



CCDA-VI

ClimDev-Africa



ECOSYSTEM SERVICES IN CLIMATE CHANGE ADAPTATION STRATEGIES IN WEST AFRICA

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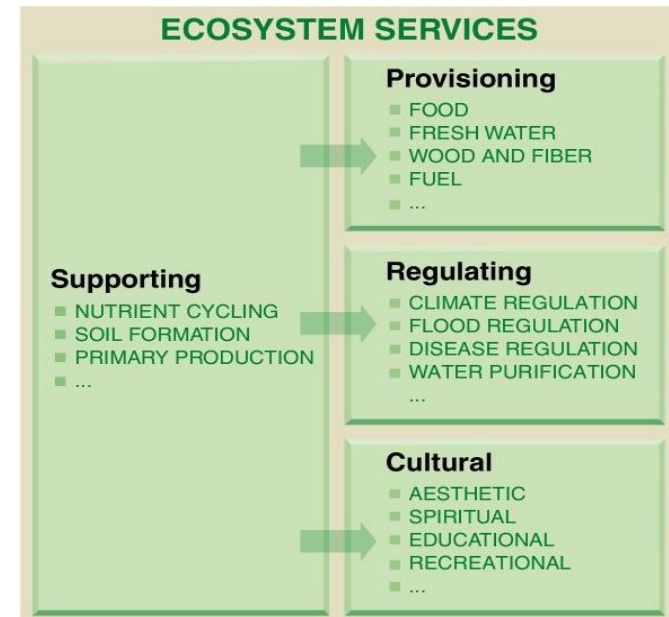
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Problem statement

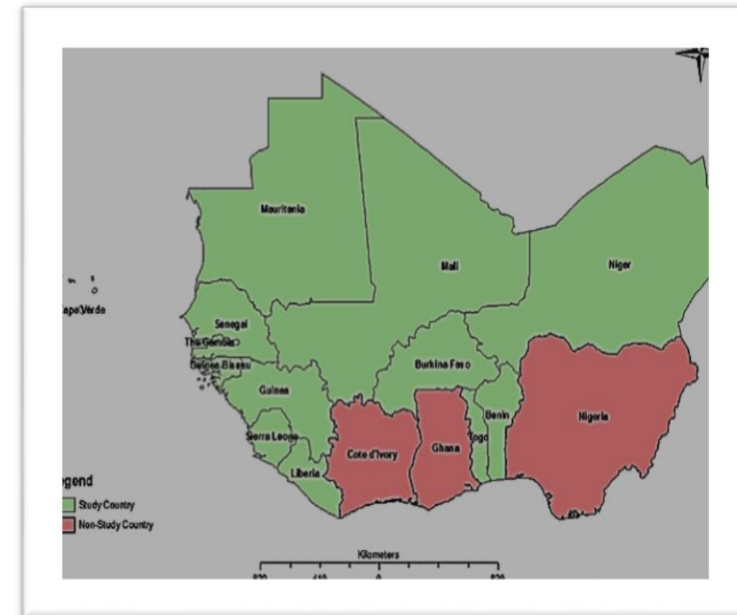
- Ecosystems support life through providing ecosystem services. These are benefits that natural ecosystem provide to the society
- Despite their crucial roles, ecosystems are under threat globally due to **anthropogenic factors**
- Globally ecosystem degradation on increase in the last 50 years (Munang, 2012)
- 60% of global ecosystems being used **unsustainable, threatened to extinct** (MEA,2005)



Problem statement Cont'd

West Africa

- Among the world's least developed region
- High poverty levels leads to high dependence / unsustainable use of ecosystems then high degradation / unproductivity translating to high poverty level
- High climate change effects e.g. recurrence of droughts, irregular rainfall patterns, increased desertification, crop failure etc
- 13/16 counties listed in the UN list of least developed countries (LDC)
- Reviewed 168 projects listed under NAPA in 13 countries
- Need for more climate change adaptation projects and strategies to reverse this trend
- Question, Are the projects addressing the community needs? Are they promoting or demoting ES?



Objectives

To assess ecosystem services in climate change adaptation projects in West Africa.

