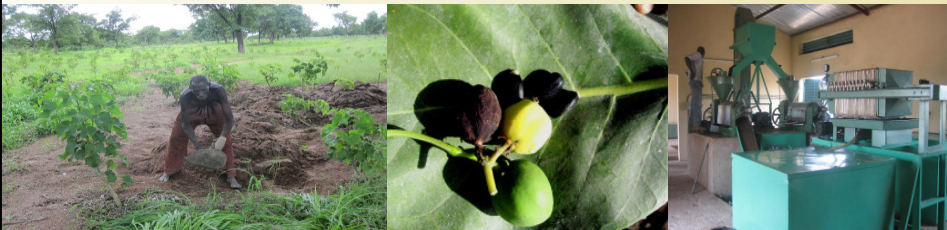


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## Sustainability Principles, Criteria & Indicators for the production of biofuels in Mali


Ousmane OUATTARA Mali Folkecenter



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## Presentation of Country

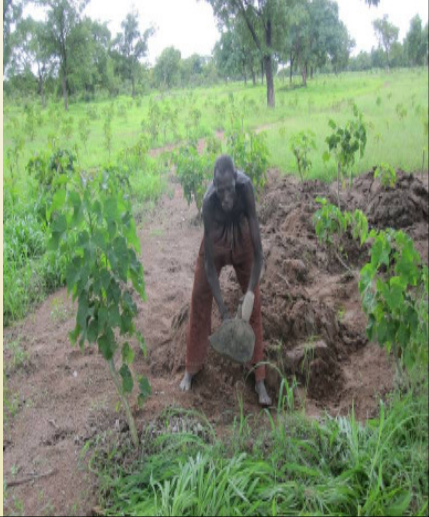
- Mali is a landlocked country in West Africa which covers an area of 1,241,248 km<sup>2</sup>, of which 51% consists of desert lands and 4% of cultivated land.
- Its population is estimated at 14,517,176 inhabitants (with an average annual growth rate of 3.4%). The majority of the population (approximately 73%) live in rural areas.
- The urbanization rate is 26.8%.



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## Electricity

- Electricity demand is growing **10% annually**,
- Represent only **2%** of the energy consumption in households.
- The national rate of access to electricity is **25.27% in 2009**.
- The electrification rate is about **58.2% in urban areas**, while only **15% in rural areas**.
- According to the targets of the NEP, the rural electrification rate was increased from **1% in 2005 to 12% in 2010 and 55% in 2015** and the country now seems on track to achieve its objectives.





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## Hydrocarbon

- Annual imports represented **710,642 tons in 2010** to over U.S. \$ **554 million**,
- Annual growth of over **6% between 2004 and 2010**.
- The current economic growth (**4.4% in 2009**), requires a rapid increase in the production of energy and identification of alternatives energy sources,

*NB: The sub-sector is characterized by a imports of petroleum products, with a dependency ratio of 100%.*





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## BIOFUEL POTENTIEL


Potential Biomass Mali has:

- (i) in terms of fuelwood:  
**33 million hectares** with a standing volume of **520 million m<sup>3</sup>**
- (ii) several million tonnes of agricultural waste and vegetable waste,
- (iii) **2.4 million** liters of alcohol since 1999/year
- (iv) approximately **2000 hectares** of **jatropha** plantations in extension for the production of biofuel.




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### Project Partners:



