Natural Capital Accounting Rwanda

Regional Perspectives Workshop on NCA

21 – 23 June - Nairobi, Kenya

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Background

- Progress & achievement
- Land, Water, Mineral, Ecosystem Accounts
- Outreach & Publications
- Take Home Messages

Progress & achievement

Implementation since 2015: TWG Participation

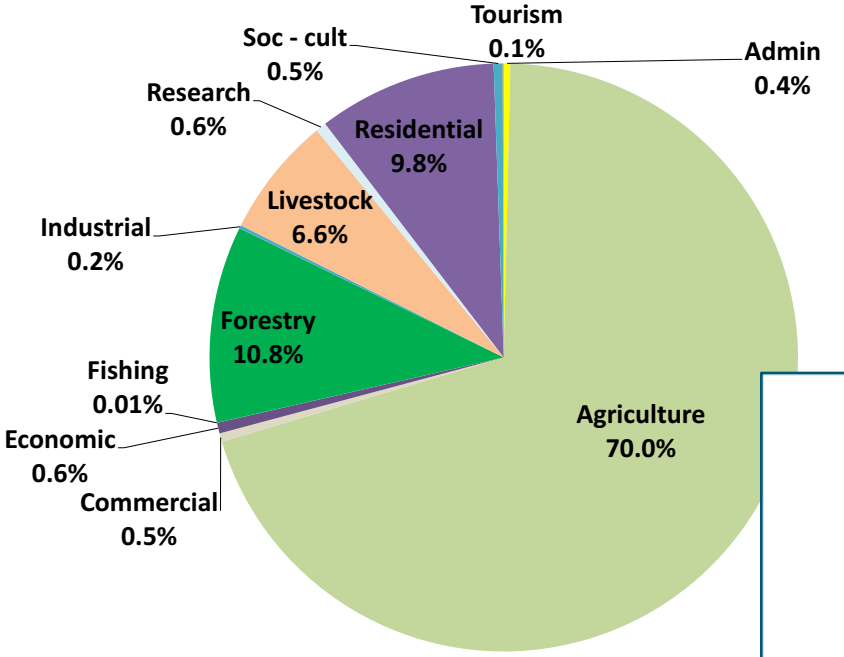
Learning by doing: Engagement (capacity building and on job training)

Notable progress: Leadership (Steering Committee)

