



# Restoration Opportunities Assessment Methodology (ROAM)

Supporting Sustainable Wood Fuel Value Chains  
&  
Gender Responsive FLR

Presented by

*Saadia B. Owusu-Amofah*

Country Coordinator, IUCN-Ghana

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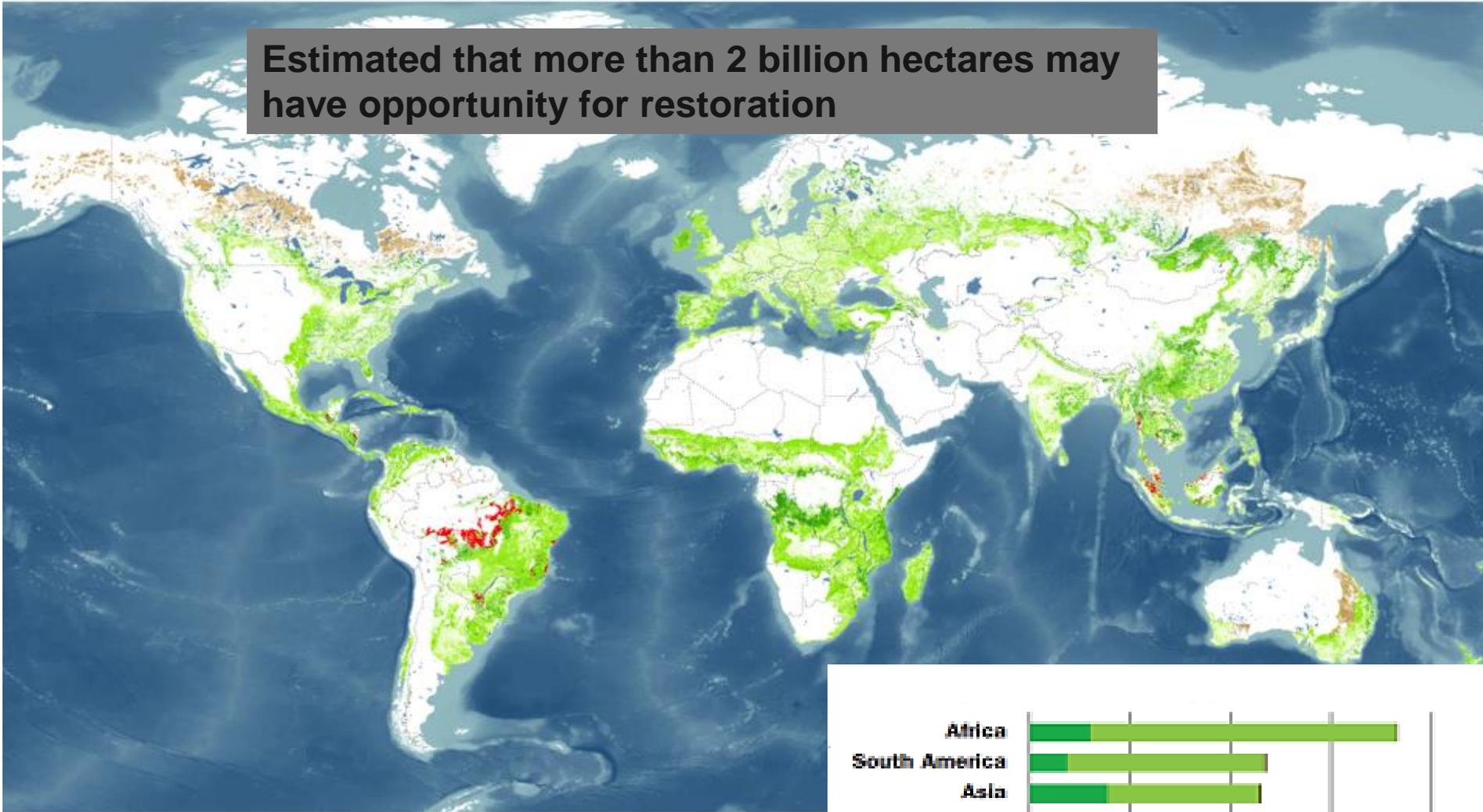


## Outline

1. What is FLR
2. How to Assess FLR Opportunities
3. The Restoration Opportunities Assessment Methodology (ROAM) Tool
  - Components
  - Process
  - Inputs
  - Outputs
  - Application
4. Gender Considerations
5. Summary/Conclusion

