



Short Brief on Lake Victoria Environmental Management Project (LVEMP)

Project Background

Lake Victoria, the second largest freshwater body and the largest fresh water fishery ground in the world with a surface area of about 68,800 km² is shared by Kenya, Tanzania, and Uganda. Rwanda and Burundi are a part of the upper watershed that drains into Lake Victoria through the Kagera River. The catchment area of the Lake is 194,000 km² of which 44% is on the Tanzanian side. Approximately 40 million people live in the basin where about 9 million people on Tanzania side their livelihood directly or indirectly depend from the lake or basin resources.

However, these resources have increasingly been threatened by severe environmental degradation and pollution of water resources and loss of biodiversity in both terrestrial and aquatic ecosystems. The underlying causes of these problems are many and varied and they include rapid population growth, poor know-how and expanding human activities. On the other hand the Lake is faced with several environmental challenges including (i) Deteriorating water quality as the result of increased sedimentation, pollution and eutrophication (ii) Declining Lake levels (iii) Overexploited natural resources (iv) Resurgence of Water Hyacinth and (v) Climate change.

The Lake Victoria Environment Management Programme (LVEMP) which is a regional effort was conceived and initiated to address the observed environmental challenges through bringing the attention of the EAC partner states and stakeholders to the problems threatening sustainable development and utilization of the lake basin resources and strengthening of governing institutions. Two phases of Lake Victoria Environmental Management Project; LVEMP phase I and II have been implemented while a third phase is under preparation. Phase one was implemented from March 1997 to December 2005 and phase two from September 2009 to December 2017.

The vision of the project is to have a prosperous population living in a healthy and sustainably managed environment providing equitable opportunities and benefits.

Lake Victoria Environmental Management Project Phase – I (LVEMP I)

The project was implemented from March 1997 to December 2005 and was financed by the World Bank (WB) through IDA credits and grant from the Global Environment Facility (GEF).

The project aimed at enhancing sustainable benefits to riparian communities, conserve biodiversity, and provide the riparian communities with harmonized and shared tools to regulate and manage the lake. The intervention focused primarily to strengthen the scientific understanding of the lake ecosystem; and secondarily to pilot technologies that can promote sustainable livelihoods for communities, and lay a foundation for better management of the lake.

The main objectives of the project were to provide the necessary information to improve management of the Lake ecosystem; establish mechanisms of cooperative management by the three riparian states; identify and demonstrate practical and self-sustaining remedies and build capacity for ecosystem management.



The notable achievements of LVEMP I, included the following:

- i. Research and ecosystem monitoring activities improved the understanding of the Lake ecosystem, particularly regarding hydrology, fisheries (species diversity, stock levels, etc.), land use and soil erosion patterns, and municipal and industrial pollution hot spots.
- ii. The Lake Victoria Fisheries Organization (LVFO) was established to coordinate the national fisheries research and management activities. Experience from this organization contributed to the establishment of the LVBC in July 2005.
- iii. At the national level, technical skills, facilities and equipment of the water and fisheries research and management institutions were upgraded.
- iv. At the community level, Beach Management Units (BMUs) were established to support co-management of the fisheries, including control of illegal fishing.
- v. Successful implementation of pilot community-based catchment rehabilitation, particularly with regards to soil and water conservation activities.
- vi. Successful implementation of biological control measures that reduced water hyacinth infestation to non-nuisance levels.

At closing of LVEMP I, both the Independent Evaluation Group (IEG) and the Implementation Completion Reports (ICRs) rated the achievement of development objectives of LVEMP I as marginally satisfactory. This was mainly because the harmonization of policies, pollution and erosion control, improved water quality, and translation of research results into strategic resources' management plans were not achieved. These problems were addressed in the LVEMP II project design.

