Scaling-up Renewable Energy in Mali:

Alleviating Poverty and Supporting the Growing Economy for the Poor

SREP SUB-COMITTEE MEETING

JUNE 21, 2011 – Cape Town, South Africa

Presentation Overview

- SREP-Mali Key Dates
- The Process for Designing the SREP-Mali
- Mali Key facts and figures
- Strenghts and Weaknesses of the Institutional/Political Framework
- Development Challenges
- A Solid Basis for Scaling Up RE in Mali
- Main Challenge and Vision for the SREP-Mali
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- Strategic Coordination (CMC)
- Next steps

SREP-Mali Key Dates

Mali expresses its interest in being a pilot country	April 2010
Mali is confirmed as a SREP Pilot Country	August 2010
Washington Meetings	November 2010
A Stocktaking Analysis is being done	January/March 2011
The Scoping Mission is held	February 2011
The first Joint Mission is held	April 2011
The environmental and social assessment of the Program is done	April/ June 2011
The SREP Projects are elaborated	May/June/July 2011
Cape Town Meetings	June 2011

The Process for Designing the SREP-Mali

A **Stocktaking Analysis** to clarify the strenghts/weaknesses, the bottlenecks of the energy sector and the RE sub sector, and to identify key intervention areas to scale-up RE in Mali

Scoping and Joint Missions to validate and fine tune the findings of the stocktaking exercise, to validate the key intervention areas and strategic axes of the SREP-Mali

Various **meetings** with the National SREP Commission, the MDBs/UNS and other stakeholders to develop projects ideas, discuss the institutionnal arrangements, etc.

SREP Investment Plan and projects concepts are being designed

Mali Key Facts and Figures

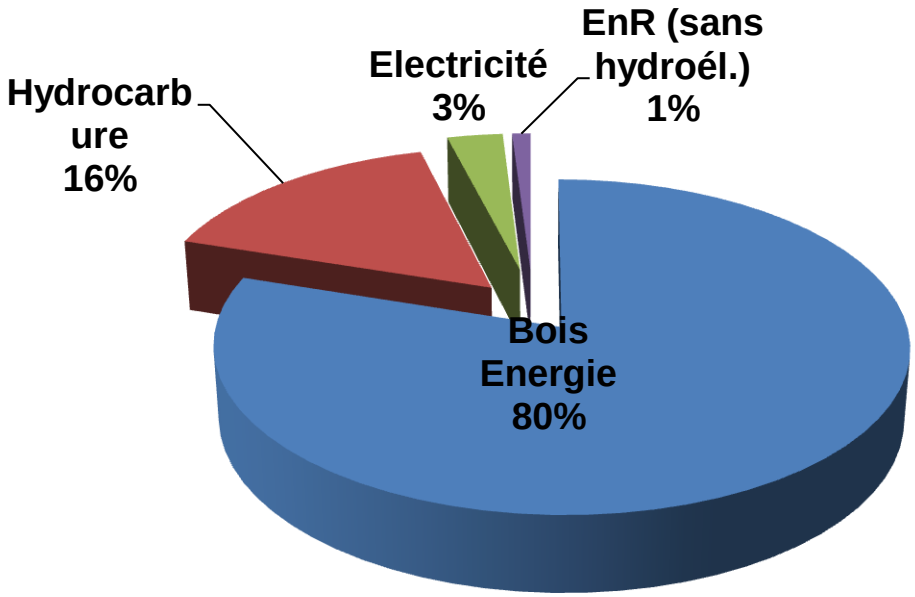
Mali context

- **Population: 14.5 million** (50.5% women)
- **Area: 1,241,238 sq km** (2 / 3 desert)
- **The average rainfall** varies between 100 mm and 1200 mm
- **Climate Projections** show increasing temperatures and extremes events
- **Two major rivers:** the Niger and Senegal and their tributaries
- **Forests are limited** and land degradation is a serious issue
- **The economy relies on the primary** sector (36.5% of total GDP)
- **One of the poorest countries** in the world (UNDP HDI : 160 on 169 countries)

Mali Key Facts and Figures

Energy Overview

- **Excessive consumption of biomass**: 80% of the national consumption of energy
- **Oil used for consumption** (16%) is all imported
- **Low rate of power consumption**: 3% of the national consumption of energy
- **Low access to electricity:** 25% (13.8% rural)
- **Strong growth in demand** (+ 10% / year)
- **Weak production capacity**



Development Challenges to Consider while Designing the IP

- **Mali is one of the poorest countries in the world** (UNDP HDI : 160 on 169 countries) with about 50% of its population under the age of 15.