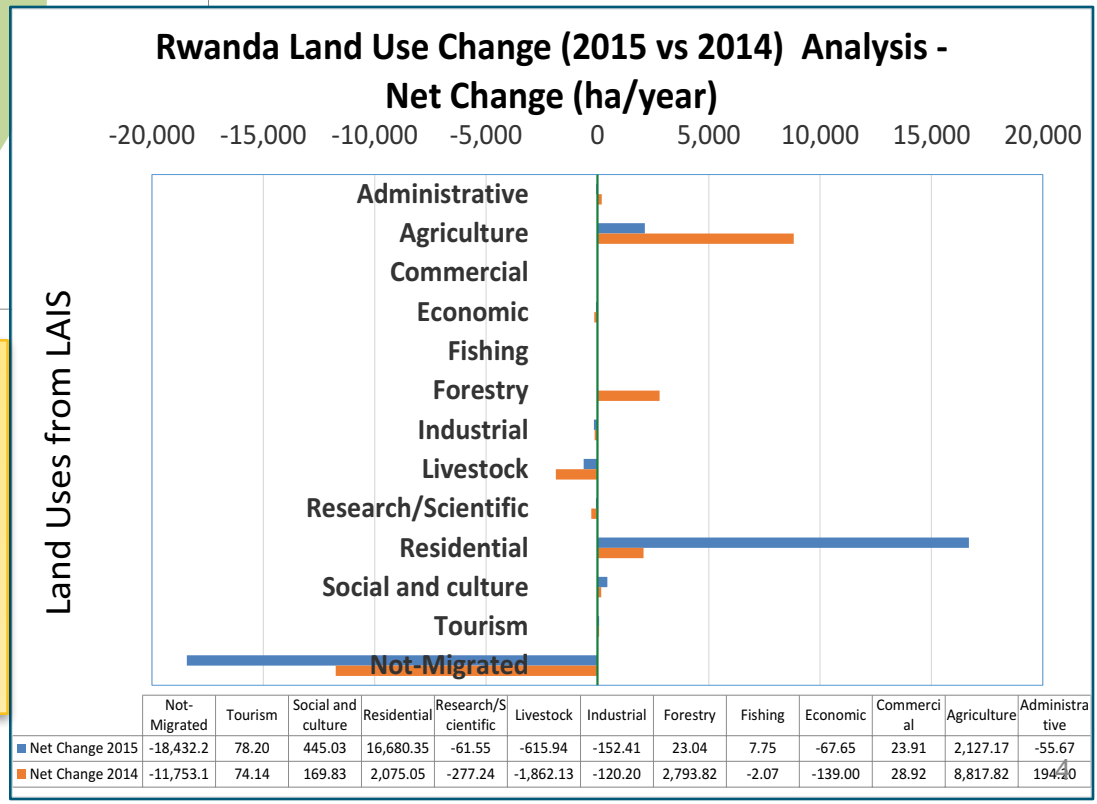
Key products so far

- Land Accounts: Land use change matrix, Land Cover Data & Mapping , Physical land asset account; Land transaction value & fees (base or monetary)
- Water Accounts: Physical Supply and Use tables, Water Asset Accounts
- Mineral: Land use trade off model & Feasibility assessment for Mineral Accounts
- Communication & Outreach effort: E- outreach, printed outreach, workshop & briefings

Land Account 2013-2015: Data Compilation ~Complete



Land Accounts Element	Years Covered		
Land Use Change Matrix: National, Regional & District Level	2013	2014	2015
Land Cover Data & Mapping: National, Regional & District Level	1990	2000	2010
Physical land asset account: National Level	2013	2014	2015
Land transaction values & fees (base for monetary): National, Provincial, District Level		2014	2015

