



Industrial Ecology Institute

# Institutional Mapping for Climate Change Adaptation in Eastern Africa

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## **Final Report**

Author: Evans Kituyi

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## Executive Summary

The Eastern African region, including the Horn of Africa, is highly vulnerable to climate change and several of its major sectors that significantly contribute to the sub-region's economies will be severely affected. First, areas already facing water scarcity may get drier and thereby cause associated disputes and conflicts. Secondly, in East Africa, 80% of the population is involved in agriculture, which contributes to 40% of the sub-region's GDP.<sup>1</sup> Climate change will significantly impact the agricultural sector in ways that will ultimately cause reduced yields of subsistence crops, cash crops and dairy. Thirdly, the eastern African highlands are vulnerable to a range of climate-sensitive diseases including malaria, dengue fever, meningitis and rift valley fever—whose increased incidence and spread is driven by climate variability.<sup>2</sup>

Fourthly, a long coastline with diverse ecosystems characterizes the eastern African region including the Horn of Africa. The gradual disintegration of coral reefs due to climate change will have significant impact on seafood supplies, region's tourism, water quality and safety of coastal communities. Finally, the region's rich biodiversity and terrestrial ecosystems are vulnerable to climate change since changes in mean temperature are predicted to shift ecosystem boundaries with resultant human/wildlife conflicts. It could similarly increase the range of some vectors and infectious diseases.<sup>3</sup>

A number of constraints to reducing the vulnerability of socioeconomic systems to climate change exist, key among these being the disconnect between national adaptation efforts and research. Useful local knowledge as well as modern research potential has not been effectively tapped to inform the national policy-making processes. There is an increasing recognition within the climate change research community that the climate system is likely to undergo further changes, regardless of the implementation of abatement policies under the Kyoto Protocol or other regimes. Similarly, numerous gaps still exist in our understanding of the nature of Africa's vulnerability to climate change and the existing opportunities for adaptation. In many of these countries, there is a need for improved scientific and technical capacity to conduct the integrated, multi-disciplinary regional investigations necessary to fill these gaps.

Climate change country focal points, regional agencies, and international agencies have all been engaged in the search for viable responses. On their part, Canada's International Development Research Centre (IDRC) and the United Kingdom's Department for International Development (DFID) launched the Climate Change Adaptation in Africa (CCAA) programme in 2006, which aims to establish a self-sustained African body of expertise on adaptation that responds to the needs defined by African communities, decision makers and organizations. The CCAA programme sees capacity development as an ongoing process that should continue beyond the life of the projects it funds.

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<sup>1</sup> IFPRI (2004) Ending Hunger in Africa: Prospects for the Small Farmer. [http://www.ifpri.org/pubs/ib/ib\\_16.pdf](http://www.ifpri.org/pubs/ib/ib_16.pdf)

<sup>2</sup> UNFCCC (2006) Impacts, vulnerability and adaptation to climate change in Africa. Background paper for the African Workshop on Adaptation Implementation of Decision 1/CP.10 of the UNFCCC. 21-23 September, Accra. (Dr BO Elasha, Leader Author)

<sup>3</sup> Ibid.

To assist strengthen the CCAA’s interventions and institutional engagement in support of these outcome areas in eastern Africa, the CCAA secretariat commissioned this study to map out institutions working on environmental management in general and climate change in particular. The main activities included literature reviews and web searches, country visits to selected institutions, and focused consultations with experts. Building upon the organizational capacity assessment for African research institutions by Nyong<sup>4</sup> The following outcomes have resulted from the study:

- a.) A scoping of the institutions engaged in environmental research within CCAA’s mandate areas. A key result has been the identification of opportunities for potential collaborative ties with other relevant institutions, programmes and initiatives that have on board an environmental mandate within the context of CCAA mandate areas. These include local and international Non-Government Organizations (NGOs), private sector, governmental organizations etc.
- b.) We have elucidated the workings and interactions among a wide range of institutions in the sub-region in the pursuit for adaptation solutions. There are five classes of research institutions active in the sub-region. There are also non-research development agencies that have been found to be a potentially important partner in linking end-users to researchers.
- c.) International research institutes have been found to be superior in climate change related research and present numerous opportunities for collaboration with the much weaker local institutions for capacity building and knowledge exchange. An analysis of strengths, weaknesses, opportunities and threats (SWOT) of these institutions was also done.
- d.) Key gaps in the research process—from research planning activities, implementation strategies, output communication, evaluation and feedback—have been identified. These have also been prioritized as per the class of institution and urgency for resolution. Similarly, a range of opportunities has been identified which weaker institutions may harness for capacity strengthening in various aspects through innovative partnerships.
- e.) Using planning, implementation, communication and partnership/network coordination as key indicators, a scoring system on weak and strong institutions and their research capacity for climate change adaptation has been developed and used.
- f.) The report has also proposed a strategy for the identification of regional institutions for the gradual devolution of programme leadership in the sub-region. It has similarly proposed strategies—mainly promotion and strengthening of strategic partnerships among research institutions and other potential partners with a view to delivering on CCAA’s four outcome areas.

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<sup>4</sup> Nyong A (2006) Capacity Needs Assessments for Climate Change Adaptation Support Programme for Action Research and Capacity Development in Africa (CCAA). Report commissioned by DFID.

## List of Abbreviations

AATF	African Agricultural Technology Foundation
AAU	Addis Ababa University
ABSF	African Biotechnology Stakeholders Forum
ACODE	Advocates Coalition for Development and Environment
ACTS	African Centre for Technology Studies
AHBFI	Africa Harvest Biotech Foundation International
ALIN	Arid Lands Information Network
ARC	Agricultural Research Council
AU	African Union
BCAS	Bangladesh Centre for Advanced Studies
CABI	CAB International
CBO	Community Based Organisation
CCAA	Climate Change Adaptation in Africa
CEEST	Centre for Energy, Environment Science and Technology
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIDA	Canadian International Development Agency
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
COHESU	Community Health Support
COMESA	Common Market for Eastern and Southern Africa
CoP	Conference of the Parties
CORDIO EA	Coastal Oceans Research and Development in the Indian Ocean East Africa
CSIR	Council for Scientific and Industrial Research
CURE	Coordination Unit for the Rehabilitation of the Environment
DFID	Department For International Development
DNIVA	Development Network for Indigenous Voluntary Association
EAC	East Africa Community
EEC	European Economic Community
EEC-Z	Energy and Environmental Concerns, Zambia
EIAR	Ethiopian Institute of Agricultural Research
EPMS	Environmental Protection Management Services
EU	European Union
FAO	Food and Agriculture Organisation
FARA	Forum for Agricultural Research in Africa
FEWSNET	Famine Early Warning Systems Network
GIS	Geographic Information System
GLUK	Great Lakes University
GTZ	German Technical Cooperation
GWP	Global Water Partnership
HoARECN	Horn of Africa Regional Environment Centre and Network
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDRC	International Development Research Center
ICIPE	International Center of Insect Physiology and Ecology
ICPAC	IGAD Climate Prediction and Applications Centre
ICRAF	World Agroforestry Centre
ICSU ROA	International Council for Science Regional Office for Africa

IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IFS	International Foundation for Science
IGAD	Intergovernmental Authority on Development
IIAM	<b>National Institute for Agriculture Research</b>
IIED	International Institute for Environment and Development
IISD	International Institute for Sustainable Development
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IPCC	Intergovernmental Panel on Climate Change
IMTR	Institute for Meteorological Training and Research
IOC	<b>Intergovernmental Oceanographic Commission</b>
IPGREN	<b>Indigenous Peoples' Global Research and Education Network</b>
IRI	International Research Institution
ISAAA	International Service for the Acquisition of Agri-biotech Applications
IUCN	International Union for Conservation of Nature
IWMI	International Water Management Institute
JICA	<b>Japan International Cooperation Agency</b>
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KARI	Kenya Agricultural Research Institute
KEFRI	Kenya Forestry Research Institute
KEMRI	Kenya Medical Research Institute
KMD	Kenya Meteorological Department
KMFRI	Kenya Marine and Fisheries Research Institute
LBDA	Lake Basin Development Authority
MARI	Mikocheni Agricultural Research Institute
MMUST	Masinde Muliro University of Science and Technology
NAADS	National Agricultural Advisory Services
NaCRRI	National Crops Resources Research Institute
NAFORI	National Forest Research Institute
NAPA	National Adaptation Programmes of Action
NARI	National Agricultural Research Institution
NARLI	National Agricultural Research Laboratories
NARO	National Agricultural Research Organisation
NARS	National Agricultural Research System
NBI	Nile Basin Initiative
NEPAD	New Partnership for Africa's Development
NEMA	National Environment Management Authority
NGO	Non-Government Organisation
NMA	<b>National. Meteorological Agency</b>
NMRI	<b>National Medical Research Institute</b>
PAGES	Past Global Changes
PAR	Participatory Action Research
PGR	Plant Genetic Resources
REDO	Rural Environment and Development Organisation
SECS	Sudanese Environment Conservation Society
SEI	Stockholm Environment Institute
SIDA	Swedish International Development Cooperation Agency
SAREC	SIDA - Department for Research Cooperation
SLUF	Sustainable Land Use Forum
TaTEDO	<b>Tanzania Traditional Energy Development and Environment Organization</b>
TARI	Tanzania Agricultural Research Institute

