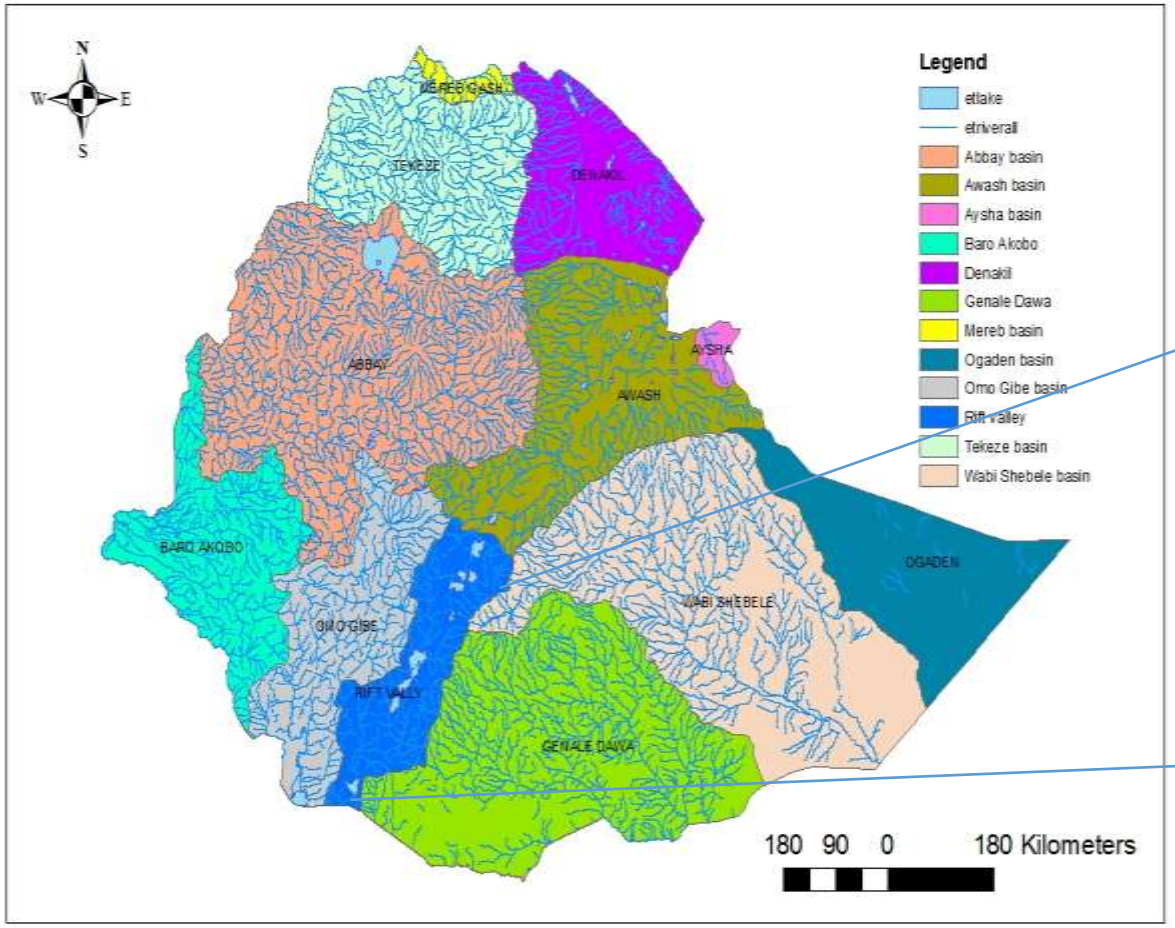
The Federal Democratic Republic of Ethiopia (FDRE)

