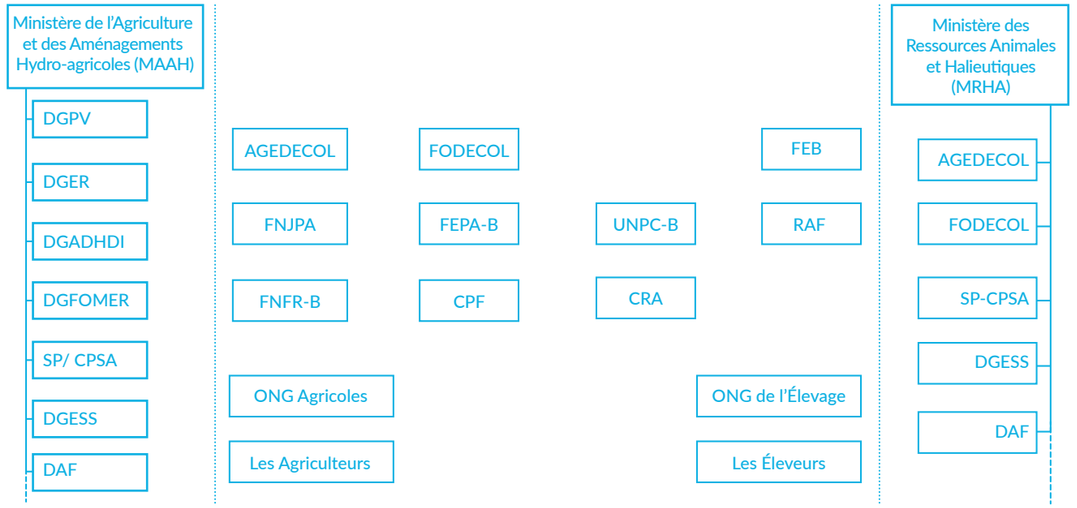
This industrial fabric is also characterized by the youthfulness of the units, as 75% are under 10 years old and 99% are under 20 years old. Over the last few years, Burkina Faso's industrial sector has recorded a relatively significant growth thanks to the effects of extractive industries, especially that of gold, which is now the first export product in value of the country. In 2011, gold accounted for a proportion of 77% of total exports, against 67% in 2010.

This evolution of the industry sector is also explained by the continuation of activities from the branch of Buildings and Public Works (BTP) in connection with the intensification of building sites, particularly the construction of urban socio-economic infrastructures and public works of transport. In terms of contribution to the creation of national wealth, the share of the industrial sector in the formation of the Gross Domestic Product (GDP) experienced a steady growth between 2008 and 2011, rising respectively from 16% to 24%. However, it fell back to 21% in 2013 due to the fall in world gold prices (POSICA 2011-2020).

As for the contribution to job creation, the latest available statistics reveal that, in 2008, the industrial sector employed 18,745 people, with a paid wage bill of nearly 39 billion F CFA (POSICA 2011-2020).

3.3 The Agriculture, Forestry and Other Land Use Sector

FIGURE 5 Agriculture and Livestock Categories Cartography



Acronymes : AGEDECOL : Agence d'Appui à la Gestion et au Développement ; CPF : Confédération Paysanne du FASO ; CRA : Chambres Régionales d'Agriculture ; DAF Direct ion de l'Administration et de s Finan c es ; DGADHDI : DGPV Direction Générale de la Production Végétale ; DGER : Direction Générale de l'Economie Rurale ; DGFOMER : Direction Générale du Foncier, de la Fo rmation, et de l'Organisation du Monde Rural ; DGAHDI : Direction Générale des Aménagements Hydro agricoles et du Développement de l'Irrigation ; DGESS : Direction Générale des Etudes et des Statistiques Sectorielles ; FEPA B : Fédération des Professionnel s Agricoles du Burkina; FNFR B Fédération Nationale des Femmes Rurales du Burkina ; FNJPAF : Fédération Nationales des Jeunes Professionnelles Agricoles du FASO ; FODECOL : Fonds d'Appui au Développement des Collectivités Locales ; ONG : Organisme Non Go uvernemental ; SP/CPSA : Secrétariat Permanent de la Coordination des Politiques Sectorielles

The Agriculture, Forestry and Other Land Use (AFOLU) sector includes the categories of agriculture, livestock, forestry, and other land occupations. It is the sector that emits the most GHGs.

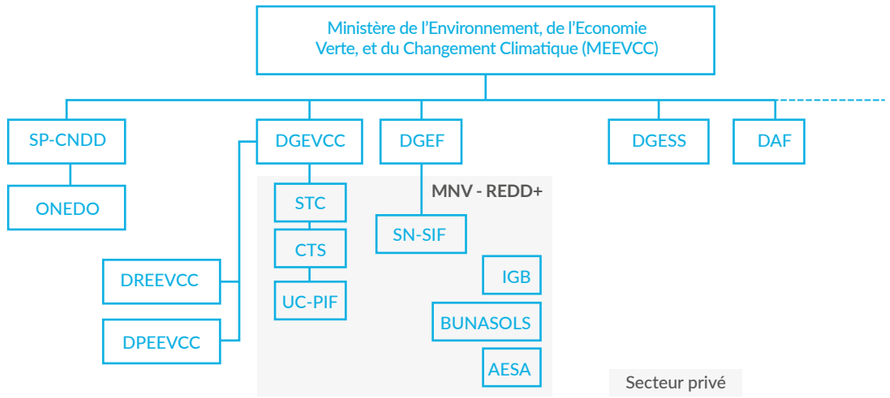
The Ministry of Agriculture and Hydro-agricultural Development (Ministère de l'Agriculture et des Aménagements Hydro-agricoles - MAAH) is responsible for ensuring the implementation and monitoring of the Government's policy on agriculture and hydro-agricultural development. The MAAH is the ministry responsible for the agriculture category. Additional actors of note in this category include the federations, confederations, and other peasant associations strongly involved in agricultural activities.

The Ministry of Animal and Fishery Resources (Ministère des Ressources Animales et Halieutiques - MRAH) is responsible for ensuring the implementation and monitoring of the Government's livestock policy. The MRAH is the Ministry responsible for the livestock category.
Additional actors of note in this category include the federations, confederations, and other peasant associations strongly involved in the activities of preservation and sustainable management of Burkina Faso's animal herd.

The General Directorate of Water and Forests (DGEF) is the main player in this category.

The DGEF is under the tutelage of the Ministry of the Environment, Green Economy and Climate Change (Ministère de l'Environnement de l'Economie Verte et du Changement Climatique - MEEVCC), which is responsible for ensuring the implementation and monitoring of the Government's policy on the environment, green economy and climate change. This includes forestry. Additional actors of note in this category include the federations, confederations, and other peasant associations strongly involved in the activities of preservation and sustainable management of forests.

FIGURE 6 Forestry Category Organization Chart



Acronymes : ASEA : Agri consulting Europe SA ; BUNASOLS : Bureau National des Sols du Burkina ; CTS : Comité Technique de Suivi ; DAF Direction de l'Administration et des Financ es ; DGEF : Direction Générale des Eaux et des Forêts ; DGESS : Direction Générale des E tudes et des Statistiques Sectorielles ; DGEVCC : Direction Générale de l'Économie Verte et du Changement Climatique ; DGPE : Direction Générale de la P réservation de l'Environnement ; DPEEVCC : Direction Provinciale de l'Environnement, de l'Economie Verte et du Changement Climatique ; DREEVCC : Direction Régionale de l'Environnement, de l'Economie Verte et du Changement Climatique ; IGB : L'Institut Géographique du Burkina ; ONEDD Observatoire Nationale de l'Environnement et du Développement Durable ; ST C : Secrétariat Technique National ; SN CIF ; SP CNDD : Secrétariat Permanent du Conseil National du Développement Durable ; UC PIF Unité de Coordination du Programme

As far as agriculture is concerned, the area of land sown is estimated at an average of 6 million hectares, i.e. 22% of the national territory (MAAH, 2017). These soils are severely degraded due to overexploitation and poor agricultural practices.

Livestock farming has about 75 million heads (all species combined) and is dominated by three systems: the pastoral system, the agropastoral or mixed system, and the semi-intensive or intensive system. The pastoral system is based on the mobility and extensive use of natural resources (particularly herbaceous and woody fodder). In the agropastoral system, practiced by sedentary farmers and herders, livestock are fed with crop residues (cereal straw, groundnut, and cowpea haulms) and benefit from supplementation with agricultural by-products. The semi-intensive or intensive farming system is based on the increased use of zootechnical inputs. It is oriented towards milk production, as well as cattle and sheep fattening.