- **About 50% of its land is in desert zones**, and land degradation is a serious issue in this country where 80% of the energy used by households comes from wood and where climate trends show growing variability (extreme events) and increasing temperatures.

- **Reforms in the energy sector are ongoing but very difficult** to manage since they imply raising the price of electricity in a country where the population cannot afford the real production price.

Strenghts and Weaknesses of the Institutional/Political/Regulatory Framework

Strenghts	Weaknesses
There is a National Energy Policy already in place, and two Strategies focused on RE. Many institutions have been created to implement the National Strategies for RE and Biofuels: DNE, CNESOLER (about to become ANAER), AMADER, ANADEB, AEDD	Lack of coherence in the institutional set up: there is a need to clarify the mandate of each institution with regards to the current context
Arrangements for public-private partnerships exist and have been experienced a few times in the energy sector (hydroelectricity/ solar plants); Private sector is already very much involved in the energy sector through the rural electrification set up	Lack of specific mechanisms and experience for public-private partnerships in the energy sector; still bottlenecks that are difficult to overcome; Lack of specific arrangements to attract private sector investments;
A few development partners support the development of the energy sector and energy efficiency activities	Electricity prices are already high but do not cover the production costs; Lack of financing in the energy sector

Other major issues include :

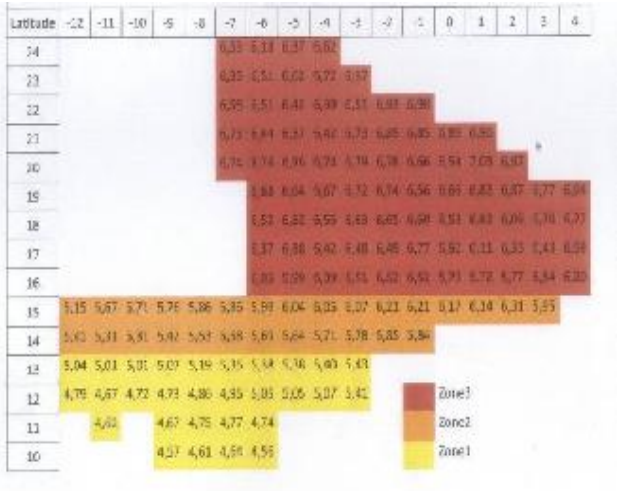
- Dependence on fossil fuels and vulnerability due to the volatility of oil prices;
- Vast and rural country where grid extension is extremely expensive;
- Extreme poverty of some populations

A Solid Basis for Scaling Up RE in Mali

A strong Potential for RE Development

Solar Potential:

6 kWh/m2/day with 7 to 10 hours of sun/day



Source: ENI 2009

Wind Potential:

mainly in northern regions, average of about 3 to 7 m/s

A study is under finalisation to provide greater details on the exact potential in many sites of the country