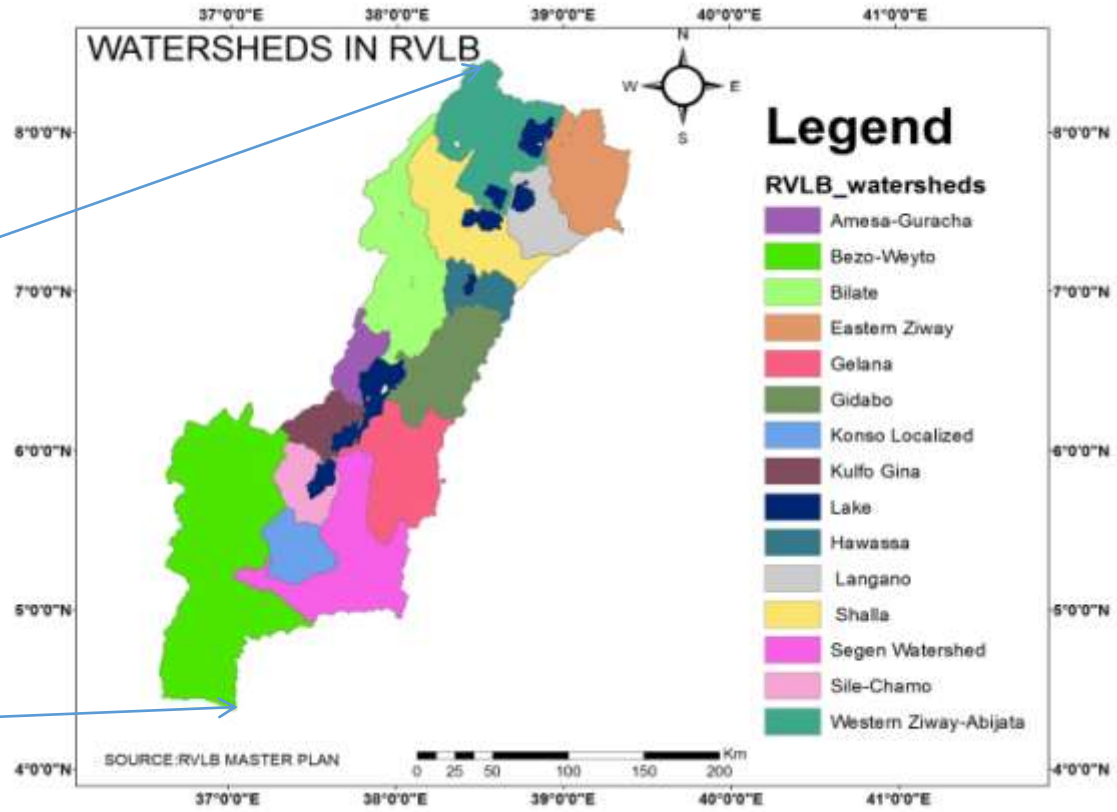
Rift Valley Lakes Basin Authority (RVLBA)

Introduction

Basins of the country



Rift Valley Lakes Basin



- Rift Valley Lakes Basin Authority is one of the twelve Basin in Ethiopia Which covers 53,000 **km^2**
- RVLBA consist of 4 sub Basin and 14 watersheds
- Most of Rift valley lakes are exist in the Basin.

Ethiopia's water resources Characteristics

- Nationally Abundant water resources especially in the highlands, that is 85% of Ethiopia's water is found in the western basins, but only **40%** of the population lives in these areas.
- The remain 15% of Ethiopia's water is found in the eastern basins but **60%** of the population lives in these areas.

- The Rift Valley Lakes Basin (RVLB), which forms the southern part of the Main Ethiopian Rift, covers an area of about 53,000 km² and extends south from the upper catchments of the Awash Basin to the Kenyan border, to the extreme south of Chew Bahir. This Basin lies both in the Oromiya and SNNP Regional States.
- The River Basin Authority was established as the technical arm and secretariat of the basin high council by proclamations No. 253/2011. It is responsible to promote and monitor the implementation of Integrated Water Resource Management (IWRM) principle in the basin.

Cont’d

- The Rift Valley Lakes Basin Integrated Development Master Plan Study (2010) concludes that this basin is characterized by under development, widespread poverty and severe land degradation.
- The situation is expected to worsen considering the increasing imbalance between a continuously growing population and a degrading resource base.

➢ The RVLB is a hydrologically closed basin, characterised by terminal lakes; those with no surface water outlet.

➢ Over abstraction, siltation, environmental degradation, population pressure, industrialization, urbanization, infrastructure development and pollution are the main challenging issue of the RVLB.

Duty and responsibilities RVLBA

- RVLBA is established on proclamation number 691/2002 article 5 and sub article 34 and house of ministers council regulation number 253/2003.

Mission

Implement a research based, participatory and sustainable integrated water resource management system with in the basin.

