Introduction
The second planning meeting of the IHP National Committee was held on 10th February 2010 at the Paradise City Hotel, Dar es Salaam. The main objectives of the meeting were to identify critical issues of water resources management in Tanzania mainland and Tanzania Zanzibar, to identify priority areas for action and to prepare action plans and budget for the programme. The meeting was attended by representatives from the Ministry of Natural Resources and Tourism, Ministry of Water, Communication, Energy and Lands Zanzibar, Zanzibar Water Authority (ZAWA), Dodoma Urban Water Supply Authority (DUWASA), Dar es Salaam Water Supply Company (DAWASCO), University of Dar es Salaam Department of Water Resources Engineering, Department of Geology and the Institute of Resource Assessment and the UNESCO National Commission. During the meeting two papers on critical issues on water resources management in Tanzania Mainland and Zanzibar were presented.

Opening Session
The meeting was called to order by the Chairperson of the National IHP Commit-
tee Dr. Tumaini A. Kimaro who thereafter invited Prof. Elizabeth Kiondo, Executive Secretary National Commission for UNESCO to deliver her welcoming remarks. Prof. Kiondo informed the members that this is the second brainstorming meeting and that its objective was to identify priority areas for action concerning water resources management in Tanzania and the kind of interventions that the National IHP Committee may consider implementing.

She also informed that the National IHP Committee and when all stakeholders institutions have submitted the names of their nominee they will be forwarded to the Minister for Education and Vocational Training for official appointment into the Committee.

Briefing on UNESCO Intergovernmental Hydrological Programme

This item was presented by Prof. Kiondo. In her presentation Prof. Kiondo gave an overview of the objectives of UNESCO IHP namely:
- To act as a vehicle through which members states, cooperating professional and scientific organizations and individual experts can upgrade their knowledge of the water cycle, thereby increasing their capacity to better manage and develop their water resources;
- To develop techniques, methodologies and approached to better define hydrological cycles;
- To improve water management, locally and globally;
- To act as a catalyst to stimulate cooperation and dialogue in water science management;
- To assess the suitable development of vulnerable water resources and to serve as a platform for increasing awareness of global water issues;
- To serve as a platform for increasing awareness of global water issues.

She further informed the committee that Tanzania is member of the UNESCO IHP Governing Council and that the Council works with National Committees; global networks, regional bureaus and cluster offices. She cited the Regional Office of Science and Technology in Africa (ROSTA) and the UNESCO Cluster Office for as cooperating Institutions with Programme Specialists responsible for water issues. The biennial sectoral priority for UNESCO IHP in the Draft Programme and Budget of UNESCO for 2010-2011 is:
sustainable management of fresh water, oceans and terrestrial resources. Prof. Kiondo concluded by stressing that the objective of the meeting was to identify national priority areas which will lead to the development of national IHP Programme Document action plan and budget.

To make the discussion more meaningful to papers on Critical issues on Water Resource Management in Zanzibar and in Tanzania Mainland were presented.

Presentation of Papers

Critical Issues of Water Resource Management in Zanzibar

This paper was presented by Mr. Said Suleiman, of the Zanzibar Water Authority (ZAWA) in his presentation; Suleiman informed the committee that Zanzibar is an oceanic island and that the Major problem of oceanic islands is salty water intrusion caused by natural phenomena or by over abstraction of groundwater. He said that Zanzibar sources of water include; groundwater in the form of boreholes, shallow wells, springs, and cave wells, surface water in the form of perennial and seasonal rivers, lake and ponds, rainwater and sea water. He mentioned the problems associated with the water sources as follows; boreholes are located in private land and therefore a subject to encroachment due to urbanization, destruction due to felling of trees. The boreholes are also not protected by law, springs like Mto Pepo and Bububu are facing decreased amount of water due to construction of houses; cave wells like Mwampaji are facing over-abstraction and deterioration of the quality and quantity of water. When abstraction occurs, it is difficult to reserve it.

Mt. Suleiman pointed out that concerted efforts of all stakeholders in a bid to protect and conserve water resource. He named the stakeholders as: Ministries in charge of water, land, environment, forestry, water authorities and local government. He also called on the sensitization of local communities to value and to protect their water sources. He named critical issues facing water resources management in Zanzibar as; salinity, lack of an integrated water resources management plan and policy, increased cost of water (getting clean water from far away) and degradation of catchment areas. He saw the political will in the implementation of water policies as a necessary tool for ensuring sustainable water resources management.

Discussion

During the discussion members of the Committee noted the following:

- They underscored the importance of the National IHP Committee in water management in Tanzania;
- Proposed that there is need to strengthen some of the weaknesses of water management in Zanzibar;
- Agreed that there is need for Zanzibar (both islands to conserve and protect her water resources because the population is growing very fast and the needs for water are also rising fast;
- Noted that cave water become saline because there is movement of water going on under the cave;
- ZAWA should collaborate with other stakeholders such as the Ministry of Natural Resources to harmonise policies and enforce legislations.

Critical Issues of Water Resources Management in Tanzania Mainland

This paper was presented by Dr. Tumaini A. Kimaro, Lecturer, and Department of Water Resources Engineering University of Dar es Salaam. Dr. Kimaro began by giving facts and figures about Tanzania that; It is 61% dry, available water is 89 cu.km/year, 89% of which is used for agriculture, per capita domestic use is 3lts/day, 65% if available water is used for hydropower generation, cultivable land is 40m ha, irrigable land is 3.0m ha but irrigated land is only 0.2m ha. Tanzania receives 200mcu lt per annum (less than 1,000 cu lt per annum).