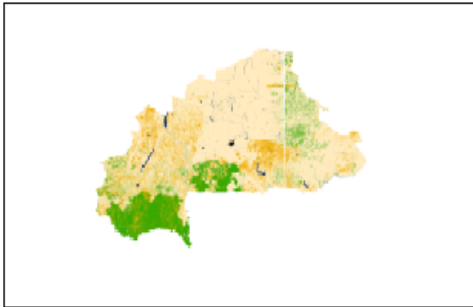
- i. To assess the land use land cover changes in rural West Africa
- ii. To assess the trends in the adaptation projects in rural areas in West Africa
- iii. To evaluate the extent to which the climate change adaptation projects have incorporated ecosystem services
- iv. To explore areas of redesigning and improving adaptation projects to enhance ecosystem services in selected projects.

Methodology

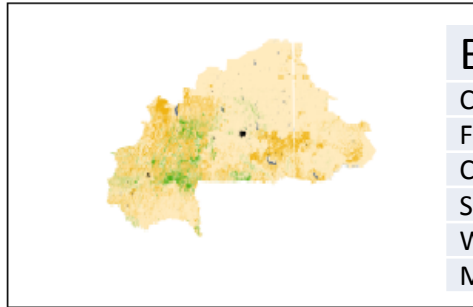
	Objective	Methodology
1	Land use land cover changes in rural West Africa	Spatial data analysis using ArcGIS 10.3
2	Assess the trends in the adaptation projects in rural areas in West Africa	<p>NAPA project review and analysis</p> <ul style="list-style-type: none"> - Developed database of the review projects (country, projects, thematic area...) - Inclusion / exclusion criteria for ES in projects
3	Evaluate the extent to which the climate change adaptation projects have incorporated ecosystem services	
4	Improving adaptation projects to enhance ecosystem services	Project analysis using CRiSTAL tool

Land use land cover change

Burkina Faso 2000



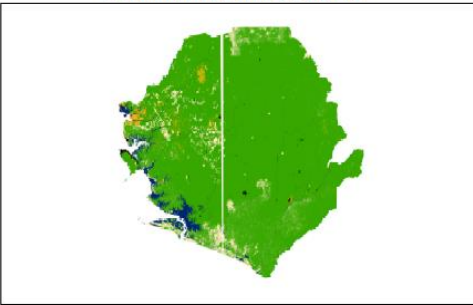
Burkina Faso 2010



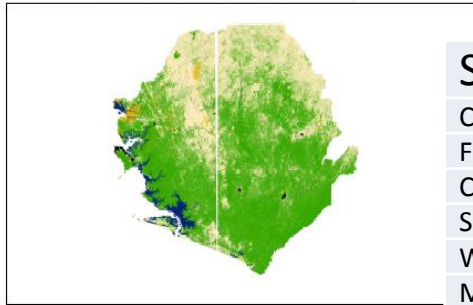
Burkina Faso

Class	2000 (%)	2010 (%)	Net Change (%)
Forest Cover	15.27986177	3.577451705	-11.70241006
Cultivated Land	13.1167257	15.4295112	2.312785499
Savanna Land	70.57804942	80.411196	9.833146583
Wetlands	0.838534246	0.334637368	-0.503896878
Modified Lands	0.186828871	0.24720373	0.06037486