Vision

To be a model basin in which integrated and participatory water resource management is practice.

Objectives

To promote and monitor the implementation of integrated water resources management process in an equitable and participatory manner in the Rift Valley Lakes Basin.

Overview of key activities in relation to IWRM by RVLBA

[1] Basin plan preparation

- It started from preparing road map
- The purpose of this roadmap is to identify issues and guidelines in the preparation of basin plan for the RVLB.
- Ziway- shalla sub basin zero draft plan is prepared,

Activities under implementation by RVLBA

- The major contents or thematic areas of this plan are:- Water resources development and management, watershed/catchment management, water quality and pollution management, flood and drought risk management and stakeholder engagement plan.
- The document is improved based comments from basin high council and now it is on the process to be presented for wider stakeholders
- Framework of the whole basin plan preparation is developed in the same way to ZSSB zero draft

[2] Integrated watershed management

- Integrated Watershed management has been practiced around the lakes by selecting the most degraded areas at wereda and kebele level.
- Ziway-Shalla Integrated Watershed management
- Abaya-chammo Integrated Watershed management
- Hawassa-Integrated Watershed management
- Identification of stakeholders by sectors and creating awareness about protection of water bodies and wetlands, water use and its management as well as watershed development on sustainable manner have been implemented.

Biological SWC Practices

Nursery Site Overview Activites

Income Generating Activates

Physical SWC Practices

[3] Water allocation plan (WAP)

Water allocation plan study project at the sub basin level is designed and started.

- ❖Action plan of Ziway- Shalla sub basin water allocation plan is prepared
- ❖According the developed action plan, first phase activity is studying current sub basin water potential and demand as well as forecasting the future potential and demand is under going.

[4] Wetland restoration

- ❖ Cheleleka wetland restoration & conservation project at Hawassa sub Basin
- ❖The general objective of the this project is to ensure the rehabilitation of the wetland through implementation of well planned community-based conservation measures that enable to realize restoration of sustainable wetland ecosystem and its functions
- ❖The activities of the proposed project were divided in to different phases/component

[5] Buffer zone management

- Draft of buffer zone regulation is prepared and presented to the wider stakeholders at national level
- Based on feedbacks from stakeholders, the draft was updated and improved by inviting technical experts from different relevant institutes
- Now it is ready to submit to federal legislator institute of the country for general edition before sending it to council of ministries

[6] Action research

- Research designed on minimize challenges on the water resources are under going
- (Integrated Environmental Research for sustainable Management of lake Hawassa Ecosystem(IRCO)
- Thematic research areas of the rift valley to be part of the conventional research areas in the IUL

[7] Collaborative projects

Projects under going by different stakeholders participation

- Protecting Lake hawassa through public private partnership (PPP)
- Improved water allocation and irrigation efficiency in the Ziway- Shalla sub basin,
- Minimizing water pollution in selected watersheds of the rift valley lakes basin through implementation of waste management best practices
- Climate Resilient Green Economy (CRGE) Project on Natural Resources Management and Conservation in Ziway-Shalla Sub-basin″
- Ziway Shalla Climate Resilient Site Network in the African-Eurasian Fly way project
- Appraising the projects of the master plan and implementing them with different stakehholdrs

[8] Identification and engagement of stakeholders

Opening remark from Dr. Kebede, General Director, RVLBA

Opening remark from Cen Williams, Africa Hub Leader, PVH

Supportive statements from Ato Tameru Tafe Hurisso , Vice Mayor of Hawassa

Dr Negash Wagesho, head of the SNNPR Water Bureau, expressed his full support to the multi-stakeholder collaboration

[9] Active university-Industry linkage

The process of establishing permanent forum which includes community, public sectors, research institutes, and higher education institutions to initiate and implement equitable and participatory integrated water resources management was established.

Some of best practices of IWRM in Rift Valley Lakes Basin

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BP 1: Active University-Industry Linkage Regional Forum on Water & Energy

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Active steering & technical committee chaired by RVLBA and Center for Ethiopian Rift Valley Studies as secretary

BP 1: ctd.