The farms concerned are located in peri-urban areas. In what concerns forestry potential, the total volume of live stock is estimated at 467.9 million m^3.

National consumption of wood for energy purposes has been estimated at 6.8 million tons of wood (FAO, 2012). On the other hand, the production of non-timber forest products (PFNLs) is estimated at 719,098 tons.

Measures to strengthen the potential of wood are being carried out, in particular through forest management, recovery of degraded land, assisted natural regeneration, and tree planting.

3.4 The Waste Sector

The MEEVCC is responsible for ensuring the implementation and monitoring of the Government's policy on the environment, green economy, and climate change. This includes the solid waste sector, through its Directorate General for Environmental Preservation (Direction Générale de la Protection de l'Environnement - DGPE).

For liquid waste, the Ministry of Water and Sanitation (Ministère de l'Eau et des Assainissements - MEA) is responsible for ensuring the implementation and monitoring of the Government's policy on water and sanitation

These two ministries oversee the sector.

Additional actors of note in the sector include town halls, municipalities, and the private sector working in the collection, transport, treatment, and recovery of waste.

Liquid waste: In Burkina Faso, the majority of existing household sanitation facilities are of the traditional type, presenting many risks, which include nuisances and pollution. Ecological sanitation facilities for excreta reuse are being tested on a small scale.

In 2015, the rate of access to family sanitation in rural areas was of 12%, with urban areas doing slightly better and reaching 34%.

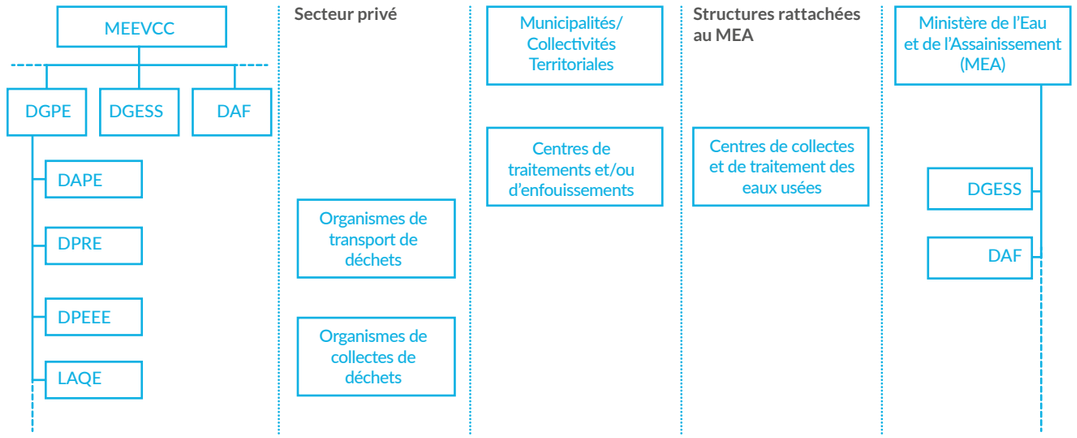
Open defecation is very frequent: statistics show that nearly 60% of people practice open defecation nationally. In the rural areas, the practice is even more frequent, with 80% of people adopting this practice.

As for the management of industrial and assimilated wastewater, there is still discharge into nature without prior treatment or discharge into inappropriate pits.

Solid waste: Solid waste management remains a concern. Since 1958, several models have succeeded one another with unsatisfactory performances: management by municipal authorities, concession to private operators, and management by the State through the Directorate, then the National Office of Maintenance, Cleaning and Beautification Services (DINASENE then ONASENE in 1988). Since 1991, management has been shared between private operators and the municipality.

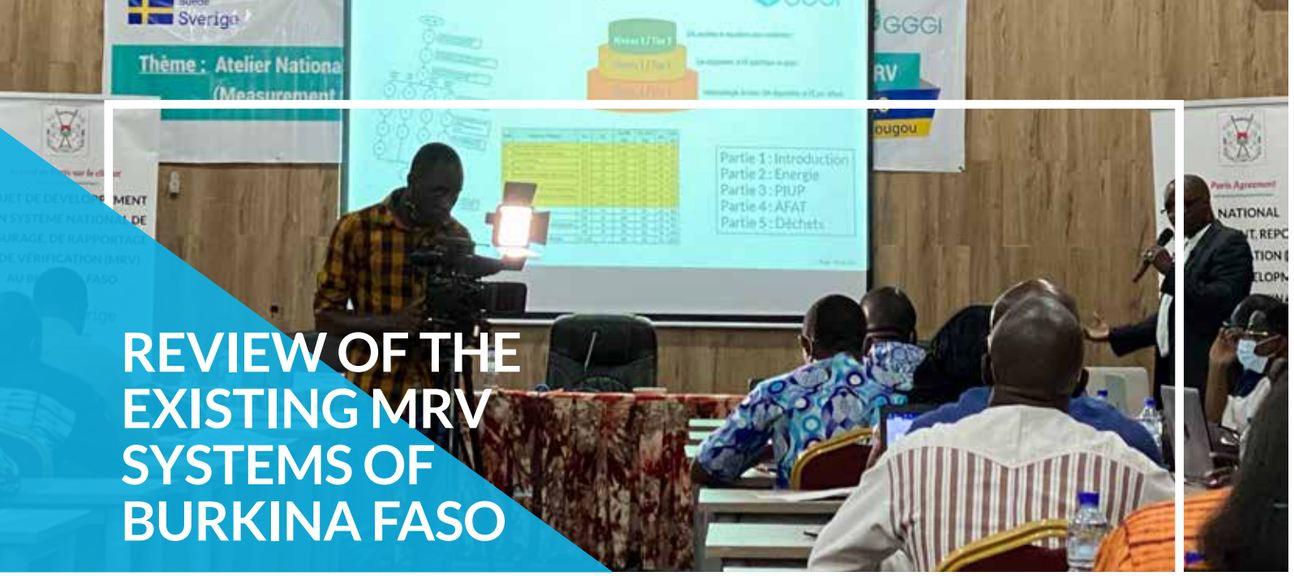
In the cities of Ouagadougou and Bobo Dioulasso, about one million (1,000,000) tons of household waste is produced per year, with a collection rate of about 60%. Two Waste Treatment and Recycling Centers (CTVD) have been set up in both these cities, but the one in Bobo Dioulasso o is not functional. However, waste production is estimated at 0.67 Kg/capita/day in the major centers, while secondary towns reach a production of 0.3 Kg/capita/day[5].

FIGURE 7 Waste Sector Cartography



Acronymes : DAF : Directeur des Affaires Financière ; DGA : Direction Générale de l'Assainissement ; DGESS : Direction Générale des Études et des Statistiques Sectorielles ; DGPE : Direction Générale de la Préservation de l'Environnement; DAPEU : Direction des Amén agement Paysagers et de l'Écologie Urbaine ; DPRE : Direction de la Prévention des pollution et des Risques Environnementaux ; DPEEE : Direction de la Promotion de l'Éducation Environnementale et de l'Éco citoyenneté ; LAQE : Laboratoire d'Analyse de la Q ualité de l'Environnement ;

[5] Source : 2019 GHGI Preliminary Report



REVIEW OF THE EXISTING MRV SYSTEMS OF BURKINA FASO

Burkina Faso drew up national GHGI, which are integrated into reports submitted, and to be submitted, to the Secretariat of the UNFCCC, by virtue of its reporting obligations. This came as a result of the ratification of the following agreements:

i. September 1993, the United Nations Framework Convention on Climate Changes (UNFCCC);
ii. March 2005, the Kyoto Protocol (KP);
iii. November 2016, the Paris Agreement (PA).

These reports comprise the following:

i. National Communications (NCs);
ii. Biennale Update Report (BURs);
iii. Intended National Determined Contribution (INDC) and National Determined Contribution (NDCs);
iv. Upcoming Biennale Transparency Reports (BTRs).

The objective of the UNFCCC is to stabilize greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate system.

Counting of national GHG emissions and removals is key to demonstrate adherence to the convention.

Therefore, reliable GHG inventories are essential, both at national and international level, for:

i. Assessing national efforts to address climate change and progress toward meeting the conventions' ultimate objective;
ii. Evaluating mitigation options;
iii. Assessing the effectiveness of policies and measures;
iv. Making long-term emission projections;
v. Providing the foundation for emission trading schemes.

Under the PA, all countries will provide emissions data and track progress against their contributions.

MRV systems will be a significant component in effectively tracking and improving the implementation of mitigation goals and policies articulated under countries' NDCs (CDKN Global 2016).

If the NDCs represent our commitments to reduce our GHG emissions, the MRV system is the mechanism for managing (in terms of planning, monitoring and evaluation) the system as a whole, building trust and confidence among countries that all commitments are being implemented in a transparent manner.

