

# Catchment planning in Rwanda

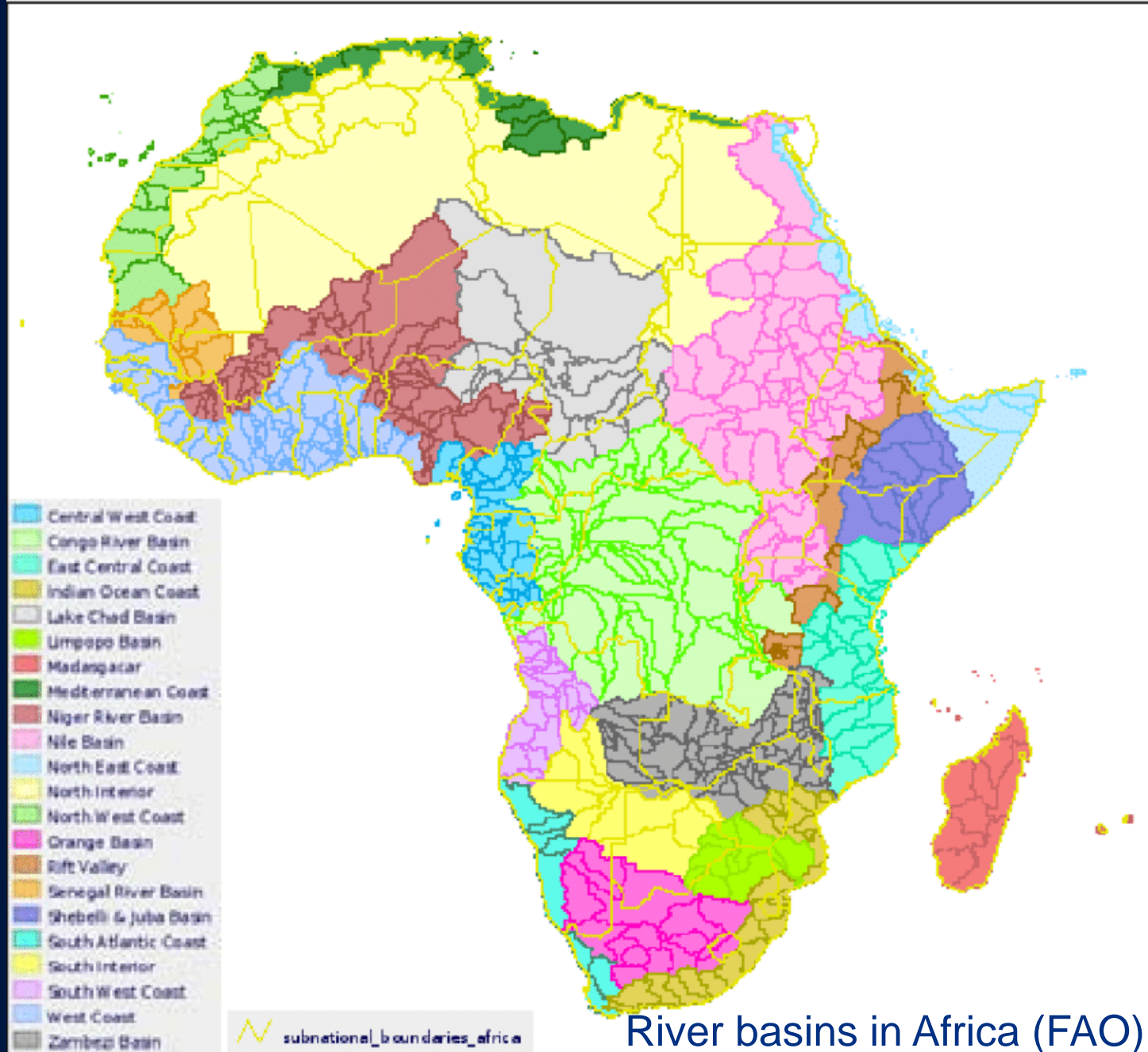
Rob Nieuwenhuis  
Mott MacDonald



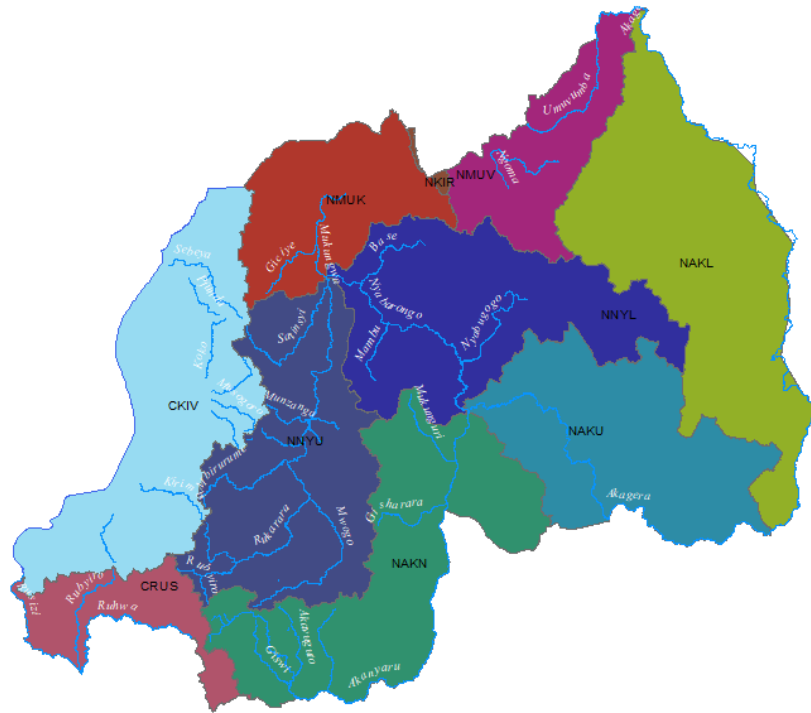
# A catchment plan is...