Ecohydrology demonstration sites

- Kulfo grand project: rive rtraining work
-Qeme-Raya watershed management

- Biogas development project
- Land rehabilitation project

Bilate integrated watershed management

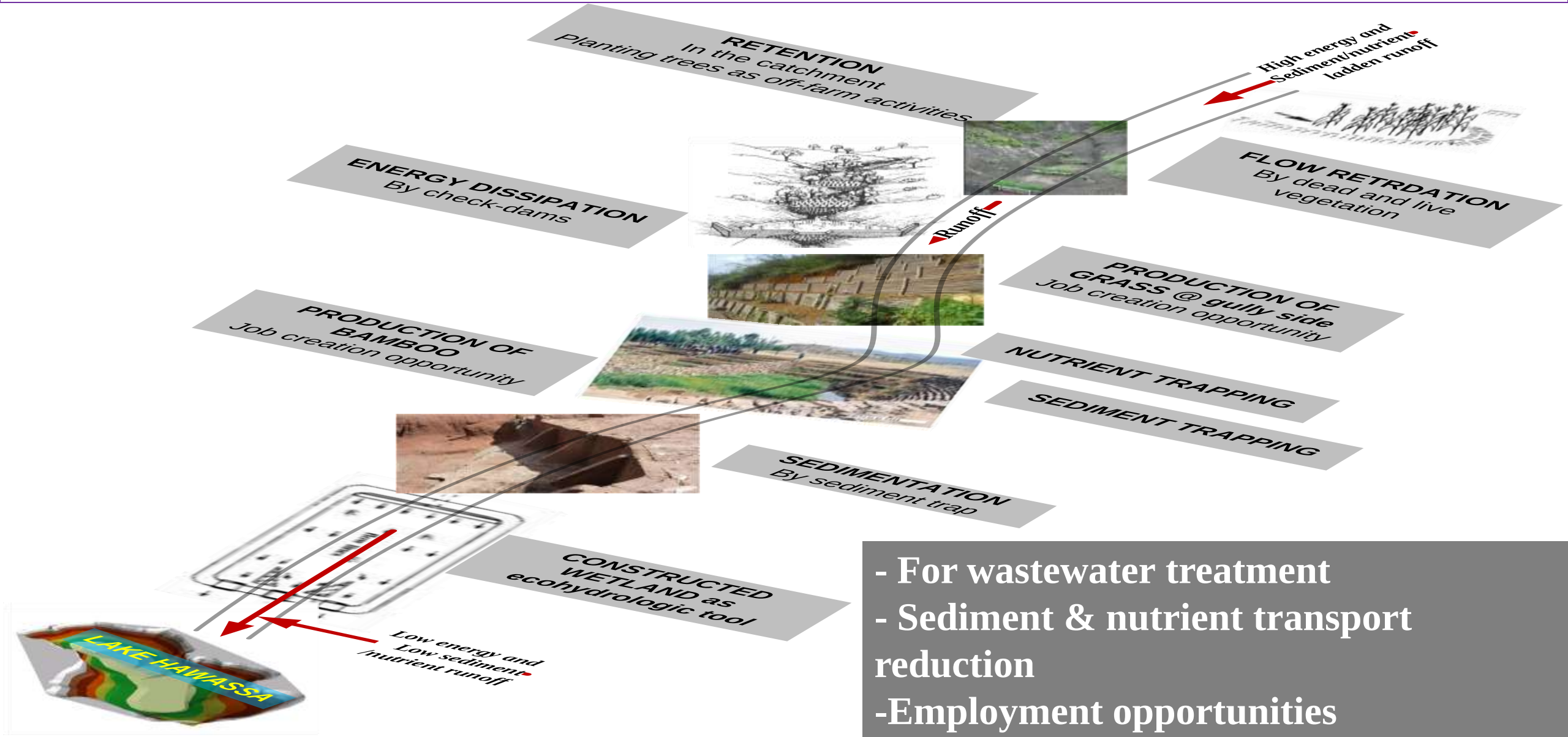
Boyo wetland integrated management

Not yet finalized

Ziway-Dugda integrated watershed managmenent

Integrated Environmental Research and policy analysis for sustainable management of Lake Hawassa Ecosystem

BP 2: Ecohydrologic approach in the context of IWSM: planned for next year through University-Industey Linkage



- For wastewater treatment
- Sediment & nutrient transport reduction
-Employment opportunities

BP 3: Wetland Preservation-Restoration-Enhancement-Establishment (PREE) approach for wetland management