4.1 Burkina Faso's NDC

Burkina Faso submitted its INDC on October 23, 2015 and ratified the Paris Agreement on November 11, 2016. The latter entered into force on November 04, 2016.

The INDC then became the country's NDC, with both mitigation and adaptation objectives.

The mitigation component is based on the methodological approach using the 2007 GHGI, and covers the energy, industrial processes, AFOLU and waste sectors; the consideration of socio-economic indicators; and projections to 2030.

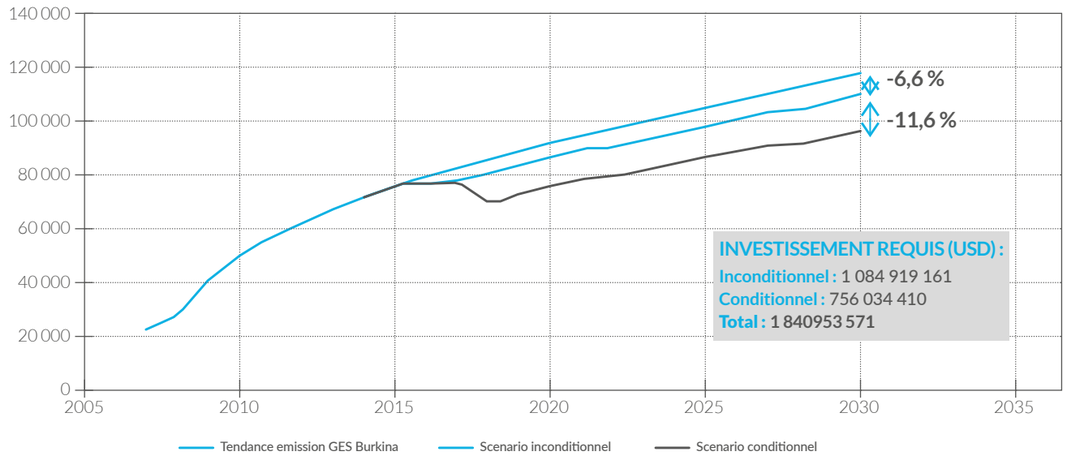
For the construction of GHG emissions' projections, three scenarios were taken into account, as described next:

i. The baseline scenario, or "Business as Usual": a scenario for future business patterns which assumes that there will be no significant change in attitudes and priorities, or no major change in technology, economics or politics, so that normal (current) circumstances remain unchanged;
ii. The unconditional scenario: in this scenario, mitigation measures are implemented, with government funding;
iii. The conditional scenario: large-scale mitigation measures are implemented with funding from the international community.

In the following figure we see the emission profiles of the three scenarios and the investments required for the unconditional and conditional scenarios.

The Adaptation component of Burkina Faso's NDC is based on the analysis of the vulnerability of climate change scenarios for 2025-2050, within the priority areas identified, which are:

FIGURE 8 Burkina Faso's GHG Emission Profile[6]



i. Agriculture;
ii. Livestock;
iii. Water;
iv. Forestry and ecosystems;
v. Energy;
vi. Infrastructures and housing; and
vii. Health.

The total investment cost of Burkina Faso's NDC amounts to USD 10,111,907,052, including USD 1,840,953,571 for the mitigation part; and USD 5,907,823,915 for adaptation. The remaining USD 2,363,129,566 are considered implementation costs.

To finance NDC projects, Burkina Faso intends to access the Green Climate Fund (GCF) and the Environmental Intervention Fund (EIF[7]) created by the Government.

The NDC cites potential sources of financing, and mention is made of monitoring and evaluation activities under the aegis of an implementation coordination and monitoring unit made up of the following components:

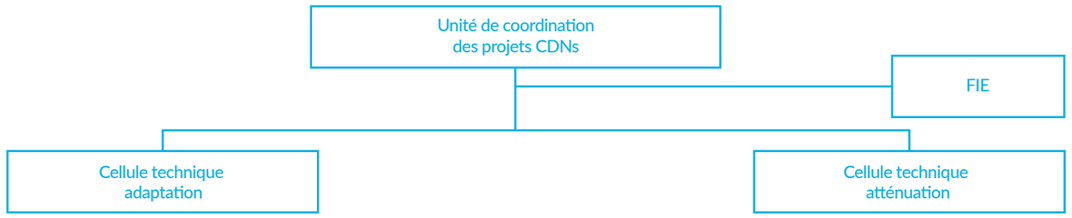
i. One Coordination and Monitoring Unit;
ii. One Mitigation Technical Entity; and
iii. One Adaptation Technical Entity.

The members of these units would be drawn from the various ministries and/or agencies of the State, Civil Society, and the Private Sector.

[6] Source: https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Burkina%20Faso%20First/INDC%20BURKINA%20FASO%20280915.pdf

[7] Refer to paragraph 4.4.4 for more details on the EIF

FIGURE 9 NDC Implementation Organization Chart



Our findings are as follows. There has been no evidence of the:

i. Creation of coordination and monitoring entities;
ii. NDC Implementation strategy;
iii. Existence of budget lines for conditional mitigation,
iv. Existence of a financing strategy,
v. Private sector involvement strategy.

In addition to the MRV implementation system proposed in the NDC, four MRV systems were used during the development of the NDC, namely:

i. A GHGI MRV;
ii. A Mitigation MRV;
iii. An adaptation MRV; and
iv. MRV funding, technology transfer, and skills development.

The GHGI MRV was summarized by updating the last available GHGI, that of 2007.

The Mitigation MRV consisted in developing unconditional and conditional sectoral scenarios, estimating their GHG projections, determining their financing needs in terms of technology transfer and skills development (FTC); and estimating the timeframe for implementation; but also in compiling the set of mitigation measures at the national level.

The Adaptation MRV is built on the latest vulnerability analysis, for which Adaptation measures (up-to-date) have been developed, with projections of impacts on the population and the environment. The next steps were to determine their funding needs for technology transfer and capacity building; and to estimate the timeline for completion. Similarly to what happened with the MRV of GHGI and Mitigation, all Adaptation measures have been compiled at the national level.

These four MRV systems are not all isolated from one another, but interact, notably the GHGI and Mitigation MRVs. Together, these components make up the national MRV system, the product of which is the NDC report that has been finalized following audits (audits, technical reviews, validation workshops, etc.).

Nevertheless, a number of MRV system implementation projects should be highlighted. In the case of REDD+, a MRV system development initiative appears to be under development, and we are seeking additional information to assess the level of progress of this REDD+ MRV system project.

4.2 The MRV Projects and Initiatives

Among all the MRV projects initiated by the FTC, we are interested in projects acting on at least a whole sector. These projects are listed below:

i. Capacity building workshop on the national and international requirements of an MRV system, which was organized by GIZ and took place between 27-29 June 2018, in Ouagadougou. This workshop aimed to support Burkina Faso in the establishment of a national MRV system, including a national inventory of greenhouse gas greenhouse (GHG), through capacity building.
ii. Forest Investment Program (FIP) for the Forestry sector (FIP Forestry) - we are looking for information on this project and to assess its progress;
iii. Capacity-building Initiative for Transparency by the Technical University of Denmark for the AFOLU sector (CBIT DTU AFOLU) - we are looking for information on this project and to assess its progress;
iv. MNV REDD + - We are looking for information on this project and to assess its progress;
v. Canadian MRV – the project, entitled “Climate Finance Support to Address Carbon Emissions in West Africa Bilateral Support to Strengthen National Approaches and Effective Regional MRV Collaboration” aims to support the ECOWAS countries and Mauritania to achieve their NDC, aligning their development policies with climate objectives and investments. This will be achieved by improving the efficiency of the MRV systems, disseminating information on the MRV systems and progress in implementing the CDNs, South-South collaboration, and sharing of experience with Canada.

4.3 The Governing Entities

The MEEVCC has two governing entities which organize the development of GHGI and UNFCCC reporting obligations. These entities are the Permanent Secretariat of the National Council for Sustainable Development (SP-CNDD) and the General Directorate of Green Economy and Climate Change (Direction Générale de l’Économie Verte et du Changement Climatique - DGEVCC).

The MEEVCC also houses the Directorate General of Water and Forests (DGEF), with reference to the Forestry category in AFOLU; and the Directorate General for Environmental Preservation (DGPE), with reference to the waste sector.

For more details, see Figure 10.

Burkina Faso has a legal and institutional framework for its NDC and GHGI coordination and implementation, such as the Permanent Secretariat of National Council for Sustainable Development (SP-CNDD) and the General Directorate of Green Economy and Climate Change (DGEVCC).