TSBF	Tropical Soil Biology and Fertility Institute
UDSM-IMS	University of Dar es Salaam – Institute of Marine Sciences
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UoN-Meteo	University of Nairobi, Department of Meteorology
USAID	United States Agency for International Development
US CDC	United States Centre for Disease Control and Prevention
UWA	Uganda Wildlife Authority
WIOMSA	Western Indian Ocean Marine Science Association
WMO	World Meteorological Organisation
WWF	World Wide Fund for Nature
ZARDI	Zonal Agricultural Research and Development Institute
ZERO	Zero Regional Environment Organisation

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## 1.0 INTRODUCTION

The past decade has witnessed a phenomenal increase in efforts to search for appropriate responses for adapting to climate variability and change—a key obligation for all Parties to the United Nations Framework Convention on Climate Change (UNFCCC). Connection seems lost between the last sentence and what follows. The diversity of institutions and combinations among partners are increasing within countries and across national and regional borders. This scenario is in line with the call by Article 4, paragraph 1(e) of the Climate Convention for cooperation in preparing for adaptation to the impacts of climate change. Parties are hence committed to developing and elaborating appropriate and integrated plans for, *inter alia*, water resources and agriculture, and the protection and rehabilitation of areas—particularly in Africa—affected by drought, desertification and floods. Climate change country focal points, regional agencies, and international agencies have all been engaged in the search for viable responses. Many responses at national and regional levels have included the promotion of drought-resistant crops, strengthening the participation of African delegations to global negotiations such as the Conference of Parties (CoPs) and Sustainable Development fora, and building capacity for weather prediction and response design.

As a contribution to these global efforts, Canada’s IDRC and the UK’s DFID launched the CCAA programme in 2006. The CCAA aims to establish a self-sustained African body of expertise on adaptation that responds to the needs defined by African communities, decision makers and organizations. Towards achieving this, the programme activities have been designed targeting four projected outcome areas, namely (i) improved research capacity (ii) knowledge and experience applied by the poor (iii) shared knowledge and expertise, and (iv) policy processes informed and influenced. In recognition of the long-term nature of climate impacts, IDRC and DFID made a five-year commitment with initial five-year funding of C\$65 million.<sup>5</sup> It is hoped that these funds will help kick-start a capacity development process that should continue beyond the life of the projects it is funding. The programme thus aims to leave a legacy of strong African research organizations capable of contributing to the field of adaptation in ways that benefit the most vulnerable

To assist strengthen the CCAA’s interventions and institutional engagement in support of these outcome areas in eastern Africa, a profiling of key institutions working on climate change, vulnerability and adaptation in the sub-region is required. The profiling would enable CCAA understand the institutional landscape dynamics with regard to climate change. Similarly, this would also identify current capacities in environmental management in general and climate change adaptation in particular among potential project partners. Such a profiling would also seek to identify engagement strategies for CCAA and these institutions. It is also crucial to identify opportunities for potential collaborative ties with other relevant institutions, programmes and initiatives that have on board an environmental mandate within the context of CCAA mandate areas. This is because there are numerous environmental organizations that have the potential to accelerate the realization of CCAA’s vision yet remain relatively unknown. Finally, it is also critical that such an exercise gives guidance to the CCAA on the identification of regional institutions most capable of gradually taking on devolution of CCAA-supported activities.

This report is the culmination of an institutional mapping study carried out for eastern Africa that has attempted to achieve the above aspirations for the CCAA. The following section describes the

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<sup>5</sup> IDRC CCAA Program Strategy Overview.



methodology employed in responding to the specific terms of reference for this consultancy. Section three is a presentation of the profiles of all institutions involved in the study—spelling out their visions, missions or core activities. Section four reports the key findings regarding the research capacities of research institutions in the sampled countries, while Section five reports on the capacities of non-research institutions to effectively contribute in the Participatory Action Research (PAR) process. The gaps in the research activities established among these institutions are reported in Section six while Section seven discusses the way forward and options for consideration by the CCAA team. Finally, Section eight presents the generic conclusions and recommendations by the consultant.

## 2.0 METHODOLOGY

### 2.1 Development of Conceptual and Methodological Framework

This section describes the conceptual and methodological framework used and elaborates key assumptions that were adopted by the study. The purpose was to: contextualize the term “institution” before use in the study; clarify the nature of institutions to be assessed by the consultancy; elaborate the major components to be assessed in the selected institutions; explore the constitution of an institutional framework for participatory action research; and guide the identification of engagement strategies between the proposed institutional frameworks with communities and policymakers.

### 2.2 Selection of institutions

A review of available literature, coupled with internet searches, was made to identify key institutions with an environmental mandate in the eastern Africa sub-region. For each of the nine countries (Djibouti, Eritrea, Ethiopia, Sudan, Kenya, Uganda, Tanzania, Rwanda and Burundi) in the sub-region, a list of organizations—complete with contact information—was prepared from *inter alia* the academia, development agencies, NGOs, government and intergovernmental institutions and programmes. The selection criteria of the institutions ensured that the organizations selected included those that organized and participated in (i) the prediction of extreme events, (ii) technology development and dissemination, (iii) policy analysis and development, and (iv) awareness raising, and capacity building for adaptation to climate change. A quick review of their mission statements and core activities enabled this categorization of institutions. Table 2.1 defines the critical overarching questions that would underpin capacity assessment tasks for institutions in the various classes. By clustering stakeholders according to their mandated activities, the database enables the identification and elimination of potential duplications and synergies. Care was also taken to ensure a fair distribution of the institutions across (i) the nine countries and (ii) key vulnerable sectors: coastal/marine, terrestrial ecosystems, health, water and food security.

Table 2.1 Key institutional types and capacity-related questions

Institution type	Critical capacity-related overarching questions for the class
Prediction of extreme events	Can they predict extreme events and give early warning to vulnerable groups?
Knowledge & technology development	Are research programmes and agenda focused on needs of vulnerable groups and goals of policymakers?
	Are the scientists equipped to generate knowledge that addresses needs of vulnerable groups and goals of policymakers?
Knowledge conveyance	Are the organizations equipped to package and disseminate new knowledge and technologies to vulnerable groups and monitor impacts?
Training/Capacity building	Are programmes adequately packaged to build capacity of groups working on adaptation projects/programmes?

Introductory e-mails and telephone calls were then made to all the identified institutions on the list to initiate personalized contact and dialogue as well as create interest in the project among potential partners. This enabled the creation of a short-list of institutions that we included on the final list of those to be engaged in the next level—involving sending questionnaires by e-mail and follow-on in-depth telephone interviews and physical visits.

E-mails were sent to all pre-identified contact persons in institutions, who were then followed up by phone a week or so later. Of the 90 short-listed organizations that received the questionnaires, only 5 of these did return the instrument duly filled out—despite many reminder calls by the project assistant. This represented a 94% failure rate of this strategy. The consultant opted, therefore, to change strategy for achieving the goals of the study—by focusing more on country visits. The new challenge was now to (i) identify four sample countries out of the nine constituent countries of the sub-region (ii) ensure presence in these selected countries of particular regional institutions<sup>6</sup> and (iii) to ensure the critical adaptation issues and concerns among the most vulnerable communities are captured.

Informed by these criteria, four of the countries (Kenya, Uganda, Tanzania and Ethiopia) were then selected. Considering the time frame of the consultancy and logistical realities, the Consultant chose to visit 45 organizations comprising 21 research institutions, 9 development agencies that had some research function (herein referred to as “*dual*”), and 15 public and development non-governmental organizations. The full list showing the distribution of these institutions in the countries and across institution type is presented in Table 2.2. The Nyong (2007) report upon which this consultancy builds involved a significant number of regional and international institutions based in Kenya and fairly good knowledge of their research capacities was documented. For this class of institutions, deliberate efforts were made to include more from countries other than Kenya.

Table 2.2 Institutions identified for country visits

	Kenya	Ethiopia	Uganda	Tanzania
a.) Research Institutions				
a.) Research Partnerships (RPs)		1	1	1
b.) International Research Institutes (IRIs)		3		
c.) National Research Institutes (NRIs)	2	1	2	1
d.) Regional Research NGOs (RRNGOs)	4			
e.) Universities	3	1		1
b.) Dual (government and other development orgs with some research going on)	3		4	2
c.) Public/Development Institutions				
a.) International NGOs			4	1
b.) National NGOs		1		2
c.) Ministries/Parastatals		2	2	
d.) Inter-Governmental Organizations	1	2		
d.) Independent Experts	4	1	1	1

<sup>6</sup> A key TOR was to identify key regional institutions for visiting to evaluate their potential for taking on devolution of IDRC CCAA programmes.