# A World of Opportunity for Forest and Landscape Restoration

Estimated that more than 2 billion hectares may have opportunity for restoration

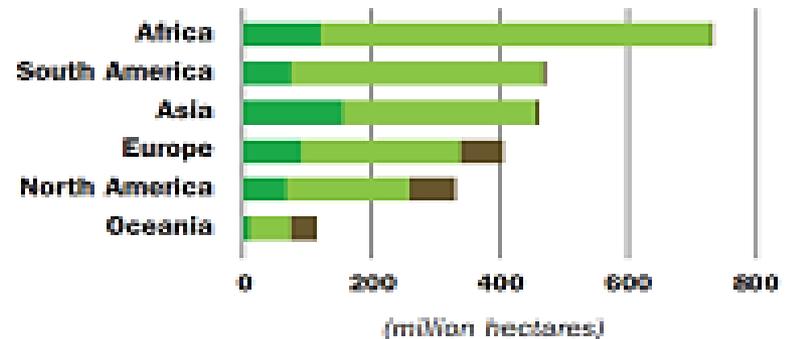


**FOREST AND LANDSCAPE RESTORATION OPPORTUNITIES**

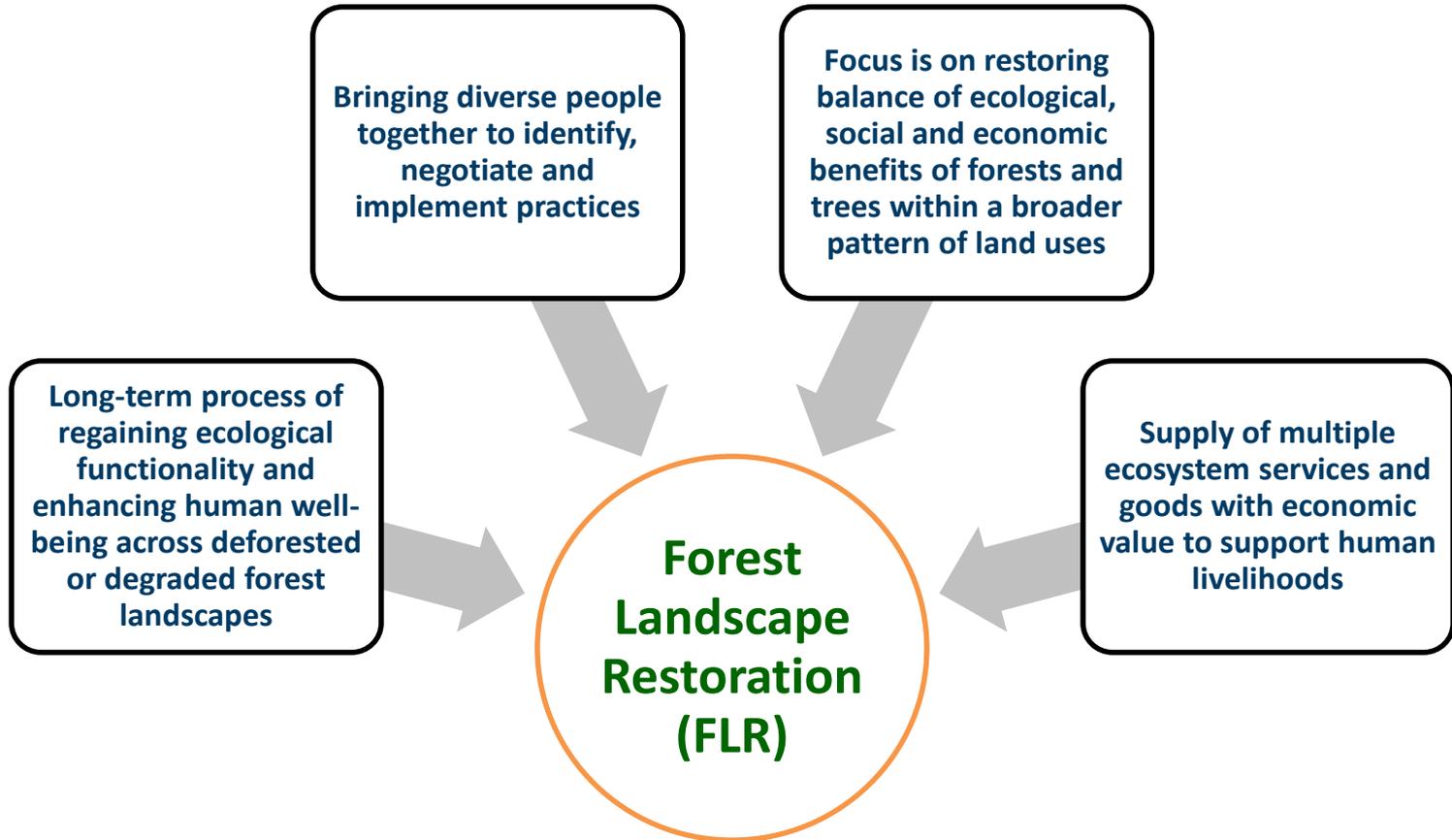
-  Wide-scale restoration
-  Mosaic restoration
-  Remote restoration

**OTHER AREAS**

-  Recent tropical deforestation



# Forest Landscape Restoration (FLR)





So FLR is not just about planting trees...