**WIP** Your Partner in the field of **Renewable Energies**



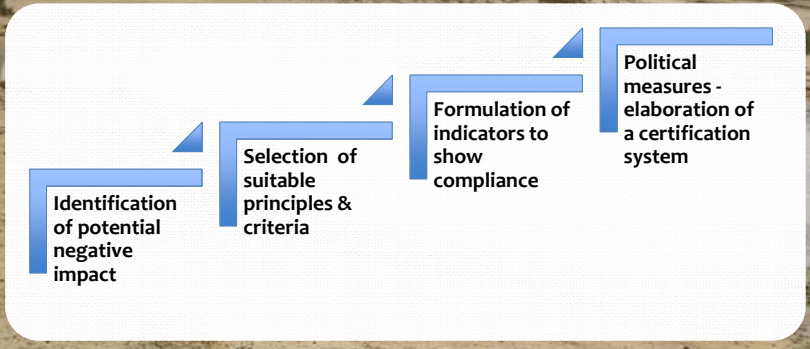
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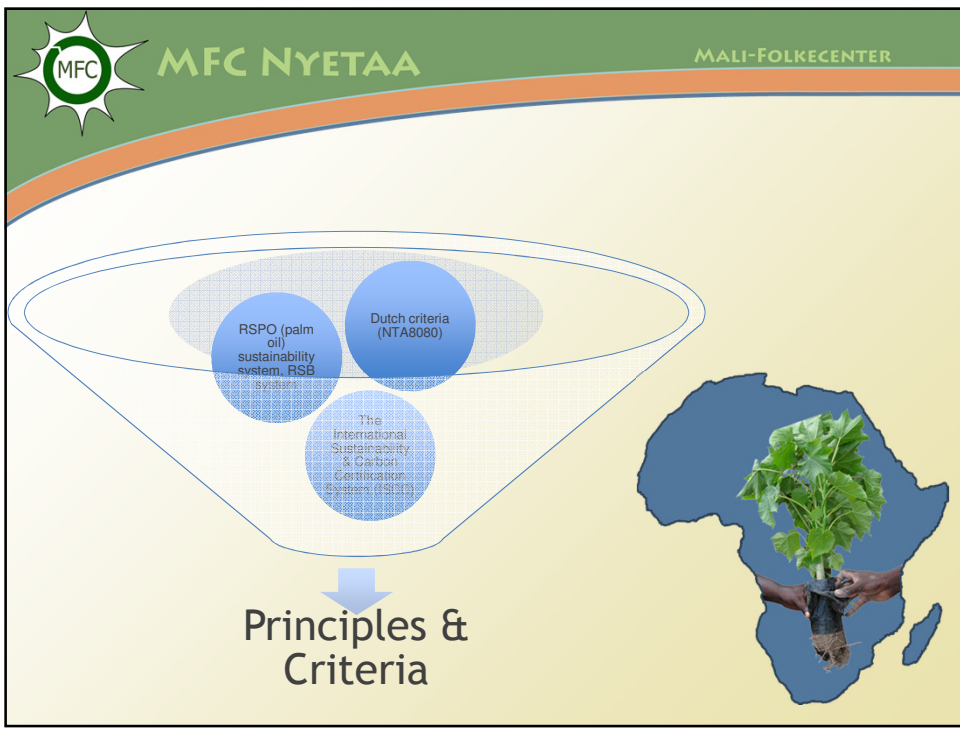
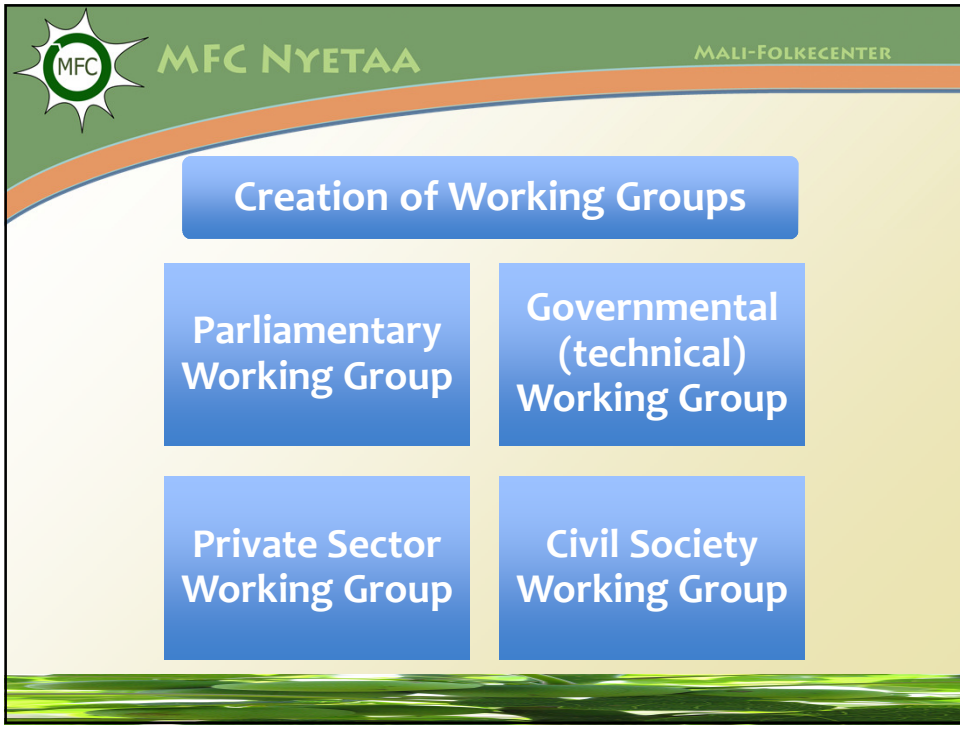
**Methodology :**