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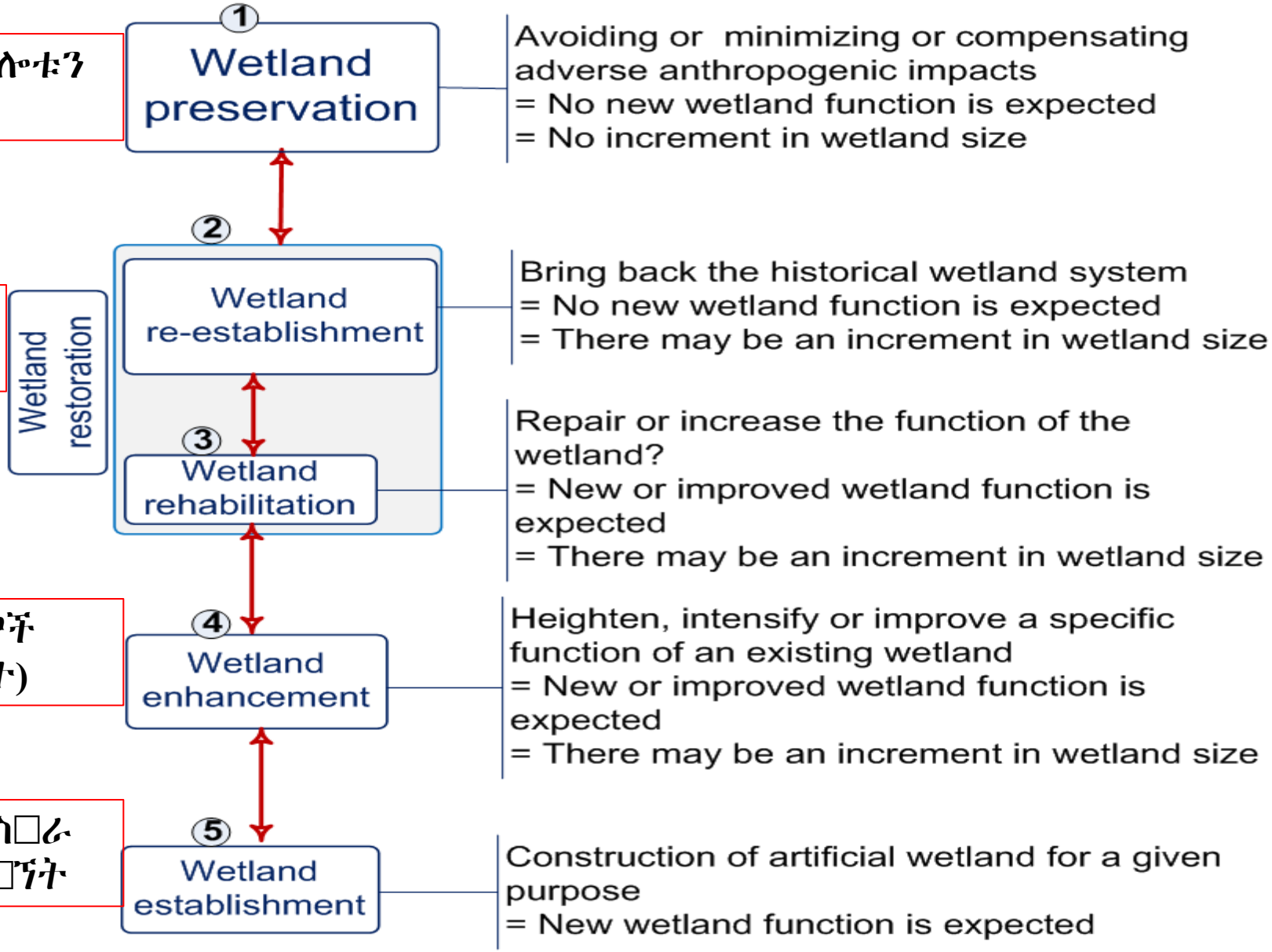
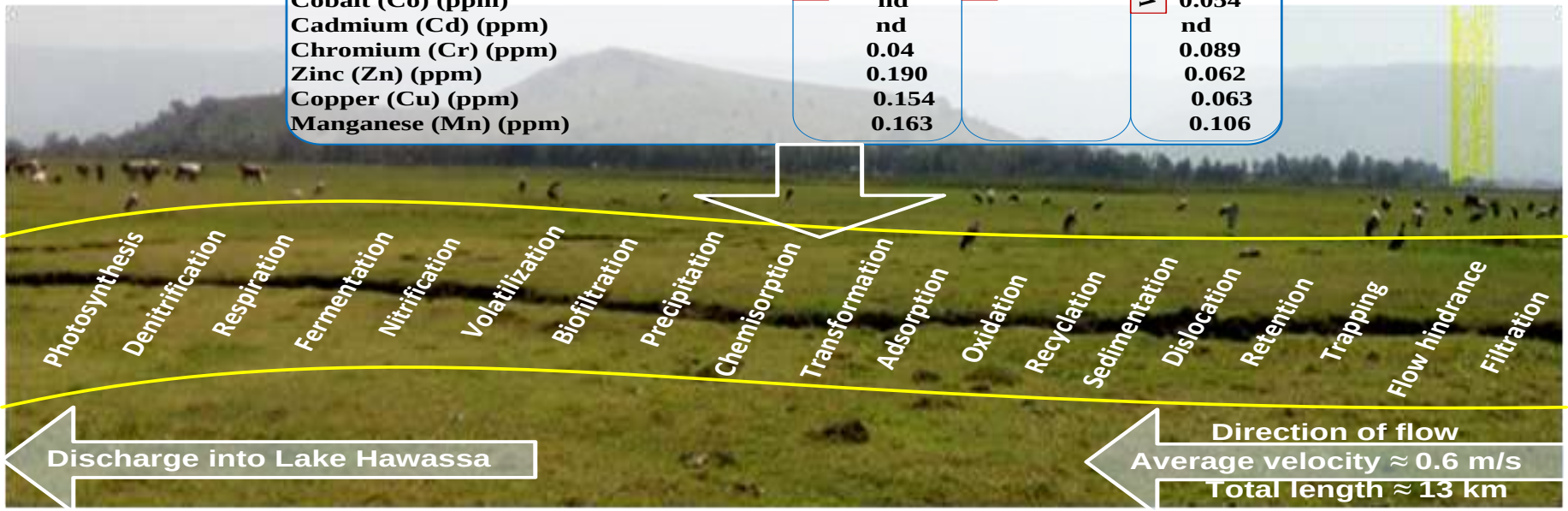