Decree No. 2016-383/PRES/PM/MEEVCC of 20 May 2016 on the organization of the Ministry in charge of the green economy governs this implementation and entrusts its responsibility to two bodies: The Permanent Secretariat of National Council for Sustainable Development (SP-CNDD) and the Directorate General of Green Economy and Climate Change (DGEVCC).

Article 45 of the above-mentioned Decree, attributed to the DGEVCC, includes the following missions and duties:

i. Participating in the implementation of a permanent system of data collection, centralization, analysis, and treatment;
ii. Developing and implementing a national strategy for GHG reduction from deforestation and forest degradation;
iii. Contributing to the production of national communications, biennial updates, and adaptation action plans reports.

On the other hand, article 12 of the same decree No 2016-383/PRES/PM/MEEVCC of 20 May 2016 states that the SP- CNDD is the executing and implementing body of the National Council for Sustainable Development (Conseil national pour le développement durable - CNDD). Its missions and duties include, among others, monitoring and capitalization of mitigation and adaptation actions related to UNFCCC’s implementation, as well as the elaboration of National Communications (NCs) and BURs reports concerning greenhouse gas inventories. This confers to SP-CNDD the coordination and monitoring role of the NDC implementation.

Order n°2018-009/MEEVCC/CAB on the creation, attribution, organization, and functioning of Permanent Secretariat of National Council Sustainable Development identified and retained three technical Departments.

The Department of International Conventions Coordination (Département de la Coordination des Convention International - DCCI) monitors NDC implementation with other national institutions, and also coordinates greenhouse gas inventories. However, there is no formalized national framework or formalized institutional arrangement bringing together all stakeholders with their roles for the national greenhouses gas inventory (GHGI).

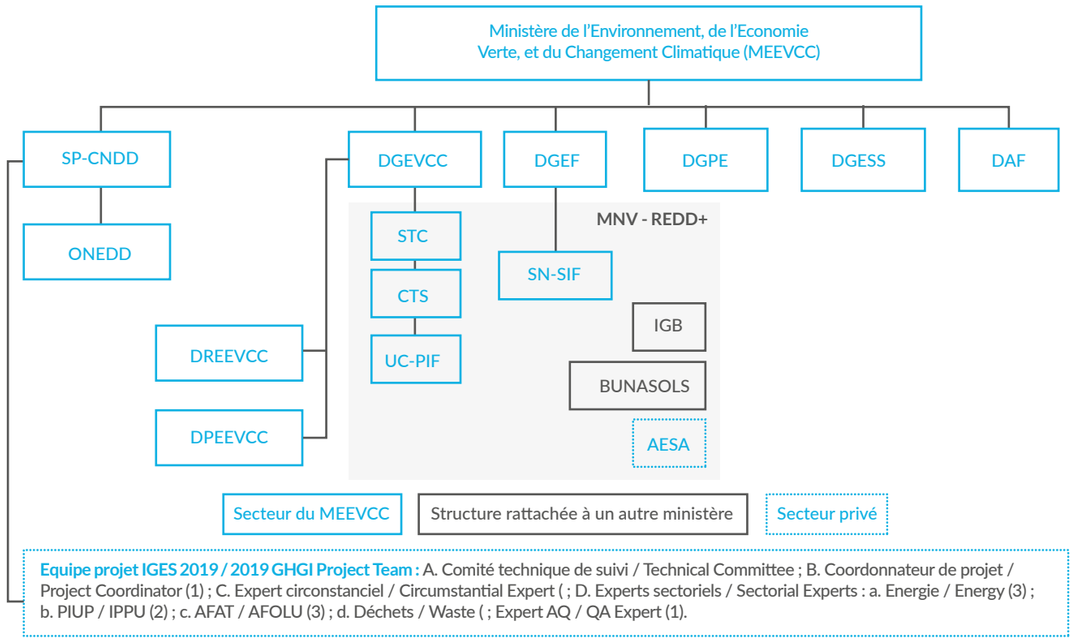
The project's current operational structure is based on the recruitment of a coordinator and experts for GHGI data collection, processing, and production of reports for National Communications and Biennial Updates.

From an organizational point of view, the realization of the GHGI, National Communications and Biennial Update Reports are done in the form of a fixed-term project without any permanent system of data storage and archiving.

Given that each project has its end, for GHGI this method seems to be unsustainable, because for each national communication report elaboration, there is always the need to recruit project staff (such as coordinators and experts) from various backgrounds; and, at the end of the project, most of the data disappears due to the lack of a strong IT system.

As Burkina Faso is not a major GHG emitter, it does not have a law regulating GHG emissions, except for the forestry code, the environment code and the law on sustainable development, which remain too broad.

FIGURE 10 MEEVCC Organization Chart



Equipe projet IGES 2019 / 2019 GHGI Project Team : A. Comité technique de suivi / Technical Committee ; B. Coordonnateur de projet / Project Coordinator (1) ; C. Expert circonstanciel / Circumstantial Expert (; D. Experts sectoriels / Sectorial Experts : a. Energie / Energy (3) ; b. PIUP / IPPU (2) ; c. AFAT / AFOLU (3) ; d. Déchets / Waste (; Expert AQ / QA Expert (1).

Acronymes : ASEA : Agri consulting Europe SA ; BUNASOLS : Bureau National des Sols du Burkina ; CTS : Comité Technique de Suivi ; DAF Direc t ion de l'Administration et des Finan c e s ; DGEF : Direction Générale des Eaux et des Forêts ; DGESS : Direction Générale des Etudes et des Statistiques Sectorielles ; DGEVCC : Direction Générale de l'Économie Verte et du Changement Climatique ; DGPE : Dire ction Générale de la Pr éservation de l'Environnement ; DPEEVCC : Direction Provinciale de l'Environnement, de l'Economie Verte et du Changement Climatique ; DREEVCC : Direction Régionale de l'Environnement, de l'Economie Verte et du Changement Climatique IGB : L'Institut Géographique du Burkina ; ONEDD Observatoire Nationale de l'Environnement et du Développement Durable ; STC : Secrétariat Technique National ; SN CIF ; SP CNDD : Secrétariat Permanent du Conseil National du Développement Durable ; UC PIF Unité de coordination du programme d'investissement forestier .

4.4 2019 GHGI and the 3rd NC

4.4.1 The Approach, Process, and Methods

The approach adopted by the SP-CNDD consists in:

i. The organization of a technical monitoring committee;
ii. The recruitment of an GHGI coordinator; and
iii. The recruitment of experts, apart from employees of sectoral ministries.

For all the GHGI carried out, Experts have been recruited to:

i. Collect data;
ii. Process and analyze data;
iii. Estimate GHG emissions by category and by sector, and the required quality controls;
iv. Compile the national GHGI; and
v. Perform national GHGI verification and quality assurance.

The steps listed above are detailed in the following paragraphs:

i. Data collection: it is carried out by sectoral experts, through documentary review, interviews with the structures involved, and specific surveys;
ii. Data processing and analysis: sector experts put the data in the formats required by the tools used to make estimates of GHG emissions. They then carry out reliability, uniformity, and compatibility analysis;
iii. GHG emissions estimations: experts perform the necessary calculations by category and by sector, as well as perform quality control. The 2006 guidelines and the GHG 2006 IPCC software are used;
iv. Compiling the national GHG inventory: once sectoral estimates have been made, the sectoral experts, in concert with the quality assurance expert, compile the national GHGI;
v. Verification and Assurance Quality: under the management of the project coordinator, all experts carry out the verification and quality assurance of the national GHGI.

The figure below shows the main process lines, as well as all the components that it is constituted by.

FIGURE 11 Process and Components of 2019 GHGI

Steps in the development of the 2019 GHGI: 1. Fundraising, **2.** Recruitment of experts, **3.** Launching workshop [PTAB, roadmap]

Supplier	Inputs	Process	Output	Customer
ENERGY: 3 Experts [ME, MEEVCC] • SONABEL, IPPS, Auto Pro., Auto Cons, Wood Coal WC Production • SONABHY, SODIGAZ, Sell of Gaz., Sell of Wood Coal & Wood; **TRANSPORT:** [MTMUSR) Land, rail, and air transportation. ***Others:*** *MMC, MUH, MCIA.*	1	**Gases:** CH 4 , CO 2 , N 2 O, et les precursors Co, non methane volatile organic compounds (NMVOC), carbon **Tools:** a. 2006 IPCC National GHGI Software, b. 2006 IPCC Guidelines for National GHGI, c. FAOSAT (P rospection). **Time serie:** From 1997 to 2017 **Verification, QA/QC:** QA International Expert (Togo), QC done, the sectoral experts / Monthly meetings	A	UNFCCC
IPPU: 2 Experts [MCIA] • Industry, Commerce, Extractive Industry. ***Other:*** *MMC.*	2			
AFOLU: 3 Experts [MAAH, MRAH, MEEVCC] • Agriculture, Livestock, Forestry, Land Use & Land Use Change, Communes; • BUNASOL (MAAH), IGB (MI), ONDD (MEEVCC), AESA (private sector) ***Other:*** *MATDCS, MI.*	3			
WASTE: 2 Experts [MEEVCC, MEA] • Treatment sites, treatment of biological waste, Communes; • Sanitation, liquid waste from agro industries ***Others:*** *MCIA, MATDCS.*	4			

Circumstantial experts: 3; **Project Coordinator:** 1; **Monitoring Technical Committee:** Monitoring /Evaluation, one meeting per Month (1st Thursday).

