

**Format for Biennial Reports by UNESCO's Water-related Centres on activities related to the IHP in the period (June 2012- May 2014)**

**1. Basic information on the centre**

Name of the Centre		Regional Centre for Integrated River Basin Management (RC-IRBM)
Name of Director		Dr. Dogara Bashir
Name and title of contact person (for cooperation)		Dr. Dogara Bashir
E-mail		dogara.nwri@gmail.com
Address		National Water Resources Institute, Mando Road, P.M.B. 2309, Kaduna, Nigeria
Website		
Location of centre		city/town Kaduna_____ country Nigeria_____
Geographic orientation *		<input type="checkbox"/> global <input checked="" type="checkbox"/> regional
Region(s) (for regional centres)		West Africa
Year of establishment		2012
Year of renewal assessment		2018
Signature date of most recent Agreement		12th March, 2012
<b>Themes Of activities during reporting period</b>	Focal Areas ♦	<input checked="" type="checkbox"/> groundwater <input type="checkbox"/> urban water management <input type="checkbox"/> rural water management <input type="checkbox"/> arid / semi-arid zones <input type="checkbox"/> humid tropics <input type="checkbox"/> cryosphere (snow, ice, glaciers) <input checked="" type="checkbox"/> water related disasters (drought/floods) <input type="checkbox"/> Erosion/sedimentation, and landslides <input checked="" type="checkbox"/> ecohydrology/ecosystems <input type="checkbox"/> water law and policy <input type="checkbox"/> social/cultural/gender dimension of water <input checked="" type="checkbox"/> transboundary river basins/ aquifers <input type="checkbox"/> mathematical modelling <input type="checkbox"/> hydroinformatics <input type="checkbox"/> remote sensing/GIS <input checked="" type="checkbox"/> IWRM <input type="checkbox"/> Watershed processes/management <input type="checkbox"/> global and change and impact assessment <input type="checkbox"/> mathematical modelling <input checked="" type="checkbox"/> water education <input checked="" type="checkbox"/> water quality <input type="checkbox"/> nano-technology <input type="checkbox"/> waste water management/re-use <input type="checkbox"/> water/energy/food nexus <input type="checkbox"/> water systems and infrastructure <input type="checkbox"/> other: (please specify) _____
	Scope of Activities ♦	<input type="checkbox"/> vocational training <input checked="" type="checkbox"/> postgraduate education <input type="checkbox"/> continuing education <input checked="" type="checkbox"/> public outreach <input type="checkbox"/> research <input checked="" type="checkbox"/> institutional capacity-building <input type="checkbox"/> advising/ consulting <input type="checkbox"/> software development

\* check on appropriate box

♦ check all that apply

	<input type="checkbox"/> data-sets/data-bases development <input type="checkbox"/> other: (please specify) _____
Support bodies <sup>1</sup>	Federal Republic of Nigeria
Hosting organization <sup>2</sup>	National Water Resources Institute, Kaduna, Nigeria
Sources of financial support <sup>3</sup>	National Budget
Existing networks and cooperation <sup>4</sup>	
Governance	<input checked="" type="checkbox"/> director and governing board <input type="checkbox"/> other: (please specify) _____ Link to election of board members to the IHP Intergovernmental Council (IGC) and hosting country IHP National Committee _____ Frequency of meetings: once every _1_ year(s) <input checked="" type="checkbox"/> Existence of UNESCO presence at meetings
Institutional affiliation of director	
Number of staff and types of staff	total number of staff (full-time, or equivalent) : ____5____ number of staff who are water experts: ____4____ number of visiting scientists and postgraduate students: __Nil____
Annual turnover budget in USD	\$440,000 (73,423,000 Naira)

## 2. Activities undertaken in the framework of IHP in the period June 2012 – May 2014

- 2.1 Educational activities (i.e., those with accreditation) that directly contributed to the IHP-VII/VIII (Appendix-1 and 2) and WWAP  
*Please include here those activities which led to accreditation of degrees, or those held in formal school settings.*
- University of Ilorin, Nigeria runs M.Sc. (IWRM) Programme developed by RC-IRBM with the support of UNESCO*
  - African Water Resources Capacity Building (AWaCaB) Programme organized by RC-IRBM under the auspices of UNESCO Regional Office, Nairobi*
- 2.2 Research activities that directly contributed to the IHP-VII and/or IHP-VIII activities  
Water Allocation Studies in the Gurara Basin of Nigeria in collaboration with Jardin Cerni Institute for the Development of Water Resources, Belgrade Serbia  
*Please include research/applied projects outputs such as publications that directly contributed to the IHP-VII/VIII and WWAP objectives*
- 2.3 Training activities that directly contributed to the IHP-VII/VIII and WWAP objectives  
Junior Water Price organized to impact early water education in young scientists in high schools