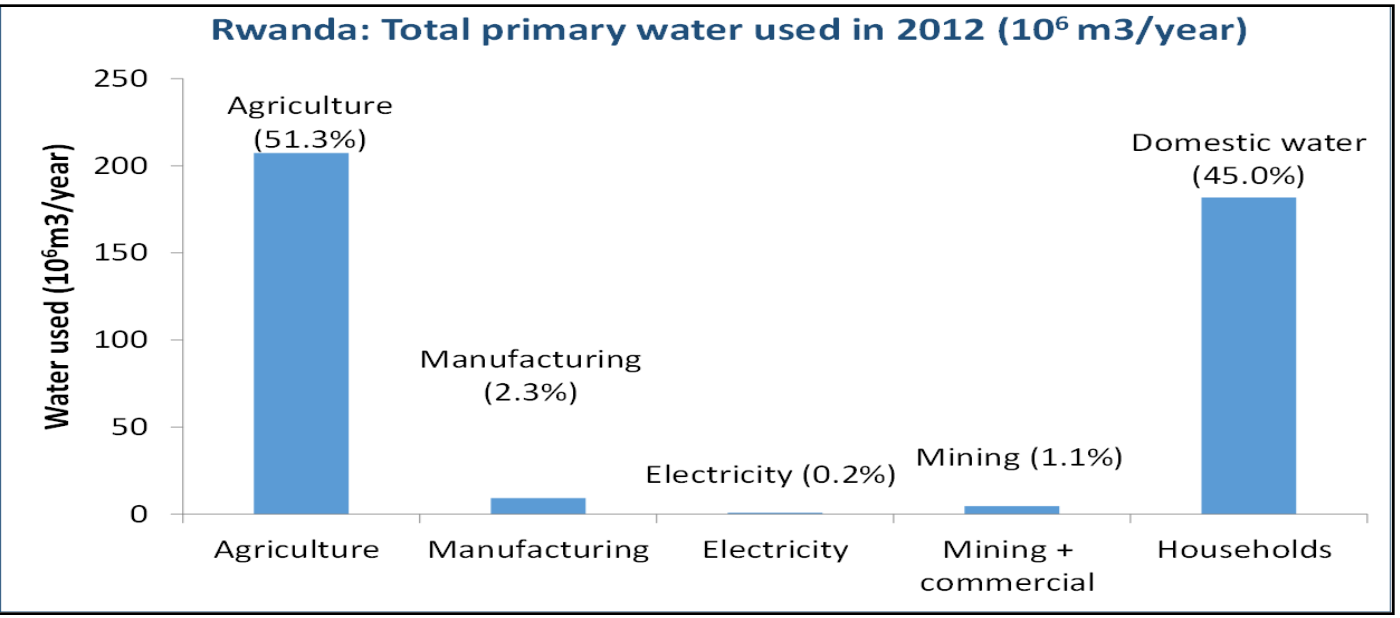


	Not-Migrated	Tourism	Social and culture	Residential	Research/Scientific	Livestock	Industrial	Forestry	Fishing	Economic	Commercial	Agriculture	Administrative
Net Change 2015	-18,432.2	78.20	445.03	16,680.35	-61.55	-615.94	-152.41	23.04	7.75	-67.65	23.91	2,127.17	-55.67
Net Change 2014	-11,753.1	74.14	169.83	2,075.05	-277.24	-1,862.13	-120.20	2,793.82	-2.07	-139.00	28.92	8,817.82	194.20

Aside from admin reclassifications, overall changes across categories are minor:

- 2014 = 20,600 ha net change
- 2015 = 44,900 ha net change

Water Use and Supply Accounts (Flows)



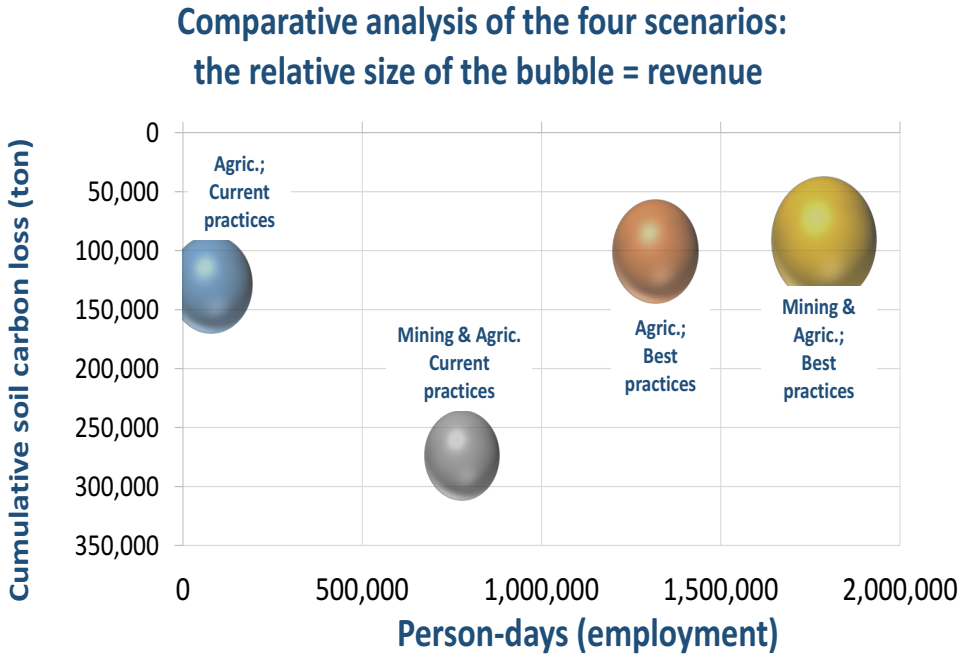
Improved physical asset account for water resources Year 2012 in Million m³