For the sake of this study, detailed institutional categorization was critical to accommodate the large diversity of institutional mandates. Research Institutions were classified into research partnerships (these are groupings of institutions with common research interests), international research institutes (these were mainly CGIAR centres based in the sub-region), national research institutes (mainly public-sponsored research institutions), regional research NGOs (many of these are independent think-tanks with an Africa-wide mandate) and universities (specific departments or programmes housed in the universities).

Other than the research institutes, some government agencies, national and international NGOs were also found to be having some research function—in as much as this wasn't the core mandate. For the sake of this study, we have referred to such as “dual” for ease of reference. Then we have the last group of institutions bringing together international and local development NGOs, government ministries, departments and Parastatals based in the countries. Also in this class are the intergovernmental organizations with an Africa-wide mandate.

### 2.3 Preparation of Instruments

Development of questionnaire instruments to be used in the study was informed by a synthesis of lessons learnt from successful adaptation projects implemented in a range of developing countries, reports from the annual Development and Adaptation Days side-events at UNFCCC CoP events; and other regional and national climate change dialogue sessions.<sup>7</sup> The questionnaire design also benefited from assessments such as the Rockefeller Foundation assessment report on adaptation in African agriculture<sup>8</sup> and findings of the Capacity Needs Assessment for Action Research report commissioned by DFID.<sup>9</sup> The questionnaire design took into account key recommendations of the CCAA Addis Ababa workshop<sup>10</sup> and the proceedings of the Community Based Adaptation to Climate Change international workshop in Dhaka, Bangladesh in 2007;<sup>11</sup> both of which identified various approaches to meaningful participatory action research. The design of the instruments also benefited from scholarly works on the management of knowledge networks<sup>12</sup> and research partnerships<sup>13</sup> for sustainable development. Some general guidelines from the flexible framework developed by CIDA<sup>14</sup> were also recognized.

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<sup>7</sup> Kituyi E (2006) Institutions for Adaptation. *Tiempo*, Issue 61, October edition pp16-19.

<sup>8</sup> Rockefeller Foundation (2008) Climate Change and Adaptation in African Agriculture. Report prepared by Stockholm Environment Institute. Pp53.

<sup>9</sup> Nyong A (2006) Capacity Needs Assessments for Climate Change Adaptation Support Programme for Action Research and Capacity Development in Africa (CCAA). Report commissioned by DFID.

<sup>10</sup> IDRC (2007) Towards a Regional Strategy in Climate Change Adaptation: Sharing Knowledge on Climate Risks and Adaptation Options. IDRC/CCAA, Addis Ababa, 16-20 April 2007. Workshop Report.

<sup>11</sup> IISD (2007) Proceedings of the Second International Workshop on Community-Based Adaptation to Climate Change. 24-28 February 2007, Dhaka, Bangladesh. VOLUME 135, NO. 1, SUNDAY, 4 MARCH 2007

<sup>12</sup> Creech H and Willard T (2001) *Strategic Intentions: Managing knowledge networks for sustainable development*. International Institute for Sustainable Development, 150p.

<sup>13</sup> Bass S and Dalal-Clayton B (2004) National Sustainable Development Strategies. In *Survival for a Small Planet* (T. Bigg, ed) International Institute for Environment and Development, pp101-120. Earthscan, London.

<sup>14</sup> Organizational Assessment Guide <http://www.acdi-cida.gc.ca/CIDAWEB/acdicida.nsf/prnEn/NAT-82011350-KV7>

The initial version of these questionnaires (one for research institutions and the other for development and governmental agencies) was submitted to IDRC CCAA team for approval before use. For R&D institutions, the questionnaire (Appendix 1) aimed to gather knowledge on, *inter alia*, the human resource strength; research planning, implementation, engagement and communication capacities; and coordination capacity for research partnerships and knowledge networks. For the non-research institutions, the questionnaire (Appendix 2) focus was on, *inter alia*, their level of participation in environmental research, nature and level of networking with R&D institutions, and their interaction and handling of research outputs in the development process.

## 2.4 Institutional Visits and Interviews

The itineraries of the pre-arranged country visits are presented in Appendix 3. In each institution, the consultant met the appointed officials whom he guided through the interviews. In some of these institutions, the consultant was taken through brief tours to view the facilities and interact with researchers. Publications and other materials useful to this study were also collected where available.

## 2.5 Expert Consultations

A number of experts in areas such as institutional design, organizational management, research management and monitoring and evaluation were contacted for a round of focused discussions. These contacts are presented in Table 2.3. Focused discussions with these individuals aimed to seek their expert views on institutional arrangements for participatory action research related to the ToR.

Table 2.3 independent experts consulted.

Name	Position	Institution	Telephone	e-mail
Dr C.A. Mumma-Martinon	Research Fellow	Hekima College	+254 736 076447	<a href="mailto:Connie_martinon@yahoo.co.uk">Connie_martinon@yahoo.co.uk</a>
Ms Njeri Karuru	Senior Programme Officer	IDRC, Nairobi	+254 20 2713160	<a href="mailto:nkaruru@idrc.or.ke">nkaruru@idrc.or.ke</a>
Ms Florence Omosa	Consultant	Private	+254 733 632003	<a href="mailto:fomosa2001@yahoo.co.uk">fomosa2001@yahoo.co.uk</a>
Abdulrahman Issa		IUCN Tanzania	+255 754 570234	<a href="mailto:issa@iucn.or.tz">issa@iucn.or.tz</a>
Prof Patricia Kameri-Mbote	Associate Professor	University of Nairobi	+254 733	<a href="mailto:pkameri-mbote@ielrc.org">pkameri-mbote@ielrc.org</a>
Boaz Blackie Keizire	CAADF Focal Point	MAAIF <sup>15</sup> , Uganda	+256 414 320722	<a href="mailto:blackiesg@yahoo.com">blackiesg@yahoo.com</a>

## 2.6 Data Analysis, Interpretation, Reporting

Data was analyzed to determine the capacity of each institution to handle environmental research individually or in partnerships and networks at various levels (national and sub-regional), where the consultant looked for significant patterns and themes. A SWOT analysis was then performed on the R&D institutions. Research capacities among research institutions and networks were assessed in terms of four (4) main criteria: Research planning; Research implementation; engagement and communication strategy; and Research partnerships and network coordination. Government and

<sup>15</sup> Ministry of Agriculture, Animal Industry and Fisheries

other development agencies were also assessed in terms of three (3) key criteria: their participation in environmental research; level of collaboration and networking with research institutions; and their handling of outputs from research institutions for use in development programmes. The idea was to identify the extent to which these were intermediaries between researchers and end-users.

Each of the components was scored on a scale that ranged from 0 (**Never** undertook an activity) to 1 (**rarely** undertook an activity) to 2 (**frequently** undertook an activity) and 3 (**always** undertook an activity). The component scores were aggregated to give mean scores for each of the criterion for research capacity for the various classes of institutions. The classification of the research capacity scores is presented in Table 2.4

Table 2.4 Classification of research capacities and their interpretation

Grade	Score Range	Capacity Class	Interpretation for action
C	0 – 1	Low capacity	Inadequate capacity for desired PAR
B	1 – 2	Medium capacity	Needs capacity strengthening in certain identified areas
A	2 – 3	High capacity	Sufficient capacity for PAR

The output of this process was intended to inform a gap analysis on factors affecting organizational capacity and knowledge base of institutions to work effectively on climate change adaptation. Secondly, it would also inform an engagement analysis and development of strategy for identifying opportunities and constraints within identifiable institutions. Using these analyses, a road map for enhanced collaboration and development of comparative advantages on climate change adaptation would be developed. Regional research institutions were also assessed for their capacity to take on devolution from CCAA.

### 3.0 INSTITUTIONAL PROFILES

This section presents a brief profile of all the organisations that were visited during the study. These were selected using criteria already discussed in Section 2.2. They do not in any case exhaust those organizations relevant to climate change adaptation. The institutions are presented in their respective categories namely: research partnerships and networks, international research institutes, national research institutes, regional research NGOs, universities, *dual* institutions, international NGOs, ministries, Parastatals and intergovernmental organisations. The visions, missions, areas of operation, current projects areas and, in some cases, the organisations they have partnered with is provided in each case. The analysis aimed to brief the Consultant on the nature of institution as well as the organizational and programmatic foci before the country visits.

#### 3.1 Research Partnerships/Networks

*Association for Strengthening Agricultural Research in Eastern and Southern Africa (ASARECA)* is a non-political organization of the National Agricultural Research Institutes (NARIs) of ten (10) countries in Eastern and Central Africa: Burundi, D. R. Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. It aims at increasing the efficiency of agricultural research in the region so as to facilitate economic growth, food security and export competitiveness through productive and sustainable agriculture. Its mission is to enhance regional collective action in agricultural research for development, extension and agricultural training and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources.