*... a joint plan for integrated management of water, land, and related natural resources within the boundaries of a water catchment.*





## Rwanda : Catchments Level 1



### Legend

— Rivers

0 5 10 20 30 40 Kilometers

## Rwanda : Catchments Level 2



### Legend

— Rivers

0 5 10 20 30 40 Kilometers

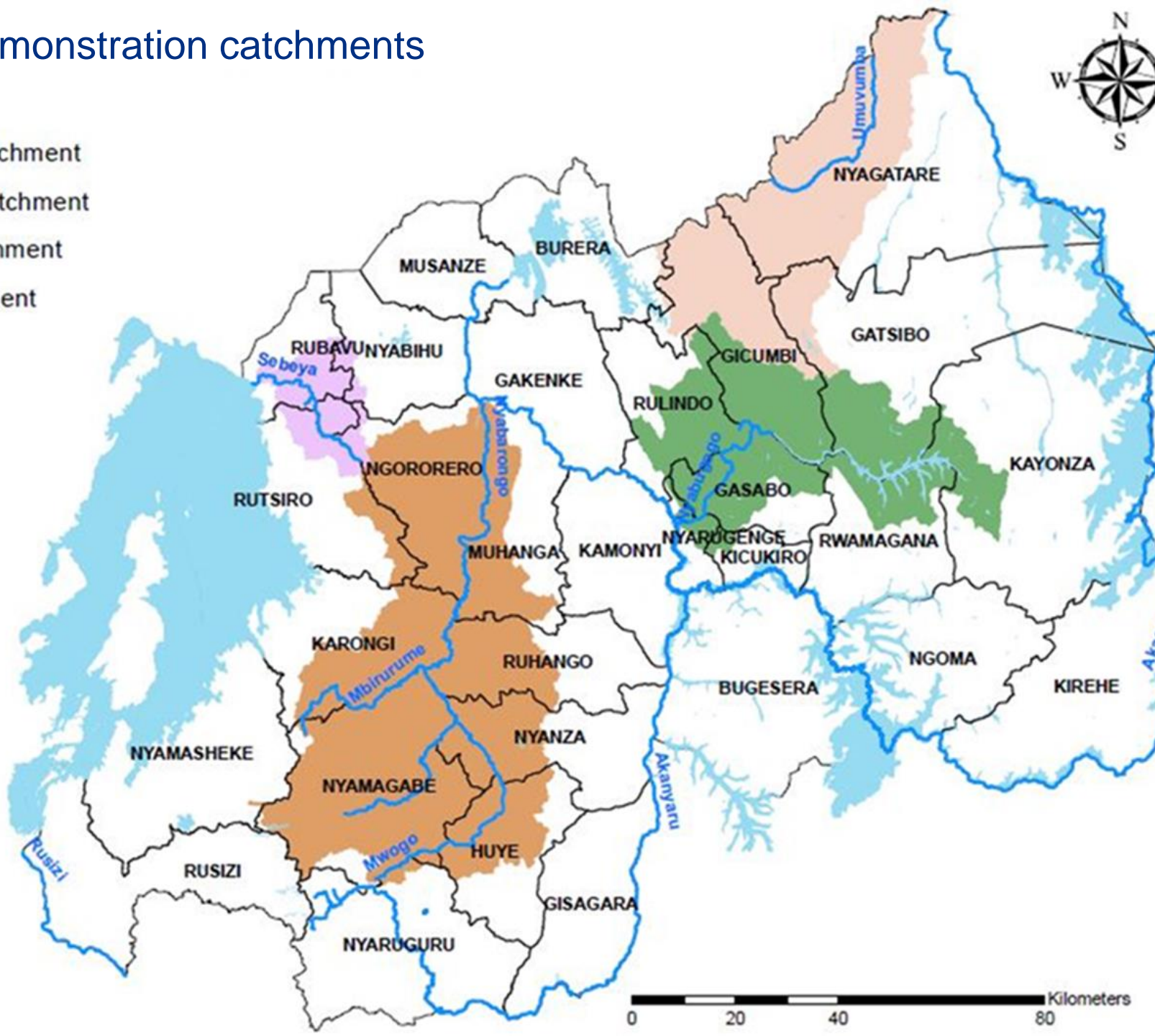


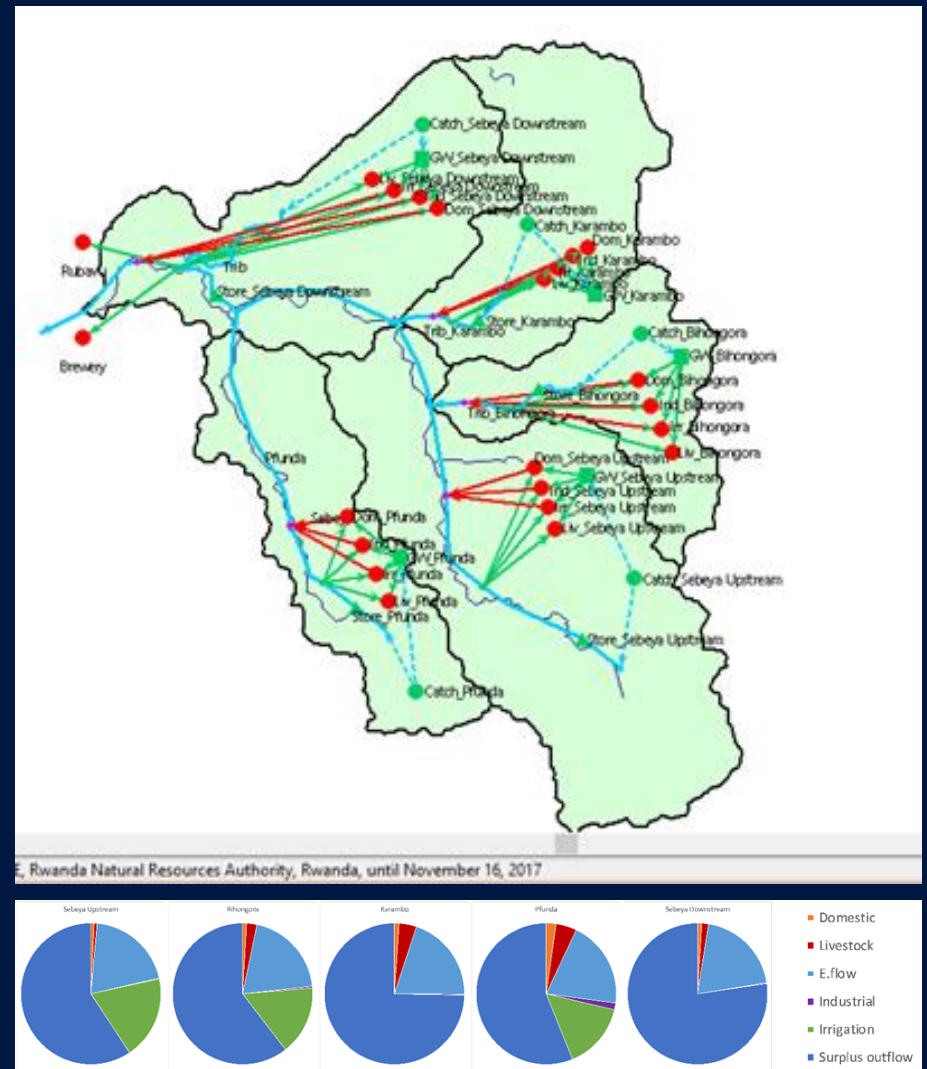