The 1996 IPCC guideline was used for the 2001 and 2007 GHGI, while the 2006 IPCC guideline and the IPCC 2006 GHG inventory software were used for the 2019 GHGI, reflecting the country's considerable efforts to improve its transparency in matters of GHGI.

Efforts were made in terms of improving the methodology and allowing the use of the 2006 IPCC guidelines. Further improvements remain to be made regarding the development of country specific parameters, and to put in place an effective and efficient system for all the GHGI activities.

4.4.2 The System's Management and Coordination

A coordinator has been recruited under contract. He is assisted by a financial assistant, and a technical monitoring committee has been set up.
Coordination and follow-up meetings are planned on a monthly basis, but are not held on a regular basis.

4.4.3 The Planning

An annual work and budget plan (PTBA) and a roadmap are drawn up.

These documents must detail the stages in the development of the national GHGI as well as the deliverables expected from sectoral experts. The documents must also indicate the deadlines.

The project coordinator is responsible for ensuring that the experts understand these documents.

The review of 2019's preliminary GHGI report has shown that the report's preparation lasted more than two years (it started in 2018 and has not yet been submitted to the UNFCCC).

Note: We have not been able to obtain a copy of the PTBA or the roadmap of the 2019 GHGI.

4.4.4 The Funding and Budget

The Environmental Intervention Fund (Fonds d'Intervention pour l'Environnement" - FIE) is the instrument for mobilizing and managing funding for the implementation of Burkina Faso's NDC.

Created by Decree No. 2015 - 838/PRES-TRANS/PM/MEF/MERH of July 13, 2015, the FIE is the result of the Burkinabe State's desire to acquire a new financial tool to meet the country's environmental challenges. It constitutes a new funding lever to mobilize additional national funding, as well as additional external funds, related to the environment, the sustainable management of natural resources, and climate change.

Through the FIE, the State has set up the Forest Fund, provided for in the Forest Code, and the Climate Fund in accordance with international conventions which have been ratified in the field of Climate.

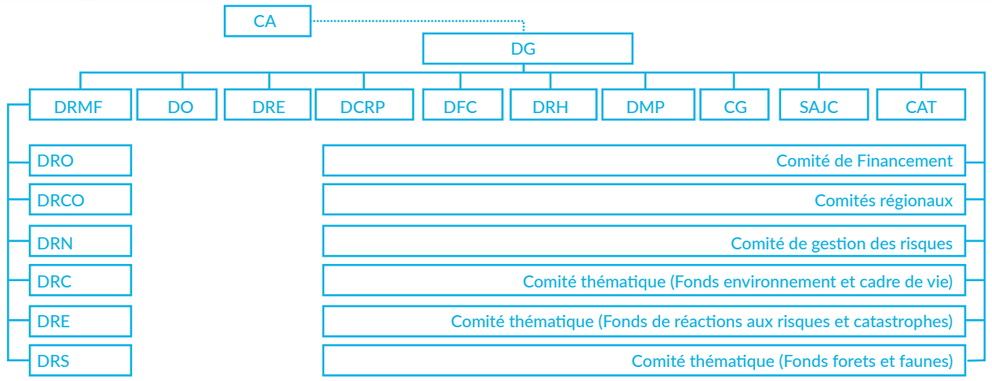
The FIE has the status of a Public State Establishment (EPE), classified in the category of State Funds. It is placed under the technical supervision of the Ministry in charge of the environment, and the financial supervision of the Ministry in charge of finances.

The FIE is in charge of:

i. Mobilizing and managing national and international funding for the environment;
ii. Allocating funding (grants) or financial incentives (rate subsidy, loan guarantees) to the various groups of national actors according to their skills in environmental management and protection; and
iii. Monitoring and reporting on the use of funds received and allocated financial support.

See the FIE organization chart below.

FIGURE 12 FIE Organization Chart

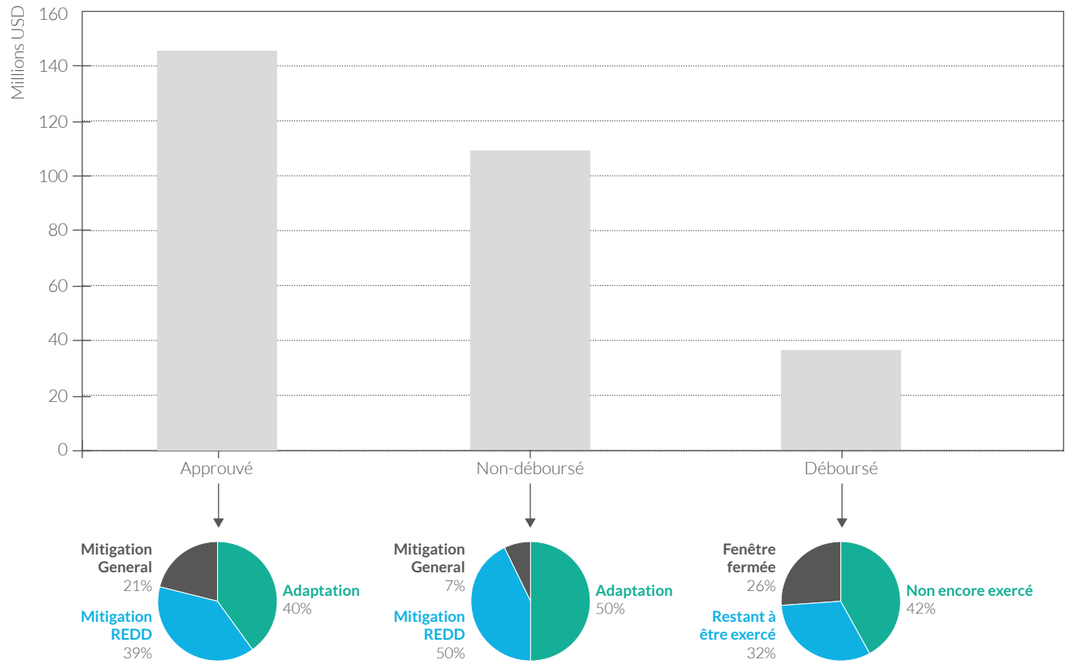


Acronymes : CA : Conseil d'Administration ; DG : Directeur General ; DRMF : Direction de la Recherche et de la Mobilisation des Financemen t DO : Direction des Opérations ; DRE : Direction du Rapportage et de l'Évaluation ; DCRP : Direction de la Communication et de s Relations Publique s DFC : Direction des Finances et de la Comptabilité DRH : Direction des Ressources Humaines ; DMP : Direction des Marchés Publics ; CG : Contrôleur de Gestion ; SAJC : Service des Affaires Juridiques et du Contentieux CAT : Cellu le d' A ppui T echnique DRO : Direction Régi nale de l'Ouest DRCO : Direction Régionale du Centre Ouest ; DRN : Direction Régionale du Nord ; DRC : Direction Régionale du Centre ; DRE : Direction Régionale de l'Est DRS : Direction Régionale du Sahel.

According to the Climate Funds Update[8], 145.5 million USD have been approved for the financing of climate projects for Burkina Faso since 2004. Of this amount, 36.6 million USD have already been disbursed, 46.3 million USD have not yet been exercised (pending the start of projects), and 34.5 million USD are currently being exercised.

However, 28.25 million USD are lost due to the closing of the financing period.

FIGURE 13 Climate Finance allocated to Burkina Faso, since 2004



For the third national communication the budget was 480,000 USD, requested with the Global Environment Facility (GEF), and the national part was 306,952 USD, requested with the government.

For the first Biennial Update Report, a total of 342,000 USD was obtained from the GEF.

The first national communication, with a total funding of 233,810 USD, was funded by the GEF.

4.4.5 The Compilation Process

Sectoral experts make a first sectoral compilation. After the necessary checks and controls, the full team of experts, assisted by the coordinator, together with the technical monitoring committee, carry out the compilation of the national GHGI.