## 3. Collaboration and linkages

- 3.1 Participation in major international networks, programmes, partnerships with other UN or other International Agencies, media and professional bodies

<sup>1</sup> please specify bodies that cover the operational costs of the centre, and other essential costs such as salaries and utility bills, and that provide institutional support to ensure centre's sustainability

<sup>2</sup> if different from support bodies

<sup>3</sup> please specify sources of main budgetary and extrabudgetary funds to implement projects

<sup>4</sup> please write international networks, consortiums or projects that the centre is part of, or any other close links that the centre has with international organizations or programmes, which are not already mentioned above

- a. Membership of the Steering Committee of Hydro Open-Source Platform for Experts;
  - b. Contribution to the World Large Rivers Initiatives;
  - c. NEPAD West Africa Network of Water Centres of Excellence;
  - d. West African Network for Capacity Building in IWRM; and
  - e. Steering Committee Member of Global Water Partnership (GWP) – Nigeria.
- 3.2 Participation in meetings related to the IHP and UNESCO (e.g., the UNESCO General Conference, the UNESCO Executive Board, the IHP Intergovernmental Council and/or other meetings organized by IHP)
- a. Participation at the 20<sup>th</sup> IHP-IGC and Membership of Resolution Drafting Committee;
  - b. Participation at High-Level Strategic Meeting on Water Security and Cooperation;
  - c. Regional Consultative Meeting on Groundwater Governance for the Sub-Saharan Africa.
- 3.3 Collaboration and networking with other UNESCO category 1 or 2 institutes/centres
- 3.3.1 cross-appointment of directors of the category 1 or 2 institutes or centres on the governing board
  - 3.3.2 exchange of information on activities such as training/educational materials, and funding opportunities
  - 3.3.3 exchange of staff, most notably professionals and students  
Two Staff have undergone 6-month study fellowships under the auspices of UNESCO/Polish Government on;  
Ecohydrology: and Economic Sociology
  - 3.3.4 implementation of joint activities, such as workshops, conferences, training programmes, joint projects, field visits, software and data sharing, knowledge exchange and publications
- 3.4 Relationships with the UNESCO field and regional office whose jurisdiction covers the country of location
- a. Representation at RC-IRBM Governing Board,
  - b. National Workshop on Strengthening the UNESCO-IHP and Man and the Biosphere National Committees for Effective Water Governance, Biosphere Reserve Management and Biodiversity Conservation
  - c. Workshop on Global Micro-Science Experimental Kits organized by the Regional Office in Abuja
- 3.5 Relationship with the UNESCO National Commission and the IHP National Committee in the country of location and with other organizations of other countries
- a. Participation in the 9th Session of UNESCO-IHP National Committee Meeting; and
  - b. NATCOM-UNESCO Experts Consultation on the UNESCO Draft Medium-Term Strategy 37C/4 for 2012-2014 and Draft Programme & Budget 37C/5 for 2014-2017 on National Sciences Sector MP II
- 3.6 Relationship with other UNESCO-related networks, such as UNESCO Clubs, ASPnet, and UNESCO chairs

#### **4. Communication**

- 4.1 Communication and knowledge dissemination activities undertaken in the framework of IHP
- 4.2 Policy documents and advice

#### **5. Update on Centre Operations**

- 5.1 Membership of the Board of Governors between designated period
  - a. Professor Oladapo AFOLABI CFR Chairman;
  - b. Dr Osu Inya Otu (UNESCO DG Representative);
  - c. Professor Patrice Jean JOURDA (ECOWAS Representative from Cote d'Ivoire);
  - d. Professor Michel Sedogo (ECOWAS Representative form Burkina Faso);
  - e. Dr Kwabena Kankam-Yeboah (ECOWAS Representative from Ghana);

- f. Mr Sunday Dan Ogu (Representative of NEPAD); and
- g. Dr Olusanjo A. Bamgboye (NWRI-Host Institution)