*Horn of Africa Regional Environment Centre and Network (HOARECN)* is an initiatives of the Science Faculty of the Addis Ababa University. HOAREC's mission statement is to improve environmental governance and management in the Horn of Africa Region by focusing on several critical environmental management areas as well as enhancing the development of environmental support sectors to relieve pressure on natural resources by stimulating new value chains for sustainable products and services and promoting renewable/sustainable energy. *Horn of Africa Regional Centre* acts as a major resource centre for the region. It promotes environmental awareness and deploying educational activities and pilot projects to test and disseminate innovations. The centre has focused on management of lakes and wetlands, management of parks and buffer zones, management of erosion prone highlands and dry lowlands.

Demand Driven Action Research is one of the center's programme which is designed to bring academic research capacity closer to the reality "on the ground". The Partnership programme is aimed at stimulating and facilitating partnerships between academia and the private sector and/or civil society organizations in order to implement environment related projects. The centre also has a capacity building programme for environmental management in the region whether through experience exchange within the Horn countries or through training and education from other areas and distance learning programmes on environment management modules using practical case studies from the field. *Horn of Africa Regional Environment Network (HoA-REN)* is a network of member and partners consisting of environmental community based organisations, non-governmental and higher learning institutes from six countries in the Horn of Africa.

*Western Indian Ocean Marine Science Association (WIOMSA)* is a regional professional, non-governmental, non-profit, membership organization, registered in Zanzibar, Tanzania. The organization is dedicated to promoting the educational, scientific and technological development of all aspects of marine sciences throughout the region of Western Indian Ocean (Somalia, Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar, Seychelles, Mauritius and Reunion with a view toward sustaining the use and conservation of its marine resources.

The organization's inter-disciplinary membership consists of marine scientists, coastal practitioners, and institutions involved in the advancement of marine science research and development. The Association: (1) provides a forum for communication and exchange of information amongst its members that promotes and fosters inter-institutional linkages within and beyond the region; (2) supports marine research by offering research grants; (3) implements programs to build the capacity of marine scientists and coastal management practitioners; and (4) works to promote policy dialogue on key topics by organizing meetings and seminars on the findings and policy implications of science.

### **3.2 International Research Institutions**

*International Maize and Wheat Improvement Centre (CIMMYT)* is a non-profit research and training center with direct links to about 100 developing countries through offices in Asia, Africa and Latin America. It is committed to improving livelihoods in developing countries. Through strong science and effective partnerships, it creates, shares, and uses knowledge and technology to increase food security, improve the productivity and profitability of farming systems and sustain natural resources. It participates in an extensive global network of people and organizations who share similar development goals, including the public and private sector, non-governmental and civil society organizations, relief and health agencies, farmers and the development assistance community. The expected applications of research of Global Wheat Program is that it will provide farm households with new options to diversify crop and livestock production systems, improve their productivity, and conserve scarce water and soil resources in large areas of Asia, Northern, Southern and Eastern Africa and Latin America. The Global Maize Program uses maize genetic resources to provide diverse, high-yielding varieties that withstand infertile soils, drought, insect, pests, and diseases. Conducts crop and natural resource management research to help farmers exploit the full potential of improved seed and to preserve and enhance soil and water resources. Among its partners and donors it has: International Maize Improvement Network, International Wheat Improvement Network (IWIN), Borlaug Global Rust Initiative, The Drought Tolerant Maize for Africa Initiative, Insect Resistant Maize for Africa (IRMA), Water Efficient Maize for Africa (WEMA), national agricultural research institutions, non-government and community-based organizations, seed sector organizations, regional research networks, other CGIAR centers, private companies, and advanced research institutions world-wide.

*International Livestock Research Institute's (ILRI's)* vision is "A world made better for poor people in developing countries by improving agricultural systems in which livestock are important". Its mission is to work at the crossroads of livestock and poverty, bringing high-quality science and capacity-building to bear on poverty reduction and sustainable development for poor livestock keepers and their communities. Its research themes are: Targeting and innovation, improving



marketing opportunities, using biotechnology to secure livestock assets and people, livestock and the environment. ILRI's strategy is to place poverty at the centre of an output-oriented agenda. ILRI's strategy focuses on three livestock-mediated pathways out of poverty: (1) securing the assets of the poor, (2) improving the productivity of their livestock systems and (3) improving their market opportunities. ILRI also coordinates the System wide Livestock Programme of the Consultative Group on International Agricultural Research (CGIAR). Its other linkages are drawn from Donor Agencies, National Agricultural Research Institutes, Non-Governmental Organisations, Farmer Organizations and Private sector.

*International Water Management Institute (IWMI)* is one of 15 international research centers supported by CGIAR. It is a non-profit organization. Its vision is to be a world-class knowledge center on water, food and environment and its mission is to improve the management of land and water resources for food, livelihoods and nature. Research is the core activity of IWMI. The research agenda is organized around four priority themes including Basin Water Management; Land, Water and Livelihoods; Agriculture, Water and Cities; and Water Management and Environment. Cross cutting activities in all themes include, assessment of land and water productivity and their relationship to poverty, identification of interventions that improve productivity as well as access to and sustainability of natural resources, assessment of the impacts of interventions on productivity, livelihoods, health and environmental sustainability. IWMI works through collaborative research with many partners and targets policy makers, development agencies, individual farmers and private sector organizations.

### **3.3 National Research Institutes**

*Ethiopian Institute of Agricultural Research (EIAR)* is a government research institution. Its parent ministry is the Ministry of Agriculture and Rural Development. EIAR's vision is to see that all Ethiopians engaged in agriculture, agro-pastoralism, pastoralism and all agriculture-related business become beneficiaries of improved and appropriate agricultural technologies. Its mission is to conduct research that will provide improved and appropriate agricultural technologies that will contribute to increased agricultural productivity, food security and environmental sustainability. Its major research thematic areas are: Crops, Livestock, Soil and Water, Forestry and Pastoral and Agro-Pastoral. The Agricultural Research System is comprised of Federal Research Institutes and Centres, Regional Agricultural Research Institutes and Higher Learning institutes.

*Kenya Marine and Fisheries Research Institute (KMFRI)* is a state corporation in the Ministry of Livestock and Fisheries Development of the Government of Kenya. It is mandated to conduct aquatic research covering all the Kenyan waters and the corresponding riparian areas including the Kenya's Exclusive Economic Zones in the Indian Ocean waters. Its vision is to be a centre of excellence in aquatic research and promotion of sustainable utilization of marine and freshwater resources. Its mission is to contribute to the management and sustainable exploitation of aquatic resources and thus alleviate poverty, enhance employment creation and food security through multidisciplinary and collaborative research in both marine and fresh-water aquatic systems. The research programmes it is involved in are: Aquaculture, Environment & ecology, Fisheries, Information and data management, Natural products and Socio-economics.

*Kenya Medical Research Institute (KEMRI)* was established under the Science and Technology (Amendment) Act to represent the national body responsible for carrying out health science research in Kenya. "To be a leading centre of excellence in the promotion of quality health" is its vision and "To improve on the quality of health and human life through research" is its mission. KEMRI has centres which are intended to focus on certain specific areas of national and/or strategic importance and each of these Centres of Excellence are expected to emphasize and articulate the respective areas in which it has been given mandate by the Board to do research. In its research programmes it collaborates with local research institutions which include local universities and some of the government ministries. Its international collaborators vary from research organisations, development agencies as well as universities. It also has linkages with regional universities and medical related research centres.

*Mikocheni Agricultural Research Institute (MARI)* is one of the research institutes under the Division of Research and Training (DRT) of the Ministry of Agriculture and Food Security in Tanzania. Its mandate is to conduct and promote research for the development of the coconut sub-sector and tree crops-based farming systems along the coastal belt of Tanzania. The Institute is also responsible for the promotion and coordination of agricultural biotechnology activities in the country.

*National Crops Resources Research Institute (NACRRI)* is one of the public agricultural research institutes in Uganda under the policy guidance of the National Agricultural Research Organisation (NARO). NACRRI has a national mandate to generate and disseminate improved technologies of crops which include beans, cassava, cereals (maize and rice), sweet potato and animal production. It carries out research in biological control of crop pests and weeds; and on agrometeorology. Research activities in the Institute are carried out under commodity programs and units. Presently, there are five programs according to the mandate: beans, cassava, cereals, potato Bananas and Horticultural crops. All programmes have multidisciplinary teams. The institute emphasizes participatory research which involves farmers (and other clients) at all levels of technology generation and development as well as bodies at national, regional and international levels in various research activities. So far the improved varieties released are Beans(11), Cassava(9), Maize (3), Rice(3), Solanum potato (8) and Sweet potato (11). All the varieties released are higher yielding and more disease and pest resistant than the traditional varieties.

*National Agricultural Research Laboratories (NARLI)*, Uganda (also a NARO constituent) hosts agricultural research for development and a new biotechnology facility which has a capacity for tissue culture, molecular biology and plant transformation in Uganda. Presently, the facility is referred to as the National Agricultural Biotechnology Centre (NABC). It is using biotechnology to address various agronomic problems in bananas, beans and coffee. Its goal is to ensure that people of the Uganda benefit from the revolution in biotechnology that is transforming agricultural research and development around the world. Areas of agricultural biotechnology currently being employed at NABC include: plant tissue culture used for mass generation of pest and disease and free planting material of improved crop varieties for banana and coffee. NABC has achieved very significant scientific and technological progress in banana (*matooke*) transformation. It is sourcing and using genes to improve banana crop to resist pests and diseases that are currently affecting productivity. The other productivity factors in *matooke* that are being targeted for improvement through biotechnology are: maturity period, shorter plants and delayed ripening. NABC performs research and development in biotechnologies not only for sustainable agriculture but nutrition improvement.