It is noted that the national GHGI must undergo quality control and quality assurance verification.

[8] Source: www.ClimateFundsUpdate.org

4.4.6 The Verification, QA, & QC

Quality control is done by the sectoral experts, under the follow up of the project coordinator and the technical monitoring committee.

Verification and quality assurance are carried out by an international quality assurance expert, other experts, the project coordinator, with the attendance of the technical monitoring committee.

Note: We have not been able to obtain copies of the verification and quality assurance reports.

4.4.7 The Planning Execution

Experts are responsible for executing the roadmap, under the supervision of the coordinator and the follow-up of the technical committee.

4.5 The Sectorial GHGI

4.5.1 The Energy Sector GHGI

If we refer to the preliminary report of the 2019 GHGI, the energy sector is the second largest sector emitting GHG, behind AFOLU; in 2015, 3,150 Gg. of CO_2 eq. was emitted, equivalent to 7% of the country's total emissions.

This corresponds to an increase of more than 390% compared to 1995 GHG emissions; while in 2030, projections indicate emissions will reach 9,813 Gg. of CO_2 eq., an increase of more than 210% compared to 2015.

This is illustrated in the figure below.

FIGURE 14 Energy Sector GHG Emissions

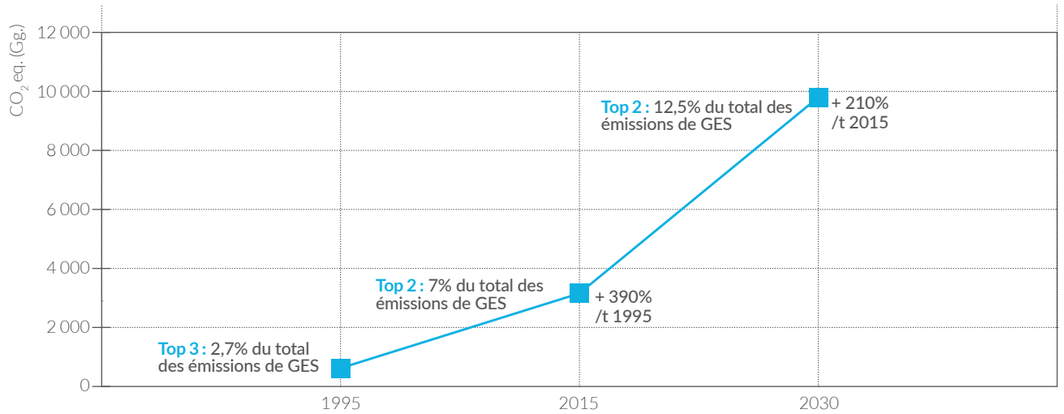


TABLE 1 Sources of activities in the Energy Sector[9]

Sector	Category	IPCC Codes	Type of Data to be collected for the GHGI
Energy	Stationary Combustion	1A1ai Electricity Generation	Types and quantities of fuel used for Electricity Production
		1A1cii Other Energy Industries	Wood coal Production
			Gaz butane Production
		1A2i Mining (excluding fuels) and Quarrying	Types and quantities of fuel used in mining
		1A4a Commercial and institutional	Types and quantities of fuel used by the Commercial and Institutional sector
		1A4b Residential	Types and quantities of fuel used in the Residences
	Mobile Combustion	1A3a Civil Aviation	Types and quantities of fuel used by Domestic Aviation
		1A3b Road Transportation	Types and quantities of fuel used by Land Transport
		1A3c Railways	Type and quantities of fuel used by Rail Transport

[9] **Source:** 2019 GHGI Preliminary Report

4.5.2 The IPPU Sector GHGI

The IPPU sector remains the smallest GHG emitter for the years 1995 and 2015, with 17 and 415 Gg. CO_2 eq. respectively, which, in terms of emissions measured for these two years, respectively corresponds to 0.07% and 0.91% of the total.

Emission projections for the year 2030 amount to 3,992 Gg. CO_2 eq., or 5% of total emissions, which corresponds to an increase of 862% compared to 2015 emissions.

FIGURE 15 IPPU Sector GHG Emissions

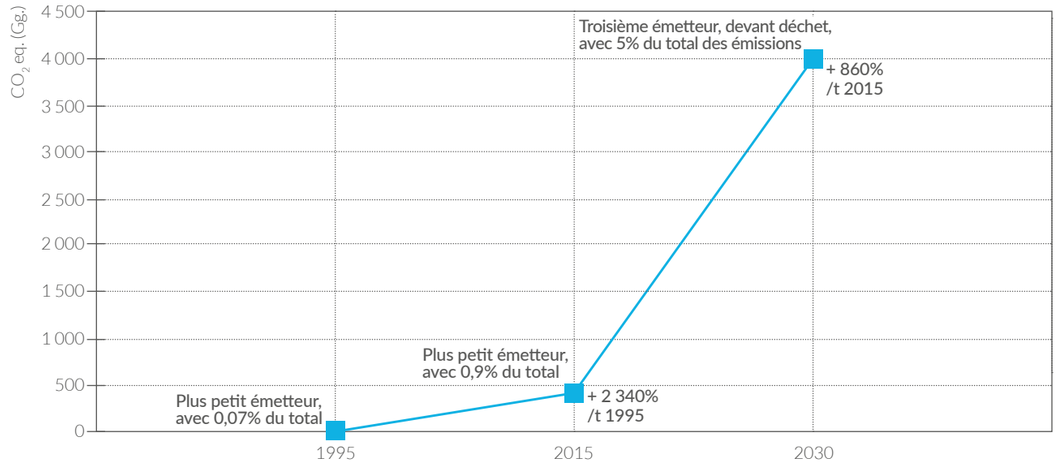


TABLE 2 IPPU Sector[11]

Sector	IPCC Category Codes	IPCC Sub-Category Codes
IPPU	• 2A Mineral Industry	• 2A1 Cement Production • 2A2 Lime Production
	• 2D Non-Energy Products from Fuels and Solvent Use	• 2D1 Lubricant Use • 2D3 Solvents Use

	• 2F Product Uses as Substitutes for Ozone Depleting Substances	• 2F1 Refrigeration & Air Conditioning
		  • 2F1a Refrigeration & Stationary Air Conditioning
		  • 2F1b Mobile Air Conditioning
		• 2F4 Aerosols
		• 2F5 Solvents[10]

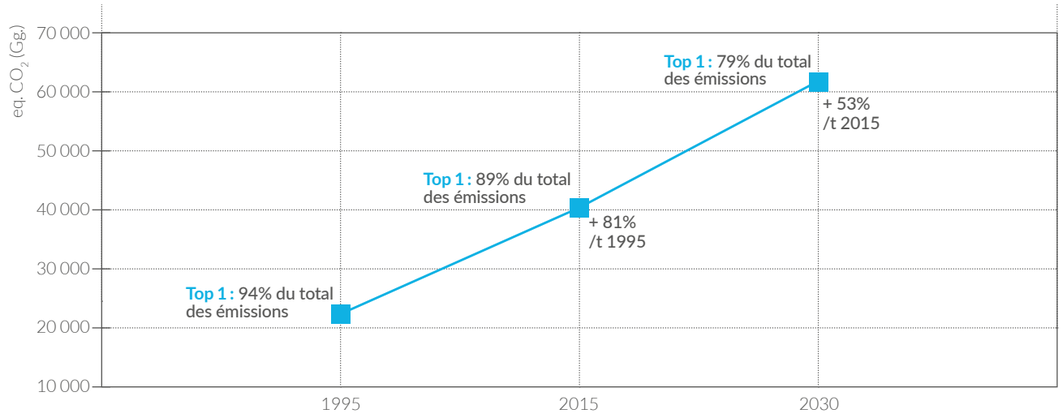
[10] Emissions from the use of fluorinated gases as a solvent should be presented here. Emissions from aerosols containing solvents should be reported in category 2F4 rather than in this category. Emissions from the use of other solvents should be reported in 2D3

[11] **Source :** 2019 GHGI Preliminary Report

4.5.3 The Agriculture, Forestry and Other Land Use Sector GHGI

The AFOLU is the sector that emits the most GHGs. It is the upward factor in GHG emissions in Burkina Faso for the years 1995 and 2015, with emissions of 22,376 and 40,410 Gg. CO_2 eq., respectively. Projections for 2030 point to it reaching 61,637 Gg. CO_2 eq.

FIGURE 16 AFOLU Sector GHG Emissions



The review of 2019's preliminary GHG report, allowed us to note that the Methodology section of the AFOLU sector contained enough elements to form the basis for procedural arrangements.