5.2 Key decisions made (attach minutes of meetings)

- a. Appointment of Interim Secretariat Staff:
  - Dr D. Bashir (Acting Director)
  - Dr W. A. Alayande, Ag. Coordinator for Research & Networking
  - Dr O.O. Yaya, Ag. Coordinator for Training & Education
  - Mr B G Yahaya, Administrative Secretary
  - Mr S.D. Ahmed, Technical Assistant
- b. Appointment of Executive Committee
  - Dr Olusanjo A Bamgboye (Chairman)
  - Dr D Bashir (member)
  - Dr W. A. Alayande (member)
  - Dr O.O. Yaya (member)
- c. 2014 Work Plan
- d. Centre Logo
- e. Centre Organogram

**6. Evidence of the Centre's Impacts**

- 6.1 Science Impacts (Major contributions to the science, technology, education, and regional and/or international cooperation in the field of water)
  - a. Resource Person at Global Micro-Science Experimental Kits organized by UNESCO Regional Office, Abuja;
  - b. Development and Implementation of Modular Curricular for Vocational, Technical and Tertiary Education in Integrated Water Resources Management for use in institutions in Africa; and
  - c. Contribution to the World Large Rivers Initiatives
- 6.2 Knowledge Transfer Impacts (Major achievements in the dissemination of knowledge and technology transfer)
- 6.3 Policy Impacts (advice sought by government and other bodies and evidence of inputs into policy arena)

**7. Future activities that will contribute directly to IHP and/or to WWAP**

- 7.1 Operational Plan (attach if available)
- 7.2 Strategic Plan linked with IHP-VIII (Appendix 2) (attach strategic plan if available)

**8. Strategic Alignment with IHP-VIII**

- 8.1 Focal areas within IHP-VIII the centre plans to contribute to and specific actions the centre will undertake to align its activities with the strategic plan for IHP-VIII (Please see Appendix-2)
  - a. Research and Training Programmes on Integrated Flood Risks Assessment Studies along major transboundary rivers of the sub-region;
  - b. Research and Training Programmes on Assessment of Impact of Climate Change on Groundwater Resources in Arid, Semi-Arid and Coastal Areas of the sub-region with particular attention to Assessment of Groundwater Resources, impact of climate change on groundwater recharge potentials of selected large and medium dams on transboundary aquifers such as Gundumi-Iilo, Chad, Benin, Senegal and Niger Basin and Mapping pollution hazards along major aquifer systems;
  - c. Managing salinity problems in selected aquifers system (coastal and non-coastal in the sb-region);
  - d. Organization of the second sub-saharan Africa HELP Basin Workshop; Research and Training Programme on the Gurara River Water Allocation Studies; and

- e. Research and Training Programmes on Assessment of Reservoir Sedimentation in large and medium dams in the sub-region with particular attention on Assessment of available capacities, impact of climate change on the reservoir inflows and outflows and down stream flooding)

**9. Annexes**

- 9.1 List of publications released by the centre (there can be overlap with those listed in 2.3 above)
- 9.2 List of training courses conducted (there can be overlap with those listed in 2.1 above)

## Appendix-1

### Overview of the Core Programme Themes of the Seventh Phase of the IHP (2008-2013) WATER DEPENDENCIES: SYSTEMS UNDER STRESS AND SOCIETAL RESPONSES

#### **Theme 1: ADAPTING TO THE IMPACTS OF GLOBAL CHANGES ON RIVER BASINS AND AQUIFER SYSTEMS**

Focal area 1.1 - Global changes and feedback mechanisms of hydrological processes in stressed systems

Focal area 1.2 - Climate change impacts on the hydrological cycle and consequent impact on water resources

Focal area 1.3 - Hydro-hazards, hydrological extremes and water-related disasters

Focal area 1.4 - Managing groundwater systems' response to global changes

Focal area 1.5 - Global change and climate variability in arid and semi-arid regions

#### **Theme 2: STRENGTHENING WATER GOVERNANCE FOR SUSTAINABILITY**

Focal area 2.1 - Cultural, societal and scientific responses to the crises in water governance

Focal area 2.2 - Capacity development for improved governance; enhanced legislation for wise stewardship of water resources

Focal area 2.3 - Governance strategies that enhance affordability and assure financing

Focal area 2.4 - Managing water as a shared responsibility across geographical & social boundaries