....but about restoring degraded and deforested landscapes



BURUNDI WB-IUCN project

# Principles of Effective FLR

## Landscape Approach

- **Focus on entire landscapes other than individual sites.** This entails balancing a mosaic of interdependent land uses across the landscape

## Functionality

- **Restore functionality.** *i.e.* ability to provide a rich habitat, prevent erosion and flooding, improve climate resilience and other disturbances

## Multiple Benefits

- **Allow for multiple benefits.** Aim to generate a suite of ecosystem goods and services.

## Suite of Strategies

- Consider and **leverage on a wide range of eligible strategies** for restoring

## Tailor

- **Adapt restoration strategies** to fit local social, economic and ecological context

## Stakeholders

- **Actively engage** all key diverse stakeholders in decisions regarding restoration goals, implementation methods and trade-offs.

## Learn and Adapt

- **Be prepared to adjust** the restoration strategy over time as conditions change

**A restored forest landscape incorporates many diverse land uses - based on the context of the land and the needs of the community**

## Wide-scale and mosaic restoration opportunities



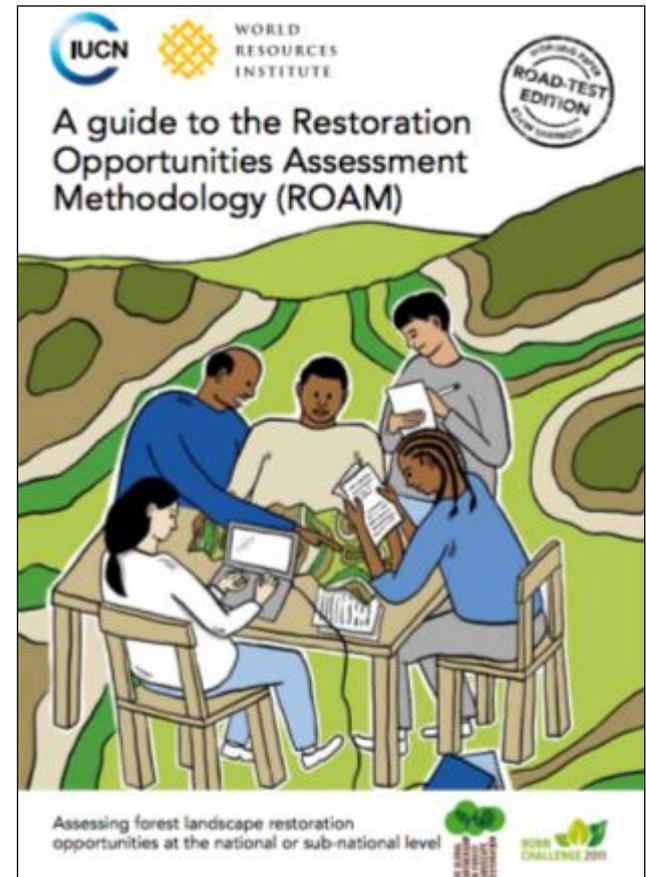
# But how do we assess forest and landscape restoration opportunities?

## And where do we start?

The **Restoration Opportunities Assessment Methodology (ROAM)** can guide efforts.

### What is ROAM?

- Stepwise, iterative, flexible and adaptable to national and subnational contexts
- Brings people together to identify, negotiate, and implement FLR activities for restoration
- Generates data, robust analysis, decision support, tools
- Demand driven – ownership – capacity development



## ROAM Involves.... (Key Components)

Drivers of degradation  
and objectives of FLR

Stakeholder mapping

Stocktaking of past  
successes and  
challenges

FLR opportunities and  
priorities

Economics, ecosystem  
services, and finance  
analysis

Social/Cultural  
aspects of FLR

Data collection and  
spatial analysis

Development of FLR  
action plan and finance  
strategy

Stakeholder ownership  
and validation



## Roam Answers Critical Questions

1. Where is restoration socially, economically and ecologically **feasible**?
2. What is the total **extent of restoration opportunities** in the country/region?
3. Which **types of restoration** are feasible in different parts of the country/region?
4. What are the **costs and benefits**, including carbon storage and ecosystem services, associated with different restoration strategies?
5. What **policy, financial and social incentives** exist or are needed to support restoration?
6. Who are the **stakeholders** with whom we need to engage? Why, where, when and how can they benefit?
7. What options exist to unlock **finance** for restoration?
8. How can we **scale up** restoration?