A Solid Basis for Scaling Up RE in Mali

A strong Potential for RE Development

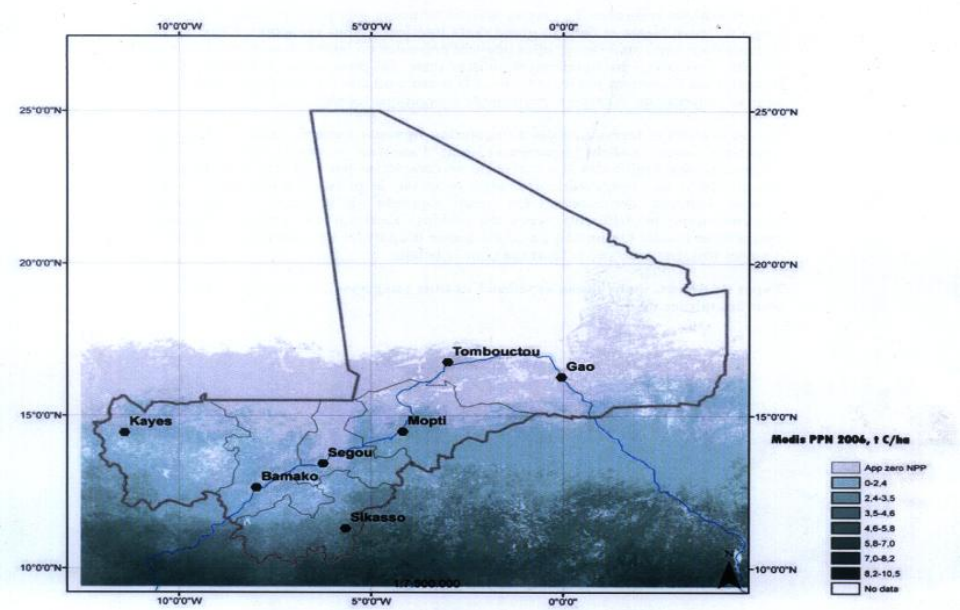
Hydro Potential:

Two big rivers with 20 sites identified for which the total power is estimated around 1150 MW representing an average annual production of 5 000 GWh

Biomass/biofuel Potential:

33 million ha of wood, millions of tons of agriculture residues,

2000ha of jatropha under extension



A Solid Basis for Scaling Up RE in Mali

Some satisfactory results already achieved

- Installed RE equipments: solar lighting kits, solar pumping systems, solar dryers for food, biogas digesters, hybrid solar PV/fuel power plants, mini-hydro power plant, etc.
- About 30MW of installed capacity;
- Legislative texts supporting the development of RE such as the one exempting taxes on the importation of RE equipments;
- About 10 development partners supporting projects/activities in the sector (WB, AfDB, IFC, UNDP, UNEP, DANIDA, EC, AFD, India, GIZ, etc.).