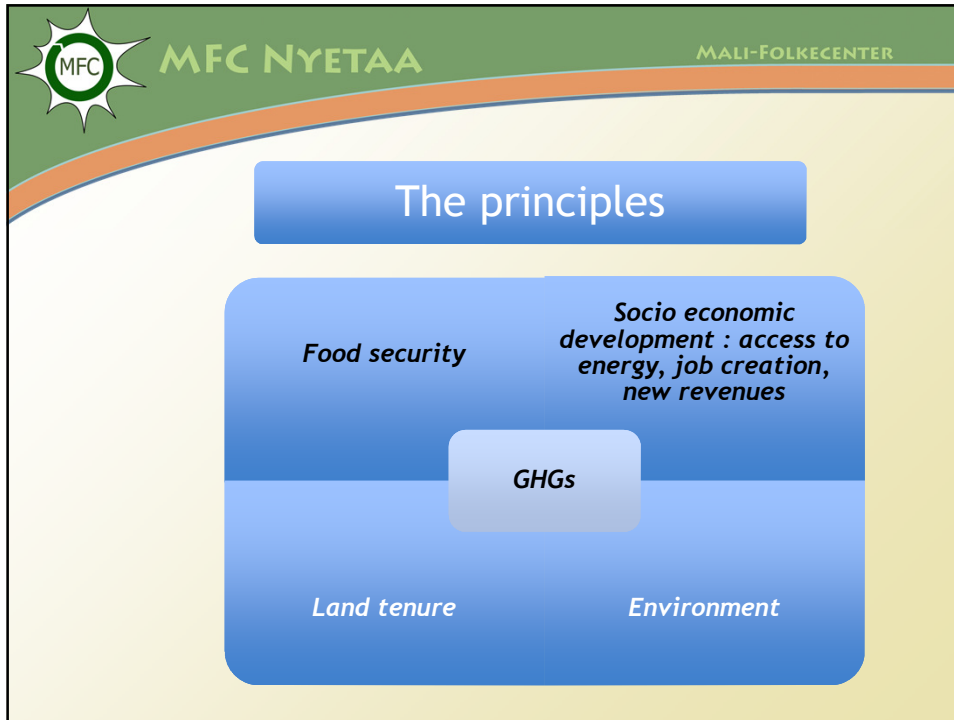
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# Approach



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graph LR; A[Identification of potential negative impact] --> B[Selection of suitable principles & criteria]; B --> C[Formulation of indicators to show compliance]; C --> D[Political measures - elaboration of a certification system];
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Principles	Criteria	Indicators
GHG Emission réductions	1. Contribute to the reduction of GHG emissions: CO <sub>2</sub> benefits should be at least 35% for the biofuel in question (with a target of 50% for the entire chain of production and distribution)	Documented procedures for the mass balance system for sustainable biomass
		Characteristics of GHG for each type of biomass (with authorized default values)
		3 Means of announcing suppliers declared sustainable
		4 Mass balance procedures : recording inputs, conversion factors and durability
		5 Recording the origin of the biomass characteristics GHG
Agro-environmental practice	2. Contribute to the reduction of GHG emissions: CO <sub>2</sub> benefits should be at least 35% for the biofuel in question (with a target of 50% for the entire chain of production and distribution)	6 - Statement signed by the suppliers to comply with good agricultural practices
		7 - Documentation rely on farming practices implemented for the production of biofuels
Land with high value in terms of biodiversity	3. The public areas of the Government of Mali, biodiversity reserves and grazing areas shall not be used for biofuel production	8- Information on the implementation of the Cartagena Protocol on Biodiversity
		9- Method of reporting where providers indicate that biofuels do not come from lands of high biodiversity value in 2010
	4. The production of biofuels must not compete with food production	10 - Official recording of land identified as having high biodiversity value
		11- Satellite images, maps official primary forest and other land that has been wooded for more than 2 years 12- Maps & records of areas of nature reserves, endangered species, or recognised by the IUCN 13- Analysis of econometric model or simulation-based foodstuffs trade 14- Information available on the evolution of prices of basic commodities in the local market

Principles	Criteria	Indicators
Land with a high carbon stock	5. The production of biomass for biofuels is prohibited on land with high carbon stocks	15- Existence of records of land previously identified as having a large stock of carbon
		16- Accessibility of these records and official documents to independent auditors
		17- Official map of continuously forested areas with an area of more than 1 hectare (according to the definition made of forests in Mali)
		18- Maps and official list of wetlands
		19- Location of biofuel producers
Socio-economic sustainability	6. Biofuel production shall contribute to socio-economic development through improved services and energy infrastructure  7. The production of biofuels must be in compliance with human rights and children's rights  8. Take into account the gender aspect in the production of biofuels  9. Biofuel operations shall respect the land rights and their uses	20- Information or inquiries on the level of improvement of roads and other infrastructure
		21- Information or inquiries about the level of improved basic energy services
		22- List of employees of suppliers of biofuels used
		23- Analysis of statistical data on the use of vulnerable groups in the field of production and biofuel processing
		24- Information and investigations on the composition of local biofuel project teams
		25- Analysis & monitoring data for the different types of land tenure
		26- Assignment of available land by the controlling entity
		27- Investigations or information on the reasons for any population displacement related to the installation of biofuel projects
Protection of soil, water and air	10. The impact of biofuels on the environment (water resources, soil and biodiversity) must be known  11. Biofuel production should comply with regulatory requirements of the country and all international treaties to which Mali is a signatory	28- Information on measures to protect soil, water and air by suppliers during the production and processing of biofuels
		29- List of international treaties to which Mali is a signatory
		30- Form for suppliers to express engagement to comply with the various treaties