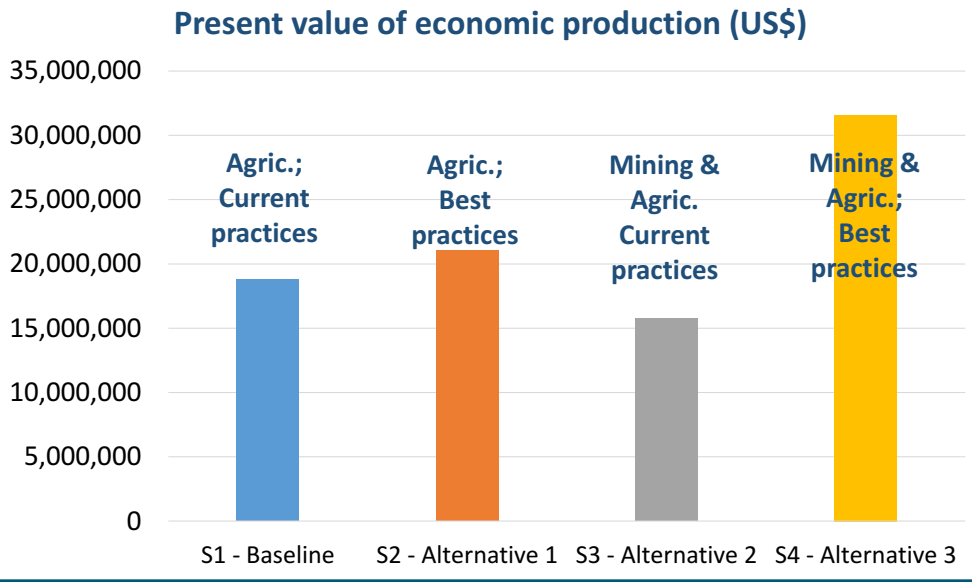
MCM	Surface water			Soil water	Groundwater	Total
	Lakes	Rivers	Artificial reservoirs			
Opening stock water resources	553,838	6,822	54,253	33,494	62,127	**710,534**
Additions to stock						
Returns of water	223,990		xx	xx	xx	223,990
Precipitation	27,507	321	2,550	261	2,921	33,560
Inflows from other territories		0.143	xx			0.143
Inflows from other inland water resources	xx	xx				xx
Total additions to stock	251,497	320.831	xx	261	2,921	**257,550**
Reductions in stock						
Abstraction of water	279,987	xx	xx	xx	xx	279,987
Evaporation and transpiration	20,686	xx	xx	xx	?	20,686
outflows to other territories	0	11	?			11
outflow to the sea	0	0	0			0
outflow to other inland water resources	xx	0	xx	xx	xx	x
Total reductions in stock	300,673	11	xx	0	0	**300,684**
Closing stock water resources	504,662	7,132	xx	xx	65,048	**667,400**

Mineral – Land Trade-Off Tool: Analytical Outputs

Helps to understand and illustrate

- Opportunity cost of land use options
- Environmental externalities, off site
- Effects on HH and Jobs
- Multiple indicators, graphic display
- Supports screening for land use decisions with no net loss to society





Mineral Accounts Feasibility assessment

Yes, it can be done…

- Preliminary accounts in one year: Key data are scattered
- Will require intensive work to organize and analyze data
- Longer term, institutional system for update & analysis

Ecosystem in Rwanda

- Rwandan territory covered with diverse ecosystems which include; natural ecosystems (consisting of mountain rainforests, gallery forests, savannah woodland, wetlands and aquatic forests), Forested area and agro- ecosystems.
- All these ecosystems are very rich with flora and fauna
- Protected areas: mainly the three national parks: i) Volcanoes National Park which; famous worldwide due to the presence of mountain gorillas and variety of plants and animal species, ii) Nyungwe National Park: has more than 1,200 species of flora, 275 species of birds, iii) Akagera National Park covers a surface area of about 108,500 ha and inhabits more than 900 species of plants and 90 mammals.
- Protected areas of Rwanda have lost around 50% of their original surface area during the last 40 years.
- Biodiversity of wetlands: The ecosystems of wetlands of Rwanda inhabit a biological diversity that is rich in plant and animal