TABLE 3 AFOLU Sector Collected Data[12]

Sector	Category	Sub-category	Type of Data to be collected for the GHGI
Energy	• 3A Livestock	• 3A1 Enteric Fermentation	• Number of animals (cattle, sheep, goats, pigs, horses, camels, donkeys, and poultry) for enteric fermentation of animals
		• 3A2 Manure Management	• Quantities of manure management
	• 3B Land	• 2B1 Forest Land • 2B2 Cropland	• Land Use Databases (LOD) 1992, 2002 and 2012
		• 2B3 Grassland • 3B4 Wetlands • 3B5 Settlements • 3B6 Other Land	• FAO's database namely FAOSTAT for complementary data on agriculture
	• 3C Aggregate sources and non-CO2emissions sources on land	• 3C1 GHG emission from biomass burning	• Quantities of agricultural residues burned in fields • Biomass burning • Areas of savannah prescribed burns
		• 3C3 Urea application	• Urea application • Quantities of used fertilizers
		• 3C4 Direct N_2O Emission from managed soils	• Direct N_2O emission from managed soils
		• 3C5 Indirect N_2O Emission from managed soils	• Indirect N_2O emission from managed soils
		• 3C6 Indirect N_2O Emission from manure management	
		• 33C7 Rice cultivation	• Areas and irrigated rice cultivation
		• 3D1 Harvested Wood Products	• Quantities of Harvested Wood Products

[12]**Source:** 2019 GHGI Preliminary Report

4.5.4 The Waste Sector GHGI

The waste sector was the second largest emitter of GHG in 1995, just behind AFOLU, with 777 Gg. CO_2 eq. Emissions were found to have risen in 2015's evaluation, reaching 1,462 Gg. The waste sector thus suffered an increase of 88%, and became the third largest emitter, behind the AFOLU and energy sectors.

Projections for 2030 reveal that the sector's emissions are expected to continue rising, reaching 2,294 Gg. CO_2 eq.

FIGURE 17 Waste Sector GHG Emissions

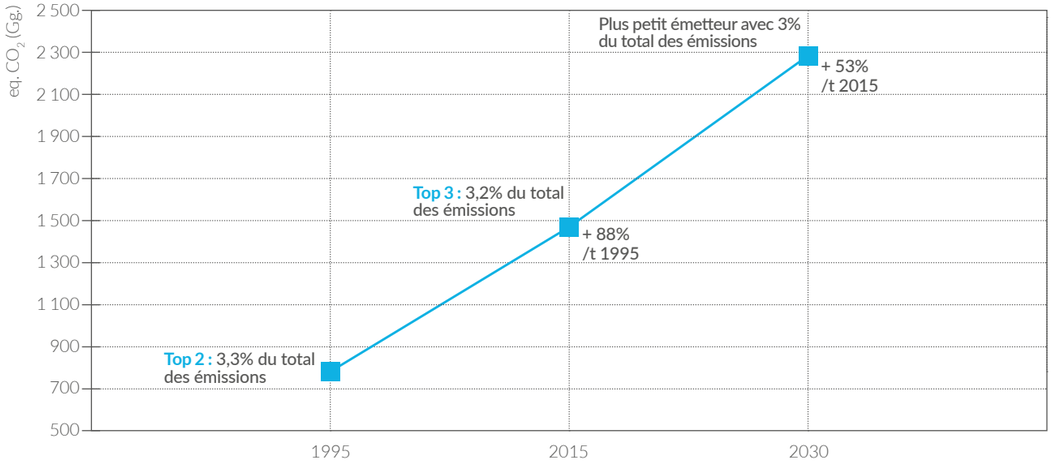


TABLE 4 Waste Sector Collected Data[13]

Sector	Category	Sub-category	GHGI Collected Data
Waste	• 4A Solid Waste Disposal	• 4A1 Managed Waste Disposal Sites	• Quantities of solid waste
		• 4A2 Unmanaged Waste Disposal Sites	• Quantities of solid waste
		• 4A3 Uncategorized Waste Disposal Sites	• Quantities of solid waste
	• 4B Biological Treatment of Solid Waste		• Quantities of solid waste biologically treated
	• 4C Incineration & Open Burning of Waste	• 4C2 Open Burning of Waste	• Quantities of waste incinerated and burned
	• 4D Wastewater Treatment & Discharge	• 4D1 Domestic Wastewater Treatment & Discharge	• Wastewater Treatment & Discharge
		• 4D2 Industrial Wastewater Treatment and Discharge	• Wastewater Treatment & Discharge

[13]**Source:** 2019 GHGI Preliminary Report

THE SWOT

The analysis of the strengths, weaknesses, opportunities, and threats of Burkina Faso's MRV systems resulted in the table below.

Note that during the preparation of the 2019 GHGI provisional report, the following constraints were encountered:

- Unavailability of activity data;
- Difficult collaboration of certain data-holding structures;
- Ineffectiveness of Thematic Working Groups;
- Quality control/quality assurance.

TABLE 5 Strengths, Weakenesses, Opportunities and Threats

STRENGTH	WEAKNESSES
Strong mobilization of the governing entities;	Very little, to even no institutional arrangements;
Deconcentrating of the statistical services, in general direction of statistics within the various ministries;	No procedural arrangements;
Availability of technical skills within INSD, and universities' research centers to participate in the development of country specific parameters;	Weak legal and regulatory arrangements;
Improvement in the GHGI methodology used, and greater sectoral coverage;	Weakness of the backup and archiving system;
Strong mobilization of Burkina Faso to fulfill its commitments under the United Nations Framework Convention on Climate Change and the Paris Climate Agreement.	Lack of a strategic skills development plan for governmental employees.
OPPORTUNITIES	**THREATS**
Availability of TFPs to support the development and implementation of a formalized and effective MRV system in Burkina Faso.	Lack of funding to support the deployment of the country NDC.

INTERNATIONAL GOOD PRACTICES

International good practices have been identified through information sharing on mature and recognized MRV systems, or as organizational best practices addressed in organizational standards, such as ISO9001.

See below a list of MRV best practices:

i. Combine the CDN with the national development strategic document:
It will be vital to combine the CDN and the national development strategic document, to make it a single harmonized document and ensure that sustainable development is the only axis of modernization, behind which all the driving forces are involved.

ii. Formalize the arrangements (institutional, legal/regulatory, and procedural):
In what concerns the formalization of the arrangements, there are different aspects to take into account:
- Institutional (relations between institutions):
  - Expectations, mandates, roles and responsibilities, timelines;
  - Information/data required (definitions, types, formats, contents, transmission modes, frequencies);
  - Sharing of resulting reports.
- Legal/regulatory: reinforce legal texts for collaboration between institutions, sharing of information/data (quality, quantity, deadlines), sharing of resulting reports, and if necessary, define the escalation mode if requests do not are not met and if expectations are exceeded.
- Procedural: document the collection methods, treatments, analysis, compilations, QA/QC verification, and reporting methods (by the actors involved, and guaranteeing proper training for any new employee).

Note: sharing of experiences and types of existing documents. Approach countries (Canada, Ghana, & EPA/USA).

iii. Establish continuity between reporting cycles:
In regards to the establishment of business continuity between reporting cycles, it's important to keep in mind that reporting obligations are treated as projects, with a start and an end, and a total interruption between two projects; which leads to a restart every time, with the feeling that these reports only meet the needs of the UNFCCC and the international community. It is necessary to pass from project mode to process mode, that is to say in a continuously manner, without interruption, featuring an exploitation at the national level of the reports.
It's important to do it often in order to disseminate information and raise awareness of the population and policies (Yearly GHGI, and NDC progress reports).

iv. Develop an integrated MRV IT tool:
Developing an integrated IT tool will bring certain important advantages to the process, such as facilitating communication, processing, analysis and backup of data and other information sharing.

Note: Sharing experiences. Getting closer to countries (Honduras, Ghana, Canada, & EPA/USA).

v. Set up a consultation platform on the national MRV system:
Setting up a consultation platform for stakeholders and experts from the various MRV projects and initiatives in Burkina Faso will provide an easier way to pool resources.