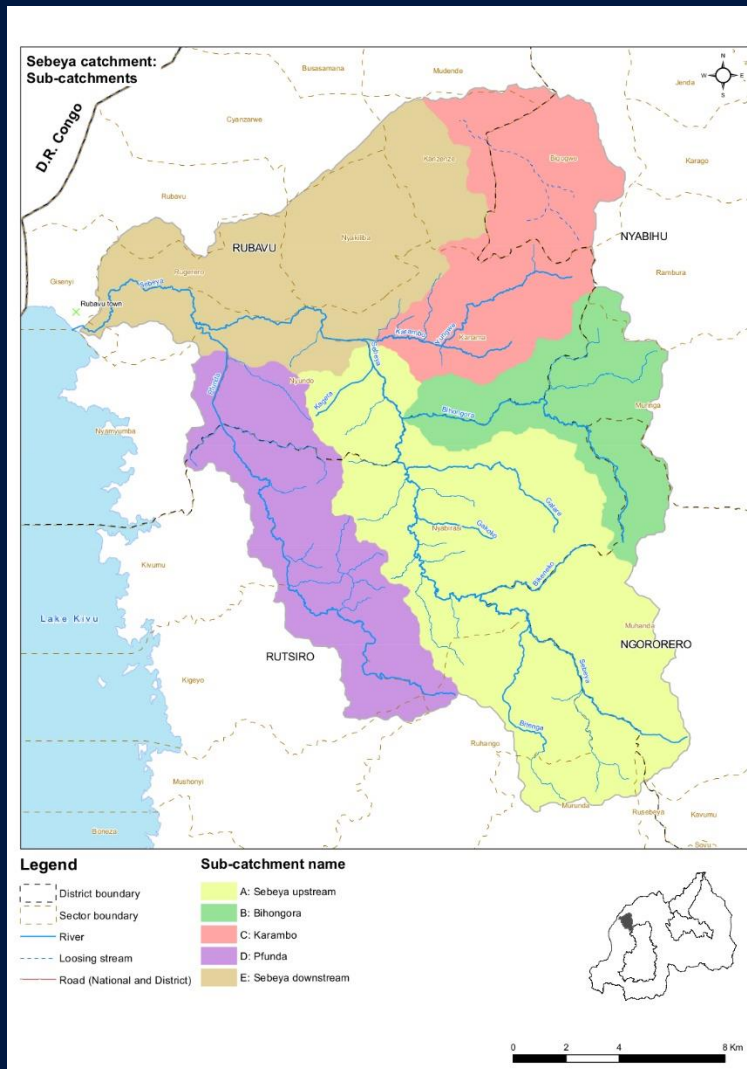
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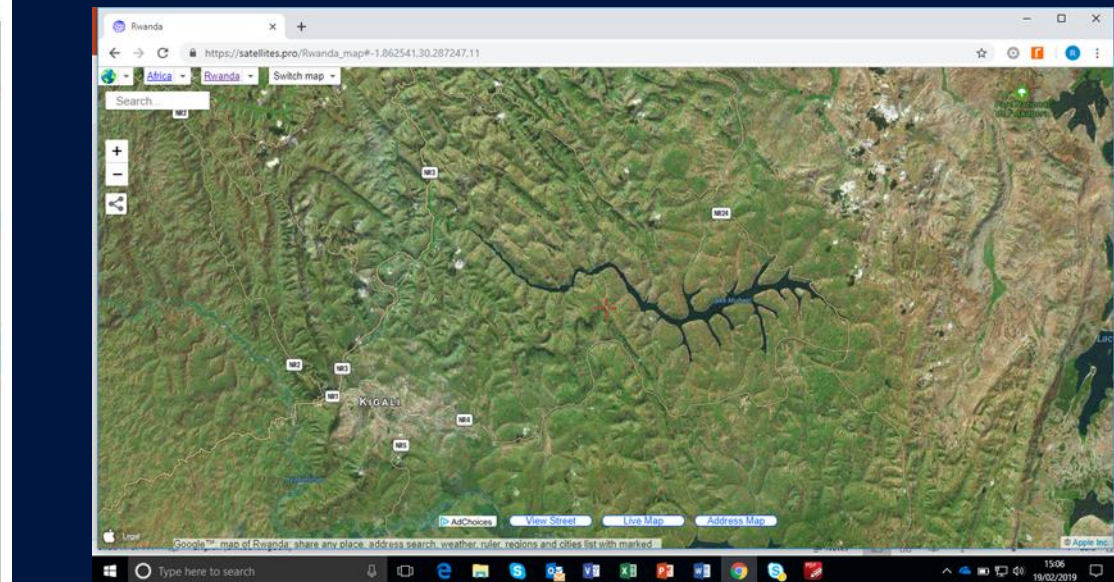
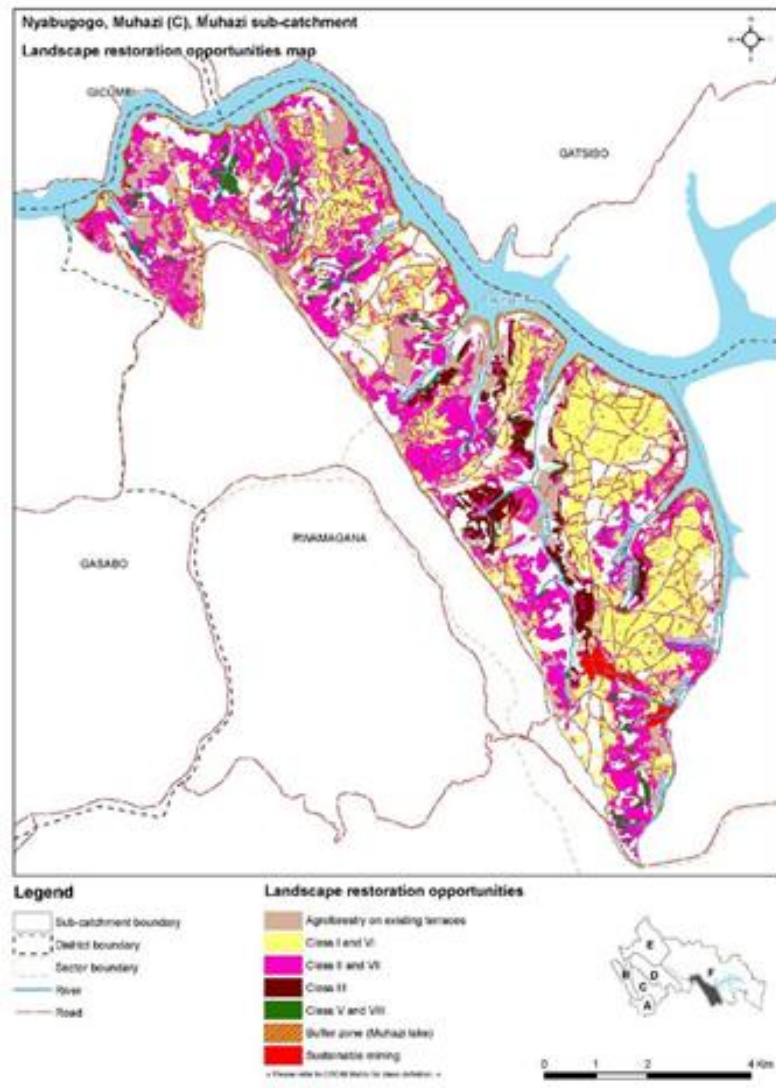
## 4 demonstration catchments