About 1000 solar cookers

3 Solar Plants producing 1 MWc

About 600 Solar pumping systems

More than 1500 solar water heaters

Some biofuel press systems

More than 1100 solar food dryers

Main Challenge and Vision for the SREP-Mali

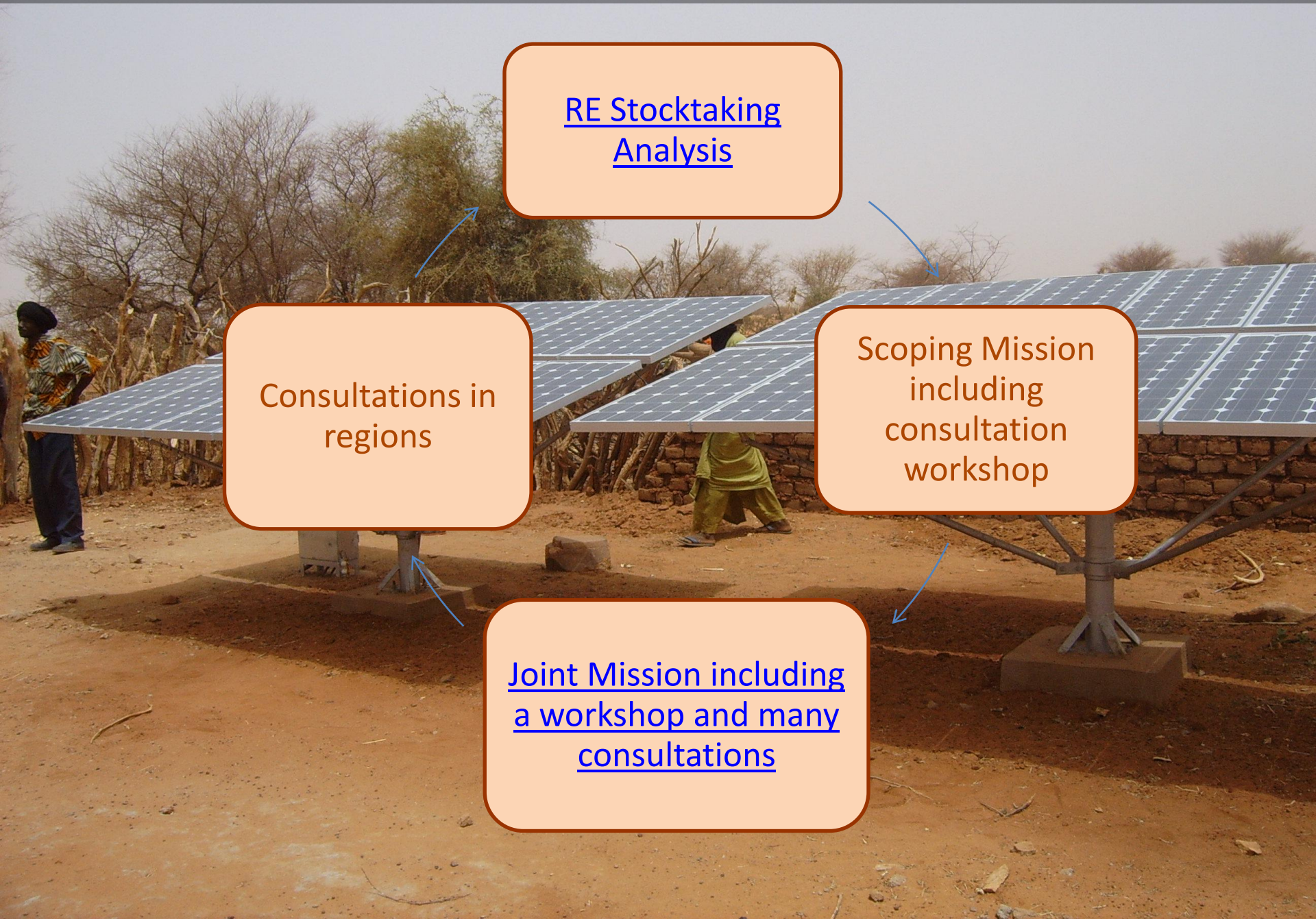
The challenge is not only to provide more energy, but to provide high level quality energy that is renewable, clean and inexpensive.

Answering this challenge requires a transformational change that will get energy from a position of bottleneck to that of an asset for the country's sustainable development.

Vision for the Future

Decisive contribution of the renewable energy sub-sector to poverty reduction and sustainable development in Mali through an integrated approach to development policies, strategies and investment programs based on efficient public-private partnerships.