BP 4: Nature-based solution for industrial waste treatment: product of collaborative research

	Brewery	Soft Drinks	Textile
Conductivity (µS)	2533	1920	2412
Salinity (mg/l)	1200	1000	1167
Total dissolved solids (TDS) (mg/l)	1516	1154	1443
Total hardness (mg/L as $CaCo_3$)	769.2	-	701
pH	7.55	8.5	8.9
Temperature (^0C)	31	32	21.1
Biochemical Oxygen Demand (BOD_5)(mg/l)	458	656	275
Chemical Oxygen Demand (COD) (mg/l)	1808	1292	1169
Dissolved Oxygen (DO) (mg/l)	0	0	5.2
Phosphate (PO_4-P) (ppm)	12.16	1.17	1.35
Nitrate (NO_3-N) (ppm)	7.55	6.45	12.03
Sulphate (SO_4^{2-})(ppm)	16.03	44.5	12
Calcium (Ca) (ppm)	9		6.3
Magnesium) Mg (ppm)	24.5		30
Sodium (Na) (ppm)	485		544
Potassium (K) (ppm)	85		165
Nikel (Ni) (ppm)	nd		nd
Lead (Pb) (ppm)	0.050		0.044
Cobalt (Co) (ppm)	nd		0.054
Cadmium (Cd) (ppm)	nd		nd
Chromium (Cr) (ppm)	0.04		0.089
Zinc (Zn) (ppm)	0.190		0.062
Copper (Cu) (ppm)	0.154		0.063
Manganese (Mn) (ppm)	0.163		0.106
Wastewater release rate	783 m^3 per day.	15 m^3/h	1200 m^3 per day



BP 4: ctd.