- Nyabugogo Catchment
- Nyabarongo Catchment
- Muvumba Catchment
- Sebeya Catchment
- Districts
- Main Rivers
- Lakes













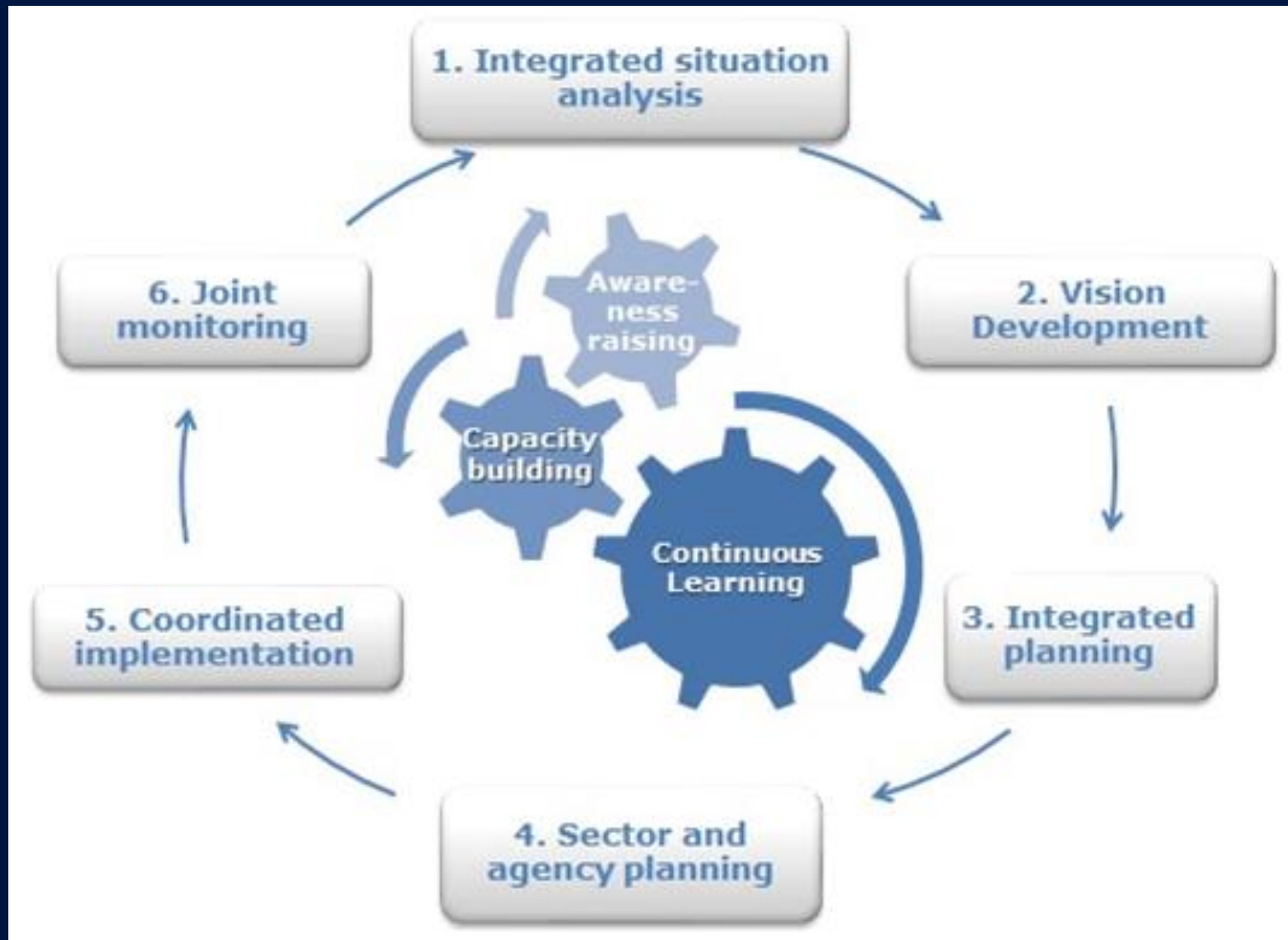
How to develop a catchment plan?

# Institutional setting for catchment plans

## Vision 2050 & National Strategy for Transformation

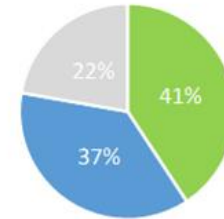


# Guiding principles: IWRM planning cycle



# Water for Growth Rwanda combined IWRM and SEA principles

- Participatory SEA & plan process
- Characterisation of catchment
- Vision, Objectives
- Alignment (national/local)
- Assessment of alternatives
- Programme of measures
- Implementation arrangements
- M&E



- NST1 Outcome ≈ CP Outcome
- NST1 Outcome ≈ CP Impact
- NST1 Outcome ≠ relevant to CP





# Participatory planning



with experts...



A group of approximately ten people, including men, women, and children, are standing on a dirt path in a rural, hilly area. The group is diverse in age and attire, with some wearing traditional headwraps and patterned skirts, and others in more modern clothing like t-shirts and jackets. The background shows a steep, vegetated hillside under an overcast sky. A dark blue banner with white text is overlaid on the lower part of the image.

... and local stakeholders





Private sector...