ANNEX 1 — GHGI COMPARATIVE SHEET

	GHGI (2019)	GHGI (2007)	GHGI (2001)
Guideline	2006 IPCC Guideline Tier 1 and tier 2 used where data were available.	Revised 1996 IPCC Guideline Tier 1	Revised 1996 IPCC Guideline
Gaz	-	CO_2, CH_4, N_2O, CO, NO_x, NMVOC	CO_2, CH_4, N_2O, No_x, CO, NMVOC, SO_2
Time Serie	1995 to 2015	1999 to 2007	Base year 1994
Ref. Year	-	2000	1994
GWP	-	-	1995 (CH_4: 21; N_2O: 310)
Sectors	• Energy No evidences that the analysis of the reference vs sectorial approaches was done	• Energy	• Energy • Reference vs sectorial approaches Analysis
	• Industrial processes and products use (IPPU)	• Industrial Processes	• Industrial Processes
	• Agriculture, Forestry, Livestock, other land use (AFOLU)	• Agriculture, Forestry, Livestock, Land use	• Agriculture, Forestry, Livestock, Land use
	• Waste	• Waste	• Waste
Key Categories Analysis	• Done	• Done	-
Incertitude Analysis	Done for the agriculture category		
Reports	• 3rd NC (being elaborated)	• INDC – NDC (Horizon 2030); • 2nd NC	• 1st NC; • National Inventory Report (NIR)
Comments	-	Realized by the INSD	-

ANNEX 2 — LIST OF ORGANIZATIONS MET

Organization: DGEVCC	**Date of the meeting :** 29/04/2020
Person met: BATIENE Mamadou **Contacts (Email, Cell) :** 76 560 527 batiemadou5@yahoo.fr	**Role :** Focal Point REDD+
Comments : Questionnaire of governing entities, (Doc. NEYA)	

Organization: Département de la Coordination des Convention International (DCCI)	**Date of the meeting :**
Person met: LANKOANDE Ibrahim **Contacts (Email, Cell) :** ibralanko@yahoo.fr	**Role :** Director of the Department of Coordination for International Conventions
Comments :	

Organization: SP-CNDD	**Date of the meeting :** 23/04/2020
Person met: GOUNGOUNGA Justin **Contacts (Email, Cell) :**	**Role :** Permanent Secretariat of National Council for Sustainable Development
Person met: TRAORE Do Etienne **Contacts (Email, Cell) :**	**Role :** Climate Change Focal Point
Comments : Questionnaire of governing entities (Doc. NEYA et Doc. YANON)	

ANNEX 3 - QUESTIONNAIRE

For the governing entities

	Questions
1	How many GHGI has Burkina Faso achieved since the ratification of the convention in 1993?
2	How long did it take to complete the GHGI (weeks, months, year)?
3	Can you provide us with the list of reports [What/Title, Date (Started, Completed, Submitted)]?
4	What are the constraints encountered during the preparation of these reports?
5	What improvements have been made during the preparation of these reports?
6	What is your (your structure and you) role and responsibilities in matters of GHGI?
7	What contributions have you made to GHGI?
8	What are your strengths in achieving GHGI?
9	What initiates the process of developing GHGI?
10	What is the process/steps that you follow when you are developing the GHGI?
11	How are GHGI development activities planned?
12	Who carries out the planned monitoring/evaluation activities?
13	How are planned monitoring/evaluation activities carried out?
14	When are planned monitoring/evaluation activities carried out?
15	How do you coordinate GHGI activities?
16	What documents are produced (work plan, etc.) by your structure in the context of preparing the preparation of GHGI?
17	How are you organized (an individual/group of individuals) to manage the process of developing GHGI?
18	What functions are represented? What are the responsibilities and deliverables of the individuals involved?
19	What are the roles and responsibilities of the functions represented?
20	What deliverables are expected from the functions involved?
21	What expertise will you seek to do the GHGI? How do you mobilize them?
22	What is the process for selecting experts?
23	What are the methods of GHGI, which are determined in agreement with the experts?
24	What are the parameters of the GHGI, which are determined in agreement with the experts?
25	What tools and equipment are available for developing GHGI?
26	What structures/services are involved in the GHGI process?
27	What are your expectations with regard to these structures?
28	What are the contributions of these structures?
29	Who are your key technical and financial partners who support you in GHGI/MRV?
30	What information/data/documents did these structures provide you?
31	How is this information/data/documents transmitted to you (the modes of transmission)?
32	What are the formats of the data transmitted?
33	How often is the information/data/documents transmitted?
34	After receiving the information/data/documents, do you inform the information provider of your level of satisfaction and compliance with the information received?
35	How is the analysis of key categories carried out?
36	How is data processing and analysis carried out?
37	What is the format and model of the data processing and analysis product?
38	How is the integration and compilation of sectoral GHGI carried out to obtain the National GHGI?
39	How is the verification, QA/QC of the GHGI National?
40	What are the evidences that the checks, QA/QC were carried out on the last two National GHGI?
41	Where are the previous GHGI reports/data/documents/information saved?
42	What funding was obtained in the context of the development of GHGI (source, amount, received on)?
43	Can you provide us with the financial reports of the various reporting obligations that you have completed?
44	Can you provide us with a copy of the agreements/protocols established with the structures (data providers) to facilitate their long-term collaboration?
45	Have you established procedural arrangements for the Analysis of Key Categories?
46	Have you established procedural arrangements for data collection?
47	Have you established procedural arrangements for the processing and analysis of data?
48	Have you established procedural arrangements for the compilation/integration of sector reports?
49	Have you established procedural arrangements to determine the uncertainties?
50	Have you established procedural arrangements for verification, QA/QC?
51	Have you established procedural arrangements for the template reporting tables?
52	Have you established procedural arrangements for the reporting template?
53	Have you established procedural arrangements for safeguarding reports?

54 Have you established procedural arrangements for data backup?

55 How will the experts get the data?

56 How do you ensure the collaboration of structures which are approached by experts to obtain data?

57 Have you ever intervened to facilitate collaboration between structures and experts?

58 What have you done, since you had to intervene to facilitate collaboration between structures and experts?

59 Do you have a strategy for developing internal expertise/skills (Ministries/Sector agencies)?

60 Do you have a register of individuals (function/sector/structure) who have participated in skills development activities relating to the development of GHGI in the past five years?

61 What are the challenges and constraints that you encountered in the process of developing GHGI?

62 What are the recommendations given the challenges and constraints that you encountered during the development of the GHGI?

63 What are the lessons learned in the development of GHGI?

64 What do you think is the ideal GHGI process (please describe it)?

65 How do you maintain communication between government structures and actors?

66 Do you see the need to set up a national framework on the MRV system in Burkina?

67 If you see the need for a national MRV system framework, what is your vision of such a framework?

For the sectorial experts :

Questions
1 How many GHGI have you been involved in, as an expert?
2 Which GHGIs have you been involved in?
3 What is your area of expertise (sector/categories/sub-categories)?
4 What are your roles and responsibilities (as an expert) in the GHGI development process?
5 For your sector, are all the categories/sub-categories estimated? If not, are the omitted categories/subcategories explained?
6 Are there estimates for all years in the time series?
7 Are emissions of all gases included?
8 Does the submission of the inventory explain the reason for the gaps (Exclusions)?
9 Does the inventory report outline plans to fill the gaps in the future? Does the report explain how and when the gaps will be filled? Does the plan seem reasonable to you?
10 Where do you find the data for existing activities?
11 Where do you find the data for new activities?
12 How do you get the missing data?
13 What are the methods (equation, third party, DA, FE) of developing GHGI, that you apply as an expert?
14 As an expert, what are the GHGI parameters you determine?
15 Have you documented the methods, parameters, hypotheses, equations, data (DA, FE, and... and their sources)?
16 What tools and equipment do you use as experts in the development of GHGI?
17 What structures/services/function/contact details/name provide you with data?
18 What information/data/documents did these structures provide you?
19 How is this information/data/documents transmitted to you (transmission methods)?
20 What are the formats of the data transmitted?
21 After receiving the information/data/documents, do you inform the information provider of your level of satisfaction and of the conformity of the information received?
22 How is the analysis of key categories carried out?
23 How is data processing and analysis carried out?
24 What is the format and model of the data processing and analysis product?
25 How is the integration and compilation of your sector GHGI carried out?
26 What documents have you produced in preparation for the preparation of the GHGI?
27 Do you estimate CO_2 emissions from fuel combustion using the benchmark approach?
28 Are the results of the comparison between the benchmark approach and the sectoral approach reported and treated if necessary?
29 What rules/methods do you apply to avoid double counting?
30 Have you performed an uncertainty analysis?
31 How is the QA/QC verification of the GHGI in your sector carried out?
32 Provide us with the evidences, verifications, QA/QC carried out on the GHGI of your sector?
33 Where are the GHGI reports/data/documents/information saved in your sector?
34 What are the challenges and constraints that you encountered in the process of developing GHGI?
35 What are your recommendations given the challenges and constraints you encountered during the development of the GHGI?
36 What are the lessons learned in the development of GHGI?
37 What do you think is the ideal GHGI process (please describe it)?
38 Do you see the need to set up a national framework on the MRV system in Burkina Faso?
39 If you see the need for a national MRV system framework, what is your vision of such a framework (please describe)?

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