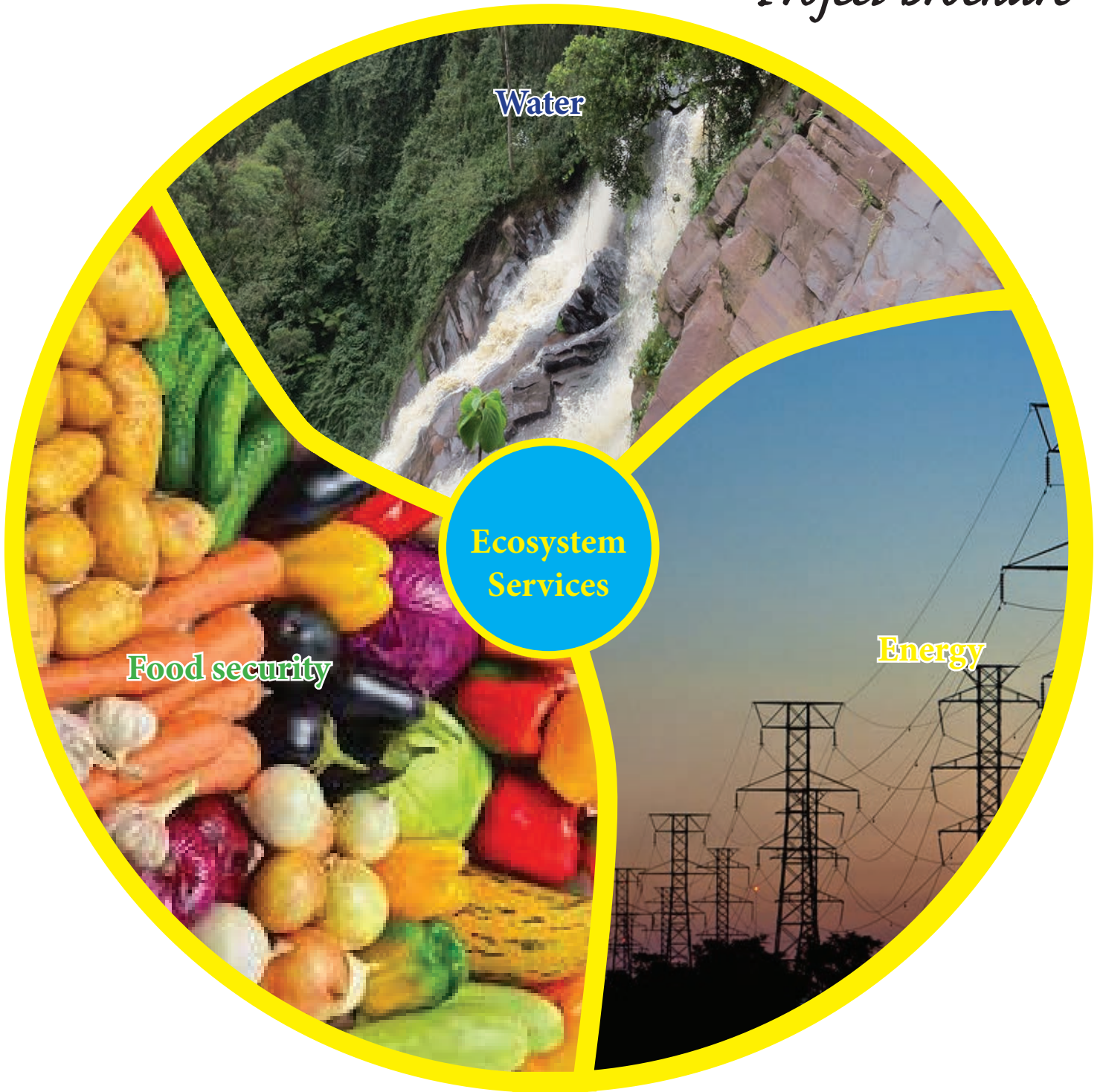


# Using Water-Energy-Food Security Nexus to Promote Climate Resilient Decisions and Model Actions in Selected Landscapes along Akagera Basin