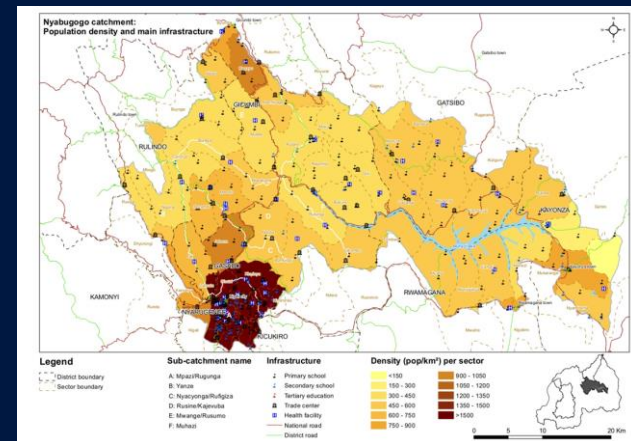
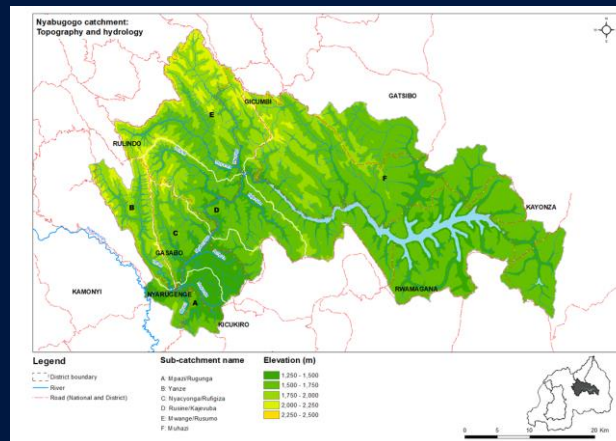
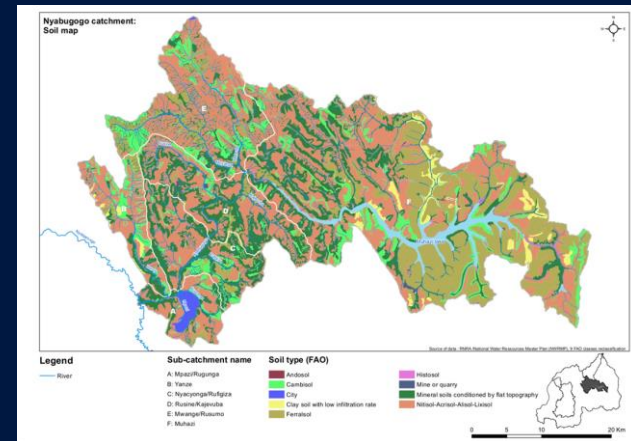
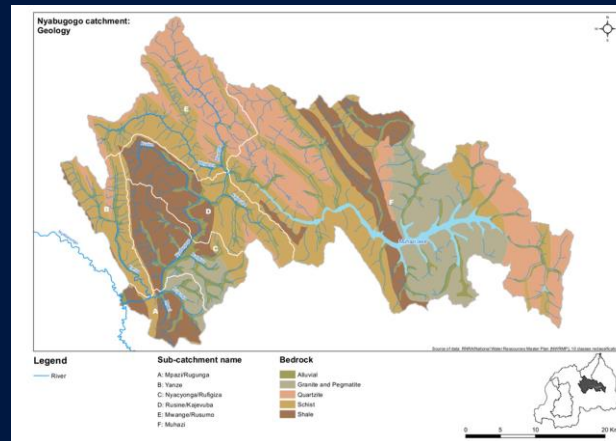
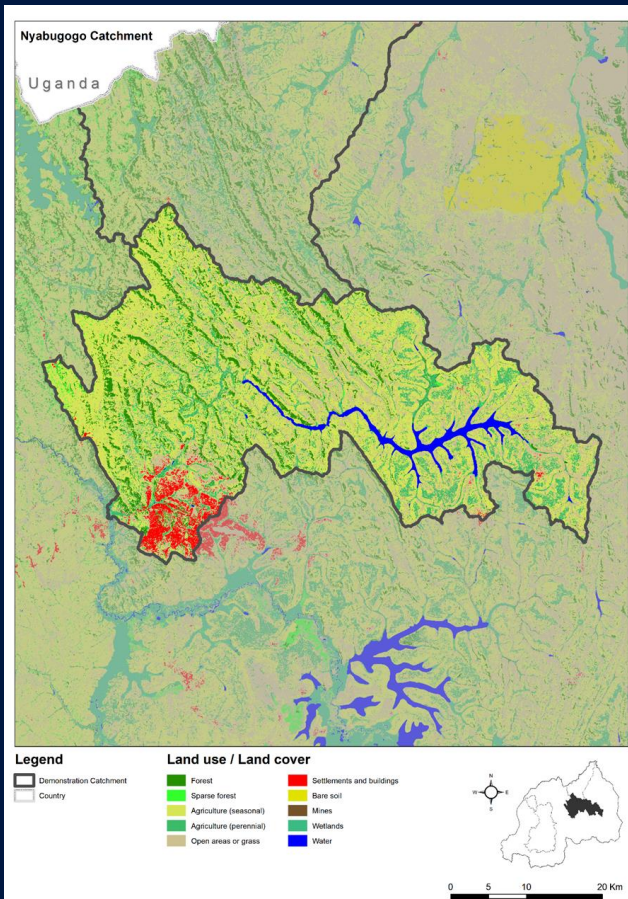




...and utilities (REG, WASAC)