### 3.4 Regional Research NGOs

*African Centre for Technology Studies (ACTS)* is in Kenya, Nairobi-based international intergovernmental science, technology and environmental policy think-tank that generates and disseminates new knowledge through policy analysis, capacity building and outreach. Its vision is to better living standards for all in Africa through harnessing science and technology for sustainable development. Its mission is to strengthen the capacity of African countries and institutions to harness science and technology for sustainable development. Previously, it managed the Regional Approach to Biotechnology and Biosafety Policy in Eastern and Southern Africa (the RABESA initiative) which was to generate and analyze technical information needed to inform COMESA and ASARECA on regional biotechnology and biosafety policy choices. In the Transboundary Natural Resources Management project, ACTS worked with the East Africa Community (EAC) to develop Regional Guidelines for Environmental Assessment of Shared Ecosystems of East Africa. The Cross-Border Biodiversity project was launched in 1999 by the governments of the three East African countries (Tanzania, Kenya and Uganda). The policy component implemented sought to promote and contribute to the creation of appropriate policy and institutional conditions for the conservation and sustainable use of cross-border biodiversity in East Africa. Currently, it is running Biodiversity and Environmental Governance, Energy and Water Security, Agriculture and Food Security programmes. ACT's collaborators cut across local and international universities, intergovernmental organisations, some of the United Nations Agencies and development organisations.

*Africa Harvest Biotech Foundation International (AHBFI)* is a non-profit foundation in Kenya. It has contributed biotech expertise to the New Economic Partnership for African Development (NEPAD) and to the Forum for Agricultural Research in Africa (FARA). “An Africa free of hunger, poverty and malnutrition” is its vision while its mission is to use science and technology – especially biotechnology – to help the poor in Africa achieve food security, economic well-being and sustainable rural development. One of its projects is the Africa Biofortified Sorghum (ABS) which seeks to modify the sorghum protein constituents and enhance its palatability. Its linkages are: Biotechnology, Breeding and Seed Systems for African Crops, The African Agricultural Technology Foundation, West and Central African Council for Agricultural and Research Foundation (CORAF), The Association for Strengthening Agricultural Research in Eastern and Central Africa, US Agency for International Development, African Centre for Technology Studies (ACTS), Forum for Agricultural Research in Africa (FARA), Biotechnology Trust Africa (BTA), AfricaBio, Bio-Earn, ISAAA, African Biotechnology Stakeholders Forum (ABSF), World Business Council For Sustainable Development and GMO Blog.

*Coastal Oceans Research and Development in the Indian Ocean (CORDIO East Africa)* is a Kenyan-based program created to respond to the degradation of coral reefs throughout the Indian Ocean. The program was initiated by the extensive bleaching and mortality of corals that occurred during 1998. CORDIO is supported by SIDA (Swedish International Development Cooperation Agency), the World Bank, FRN (Swedish Council for Planning and Coordination of Research), MISTRA (Foundation for Strategic Environmental Research) and WWF (Worldwide Fund for Nature). Activities within the program are conducted in Kenya, Tanzania, Mozambique, Madagascar, Seychelles, Reunion, Comoros, Mauritius, Maldives, India and Sri Lanka and coordinated from sub-regional secretariats in Kenya, Sri Lanka and Reunion. Projects within CORDIO focus on determining a) the bio-physical impacts of coral degradation as a result of bleaching and other disturbances, and the long term prospects for recovery, b) the socioeconomic impacts of coral

mortality and options for mitigating these through management and development of alternative livelihoods and c) the prospects of restoration and rehabilitation of reefs to accelerate the ecological and economic recovery.

*IGAD Climate Prediction and Applications Centre (ICPAC)*: is a specialized institution of the Intergovernmental Authority on Development (IGAD) working with the National Meteorological Services, World Meteorological Organisation (WMO) and other partners to address regional challenges of climate risks including climate change. It has its headquarters in Kenya. The mission of ICPAC is to foster sub-regional and national capacity for climate information, prediction products and services, early warning, and related applications for sustainable development in the IGAD Sub-Region. Within its core programmes, it has computer services and data management, climate diagnostics, prediction and climatology, climate applications, documentation, research and development and end-user liaison. It has managed to create a climate data bank that is constantly updated. It has been capacity building in data processing, climate monitoring & modeling, and prediction. Upgrading of ICPAC computing facilities has improved regional climate modeling and prediction capacity.

### 3.5 Universities

*Climate Change Research Group, Addis Ababa University, Ethiopia* is a new initiative within the Environmental Science Department at Addis Ababa University. It was established to monitor long term patterns of extreme events. Currently, the research group has researchers from Environmental Science, Earth Science, Physics and Statistics Departments. They will be integrating graduate students in their research. They will be open to establish collaboration with other research institutions. Their aim is to have regional integration. They want to be aligning their research to international research agenda apart from considering the national one. They are currently funded by SIDA/CIDR on a project that will entail observing termite behaviour in response to extreme events. They are currently developing a governance structure to enable it become an independent climate change research centre.

*Great Lakes University of Kisumu (GLUK), Kenya* is an off-shoot of Tropical Institute of Community Health and Development (TICH) in Africa - a non-profit community based training, research and development trust. Its vision is to be a centre of excellence bridging academics with community and institutional based development. The mission is the development of effective, concerned managers/leaders with a vision for the transformation in the African context. The main aim of GLUK is to develop effective managers of health and development initiatives in the Africa Region. This is done by bridging training with service delivery programs, focusing on the needs of the most vulnerable communities in the society. It develops hands-on-tests and disseminates innovative and effective models through action research. GLUK brings together regional and international academics, professionals and practitioners in Community health and development of diverse backgrounds to pool their skills, expertise and experience in addressing issues of livelihood through capacity building and for policy development.

*Institute of Marine Sciences (IMS), University of Dar es Salaam* is based in Zanzibar. It does its research in marine science and coastal research on a theoretical laboratory and field basis. Its research priorities fall into in four domains: Living Resources and Ecology; includes Fisheries, Ecology and Marine

Botany, Chemical and Environmental Marine Sciences; includes Chemical Oceanography and Marine Pollution, Physical and Applied Marine Sciences; includes Physical Oceanography, Marine Geology and Ocean Engineering, Marine Education Extension and Development. Its objectives are: (a) to undertake research in all aspects of marine science including socio-economics and resource management, (b) to provide postgraduate training and, in the future, establish undergraduate training in accordance with the country's manpower requirements and (c) to provide advisory and consultancy services in marine affairs. The research program of the Institute is mainly on projects undertaken by its staff as well as collaborative research programs with different departments in the university, various institutions in the country, overseas universities and international research, education and development organizations. The collaborative research programs are supported under bilateral and multilateral agreements. IMS research activities are funded by the Government of Tanzania, as well as international organizations such as SAREC, UNESCO-IOC, CIDA, EEC and consultancies. In addition to this, support has been provided through various collaborative research programs, which have been, or are, supported by the EU, UNESCO, ROSTA, IOC, UNEP, IUCN, WWF, IFS, World Bank and other international organization

*Masinde Muliro University of Science and Technology's (MMUST) in Kenya* vision is to be a centre of excellence in science and technology responding to development needs of society through engagement in dynamic knowledge creation and application. The university is already responding to socio-economic needs of the locals and the country at large. It is fulfilling this through the various capital development projects. The university has two faculties: Faculty of Science and Engineering (FSE) and Faculty of Education and Social Sciences (FESS). They also have a Centre for Disaster Management and Humanitarian Assistance (CDMHA), Institute of Graduate Studies, Research and Extension (IGSRE) and Science and Technology Park and Industrial Linkages (STPIL).

*Department of Meteorology, University of Nairobi, Kenya* provides an educational and research environment to examine the dynamic, physical, and chemical processes that occur in the atmosphere. A major theme is the establishment of a physical basis for understanding, observing, and modeling climate and global change. Graduate students, research staff, and faculty work together on a wide range of research topics. It has ongoing consultancies from UNESCO/IHP Nile FRIEND Project, Government of Kenya - Nile Basin Initiative, UNDP/GEF and Government of Kenya-Ministry of Energy/KMD. Some of its ongoing projects are Formulating Disaster risk reduction strategy for Kenya., The onset and cessation of the long rains in eastern Africa and their interannual variability, Improvement of our understanding of rainfall mechanisms, prediction and verification methods in Kenya, Calibration and Validation of Satellite-Derived Data and Products for Improved Environmental Monitoring for Sustainable Development over Kenya and Using Rainfall to Predict Droughts and Floods in Kenya. These projects are being managed by individual departmental lecturers and/or in collaboration with other institutions.