# Where and How Can Land Be Restored?



Degraded Agric Land (Maize) →



Agroforestry with maize



Poorly managed woodlots →



Well managed woodlots



Deforested land →



Naturally regenerated forests

# The Many Benefits of Restoration

**NATURAL FOREST**

**SUSTAINABLY MANAGED FOREST**

**AGROFORESTRY**

**CLIMATE-SMART AGRICULTURE**

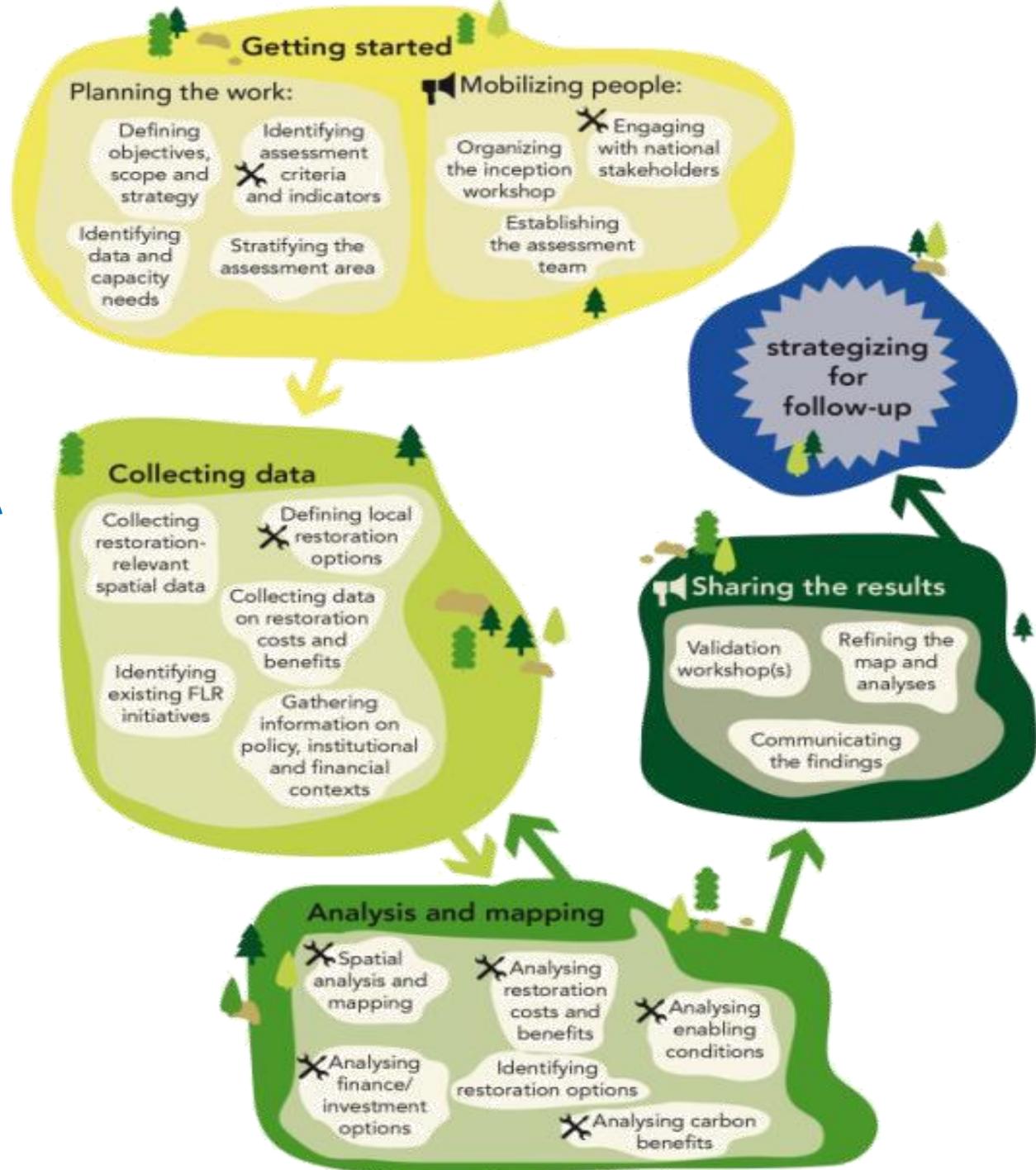


- **Water**
- **Air**
- **Biodiversity**
- **Carbon**
- **Health Medicine**

- **Wood**
- **Livelihoods**
- **Forest products**
- **Carbon**
- **Health Medicine**