The Consultation Process for Designing the SREP-Mali

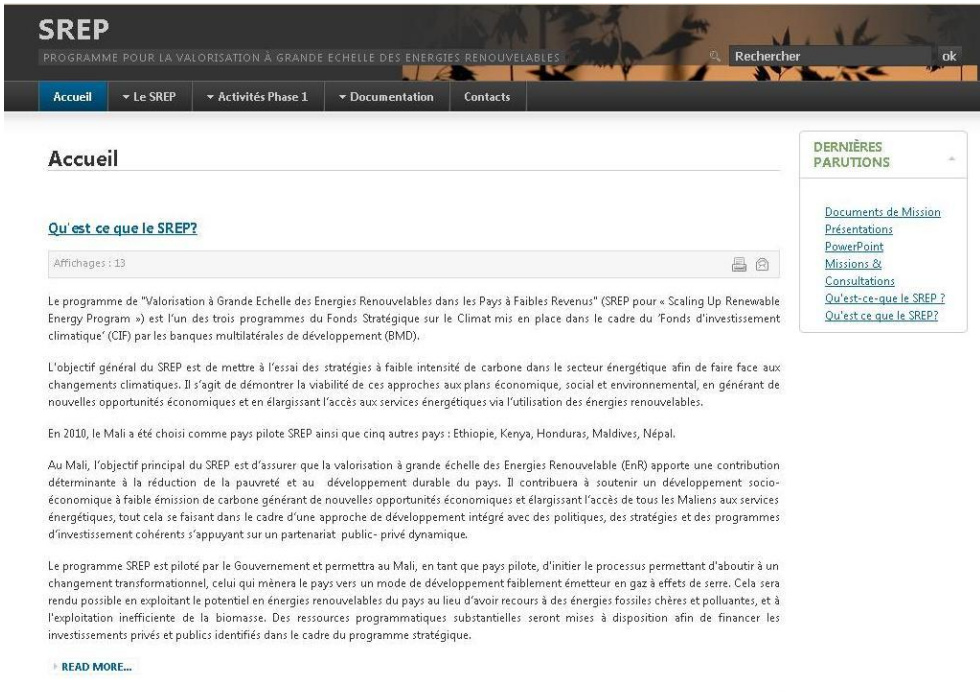


The Consultation Process for Designing the SREP-Mali

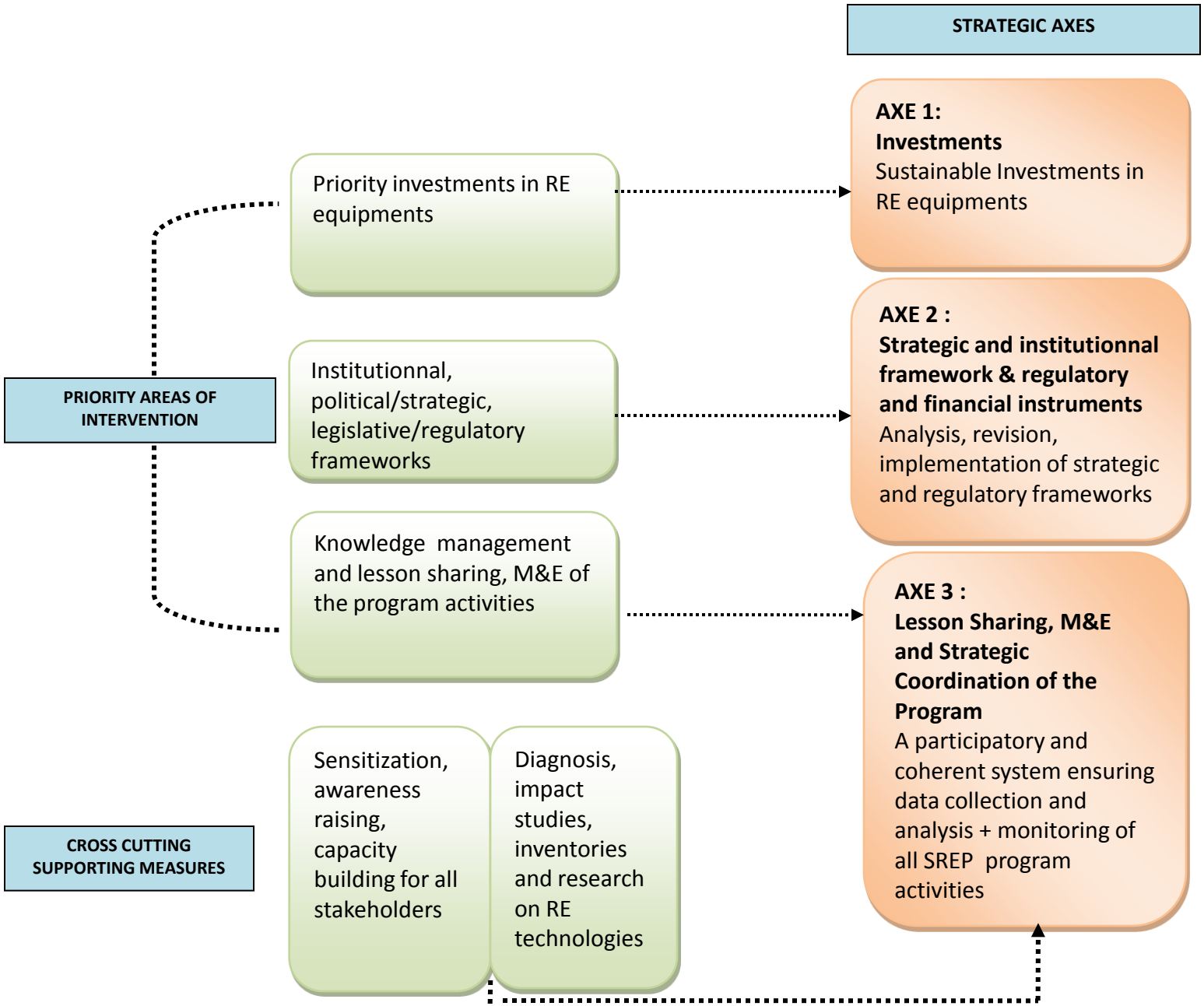
In addition, there were also:

- **Regular meetings** from October 2010 up to now, with various partners according to identified needs, especially on the projects ideas and potential cofinancing

- **A dedicated website** created before the Joint Mission to make the documents available to all



Strategic Axes of the SREP-Mali



Identified Projects

Program Strategic Coordination

Estimated Total Budget: US$ 4 Million

SREP envelope: 10%

Project 1
Solar PV Plant (IPP)

Estimated Total Budget: US$60millions

SREP envelope: 30%

Project 2
Solar PV for Rural Electrification

Estimated Total Budget: US$85millions

SREP envelope: 30%

Project 3
Mini/Micro Hydro

Estimated Total Budget: US$22millions

SREP envelope: 15%

Project 4
Bioenergy

Estimated Total Budget: US$20millions

SREP envelope: 15%

Identified Projects: some expected transformational impacts

- Increase energy access / strong development of clean energy technologies – without SREP, the emergency and investment costs would rather suggest thermal plants

- The new enabling environment is more attractive for development partners and private sector to invest in the sub sector

- The regulatory and legislative framework is set for great improvement of private sector mobilization and investments

- Forests conservation, and related CO2 emissions saved

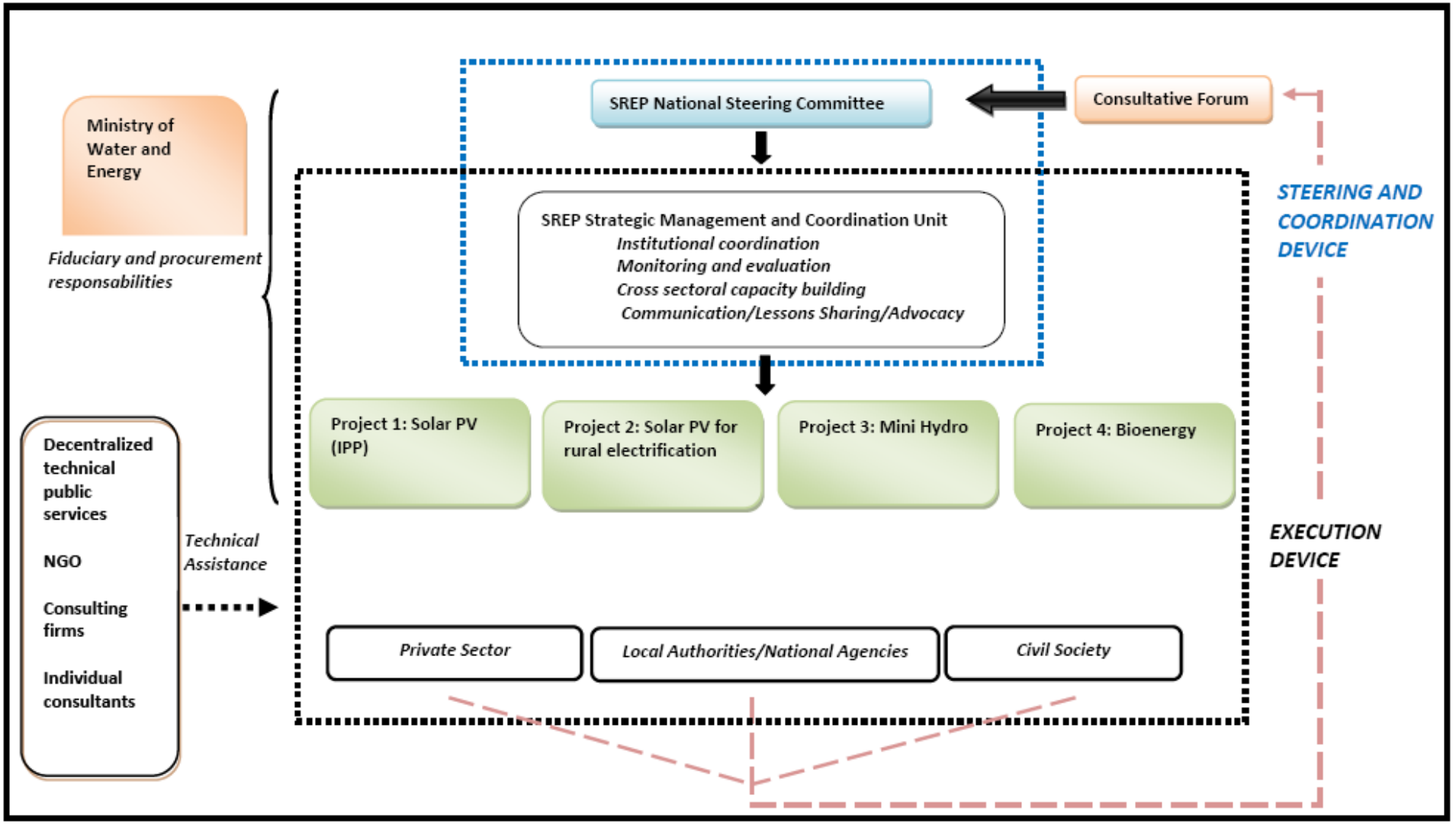
- Jobs created, small businesses created, mostly in rural areas where unemployment rate us very high (through rural electrification)