Focal area 2.5 - Addressing the water-energy nexus in basin-wide water resources

#### **Theme 3: ECOHYDROLOGY FOR SUSTAINABILITY**

Focal area 3.1 - Ecological measures to protect and remediate catchments process

Focal area 3.2 - Improving ecosystem quality and services by combining structural solutions with ecological biotechnologies

Focal area 3.3 - Risk-based environmental management and accounting

Focal area 3.4 - Groundwater-dependent ecosystems identification, inventory and assessment

#### **Theme 4: WATER AND LIFE SUPPORT SYSTEMS**

Focal area 4.1 - Protecting water quality for sustainable livelihoods and poverty alleviation

Focal area 4.2 - Augmenting scarce water resources especially in SIDS

Focal area 4.3 - Achieving sustainable urban water management

Focal area 4.4 - Achieving sustainable rural water management

#### **Theme 5: WATER EDUCATION FOR SUSTAINABLE DEVELOPMENT**

Focal area 5.1: Tertiary water education and professional development

Focal area 5.2: Vocational education and training of water technicians

Focal area 5.3: Water education in schools

Focal area 5.4: Water education for communities, stakeholders and mass-media professionals

## Appendix-2

### Overview of the Core Programme Themes of the Eighth Phase of the IHP (2014-2021) WATER SECURITY: ADDRESSING LOCAL, REGIONAL, AND GLOBAL CHALLENGES

#### **THEME 1: WATER-RELATED DISASTERS AND HYDROLOGICAL CHANGE**

- Focal area 1.1 - Risk management as adaptation to global changes
- Focal area 1.2 - Understanding coupled human and natural processes
- Focal area 1.3 - Benefiting from global and local Earth observation systems
- Focal area 1.4 - Addressing uncertainty and improving its communication
- Focal area 1.5 - Improve scientific basis for hydrology and water sciences for preparation and response to extreme hydrological events

#### **THEME 2: GROUNDWATER IN A CHANGING ENVIRONMENT**

- Focal area 2.1 - Enhancing sustainable groundwater resources management
- Focal area 2.2 - Addressing strategies for management of aquifers recharge
- Focal area 2.3 - Adapting to the impacts of climate change on aquifer systems
- Focal area 2.4 - Promoting groundwater quality protection
- Focal area 2.5 - Promoting management of transboundary aquifers

#### **THEME 3: ADDRESSING WATER SCARCITY AND QUALITY**

- Focal area 3.1 - Improving governance, planning, management, allocation, and efficient use of water resources
- Focal area 3.2 - Dealing with present water scarcity and developing foresight to prevent undesirable trends
- Focal area 3.3 - Promoting tools for stakeholders involvement and awareness and conflict resolution
- Focal area 3.4 - Addressing water quality and pollution issues within an IWRM framework - improving legal, policy, institutional, and human capacity
- Focal area 3.5 - Promoting innovative tools for safety of water supplies and controlling pollution

#### **THEME 4: WATER AND HUMAN SETTLEMENTS OF THE FUTURE**

- Focal area 4.1 - Game changing approaches and technologies
- Focal area 4.2 - System wide changes for integrated management approaches
- Focal area 4.3 - Institution and leadership for beneficitation and integration
- Focal area 4.4 - Opportunities in emerging cities in developing countries
- Focal area 4.5 - Integrated development in rural human settlement

#### **THEME 5: ECOHYDROLOGY, ENGINEERING HARMONY FOR A SUSTAINABLE WORLD**

- Focal area 5.1 - Hydrological dimension of a catchment– identification of potential threats and opportunities for a sustainable development
- Focal area 5.2 - Shaping of the catchment ecological structure for ecosystem potential enhancement – biological productivity and biodiversity
- Focal area 5.3 - Ecohydrology system solution and ecological engineering for the enhancement of water and ecosystem resilience and ecosystem services
- Focal area 5.4 - Urban Ecohydrology – storm water purification and retention in the city landscape, potential for improvement of health and quality of life
- Focal area 5.5 - Ecohydrological regulation for sustaining and restoring continental to coastal connectivity and ecosystem functioning

#### **THEME 6: WATER EDUCATION, KEY FOR WATER SECURITY**

- Focal area 6.1 - Enhancing tertiary water education and professional capabilities in the water sector
- Focal area 6.2 - Addressing vocational education and training of water technicians
- Focal area 6.3 - Water education for children and youth
- Focal area 6.4 - Promoting awareness of water issues through informal water education
- Focal area 6.5 - Education for transboundary water cooperation