- **Food**
- **Livelihoods**
- **Soil fertility**
- **Carbon**
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## ROAM PROCESS AT A GLANCE

# Defining the Problem and Restoration Objectives: Creating a Theory of Change

Understanding degradation and the drivers of degradation.

Agreeing on the objectives for FLR, for example:

- Erosion control, sedimentation of rivers
- Increased resilience
- Food & water security
- Increase soil productivity
- Wood fuel
- Etc.

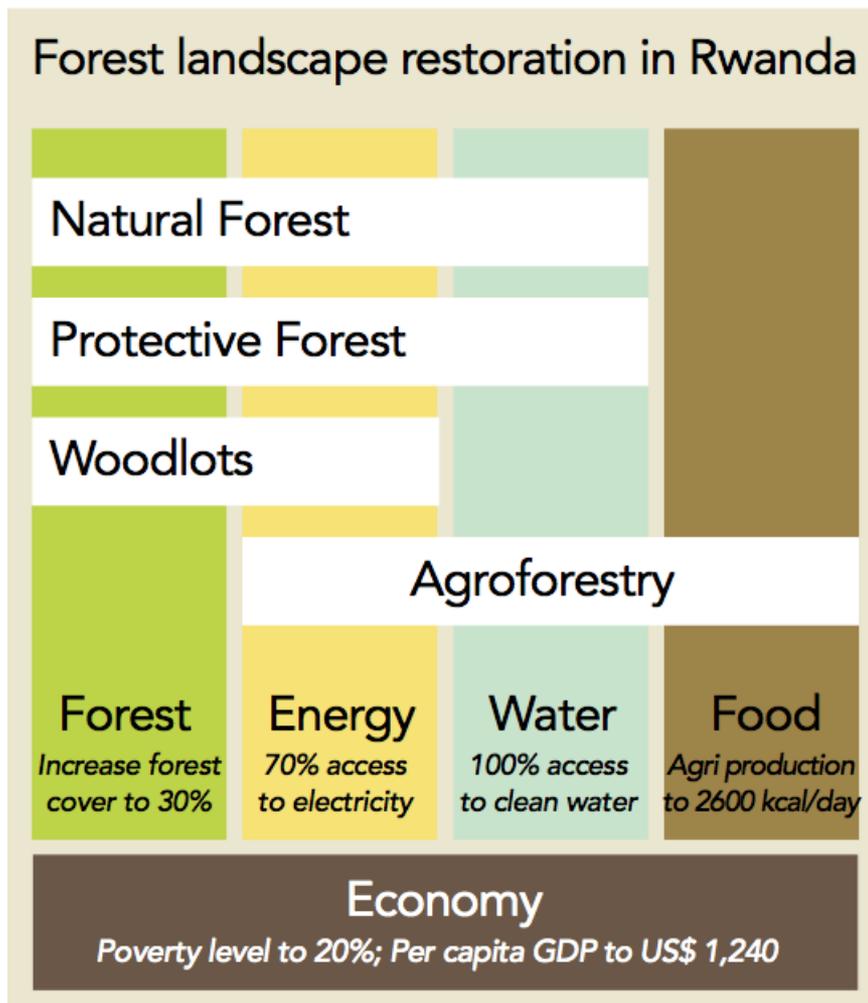


Table 10.

Revised listing of most appropriate FLR options, from the Rwanda assessment

These top 8 candidate FLR options were identified from an initial list of 21 — see Table 3 (page 40).