Lake Victoria Environmental Management Project Phase – II (LVEMP II)

LVEMP II succeeded LVEMP I and was also a regional project developed to enhance environmental management of the Lake Victoria Basin and to contribute in meeting the EAC's Vision and Strategy Framework for Management and Development of the Basin – *“a prosperous population living in a healthy and sustainably managed environment providing equitable opportunities and benefits”*. The project aimed at contributing to a broad-based poverty alleviation and improvement of livelihoods of people, by supporting sustainable management of shared natural resources of the Lake Victoria Basin which many communities depend upon.

The project operated in all the East African countries. It first started in Kenya, Tanzania and Uganda in the year 2009 and was financed by the World Bank (WB) through the International Development Agency (IDA) support under Adaptable Program Lending 1 (APL1) and had to run for four years from Financial Year (FY) 2009 to FY 2013 but extended to June 30, 2015 during the restructuring of the project conducted in April 2012. The project was also rolled over to Burundi and Rwanda through the same IDA support under APL2 from FY 2010 to FY 2017.

It was implemented by and largely through the structures of the Sector Ministries under the coordination of National Focal Point Ministries in the Partner States. To enhance the project implementation capacity of Ministry of Water and Irrigation (MoWI), LVEMP II supported a National



Coordination Office as an integral part of the Focal Point Ministry. The National Coordination Office was headed by a National Project Coordinator, who also led the National Project Coordination Team (NPCT) comprising of technical experts assigned to the project by the relevant sector ministries plus other support staff.

Project Components, Targeted Beneficiaries and Scope of the Project

During implementation, the project activities were categorized into four components which are as follows:

Component 1: *Strengthening institutional capacity for managing shared water and fisheries resources.* This component aimed at building the capacity of existing regional and national institutions to harmonize policies, legislation, and regulatory standards, and develop basin-wide management frameworks, to improve cooperative management of the shared trans-boundary water and fisheries resources of the Lake Victoria basin.

Component 2: *Point sources pollution control and prevention.* The aim of this component was to reduce environmental stresses within the lake and its littoral zone, through the rehabilitation of priority wastewater treatment facilities, promotion of industrial cleaner production technologies, installation of the lake navigation equipment, and implementation of a contingency plan for the oil spills and hazardous wastes management in the Lake Victoria Basin.

Component 3: *Watershed Management.* This component aimed at reducing environmental stresses from the lake basin through the implementation of sustainable soil and water management practices and livelihoods improvement interventions, using community-driven development approaches, to improve water use efficiency in the Lake Victoria basin and generate positive externalities to downstream countries.

Component 4: *Project Coordination and Management.* This component aimed at providing resources necessary for the effective coordination and communication, and monitoring and evaluation of the project activities.

Project Beneficiaries

Beneficiaries of this project are the communities in the whole Simiyu River Catchment and all communities in the littoral zone. Special attention has been given to women. Other beneficiaries include institutions responsible for Fisheries and Water Resources management in the Lake Zone (e.g. Tanzania Fisheries Research Institute (TAFIRI), Fisheries Education Training Agency (FETA), Fisheries Development Division, Lake Victoria Basin Water Board (LVBWB), Water Quality Laboratories, Local Government Authorities (LGAs) etc.).

The scope of the project was the entire Simiyu Catchment and the littoral zone of the Lake Victoria.

Summary of overall achievements of Project Development Objectives (PDOs)

The Project development/global environmental objectives (PDOs/GEOs) were to:



- A. **Improve collaborative management of the transboundary natural resources of Lake Victoria basin (LVB) for the shared benefits of the EAC Partner States.** This PDO had several indicators which were as follows;
- *Adoption of harmonized policies, legislation and regulatory frameworks for water and fisheries management.*
 - *Adoption of basin-wide water and fisheries resources management frameworks*
 - *Approval of the draft harmonized policy on fisheries management and agreement on a strategy and timeframe*

The objective was achieved when the Consultancy Report detailing the water resources management policy with an agreed action plan as the strategy was approved by LVB-SECOM and subsequently adopted by the 30th EAC COM. Likewise, the draft Fisheries and Aquaculture Policy for East Africa was endorsed by the LVFO Council of Ministers and approved by the EAC Council of Ministers.