Sierra Leone 2000



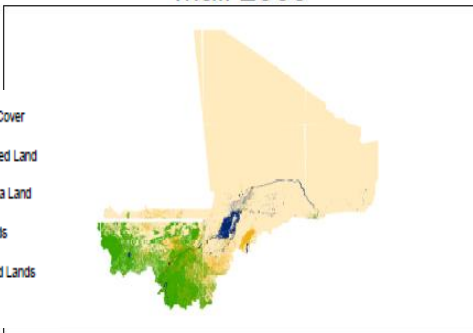
Sierra Leone 2010



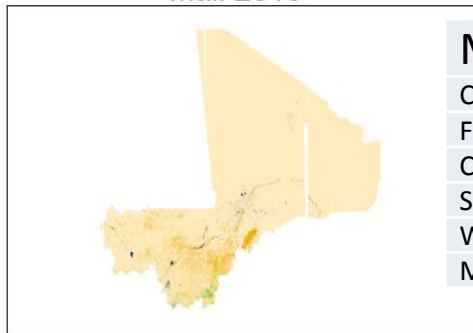
Sierra Leone

Class	2000 (%)	2010 (%)	Net Change (%)
Forest Cover	88.83868572	57.89815812	-30.94052761
Cultivated Land	1.453983315	1.307625744	-0.146357571
Savanna Land	6.302510128	37.28656286	30.98405273
Wetlands	3.071810484	3.107142296	0.035331812
Modified Lands	0.33301035	0.400510986	0.067500636

Mali 2000



Mali 2010



Mali

Class	2000 (%)	2010 (%)	Net Change (%)
Forest Cover	44.50812842	2.143421687	-42.36470674
Cultivated Land	16.52405183	28.22737763	11.7033258
Savanna Land	32.17140394	66.74210381	34.57069987
Wetlands	6.543901945	2.353562168	-4.190339777
Modified Lands	0.252513854	0.533534703	0.281020849





Trends in the adaptation projects in rural areas in West Africa

- Sectorial variation - Agricultural (32%), water (19%), forestry sector (10%)...cross cutting themes 10%
- Budgetary allocation – 63% <1M, 16% 1-2M USD, 9% over 4M USD.
- Geographical/spatial coverage – 49%, 28%, 29% sub-national, national, local
- Duration 46% 3 years, 30% 2 years, 15% 5 years.



Ecosystem services in the adaptation projects



- 55% direct, 36% indirect, 9% no mention
- Type of ES – 50% provisioning, 16% supporting, 31% regulatory, 3% cultural
- 67% single ES, 33% multiple services



Areas of redesigning



Community-based Risk Screening Tool - Adaptation and Livelihoods

1. Introduction

2. Project information

3. Project activities

4. Livelihoods context

5. Climate risk analysis: **Women**

[Livelihoods resources](#)

[Climate change](#)

[Climate hazards](#)

[Climate risk](#)

[Response strategies](#)

6. Climate risk analysis: **Men**

[Livelihoods resources](#)

[Climate change](#)

[Climate hazards](#)

[Climate risk](#)

[Response strategies](#)

7. Risk analysis summary

8. Project revision

9. New project activities

10. Evaluation criteria

11. Evaluation of new activities

12. Opportunities and barriers

13. Monitoring and evaluation

Welcome to CRiSTAL

CRiSTAL is a project planning tool that helps users design activities that support climate adaptation (i.e., adaptation to climate variability and change) at the community level. Specifically, it provides an analytical framework to help users understand:

- How current and potential future climate hazards affect/may affect a project area and local livelihoods.
- How men and women (and/or other social groups) respond to the current and potential future impacts of these climate hazards.
- Which livelihood resources are most affected by current climate hazards and which ones are most important for the response strategies.
- How project activities affect access to, or availability of, these critical livelihood resources.
- What project adjustments (revision of existing activities and/or design of new activities) can be made to support climate adaptation and reduce climate risk.
- To what extent the project contributes to climate adaptation.

To start the analysis, please choose either or both of the first two options or the last option:

- A. I want to revise existing project activities.
- B. I want to design new project activities.
- C. I only want to understand the livelihoods and climate context without revising existing activities or designing new activities.

Please click on the next step in the left hand menu to start your analysis. This menu bar will help you navigate through the entire tool.

Areas of redesigning

Adaptive capacity

- Increasing Natural Resources Management
- Alternative livelihoods that are less dependent on natural resources
- Sustainable resource usage
- Financial incentives
- Human resources capacity development

Areas of redesigning (Cont'd)

Mitigation capacity

- Increasing carbon sinks – forest cover, soils
- Financial incentives – REDD+, carbon credit
- Sustainable energy

Main Recommendations

What to how.....

- Community involvement in project design/implementation – CRiSTAL
- Scientific approach in project design – ArcGIS
- Project contextualization (social, economic, environmental dynamics)
- Integrated approaches:-
 - Landscape approach – multi-functionality of ecosystems,
 - Climate smart approaches
 - Evergreen Agriculture