Type of intervention /land-use	Top candidate FLR option
Agroforestry	Agroforestry on flat lands
	Agroforestry on sloping lands
	Agroforestry on pasture lands: farmer-managed natural regeneration
Improved woodlot and timber plantation management	Improved management of existing small woodlots for fuel-wood or structural wood
	Improved management of existing industrial timber plantations (pine)
Natural forests	Restoration of natural forests in or around protected areas
Protective forests	Restoration or establishment of protective forests on steep lands (55%)
	Restoration or establishment of protective forests on very steep lands (20%-55%)



Spatial data analysis

EXAMPLE OF DATA for Multi-criteria Analysis

DEGRADATION	FOOD SECURITY	RESILIENCE	BIODIVERSITY
Steep slope	Female Gender Balance	Drought	Key Biodiversity Areas outside Protected areas
Erosion	Poor Market Access	Flooding	Protected Areas outside Key Biodiversity areas
Low Evapotranspiration	Low Crop Yields	Water Yield	High Tree Cover
Low soil fertility	Rainfed Cropland	Temperature	Endangered Ecoregions
Sediment Export	Lack of Access to Non-Timber Forest Products	Precipitation	Red List of Species
Canopy cover loss	Fewest Quantity of Livestock	Rainfed cropland	
High population density	Most Days of Food Insecurity	NTFP	
High poverty			
Fire / fire risk			

# E.g. Data Collection

- Using degradation proxies identified to define the criteria that can be used to measure them.

Degradation	Degradation Proxy	Measurable Criteria	Data Source	Scale
Biodiversity loss	Decrease species population size	Change in population size over time	Research Surveys	Local
	Decline species diversity	- Number of species per ha - Shannon Index	Ecological Research Surveys	Local
	Habitat loss	- Change in forest cover area /year - Presence of invasive species	Satellite Data	Regional/Global

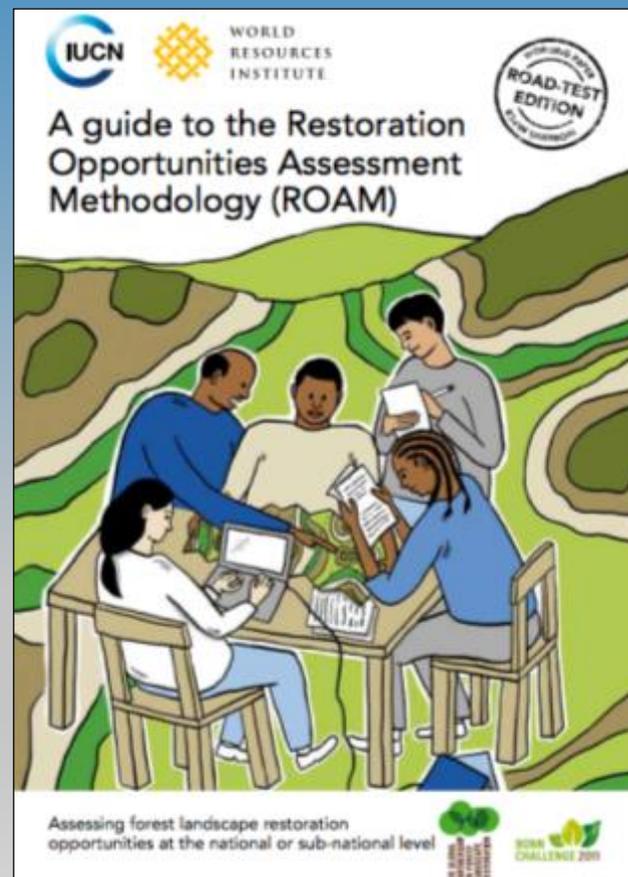
## General ROAM Outputs

### **Six main products can be achieved:**

1. A shortlist of the most relevant and feasible restoration intervention types across the assessment area
2. Identified priority areas for restoration
3. Quantified costs and benefits of each intervention type
4. Analysis of the finance and resourcing options for restoration in the assessment area
5. Estimated values of additional carbon sequestered by these intervention types
6. Identification of strategies to address major policy, legal and institutional bottlenecks