### **3.6 Dual Institutions**

*Advocates Coalition for Development and Environment (ACODE)* is an independent public policy research and advocacy think tank. ACODE is one of the regional leaders in cutting-age public policy research and analysis in a range of areas including governance, trade, environment, and science and technology. Its research team is a unique blend of multi-disciplinary professionals with specialized

expertise in cutting age policy research, advocacy and monitoring of public policy. Its aim is to influence development and governance policies for the promotion of social justice in Eastern Africa through independent policy research and advocacy. Through research, it helps governments and international development organizations expand the range of policy options available to confront challenging and controversial public policy problems. Through advocacy, ACODE contributes to formulation of policies that support sustainable development thereby expanding livelihood and income options for poor people. Through representation, it empowers communities to demand for justice and promote public participation in decisions making processes that affect rural livelihoods and the environment.

*Arid Lands Information Network (ALIN) based in Kenya* is a network of community development workers established in the year 2000 to continue the work of the parent organisation, *Reseau d'Information des Terres Arides* or the Arid Lands Information Network (RITA-ALIN). RITA-ALIN was established by OXFAM (UK) in 1988 as a platform to exchange experiences among Community Development Workers (CDWs). ALIN's vision is "a Knowledge-Driven Society" and its mission is "To enhance the livelihoods of communities through info exchange". Its core business is to facilitate the exchange of ideas, experiences and knowledge among communities to enhance learning in order for communities to manage their socio-economic issues using multi-media tools. Its countries of operation are Kenya, Uganda, Tanzania and Ethiopia. Due to successful involvement in using ICTs at community level, ALIN-EA was chosen to pioneer in Africa on pilot basis the Open Knowledge Network (OKN). The OKN is a global initiative linking thousands of marginalized and poor people through information sharing. ALIN has a one year youth volunteer program whose purpose is to equip the youth with skills in community development, impart them with social responsibility and prepares them for the job market. ALIN membership consist CDWs drawn from NGOs, community- based organisations as well as government departments, all offering a form of extension service in their fields of expertise. They act as a source of information and knowledge for the rest of the community. ALIN has also partnered with other development agencies to develop a wider content for dissemination.

*Centre for Energy, Environment Science and Technology* is a Non-Governmental Organization in Tanzania. It was formed because of the need for an institution, which would research on issues of energy development, environmental protection, natural resource use and management, and the development and use of science and technology in a holistic and balanced manner. Its aim is to explore and exploit synergies and possible multiplier effects in order to complement efforts of other institutions and individuals as countries strive to overcome backwardness and poverty. It has been able to accomplish a number of research assignments, consultancies and studies. It has massive experience in technology and policy related research and studies in energy and environment, Environmental Impact Assessment (EIA) in energy, mining, etc, policy and technical/technological studies and advice in energy, mining, water resources and environment, Climate change studies and research.

*National Cleaner Production Centre* is a Tanzanian Trust hosted by the Tanzania Industrial Research and Development Organization (TIRDO). It carries out in-plant assessment for industries and advises on health and safety issues. It also creates awareness on Cleaner Production to selected industry and its associations, R&D institutions, government departments and organizations, environmental management agencies, NGOs, consultancy firms and media institutions. The centre has been very active in interacting with policy makers, industry executives and other stakeholders in the policy

formation process. Because of this, the Cleaner Production concept has been incorporated into the National Environmental Policy (draft) and the Sustainable Industrial Development Policy (1996 - 2000).

*Lake Basin Development Authority (LBDA)* was established under a Kenyan act of parliament. The Act gives it the mandate to undertake overall planning, co-ordination, implementation, monitoring and evaluation of development projects and programmes in its area of jurisdiction. The vision of the LBDA is to be a leading institution in the socio-economic development of the Lake Basin Region. LBDA's mission is to spearhead development in the region by undertaking integrated planning and sustainable management of the resources through the participation of local people as key stakeholders. It accomplishes this mandate by utilizing the abundant resources in the region for socio-economic development. The LBDA's area of jurisdiction covers the entire catchments areas of the major rivers which drain into Lake Victoria on the Kenyan side.

*Department of Meteorology, Kenya* is a government institution, under the Ministry of Water and Environment. It plays its specialised role of providing climate and weather services to the Government and other stakeholders engaged in national development activities in the country. The Department of Meteorology has four Divisions which include: Station Networks, Forecasting, Applied Meteorology & Data Processing, and Training & Research. It establishes and maintains a weather station network across the country. At each of the weather station, weather observations are made daily and the weather records are kept at the Department Headquarters which are available to the public. In addition to provision of weather data, the Department process the data to provide tailor made climate information products to the end user as needed. It also provides a range of weather forecasts to different users which include aviation, agriculture construction among others. Furthermore, the Department provides training to different stakeholders in various issues which include use of climate information products, weather observation and others as required by the user.

*Practical Action* (formerly known as Intermediate Technology Development Group- ITDG) aims to demonstrate and advocate the sustainable use of technology to reduce poverty in developing countries. Practical Action has a unique approach to development "we don't start with technology, but with people". It works with poor communities to help them choose and use technology to improve their lives for today and generations to come. The organisation works towards fulfilling its mission in Eastern Africa – Kenya, Uganda and Tanzania, and will later cover Ethiopia, Eritrea, Somalia, Rwanda and Burundi – by increasing the choices of technologies and approaches accessible to the marginalized groups through establishing a broad range of highly regarded project work. The Rural Agriculture and Pastoralism Programme (RAPP) is a food production unit of ITDG (Practical Action) in Eastern Africa. The programme undertakes its projects in partnership with both dry land farmers and pastoralists in Turkana, Marsabit, Samburu, Tharaka and Makueni districts in Kenya.

*Plant Resources of Tropical Africa (PROTA)* is an international programme concerned with making scientific information about utility plants accessible in Africa and supporting their sustainable use to reduce poverty. PROTA's stated mission is to synthesise all the information available for approximately 7,000 plants used in tropical Africa and make it widely accessible in various media. It also intends to promote opportunities for the sustainable use of plants to the public and private sectors, making a difference to the people whose livelihoods depend on plants. The programme operates through an international network of institutional partners and collaborators of the PROTA Foundation and has representatives in 20 African countries.

*Uganda Wildlife Authority (UWA)* was established by the Uganda Wildlife Statute, which merged the Uganda National Parks and the Game Department. UWA's mission is to conserve and sustainably manage the wildlife and Protected Areas of Uganda in partnership with neighbouring communities and stakeholders for the benefit of the people of Uganda and the global community. UWA is mandated to manage wildlife and wildlife protected areas of Uganda in partnership with neighbouring communities and other stakeholders. Since UWA also manages some of the forested protected areas, UWA adheres to the forest management practices consistent with the Forest Stewardship Council (FSC) Principles and Criteria in managing these forests to ensure that benefits accruing from the conservation of these areas are generously shared with neighbouring local communities. It has strategic programmes which are Protected Area, Community Conservation and Benefits and Wildlife Management Outside Protected Areas. The Wildlife Management Outside Protected Areas programme helps in creating awareness amongst local communities and engages community partners in understanding the value of wildlife outside Protected Areas.

### **3.7 International NGOS**

*Famine Early Warning Systems Network (FEWSNET)* (Uganda Office visited) , is a USAID-funded activity that collaborates with international, regional and national partners to provide timely and rigorous early warning and vulnerability information on emerging and evolving food security issues. Its professionals monitor and analyze relevant data and information in terms of its impacts on livelihoods and markets to identify potential threats to food security. Once these issues are identified, FEWSNET uses a suite of communications and decision support products to help decision-makers act to mitigate food insecurity. FEWSNET also focuses its efforts on strengthening early warning and food security networks. Activities in this area include developing capacity, building and strengthening networks, developing policy-useful information, and building consensus around food security problems and solutions. Its approach is guided by several main pillars that support its core objectives. These include: continued production of high quality targeted early warning information, emphasis on developing sustainable networks, emphasis on policy-useful information and continued innovation in analytical tools and methods. The FEWSNET implementing partners are: Chemonics International, Inc., United States Geological Survey (USGS), National Aeronautics and Space Administration (NASA), National Oceanographic and Atmospheric Administration (NOAA) and United States Department of Agriculture (USDA).

*Global Water Partnership (GWP)*, with regional headquarters in Uganda, is a working partnership among all those involved in water management: government agencies, public institutions, private companies, professional organizations, multilateral development agencies and others committed to the Dublin-Rio principles. “Support countries in the sustainable management of their water resources” is its mission. Within East Africa, it helps in getting solutions for the specific water related challenges in the particular countries. Among its linkages is: Eritrea Water Partnership, Ethiopia Water Partnership, Kenya Water Partnership, Sudan Water Partnership, Uganda Water Partnership and Burundi Water Partnership.

*HEIFER International, Uganda* was established with gifts from generous donors, including David and Marianne Hogg of Raleigh, North Carolina and Ursula Bartel of La Verne, California. In Uganda, Heifer is providing livestock including dairy cattle, goats, poultry, pigs and bees. The focus of the projects is improving nutrition and income status for small-scale farmers, particularly women, as the male population has been so significantly diminished due to AIDS.