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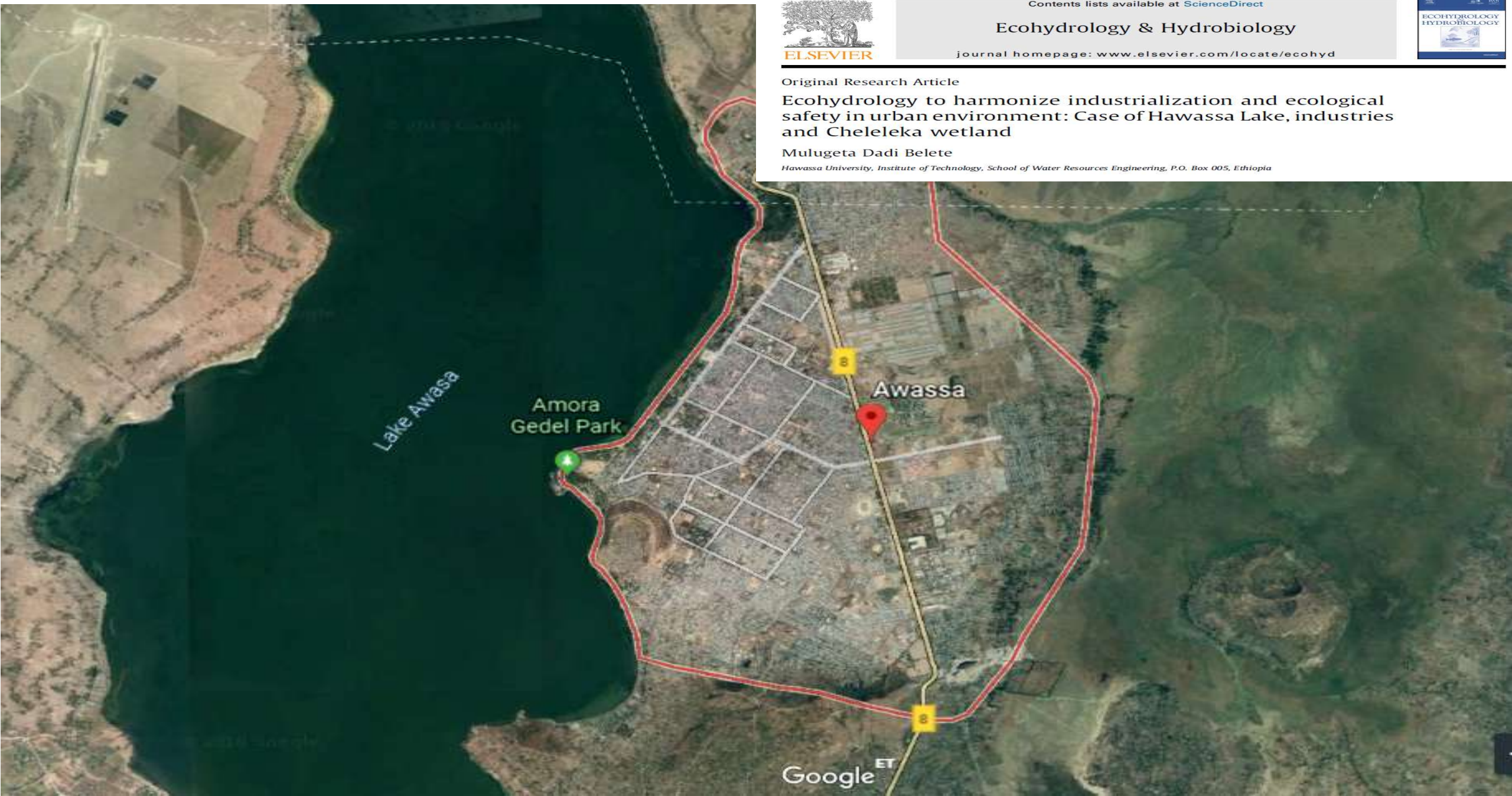
Original Research Article

Ecohydrology to harmonize industrialization and ecological safety in urban environment: Case of Hawassa Lake, industries and Cheleleka wetland

Mulugeta Dadi Belete

Hawassa University, Institute of Technology, School of Water Resources Engineering, P.O. Box 005, Ethiopia



MOVE TOWARDS ECO-CITY: HAWASSA

Anticipated action towards making Hawassa to be eco-friendly city by harmonizing industrialization and ecologica safety : the fruit of University-Industry Linkage