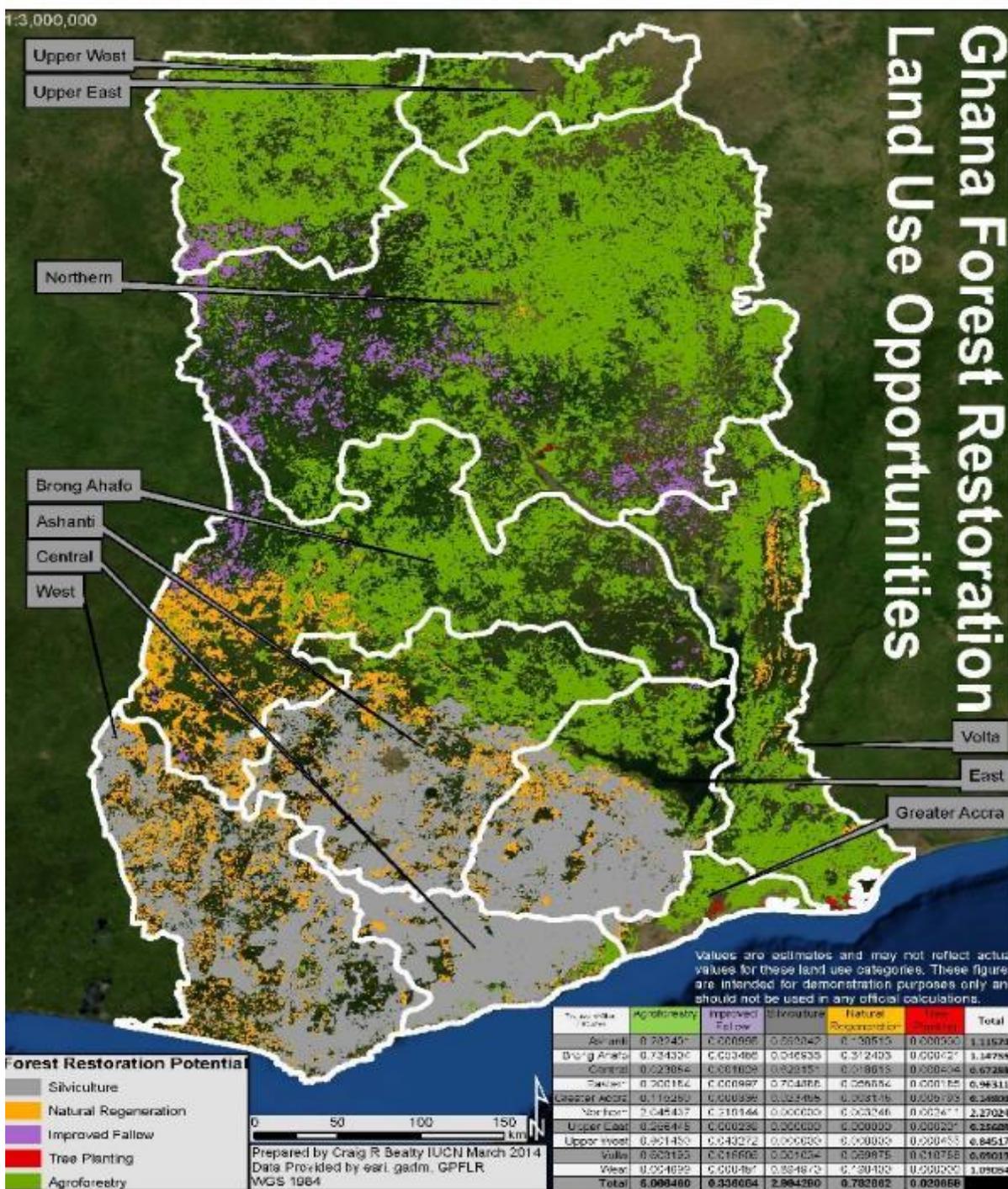
# Application of ROAM

- ❑ **Ghana:** Baseline-setting, supporting Ghana's Forest Investment Programme (FIP)
- ❑ **Rwanda:** Defined a strategy to realise the country's 2 Million Ha commitment to the Bonn Challenge
- ❑ **Mexico:** Contributed to a cross-institutional national restoration strategy
- ❑ **Guatemala:** Foundation for the 1<sup>st</sup> national restoration strategy and the re-shaping of restoration incentive schemes.



1. Forest Reserve Condition Mapping: Participatory mapping of forest reserves through triangulation approach which merged the 'best of science' (GIS data- forest cover maps) with the 'best of local knowledge'
2. Development of a savannah zone classification criteria for FRs.
3. Assessment of FLR Opportunities in Ghana in Off-Reserve Areas.
4. Production of carbon abatement curves to rank the restoration interventions according to their net economic benefits per ton of carbon sequestered





# Ghana Forest Restoration Land Use Opportunities

1:3,000,000

**Forest Restoration Potential**

- Silviculture
- Natural Regeneration
- Improved Fallow
- Tree Planting
- Agroforestry

Prepared by Craig R Beatty IUCN March 2014  
 Data Provided by earl.gadm, GPFLR  
 WGS 1984

Values are estimates and may not reflect actual values for these land use categories. These figures are intended for demonstration purposes only and should not be used in any official calculations.