*International Union for Conservation of Nature (IUCN)*, (Uganda and Tanzania offices visited), helps the world find pragmatic solutions to our most pressing environment and development challenges. Their vision is “a just world that values and conserves nature”. Their mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. In knowledge, IUCN develops and supports cutting edge conservation science, particularly in species, ecosystems, biodiversity, and the impact these have on human livelihoods. IUCN runs thousands of field projects around the world to better manage natural environments. It also helps implement laws, policy and best-practice by mobilizing organizations, providing resources, training people and monitoring results. It offers scientific research, brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice.

### **3.8 National NGOs – Development**

*Rural Environment and Development Organisation (REDO)*, based in Rwanda. Since its inception has been implementing environmental conservation activities in the form of improved fuel stove dissemination of energy conservation, tree planting soil conservation, social integration of indigenous (BATWA pygmies) in community mobilization, sensitisation, skills development for youth and women among others. Its vision is a world where there is a corresponding realistic utilisation of the available resources balances both ecological and development needs for any sustainable development. Its missions are: (a) to champion environmental education and public awareness for sustainability in Rwanda and in the great lakes region, (b) to instil environmental concerns from grass root to national level and (c) to work towards poverty eradication through a participatory sustainable approach. It obtains its project funds from various donor agencies and has collaborated with some ministries to implement some of its project activities.

*Sustainable Land Use Forum (SLUF)* formerly called NOVIB Partners Forum on Sustainable Land Use in Ethiopia and Eritrea is an outgrowth of the December 1994 workshop which was organized by NOVIB in Addis Ababa. Its vision is that “It envisages seeing a secured livelihood in a sustainable natural environment in Ethiopia”. Its mission is that “It would like to promote Sustainable Land Use and improve Natural Resource Base and People's Livelihood”. This would be achieved by enabling stakeholders: Member organizations, Government organizations; Communities related to SLUF in rural and urban areas, Community Based Organizations and Civil Society Organizations; the private sector and individuals build their capacities through: Training, Information Exchange, Studies and Research, Advisory Services, Advocacy and Lobbying and Networking. Its objective is to support and strengthen local organizations that work to improve natural resource management and sustainable land use practices. It is a network association of organizations that are engaged in public policy advocacy, research and environmental protection work. SLUF has sub grantees with different intervention areas, including promotion of participatory natural resources conservation, forest and land use management, environmental improvement and combating water pollution and other environmental problems through different environmental friendly processes.

*AGENDA*, for Environment and Responsible Development is a Tanzanian non-governmental, non profit sharing organization. It was established by the Danish Development Agency (DANIDA) as a

project to contribute to the development of the business sector in Tanzania by promoting environmentally responsible, transparent and accountable business practices in the country. On concluding the project AGENDA was reconstituted as an autonomous NGO and was officially registered in July 1997. Its vision is “Socio-economic development is attained equitably to all members of the society without causing adverse effects to human health and the environment”. Its mission is to promote a culture of responsibility to the environment and sustainable development among the general public in Tanzania. In Chemicals and Chemical Waste Management, it conducts studies on health and environmental impacts of chemicals. The studies focus on the entire life cycle of the chemicals. AGENDA has also been involved in the training of the Community Based Organizations (CBOs) involved in Solid Waste Management (SWM) in Tanzania. In collaboration with government and other interest groups it has contributed to initiatives for the conservation of biological resources by promoting the production of biodiversity education materials to support the Biodiversity convention in Tanzania. In 1998, AGENDA established a Desktop Publishing Unit for biodiversity conservation in collaboration with the International Centre for Conservation Education (ICCE) under the Darwin Initiative. AGENDA has been involved in capacity building for environmental conservation and economic uplifting of coastal communities. In addition, AGENDA facilitated the integration of environmental responsibility into decision-making, working with the National Environment Management Council (NEMC). One of the AGENDA's strategies is to influence tertiary institutions to incorporate Environmental Education in their syllabi

### **3.9 Ministries/Parastatals**

*National Environment Management Authority (NEMA) Uganda* is a semi-autonomous government institution that was specifically mandated by the National Environment Act (NEA), as the principal agency in Uganda charged with the responsibility of coordinating, monitoring, supervising and regulating all environmental management matters in the country. Its vision is to be an efficient and self-sustaining agency, ensuring that people in Uganda are living in a clean, healthy, productive and sustainable environment. Its mission is to promote and ensure sound environmental management practices for sustainable socio-economic development. It helps in enforcing the environmental laws and regulations. It produces national and district state of environment reports and creates awareness about environment management through its environment education programme.

*National Meteorology Agency (NMA)-Ethiopia* was established as an autonomous government organization. The vision of NMA is to be a World-class meteorological centre in Ethiopia and its mission is “by collecting, analyzing and studying the atmosphere, we provide weather forecast and early warnings on the adverse effects of weather and climate of Ethiopia”. In the weather analysis and forecast, it provides city forecast that has data regarding temperature, rainfall and weather forecast for 24 hours, for three consecutive days over selected cities and towns. The National Forecasts contain weather assessments and forecasts in text description, maps, and statistical outputs covering the whole country in different time scale. Its other services include agrometeorological bulletins, hydrometeorological bulletins and climatological maps. It has collaborated with Ministry of Water Resources(Ethiopia), Radio and InterNET (RANET Ethiopia), World Meteorological Organisation(WMO), Intergovernmental Panel on Climate Change(IPCC), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environmental Program (UNEP), European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT),

National Oceanic and Atmospheric Administration (NOAA), Food and Agricultural Organization of the United Nations (FAO), Disaster Prevention and Preparedness Agency (DPPA) and The World AgroMeteorological Information Service (WAMIS).

*Ministry of Agriculture and Rural Development's (Ethiopia)* vision is to have a well-developed agriculture that uses modern technology; and to have a developed community which is free from poverty. Its mission is to do away with the problem of food insecurity and to enable the rural community get rid of poverty through enhancing the productivity of human resources, changing the outlook of the society, sustainability implementing the human labor and natural resources, especially land and water, generating, introducing and promoting technologies, and setting up market-led agricultural system. Some of its research themes are Forest, Livestock and Crop. Some of the issues it handles related to natural resources and forests are water harvesting, land-use/cover, soil, forest and natural vegetables, wildlife, irrigation potential areas, grazing potential areas and forestry potential areas.

*Directorate of Environment, Uganda* is responsible for environmental policy coordination. It falls under the Ministry of Environment and Water Resources. The Ministry aims to promote and ensure the rational and sustainable utilization and development and safeguard of Land and water resources and environment, for social and economic welfare and development as well as for regional and international peace. In addition, the Ministry promotes the utilization of weather and climatic information for sustainable development

### **3.10 Intergovernmental Organizations**

*African Union (AU)* was established to accelerate the process of integration in the African continent to enable it play its rightful role in the global economy while addressing multifaceted social, economic and political problems compounded as they are by certain negative aspects of globalisation. Its visions are:

- The AU is Africa's premier institution and principal organization for the promotion of accelerated socio-economic integration of the continent, which will lead to greater unity and solidarity between African countries and peoples.
- The AU is based on the common vision of a united and strong Africa and on the need to build a partnership between governments and all segments of civil society, in particular women, youth and the private sector, in order to strengthen solidarity and cohesion amongst the peoples of Africa.
- As a continental organization it focuses on the promotion of peace, security and stability on the continent as a prerequisite for the implementation of the development and integration agenda of the Union.

The New Partnership for Africa's Development (NEPAD) is a programme of the African Union created by Africans, for Africans and implemented by Africans. Its goals are: to promote accelerated growth and sustainable development, to eradicate widespread and severe poverty. Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC) is a special project which arose from the urgent need to address the problem posed by tsetse-transmitted diseases, which threatens the health and productivity of people and livestock, affects land use and severely constrains Africa's socio-economic development. Within its commission portfolio, it has the thematic areas including

*inter alia*: Infrastructure and Energy, Social affairs (Health, Children, Drug Control, Population, Migration, Labour and Employment, Rural economy and agriculture (Rural Economy, Agriculture and Food Security, Livestock, Environment, Water and Natural Resources and Desertification).

*Lake Victoria Basin Commission (LVBC)* serves as an overall institution for the management of issues related to the Lake Victoria Basin. The East African Community (EAC) established the Lake Victoria Development Programme in 2001 (which was taken over by LVBC), as a mechanism for coordinating the various interventions on the Lake and its Basin; and serving as a centre for promotion of investments and information sharing among the various stakeholders. EAC had also designated Lake Victoria and its Basin as an "area of common economic interest" and a "regional economic growth zone" to be developed jointly by the Partner States (Kenya, Uganda and Tanzania). The programme was the driving force for turning the Lake Victoria Basin into a real economic growth zone. The Commission is focusing on harmonization of policies and laws on the management of the environment in the Lake and its catchment area; continuation of the environmental management of the Lake, including control and eradication of the water hyacinth; management and conservation of aquatic resources, including fisheries; economic activities in the development of fishing, industry, agriculture and tourism; and development of infrastructure, including revamping the transport system on and around the Lake.