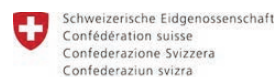
*Project Brochure*



*Project duration: 1<sup>st</sup> October 2015 to 30<sup>th</sup> September 2018*



**Districts:**  
*Bugesera,  
Kirehe, and  
Rutsiro*



Swiss Agency for Development  
and Cooperation SDC



## Project background

Meeting human aspirations in the face of a changing climate and an increasingly resource scarcity requires that resources are used cautiously and equitably. Rwanda is witnessing rapid economic transformation, guided by the Economic Development and Poverty Reduction Strategy (EDPRS II). This economic transformation combined with population growth, will lead to additional pressure on the environment and particularly the use of water, use of energy and agricultural production.

Rwanda is one of the pioneer countries in having developed in 2011 its “Green Growth and Climate Resilience Strategy”. This strategy recommends the need to understand the linkages between different sectors in future scenarios. Agriculture, energy and water are closely interlinked sectors: Intensification of agriculture requires more water and energy per unit. Meanwhile, energy needs are commonly being met through the use of water for



*Freshwater ecosystems in the Akagera basin perform a range of services to local communities and contribute to the countries' economy. There is need to understand the linkages between water, energy and food in order to better guide policies for the sustainability of these services.*

hydropower production and biomass for cooking.

This inter-dependence needs analysis to guide natural resource management, investments and policy. Information to guide decisions as well as demonstration initiatives will help to support climate resilience activities and community livelihoods.

Sustainable energy transitions entail shifting away from traditional biomass use, while at the same time meeting climate change mitigation targets. Developing modern bioenergy and hydropower

are potential options, requiring both water and land. Similarly, sustainable agricultural transformation will require higher energy and water inputs to improve productivity.

Upstream water-withdrawals for irrigation may reduce water availability for hydropower generation and ecosystems. At the same time, the agricultural sector will need to adapt to a changing climate in particular focusing on water management to bridge more frequent droughts.

In Rwanda, Akagera Basin plays a significant role in biodiversity conservation and provide essential services for human well-being. However, there is an increasing competition for those services and as a result, they are being depleted as the country develops and the population increases. For instance, there is increasing competition for water, which is being exploited for hydropower, irrigation, and water supply to major towns and various industries.

This project will illustrate the future development pathways for food, water and energy production and its implementation will focus on three landscapes selected in three districts namely Bugesera, Kirehe and Rutsiro with the results to guide also planning and decision-making in other districts.

## Objectives and expectations

The goal of this project is to provide evidence-based policy guidance and promote local actions that foster climate resilience and participatory sustainable development along the Akagera Basin.

The project will assess the risks and opportunities to the Akagera Basin under different development trajectories for different stakeholders, with focus on the food, energy, environment nexus. The project will result in an identification of sustainable and agreeable development pathways to guide future investments at national and local level. The three focal areas of the project – Water, energy and food security and the environment – are all key elements within EDPRS II and the project will contribute to the implementation of the Green Growth and Climate Resilience Strategy.

### EXPECTED OUTCOMES

- High Level technical reports and policy briefs (25) illustrating future development pathways for food, water and energy production to guide planning and decision-making in focal districts of Rutsiro, Bugesera, and Kirehe and other districts in Rwanda
- Over 2,000 stakeholders representing different development sectors operating in Rutsiro, Bugesera and Kirehe Districts understand and share vision about future development pathways
- Over 15 Nature Based Community Enterprises (NBCEs) empowered and supported through training, institutional development and link to markets (average of 5 per project landscape);
- Over 800 people supported in pursuing sustainable practices