- Women empowerment through job creation + girls save time on wood collection to go to school and study more

Strategic Coordination / Country Management Component

Components	Main Activities
Sub-Component 1: Strategic coordination and fund raising	•Administrative and fiduciary management of the program activities •Strenghten coordination between the four projects through appropriate communication channels •Ensure linkages with PRSP and national policies and strategies •Ensure that SREP principles are respected and implemented •Fundraising and support the GoM in benefiting from new CC financing
Sub-Component 2: Lessons sharing, Advocacy and communication	•Define and implement advocacy and communiation strategy •Disseminate SREP results at all levels, including regional and international with other SREP countries •Conduct specific cross sectoral studies, international/regional benchmarking for lessons sharing, etc. •Organise trainings and lessons sharing sessions at the sub regional level (West Africa) to ensure replication in the sub region
Sub-Component 3: Monitoring and Evaluation	•Develop and implement programmatic M&E system •Ensure linkages with the projects M&E systems •Capitalize knowledge extracted from the M&E for knowledge management •Ensure implementation of the program ESMP
Sub-Component 4: Cross sectoral capacity building (cross sectoral only)	•At the institutional level: Support the revision process of the national policy/institutional/regulatory frameworks (when cross sectoral) •For private sector operators: management trainings, improvement of the regulatory/fiscal framework related to private sector and appropriate trainings, knowledge transfer, etc. •For commercial banks: RE trainings to identify good projects, development of specific credit lines and micro credit systems, etc.

Institutional Set Up (under discussion)



Next Steps

Consultations in regions	July/August
Finalization of the environmental and social analysis	July
Fine tunning of the project concepts with guidance from the SREP Sub-Committee	July/August
Write Up / Consolidation of the IP	July/August
Discussion with the TFP and other partners to ensure cofinancing of the projects	July/August
Translation of the first sections of the PI to ensure quality review by MDBs	August
Finalization of the IP for validation by MDBs and the Government	August/September
Independent evaluation of the IP + consultations on the DNE website	September
Revision of the IP including recommendations from GoM + external reviewer + MDBs + public consultations	September
Finalization and Submission to SREP Sub-Committee	Early October

Thank you for your attention !