Integrating Natural Capital into System of National Accounts: A Case Study of Forestry and Wetland Landscapes in Rwanda

WCS

SNAP
Science for Nature and People

The Nature Conservancy
Protecting nature. Preserving life.™

NCEAS
National Center for Ecological Analysis and Synthesis

Co-PIs: Janaki Alavalapati, Glenn Marie Lange and Michel Masozera

Ecosystem Accounting and link with the Land accounts

Initiative: Integrating Natural Capital into System of National Accounts: A Case Study of Forestry and Wetland Landscapes in Rwanda

Objectives

1) Quantify the economic values of the Rugezi wetland and Nyungwe National Park as examples that can facilitate the integration of natural capital in System of National Accounts;

2) Explore and identify economic tradeoffs associated with alternative natural resource management and policy options to support landscape-level conservation and development planning;

3) Identify innovative financing mechanisms that encourage investment in natural capital.

Land inputs in ecosystem accounting

Experimental ecosystem accounts need land data inputs that address:

a) land cover, which relates with ecological functions;

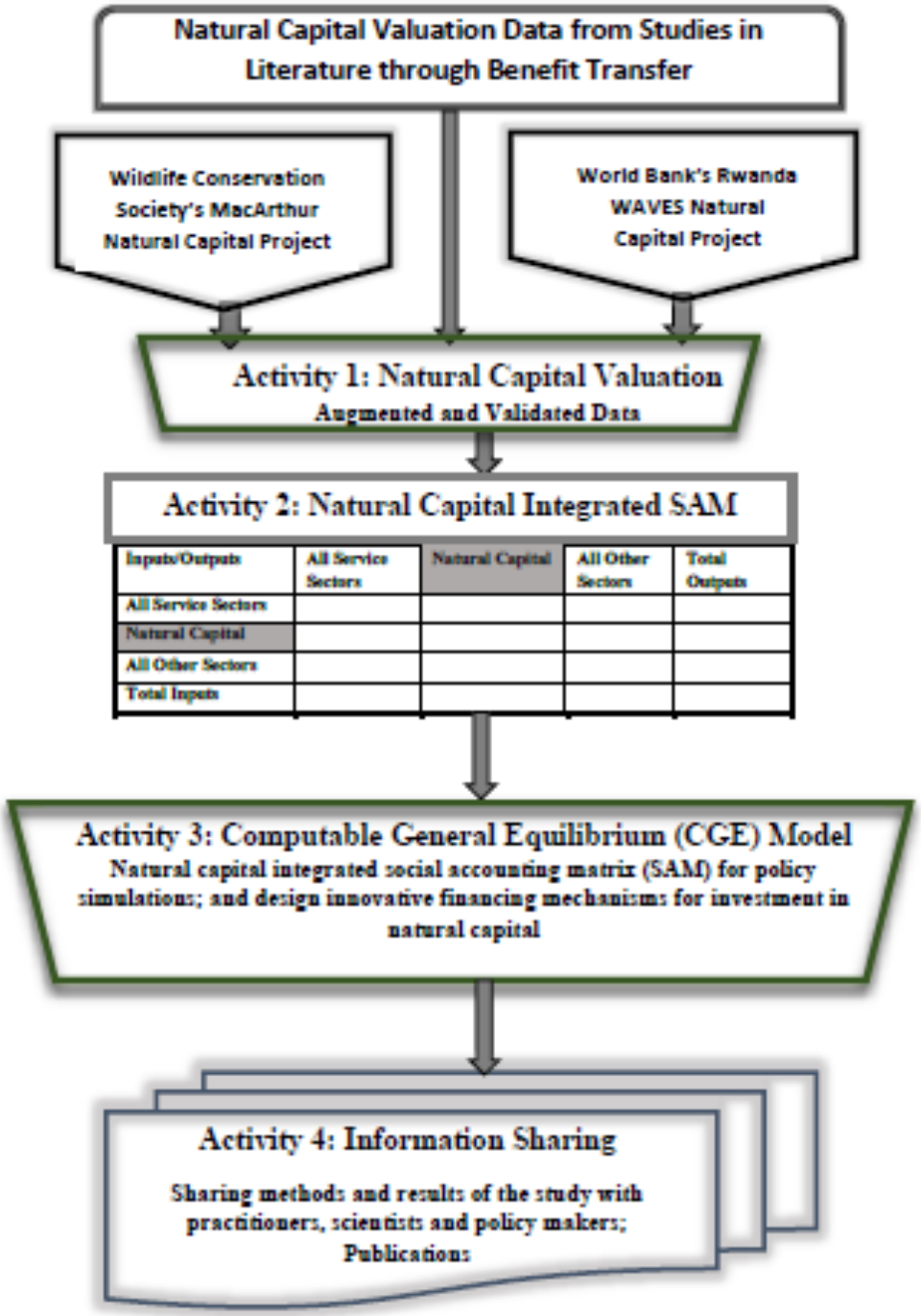
b) land use, which relates with economic functions; and