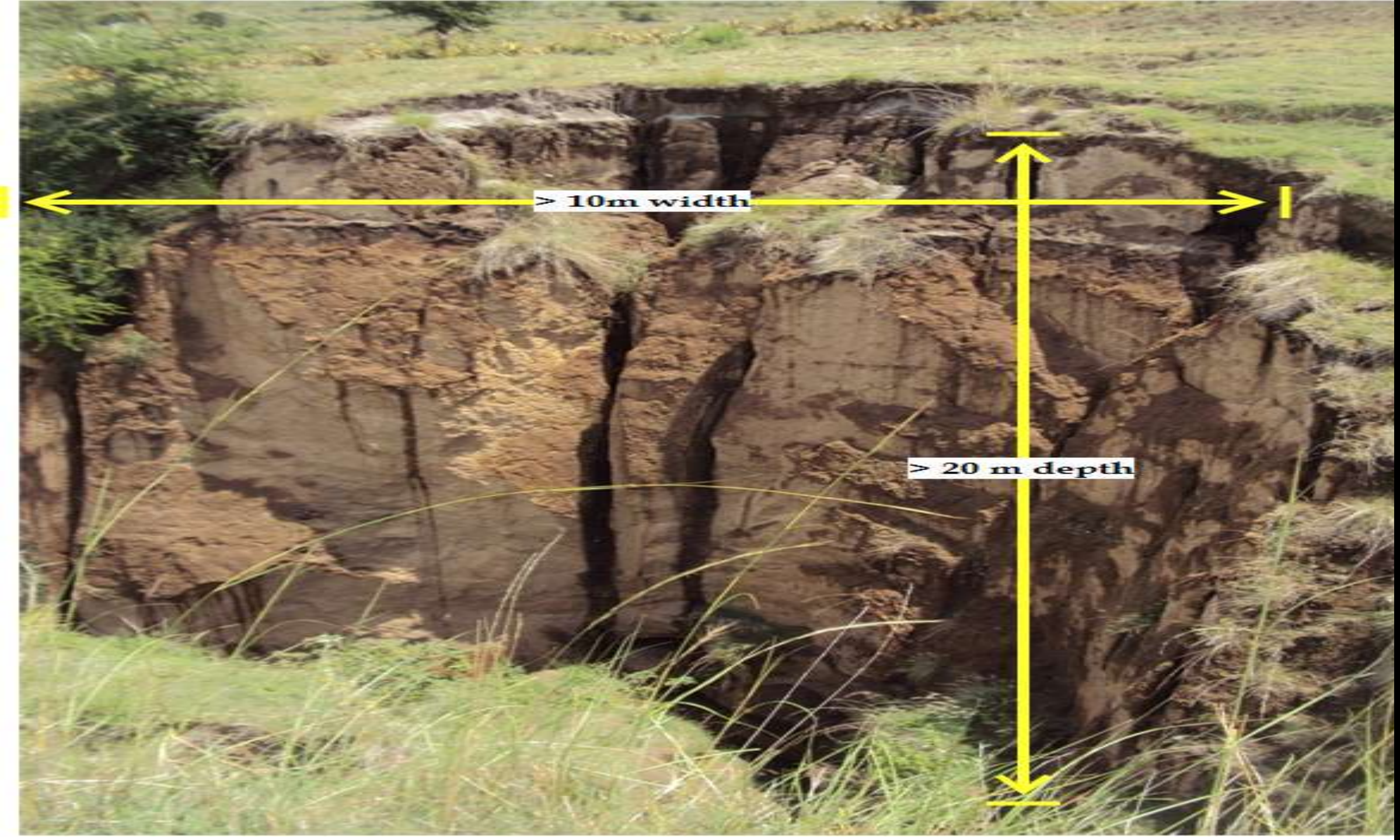
BP 5: Ecohydrologic approach for treatment of mega gullies

SOUTHERN SIDE OF LAKE HAWASSA

BP 5: ctd.

SOUTHERN SIDE OF LAKE HAWASSA

BP 5: ctd.



WESTERN PART OF THE

AROUND THE AIRPORT

Some of the solutions: Sediment storage dams

Some of the solutions: gully side rehabilitation

BP 5: Scientific publication in high profile journal: fruits of Univ.-Industry Linkage

IMPACT FACTOR: 1.68

G Model
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WATER HYACINTH: A CRITICAL CHALLENGE TO OUR WATER BODIES

Lake Abaya

አመሰግናለሁ!!!

Thank you !!!