- B. **Reduce environmental stress in targeted pollution hotspots and selected degraded sub-catchments to improve the livelihoods of communities, who depend on the natural resources of LVB.** The indicators of this PDO and the corresponding achievements were as follows;
- *Number of urban pollution hotspots addressed through investments to control wastewater pollution: the target was 3 hotspots.* Bukoba sludge disposal facility has been completed and it is operational, construction of artificial wetland in Mwanza City and slaughterhouse is completed. House connections to main sewer line in Mwanza is completed (290 households were connected out of 300 targeted).
 - *Number of hectares under sustainable land management practices in the targeted sub-catchments:* The target was 2450 Ha. About 1,400 Ha have been treated through CDDs and 2,600 Ha have been treated through CMIs.
 - *A regional strategy on water hyacinth control, submitted by LVBC to the Council of Ministers for endorsement:* The Strategy was endorsed by 10th SECOM and national Action Plans for implementation prepared and are now under implementation in the Partner States through the CDD and CMI approaches. The strategy has also been shared with other Stakeholders in the LVB to guide their interventions programming and implementation. LVBC is also undertaking resource mobilization for its long-term implementation.
 - *Number of identified water hyacinth hotspots with active monitoring and removal activities.* The target was to cover 18 hotspots. As of now 28 weevils and 4 mites rearing units are operational in 24 hotspots in rivers and littoral zones of Lake Victoria. Monitoring of water hyacinth coverage indicates reduction from 520 ha in Oct 2010 to 106.6 ha in May 2017. Which is about 80% reduction.
 - *Number of direct Project Beneficiaries and the percentage of female among the beneficiaries.* The target was to have 58,500 beneficiaries. Total number of beneficiaries from CDD sub-projects to date is approx. 342,600 Beneficiaries from public toilets are 136,300, beneficiaries from Household connection to main sewer line in Mwanza are 1650 and beneficiaries from Bukoba sludge disposal facility are approximately 25,000. The percentage of female beneficiaries is 51%.



Beyond Results Framework

There are several achievements made by LVEMP – II which were not reflected in the results framework, some of them are as follows;

- i. Establishment and operationalization of Lake Victoria Fisheries Trust Fund.
- ii. Strengthening of Marine Rescue Coordination Centre (MRCC): Communication equipment (radios) and office equipment were procured and handed over to MRCC for strengthening marine security.
- iii. Mwanza water quality laboratory was supported towards accreditation in May 2015
- iv. Rehabilitation of Water Laboratories in Mwanza, Musoma and Bukoba
- v. Support for Strengthening Fisheries Surveillance in Lake Victoria: Four (4) Patrol Boats with rubber dinghies equipped with sea safety equipment were procured, certified and handed over to the Fisheries Development Department in Mwanza by August 2016.
- vi. Conduct of Ecosystem Monitoring (Fisheries Frame Survey; FS)
- vii. Updating of the Fisheries Management Plan III: facilitation was provided, and the plan has been updated.
- viii. Support for strengthening Fish Quality and Water Quality laboratory in Mwanza in terms of equipment and training.
- ix. Several sanitation facilities have been constructed through the implementation of CMI and CDDs. These include: 72 public toilets, Three Markets (Igogo, Sabasaba and Kakukuru Markets) and 21 Waste collection points, each 145 m³.
- x. Water storage in the project area has increased by 2,800,000m³ through project interventions: (Construction/rehabilitation of 11 Charco Dams, drilling of 15 boreholes, Construction of 48 rainwater harvesting tanks; and Construction of 22 shallow wells).
- xi. Promotion of Biogas technology and Improved Cooking Stoves. This has significantly reduced the consumption of firewood. Some homesteads have cut the consumption of firewood for cooking from four (4) oxen -carts to two (2) carts per year. (Equivalent to 50% reduction in firewood Consumption).
- xii. Livelihood improvement: The project has reached about 120,000 people and supported them on livelihood improvement through 280 CDDs which have livelihood improvement component. (i.e. Beekeeping, horticulture/agriculture, Poultry, Fish farming, Cow fattening, Dairy Cattle, Dagaa processing, Milling machines, etc.).