## Main activities and methods

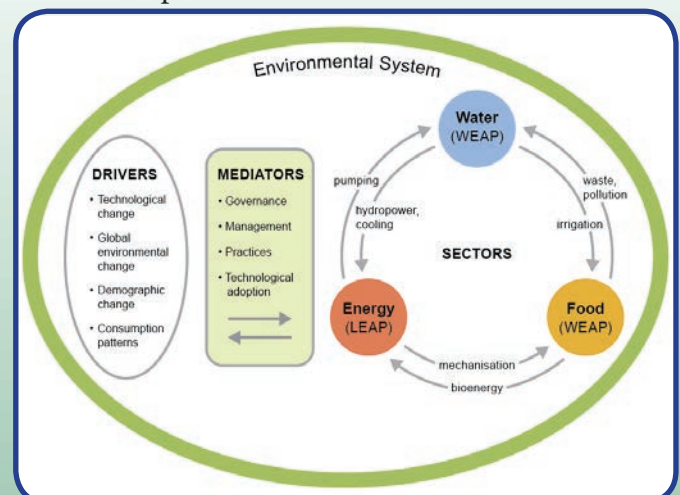
The project will work at 3 main levels: 1) evidence collection through research and monitoring, 2) multi-sector dialogue to facilitate the understanding and development of shared vision on future development in selected districts, and 3) local community enterprises to serve as demonstration models to link local action and planned dialogue.

The project is structured around four work-packages. Key methodologies for each work-package are described below:

1. **Integrated Landscape Assessment and Monitoring (ILAM):** we will conduct annual Integrated Landscape Assessment and Monitoring in the 3 project landscapes. This will build on ARCOS experience in conducting this activity, focusing on biodiversity, ecosystem services and socio-economic status. This activity will be implemented by ARCOS, working closely with Nile Equatorial Lakes Subsidiary Action Program (NELSAP) and with stakeholders in each landscape.
2. **Analyse Water- Energy-Food Nexus:** We will analyse current policies and plans, develop scenario narratives with stakeholders and parameterise the Nexus toolkit. Stockholm Environment

Institute (SEI)'s Water Evaluation and Planning (WEAP) tool and Long-range Energy Alternatives Planning (LEAP) tool are modelling tools that use a broad set of data collected in the field and from other sources. The toolkit can then analyse several development pathways, conduct stakeholder analysis of outputs and finally evaluate different development pathways. This activity will be implemented by SEI, with ARCOS support on the ground.

3. **Evidence based platform and stakeholder dialogue for advocacy:** We will involve key stakeholder groups in the Kagera Basin, including government, academia, communities, Community Catchment Committees, NGOs and the private sector. We will use the nexus toolkit to support discussions and influence decision-making leading to a basin-wide planning vision. We will produce awareness raising materials, technical and policy papers to guide public understanding and guide decisions. This activity will be implemented by ARCOS, supported by SEI.
4. **Building Sustainable Nature-Based Community Enterprises:** This activity will be implemented in demonstration sites to



The food-energy-environment nexus as addressed with the SEI nexus tool-kit (WEAP-LEAP)

enable joint learning with stakeholders, through local action planning and testing of interventions designed to increase climate change resilience. With the districts, we have already identified all the community groups active in each district, including women and youth. During the project implementation, we will conduct further analysis of these groups, and a special attention will be paid towards women and youth groups.



### About the Nexus

*A nexus approach reveals how management decisions regarding one resource or sector impact on other resources and sectors, quantifying the feedbacks and links between them. It identifies externalities, interactions, and potential trade-offs at different scales. Importantly, it can highlight where sector-based plans are incompatible, making it possible to avert unintended consequences and find optimal solutions.*

### Implementation partners:

This project is coordinated by ARCOS in collaboration with Stockholm Environment Institute (SEI), Nile Equatorial Lakes Subsidiary Action Programme (NELSAP), the Districts of Bugesera, Kirehe, and Rutsiro, and various stakeholders and sectors involved in water, energy and agriculture in the selected Landscapes along Akagera Basin. It is funded by Rwanda Environment and Climate Change Fund (FONERWA) with co-funding from SEI and ARCOS through its partnership with the Swiss Agency for Development and Cooperation (SDC).

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