# Catchment planning is spatial planning using GIS and remote sensing...





*... and local  
knowledge of  
catchment  
inhabitants*







Joint analysis of  
issues and opportunities

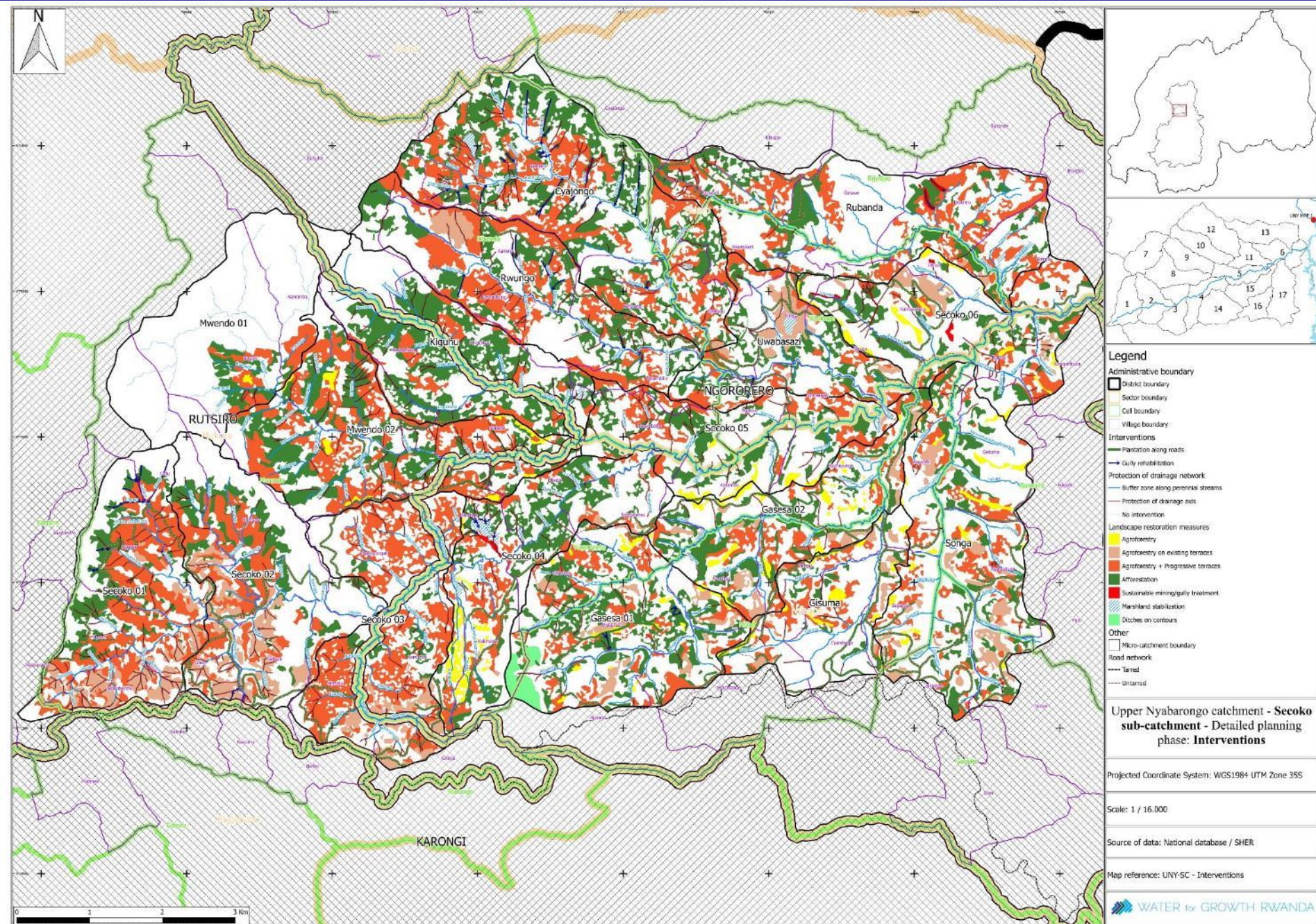




**Local level joint decision making by project implementation committees in micro-catchment action plans**



# MCAP intervention plan including catchment restoration (using CROM DSS)







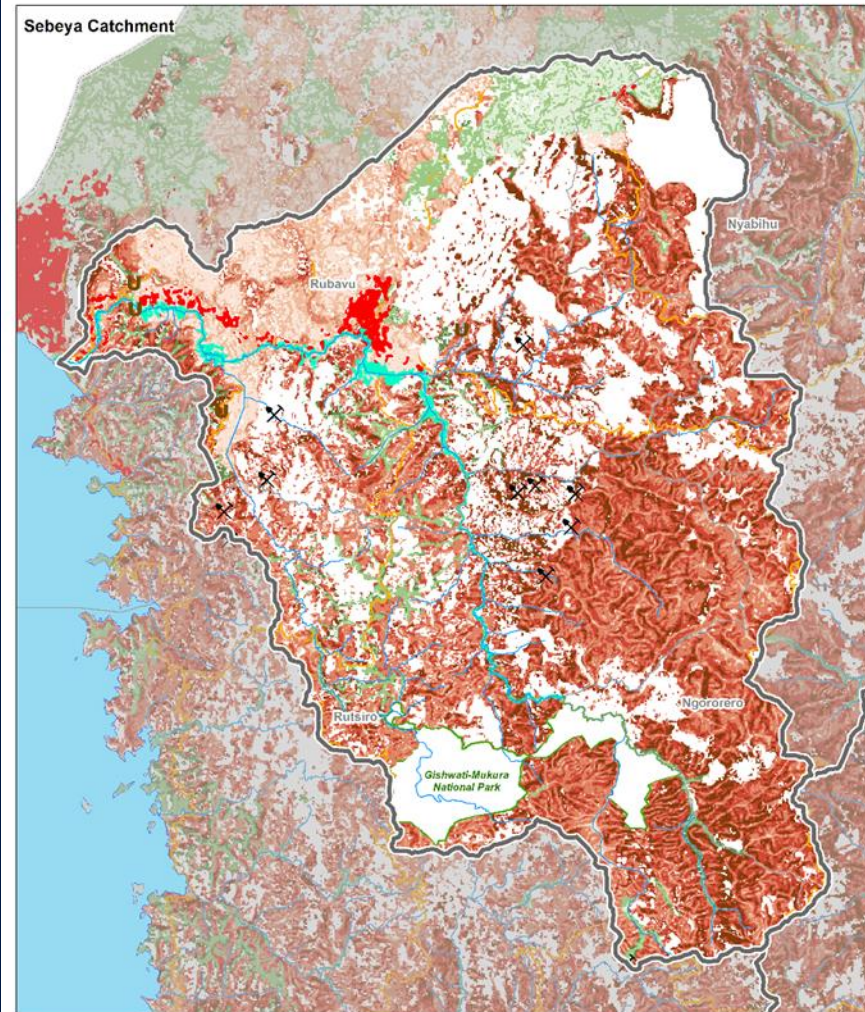


A photograph of three men in a rural, hilly landscape. In the center, a man stands leaning against a large, leafy tree with yellow fruit. He wears a purple jacket over a green and black striped shirt and dark blue trousers. To his left, another man sits on the grass, wearing a blue jacket and a grey cap, gesturing with his hands. To the right, a third man sits on the grass, wearing a green jacket and light-colored trousers. The background shows a grassy hill under a blue sky with some clouds. A dark blue banner with white text is overlaid at the bottom.

