WATER AND ENERGY LINKAGES

Case Study of "Akanyaru Peat Production and Power Generation Project"

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August, 01, 2015

QUESTIONS

- What are the main transboundary challenges/opportunities
- What is the existing applicable legal framework
- What are the main challenges/lessons learnt in developing/implementing the existing legal framework?

INTRODUCTION

- Introduction/Background
- Current Situation & Achievements
- Challenges/Opportunities
- Recommandations

BACKGROUND

- Rwanda is a landlocked country located within the Great Lakes region of the central eastern part of Africa.
- The Congo Nile Ridge divides the country's waters into two parts: those flowing to the west into the Congo Basin and those flowing to the east into the Nile Basin.
- Therefore, Rwanda principally has only two hydrographic basins. The Nile basin covers (**67%**) of the territory and the Congo Basin covers (**33%** of Rwanda's territory).

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- The Nile Basin covers the greatest part of the country. Its main rivers, namely the Nyabarongo and the Akanyaru, together with their many tributaries form the River Akagera, which flows into Lake Victoria. Along these rivers are also marshes and numerous shallow lakes forming a network of wetlands of national and global importance as major water reservoirs.

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- The Congo Basin consists of short rivers which flow into Lake Kivu with Rusizi/Ruzizi River as its outflow into Lake Tanganyika. Its principal tributary, the Ruhwa River, forms the border between Rwanda and Burundi in the South, while River Sebeya in the North-West flows into Lake Kivu (cf.WRM Policy 2011).

Energy in Rwanda

- With the rapid increase in urbanization Rwanda's total installed capacity has jumped from 25MW to 119MW in the last 20 years.
- To ensure long term sustainable and reliable energy supply, a balance is needed in the energy mix. Moderate use of each resource including hydro, thermal, solar, peat and methane is the plan for the energy mix going forward.

Akanyaru Peat Project

- The **Akanyaru River** is the main tributary of the Nyabarongo River. It rises in the western highlands of Rwanda and Burundi, flows east and then north along the border between those countries before joining the Nyabarongo River.
- The Akanyeru River average discharge is 21 m3/s, based on measurements from a monitoring weir between 1957 and 1985. The discharge follows the seasonality of precipitation and is highest in April **(29 m3/s)** and lowest in August **(16 m3/s).**

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- The amount water allowed to HAKAN/YUMN Ltd is **10,800m³/day,** (which is equivalent to **0,125m³/s**) from Akanyaru River for electricity generation according to the surface water abstraction authorization n°0016/MINIRENA/WRM/2015. Considering the lowest river discharge the requested water was granted with no negative effect.

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- The peat power project is located in Gisagara District /Southern Province. The Turkey company YUMN Ltd an independent Power Producer is taking full advantage of this unutilized resource which will generate 80MW by 2017.
- The contract between MININFRA/REG and HAKAN/YUMN Ltd was signed in 2012
- ESIA prepared in 2013
- Implementation with preliminary works started in June 2014
- A further $260 million will be injected into this project.

General Challenges in TWRM

- Climate change (droughts and floods)
- Environmental degradation
- Low social economic development
- Low water infrastructure development for regulation control
- Inadequate of IWRM data
- Uncoordinated Infrastructure
- Disparities and inadequate human & Institutional among the states

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- Political turmoil, **conflict , war, between countries**
- **Mistrust between states**
- **No common understanding between countries**
- **Lack of political will and commitment of by some countries in cooperation**

Impacts of the project

- According to the SWECO ESIA report (2013), the project will have positive and negative Impacts
- **Positive Impacts**

✓ local employment
✓ contractor employment and poverty alleviation
✓ local business enhancement
✓ economic diversification,
✓ healthcare for employees
✓ possibility of savings for the employees and tax payments.

- **Negative Impacts**

✓ soil pollution
✓ waste generation
✓ water use and quality impacts
✓ impacts on land and biodiversity
✓ air pollution
✓ noise and vibration
✓ water borne diseases
✓ risk of accidents

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- Different mitigation measures for these negative impacts have been proposed to reduce their effects on the socio-economic environment as well as on the biophysical environment to a minimum.
- These include general environmental management conditions and a **Mitigation measures.**
- The number of specific mitigation measures including:

✓ reduce soil impacts
✓ minimize water use and quality management
✓ management of non-hazardous waste
✓ land and biodiversity protection

Mitigation

- ✓ water storage dams management
- ✓ occupational, health and safety management
- ✓ air quality management
- ✓ management of noise and vibrations
- ✓ training and capacity building for employees

Existing applicable Policy &Legal Frameworks

- UN's Water Convention (1997)
- **Nile Cooperative Framework Agreement (CFA) (2010)**
- Convention internationale de la GIRE du basin du Lac Kivu et de la Rivière RUZIZI/RUSIZI (2014)
- Kagera MoU (2015)
- Rwanda National WRM (2011)
- Protocol for sustainable development of the LVBC, 2014
- Rwanda water law(2008)
- Water Resources Management Master Plan

Policy &Legal Frameworks

- Several legal and policy documents relate to environmental issues like:

- ✓ Rwanda Vision 2020
- ✓ EDPRS II
- ✓ National Environment Policy
- ✓ National Environment Water
- ✓ Land law
- ✓ Law on Mining and Quarry Exploitation

- Besides the national legislation, policies and strategies, the current Project is designed to comply with the International Finance Corporation safeguards and guidelines .

Recommendations

- After consultation meeting held from 22-23 December 2014, the two countries agreed on the following recommendations :
- Put in place multisectorial technical committee for follow up of the project implementation
- Preparation of MoU between the 2 countries on shared Natural Resources
- Development of Environmental and social management plans to guide all activities of the project concerning the protection of the environment.
- The YUMN Ltd will duplicate the project in Burundi and also the energy can be shared though the Interconnection project of NBI.

Lessons Learned

- Cooperation before utilization of shared resources is needed
- Negotiations between countries who share a water resource is essential
- Political will and commitment are important for successful cooperation for water- sharing

Institutional framework for the Project

- **Ministry of Infrastructure (MININFRA)**
- **Ministry of Natural Resources (MINIRENA)**
- **REG**
- **RNRA**
- **REMA**
- **RDB**
- **Gisagara and Nyanza Districts**

"The future of water is in our hands and the time to move is now."

- Thank you for your attention

- MURAKOZE