Region	Agroforestry	Improved Fallow	Silviculture	Natural Regeneration	Tree Planting	Total
Ashanti	0.727457	0.000000	0.000000	0.130613	0.000000	1.116270
Brong Ahafo	0.734330	0.003468	0.046835	0.312403	0.000000	1.096636
Central	0.223854	0.001809	0.023357	0.018615	0.000000	0.266635
Eastern	0.200184	0.000987	0.704866	0.086654	0.000185	0.993876
Greater Accra	0.110280	0.000996	0.023466	0.008136	0.000195	0.142073
Northern	0.045437	0.010144	0.000000	0.003746	0.003671	0.062998
Upper East	0.004418	0.000230	0.000000	0.000000	0.000207	0.004855
Upper West	0.001450	0.043272	0.000000	0.000000	0.000000	0.044722
Volta	0.003153	0.016606	0.001054	0.009978	0.010758	0.041550
West	0.004699	0.000467	0.004670	0.100100	0.000000	0.110336
<b>Total</b>	<b>5.000460</b>	<b>0.036064</b>	<b>2.904260</b>	<b>0.782062</b>	<b>0.020666</b>	<b>8.743512</b>

# Gender Responsive Considerations

- ❑ Identifying, understanding, negotiating and implementing FLR in ways that address gender gaps;
- ❑ Overcoming gender biases in policy and interventions related to FLR and;
- ❑ Ensuring that the outcomes of FLR interventions benefits equally men, women and the youth
- ❑ Ensure longer-term sustainability / community ownership





## E.g. of Gender Considerations for FLR with Sustainable Wood fuel as an Objective

1. Inclusive Participation in restoration: Identify the primary and secondary stakeholders including those likely to be displaced.
2. Benefit sharing (BS): Strengthen BS arrangements to ensure that both women and men who participate in FLR activities benefit directly.
3. Tenure: Enhance participation of women and youth in decision making on land utilization for FLR activities by considering the following factors/interventions;
  - Kind of lands women have access to or control over
  - Cultural restrictions if any against women and young people holding lands in the area selected for FLR activities
4. Livelihoods: Ensure that areas where women have high capacities are reserved for them E.g. tree nursery establishment; planting, watering etc.
  - Build the capacities of women to undertake such activities to improve their livelihoods taking into consideration their household duties and ensuring work burden does not disproportionately increase

## Example

Common tree name	Benefits and use by women	Benefits and use by men
<b>Mango</b>	Food, fire wood, fruits	
<b>Mangoes</b>	Food, fruit selling	
<b>Tangerines</b>	Food, fruit selling	Fruit selling
<b>Avocados</b>	Medicine and food	Fruit selling
<b>oranges</b>	Food and selling	
<b>Guava</b>	Fruits and medicine	
<b><u>Moringa</u></b>	Medicine	
<b><u>Neem</u></b>	Firewood, powder as medicine	Firewood, powder as medicine
<b><u>Mpoza</u></b>	Medicine, fruit selling	
<b><u>Mnyozi</u></b>	Fire wood	
<b><u>Muwanga</u></b>	Fire wood	
<b>Eucalyptus</b>	Fire wood	Poles
<b><u>meina</u></b>		Timber, poles, firewood, animal fodder
<b><u>Mombo</u></b>		Poles and timber for construction and charcoal for sell
<b><u>Mkulu</u></b>		Most preferred for furniture and carvings
<b><u>Mnyozi</u></b>		Preferred for charcoal
<b><u>Nsangu</u></b>	Fertility fixation	Fertility fixation
<b><u>Leucina lucosfalla</u></b>		Nitrogen fixing



# Summary/ Conclusion

1. ROAM is the most comprehensive and responsive framework for FLR
2. It is adaptable to varying objectives for FLR (incl. sustainable wood energy)
3. Key inputs of ROAM are Stakeholder Engagement and Ownership:
  - Preparation and Planning; Data Collection and Analysis; Validation and Results
4. Gender considerations are key for Effectiveness and Sustainability
  - Provide enabling environment for women, men & youth to participate in decision making and ensure this translates into substantive equality in FLR outcomes.
4. Key outputs of ROAM are:
  - Implementation of FLR and uptake into policy
  - Unlocking finance
6. Results facilitate sub-national, national and international processes and the methodology is resilient at different scales
7. The ROAM framework is not Prescriptive, it is Procedural, allowing for stakeholders to guide and inform FLR decision making at each step



## **How can ROAM support development of sustainable wood energy value chain in Ghana?**

1. Develop a Theory of Change for sustainable wood energy
2. Bring existing platforms and stakeholders together for decision-making
3. Identify priority areas for restoration in the wood energy value chain
4. Help with cost-benefit analysis for the FLR interventions targeting wood energy value chain
5. Other decision support analysis, e.g. carbon sequestration, optimization and finance analysis (incl basis for PPPs)
6. Develop the FLR models for wood value chain for smallholders and others

Thank you!