Dr. Kimaro listed some of the challenges or critical issues facing water resources management in Tanzania Mainland as:

- Fast growing population which will lead to water stress in the next two decades;
- Scarcity of water will lead to water conflicts upstream, downstream and transboundary; low crop production and low hydropower production;
- Management of major cross-border water bodies of L. Victoria, Nyasa and Tanganyika;
- Scarcity of water will have impact on health in terms of sanitation, water borne and water related diseases;
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- Protection of water sources and catchment areas;
- Review of policies such as energy policy, rural development policy, land policy and human settlement development policy;
- Water resources assessment: understanding quantity and quality application of science and technology in water resources management and establishment of water resources databases;
- Identification and quantification of transboundary water resources; and
- Water disasters management: floods and droughts and mitigation.

Discussion
During the discussion the members noted the following problems in connection with water resources management in Tanzania:
- Tanzania has nine water basins which if properly management will helped to alleviate water shortages in the country;
- There is lack of financial sustainability in water resources management;
- The Institutional framework for the management of biosphere reserves is weak, and
- Water management in oceanic islands and coastal areas (Security, conflicts, assessment and planning);
- Water for food (to respond to the National Strategy for Poverty Reduction (MKUKUTA), and (Agriculture First) KILIMO KWANZA initiative;
- Water and Environment.

It was agreed that the priority areas for action should be classified in to themes, sub themes and action as shown below:

<table>
<thead>
<tr>
<th>S/N</th>
<th>THEME</th>
<th>SUB THEME</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>1.</td>
<td>Water management</td>
<td>Water Resources Assessment</td>
<td>Improvement of network; Training of technical staff in hydrology and hydrogeology; water reserves mapping</td>
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<td></td>
<td></td>
<td>Water use assessment</td>
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<td>Stakeholder participation</td>
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<td>2.</td>
<td>Water for food</td>
<td>Soil and water management</td>
<td>Rainwater harvesting for agriculture and livestock</td>
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<td></td>
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<td>Adaptation measures for impacts of climate change in agriculture</td>
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<tr>
<td>3.</td>
<td>Water for environment</td>
<td>Environmental flow assessment</td>
<td>Capacity building in environmental flow assessment and awareness creation on water conservation issue</td>
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<tr>
<td></td>
<td></td>
<td>Conservation of water sources</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Impact of climate change on water resources</td>
<td>Prediction of impact of climate change on surface and ground water</td>
<td></td>
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</tbody>
</table>

Dr. Kimaro proposed the formulation of action plans in the following priority areas:
- Water resources management (security, conflicts, assessment and planning);
- Water for food (soil and water management);
- Water and health (quantity and quality);
- Water and energy (hydro power and other sources of power);
- Water for the environment; and
- Impact of climate change on water.

Closing
Prof. Kiondo closed the meeting by thanking the member for their valuable contribution to the success of the meeting. She promised to pursue other institutions which have not yet nominated members to the National Committee to do so in order to complete the process of appointing members to the National Committee.
Introduction

The United Republic of Tanzania which includes mainland and Zanzibar islands is the largest country in east Africa a home to highest water tower in Africa (the 5895m snow capped Mount Kilimanjaro) as well as the deepest point (Lake Tanganyika). Tanzania shares with her neighbors all great lakes in east Africa including Lake Victoria (source of White Nile and second largest fresh water lake in the world), Lake Tanganyika and Lake Nyasa/Malawi. Additionally the country shares major trans-boundary rivers with neighbors including rivers Kagera and Mara draining into Lake Victoria, Songwe draining into Lake Nyasa and Ruvuma at the border with Mozambique draining into Indian Ocean. Despite having so much water on the periphery of the country Tanzania is considered a dry country with 61% of the land classified as dry. Most of the country receives less than 800mm/year and devastating droughts resulting in famine frequently occur. Occasionally floods wash away railway and road bridges and cause landslides on fragile mountain slopes.

Water Management Challenges

Sustainable management of water resources in the face of rapidly growing population and climate change/variability seems to be the main challenge in both Mainland and Zanzibar. There is low capacity for water management in the country which have resulted in problems like; pollution of water sources by both domestic and industrial wastes, deforestation of important catchment areas and subsequent dry up of rivers, lack of water for basic hygiene resulting in high prevalence of water borne diseases, water conflicts between upstream/downstream and across sectors, insufficient water for hydropower generation, food shortage, destruction of aquatic resources, low water use efficiency, high water losses in urban supply networks, low water supply coverage etc.

IHP Activities

The National IHP committee in Tanzania has just been formed thanks to the efforts of the UNESCO National Commission in Tanzania and the UNESCO cluster office in Dar es Salaam which are spearheading the activity. There have been two meetings the first of which was for proposing institutions to be represented in the national IHP committee to have members representing the various institutional mandates and disciplines in water management. The second meeting was called to assess water management situation in the country and identify priority areas to be included in the National Action Plan for the biennial 2010-2011. The priority areas were identified from a review of policies with bearing on water and specific government program for water sector development and they are generally classified in 5 main areas as;

- **Capacity building in IWRM** focusing on (water resources assessment, training of stakeholders on IWRM principles and practices, improving water use efficiency, reducing water losses);
- **Water for food** focusing on increasing production per drop in arid areas;
- **Water and Health** (reducing the burden of diseases through hygiene education, increasing domestic water supply through alternative source rain water harvesting, improving domestic water quality);
- **Water and environment** (watershed management, water quality, ecological integrity);
- **Climate change impacts on water** resources (identification of vulnerabilities and design of adaptation measures for critically affected communities).

Activities planned to respond to above mentioned problems include, training, outreach, research, surveys, workshops and conferences. The committee plans to identify different Institutions to carry out activities identified in the National Plan of Action such as training, surveys, research, outreach conferences and workshops. The aim is to build on existing efforts and create synergies which will facilitate achievement of objectives of the plan.