# Challenges & opportunities



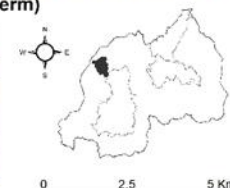
# Spatial planning challenge: GIS skills at districts



9. Catchment wide restoration areas with intervention options (long term)

- Mining sites
- Gullies
- Roads on Slopes (>15%)
- Rivers
- Flood risk zones
- Lakes
- National Parks
- Demonstration Catchment
- District
- Country

Land slope ↓	Soil depth →	
	≥ 0.5 m	< 0.5 m
0 – 6 %	Class I	Class VI
6 – 16 %	Class II	Class VII
16 – 40 %	Class III	Class VIII
40 – 60 %	Class IV	Class VIII
> 60 %	Class V	Class VIII







Physical / financial challenge:  
soil erosion risks throughout the country





Institutional challenge:  
Catchment Committees starting up (from 4  
excellent W4GR Catchment Task Forces),  
10-20 still to be established from scratch





Institutional opportunity:  
Rwanda Water Resources Board  
establishment and operationalisation



A landscape photograph showing rolling green hills under a cloudy sky. The hills are covered in lush green grass and some small trees. The sky is filled with large, grey clouds, with some light breaking through. In the foreground, there are some green plants and a fence line.

Knowledge challenge: water resources  
monitoring as a programme, not as projects





Energy  
challenge:  
Firewood



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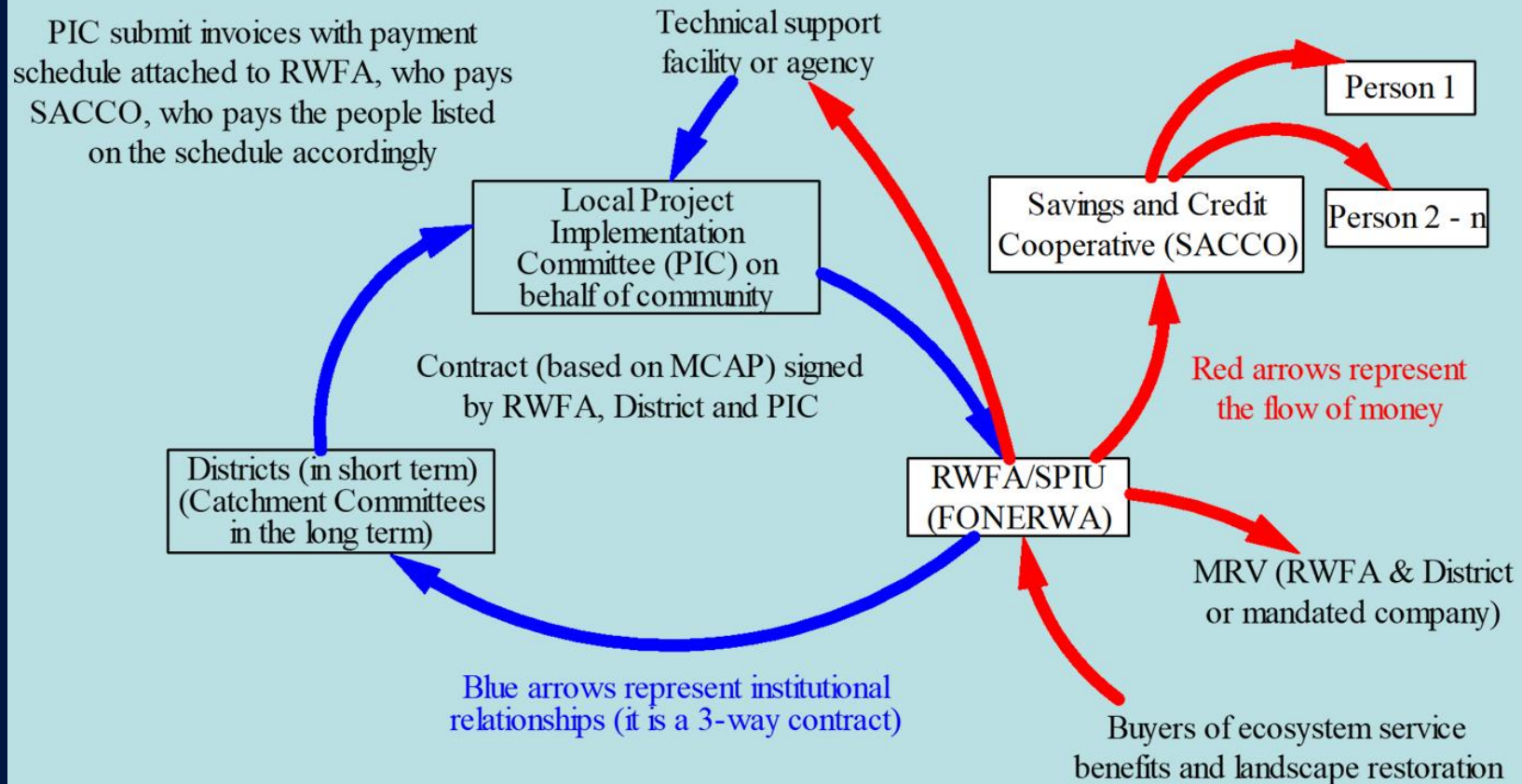




**Capacity challenge:  
Developing skills for  
sustainable land  
husbandry**



# Challenging financing opportunity: Payment for Ecosystem Services (pilot Secoko)





# Hopeful opportunities

- Rwandans are resilient
- Solutions '*made in Rwanda*' are quickly adopted
- Strong focus on performance throughout government and society
- W4GR provides strong foundation for IWRM and catchment planning
- 3 more years of EKN support
- PES study shows: benefits of catchment management outweigh costs tremendously
- Innovative financing of IWRM and irrigation is catching on





# Conclusion

Catchment Planning, incorporating IWRM and SEA principles, provides solid base for sustainable green growth and climate resilience in Rwanda and offers a key instrument to implement Rwanda's National Strategy for Transformation







**Murakoze cyane**





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