Challenges

The project faced several setbacks/challenges during implementation. Some of them are listed below;

- i. Prolonged procurement procedures (Delays)
- ii. Abandoning of site by Contractor due to complications arising from VAT exemptions
- iii. Lack of compensation funds
- iv. Slow adoption of environmental conservation/protection options
- v. Weak take-up of LVEMP II interventions by the LGAs
- vi. Drought and erratic rains



Key Lessons Learnt

The following are some of the key lessons learnt;

- i. For better results in the management of the Lake Victoria and its resources, the partner states should adopt and implement the harmonized policies and frameworks and use Science to guide interventions.
- ii. Awareness creation on environmental issues needs to go along with law enforcement to achieve the intended results.
- iii. Community members particularly the rural ones in the LVB are obedient to their political leaders, thus the leaders can be resourceful persons if well sensitized.
- iv. Science can play pivotal role in rehabilitation of Lake Victoria.

PREPARATION OF LVEMP III

The previous initiatives and interventions of LVEMP I (1997-2005) and LVEMP II (2009-2017) have to a certain level improved livelihoods of community and natural resources conservation of the LVB. However there are still challenges of environmental degradation resulting from continuing over utilization of natural resources, poor disposal of both liquid and solid wastes from industries; municipal and domestic which further continue to threaten livelihoods of the people in the basin. Restoration of the degraded LVB environment requires a considerable period of time after introduction of intervention measures to attain the improved situation bearing in mind that degradation has also taken longer. Manifestation of restoration is anticipated to take 15 to 20 years hence implementation of third phase is necessary to as well sustain and complement previous interventions on top of new ones.

During LVEMP I, environmental related information were gathered and were used to put in place mechanisms to cooperate in improving management of the ecosystem of LVB in the three Partner States. Based on the achievements and lessons learnt from Phase I, LVEMP II was conceived. LVEMP II has contributed to notable improvement in environmental management of targeted pollution hotspots and rehabilitation of Simiyu catchment. LVEMP II interventions have also increased the readiness of LVB communities to involve themselves in development and environmental management and livelihood improvement activities which are interlinked to the extent that they enforce each other. The completed LVEMP II interventions indicate that most of the intended outputs to improve environment and livelihoods were achieved both quantitatively and qualitatively. Implementation of the proposed LVEMP III will (i) achieve stress reduction outcomes in selected polluted hotspots resulting from point and non-point sources of pollution; (ii) promote the long-term program for sustainable improvement of the environmental status in the LVB; and (iii) build capacity on climate resilience and value chains to sustain and improve livelihoods of Basin communities iv) cluster efforts to support LVB community livelihood improvement in order to reduce pressure to the environment. It is expected that LVEMP III interventions will contribute to measurable impacts on increased inputs for industries aiming at promoting Small-Medium Enterprises (SMEs) in the selected and prioritized micro-catchments of Simiyu and littoral areas of the Lake and satellite lakes.



Proposed Areas of Intervention

In order to have measurable environmental and natural resources improvement results, LVEMP III will concentrate its investment in critical watersheds specifically focusing on soil erosion and pollution hot spots. Therefore interventions will concentrate on Simiyu river basins for non-point source pollution reduction where LVEMP II invested and Mirongo river in Mwanza City on point-source pollution hotspots on the lake shore to scale up the efforts and impacts of Environmental and Natural Resource Management (ENRM) interventions.



LVEMP II interventions on pictures



Photo: Wastewater treatment facility of abattoir (bio digester)



Photo: Bukoba Sludge Disposal Facility



Photo: Rehabilitated Mwanza City abattoir. The small photo at the right bottom corner is the abattoir before rehabilitation



Photo: Tree planting at Mwamgoba Village