c) land divisions (areas) for statistical purposes.

Land accounting inputs :

- apply land cover types as proxy for ecosystem units (or assets);
- apply land use to delimit areas where ecosystem services originate.

Project Implementation Schematic



Anticipated results and benefits

1. **Inform natural resource management policy agenda** in Rwanda by quantifying and illustrating direct relationships between the economy and the environment.

2. **Link with and strengthen World Bank's WAVES initiative** both in Rwanda and other partner countries in Africa by providing a case study of regional CoPs for NCA.

3. **Strengthen the NCA programs in current CoPs**, and provide a longer-term solution to the challenge of institutionalizing NCA globally by building regionally based capacity for NCA

4. **Contribute towards achieving the *Gaborone Declaration*** and *"The Future We Want"* - to recognize and capture environmental services provided by nature in economic growth parameters

5. **Provide case study for UN's SEEA framework**

6. **Provide information needed to identify and catalyze new** investments in natural capital, such as PES, water funds and/or other innovative financing mechanisms to support the country's ambitious development goals

7. **Provide platform for resource managers, scientists, industry**, governments and the public to substantively engage in natural resource conservation and investment as a vital component of economic growth for human well-being and sustainability

Rwanda NCA Communication & Outreach Effort

E-Outreach

- MINIRENA Comms officer
- MINRENA Website
- News Articles

Printed Outreach

- Monthly newsletters
- Country brief 2 pager

Workshops & Briefings

- Training programs
- Stakeholder consultation
- Invited into SMM, SWG

Take Home Message …

Convince senior policy makers on the value / benefit of NCA

- Policy findings well framed to answer key questions of policy makers;
- It is not easy to convince policy makers on the benefit of NCA. Information should be well packaged in a way that it addresses questions at the macro or sectorial level. NCA can also be communicated as a tool or an input to national development process.
- Someone needs to be well prepared with figures in mind

How can NCA be more effective to inform policy?

- Accounts should respond to policy key questions. What are the key problems identified (findings)?
- What do the decision makers thinks about it? What can policy makers do about these problems?
- Who would win / lose if problems are addressed? What would cost to address these problems which were addressed? What more would need to be done (beyond looking at NCA) to address problems?

Take Home Message …

Overall key lessons

- The connection of natural capital accounting to policy decision making to be improved
- Natural capital account is a complex, multidisciplinary area, requiring many agencies and professional to work together
- NCA as a tool to implement the Sustainable Development Goals
- NCA provide information/ data baseline for green indicators and is a tool to monitor progress.

From statistics to policy

- Data are very useful to improve the environmental policy.
- An important thing here is to be able to convince policy makers on specific things that the accounts can do and that other statistics cannot do.
- The accounts can be used for the *Computable General Equilibrium CGE model, the input-output model, to monitor how green growth is* progressing, in political arena, etc., i.e., depending on the specific problem to be addressed.


Thank you!