*United Nations Economic Commission for Africa (UNECA)* was established by the Economic and Social Council (ECOSOC) of the United Nations (UN) as one of the UN's five regional commissions. ECA's mandate is to promote the economic and social development of its member States, foster intra-regional integration, and promote international cooperation for Africa's development.

Food Security and sustainable development is one of its subprogrammes whose overall objective is to strengthen the capacity of member states to design institutional arrangements and implement national policies and programmes that reinforce the linkages within the nexus of food security, population, environment and human settlements in order to achieve sustainable development, and to contribute to building capacity of African countries to utilize science and technology in achieving sustainable development. Strengthening Integrated Water Resources Management (IWRM) programme focuses on promoting the implementation of the African Water Vision 2025. Improving land resources management for sustainable development subprogramme has its efforts on analytical work, capacity building, sharing of information and experiences, and advocacy for best practices on land-related institutional and legal frameworks, and land improvement investments. Harnessing science and technology for sustainable development subprogramme aims at improving the state of affairs to put Africa at the forefront of technological innovation for sustainable development. ECA will be establishing a new Climate Change centre that will focus on all matters related to climate change in Africa. ECA works with other UN agencies, regional intergovernmental organizations, regional economic communities and regional development banks.

## 4.0 INSTITUTIONAL RESEARCH CAPACITIES

In this section, results from the institutional visits and expert consultations are presented. They are presented according to the major analytical parameters used namely: human resource base; research planning; research implementation; institutional engagement and communication; coordination of research partnerships and knowledge networks. This section has also ranked the institutions according to their performance based on defined scores.

### 4.1 Human Resource Base at Research Institutions

The mean number of research staff (top scientists to assistants) is presented in Figure 4.1, which shows the NRIs in Eastern African countries employ an average of 40 persons to support research in those institutions, hence the most endowed in terms of quantity. The public universities follow closely at 19 then the regional research NGOs at 18 (this including their part-time associates based in other institutions. The “duals” employ the least research staff averaging 8.

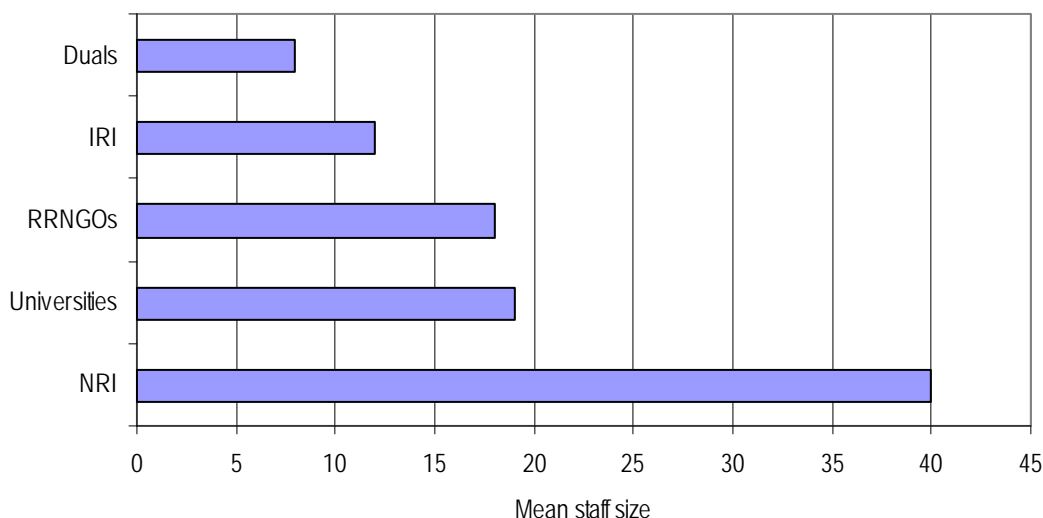


Figure 4.1 Number research staff across the institutions.

In terms of research staff quality, their distribution according to academic qualifications is shown in Table 4.2. The IRIs led with almost 80% of its research staff having at least a PhD degree. Universities follow closely at almost 60%, the rest being research fellows and teaching assistants with MSc and BSc, respectively. NRIs, mainly government funded agricultural research organizations, employ a significant fraction of junior staff (field technicians, other support staff) as indicated in the “other” cadre. Despite research not being a priority in “duals”, some such as the Ethiopian National Meteorological Agency boasts the 2008 Nobert-Gerbier-Mumm international award laureate—Dr Abebe Yashenew for high ground-breaking contribution that gave new insights into why floods continued to wreck havoc parts of Ethiopia despite timely early warning information being disseminated.

Challenges affecting human resource development mainly among national institutions (universities and NRIs) include high turn-over and slow employment by government. Examples include the

Meteorology Department of the University of Nairobi which has over the past 5 years lost four senior scientists with PhD to FAO, ICPAC, KMD and WMO. The Agricultural Research Institute, Mikocheni in Tanzania has most of its staff in all cadres being very aged yet the government has frozen employment for a long period—potentially losing an opportunity for mentorship of young scientists.

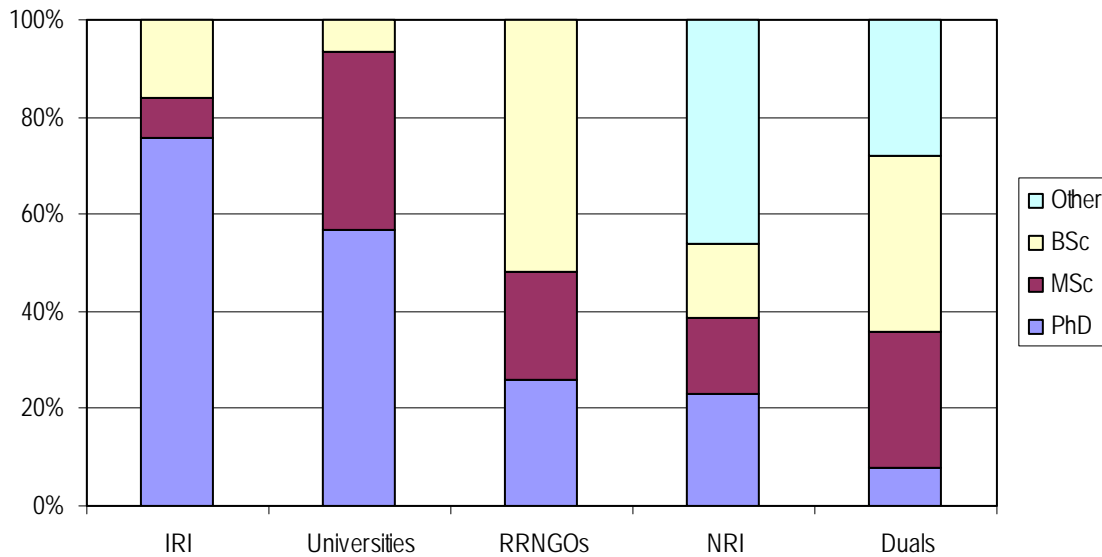


Figure 4.2 Human resource distribution by institution type and academic qualification

## 4.2 Research Planning

### 4.2.1 Setting the Research Agenda

Viable research programmes are thought to be those that have been developed locally by institutions themselves in consultation with the users of the intended research outputs in order that real needs are identified. The institutions then mobilize funds to implement the agenda. The study reveals five different models for agenda-setting at research institutions: *First*, members of a research partnership or knowledge networks submit their inputs on local research needs on an annual basis to the network secretariats which collates the information into popular clusters and themes that are then presented for approval at annual meetings or symposia of members. Examples here include WIOMSA, whose partners across 10 countries identify priority research issues with its grassroots partners, and the HoARECN which sends questionnaires to its member institutions in the 6 countries. In both cases, annual workshops are held where any significant developments are incorporated in work programmes. *Secondly*, all IRIs operate on global research agenda with regional focal areas and themes that are arrived at through interaction with country-level working groups and stakeholders that allows a consultative filtering of the process of contributions in the context of the global agenda.

*Thirdly*, individual institutions independently identify their research agenda and seek funding from donors to implement the agenda. Most of these institutions use their own in-house mechanisms that also involve baseline studies followed by consultative needs assessment workshops with stakeholders (AHBFI, ICPAC, NRIs, MMUST and GLUK). The GLUK model is particularly interesting—where it uses community health as the entry point in identifying and monitoring issues e.g. food security, climate change, etc by having students visiting health centres and clinics to interview patients on a monthly basis. *Fourthly*, institutions that simply do situation analysis and trends based on secondary information and *donor-intelligence*. No stakeholders are consulted in the process. Following which they solicit funds from the identified donors. Examples include Practical Action which relies on its in-house strategy leadership team that sits to discuss focal areas. *Finally*, institutions implementing research based on agenda developed externally—mainly by funding bodies and international institutions. For example, ACTS climate change is wholly based on IIED and IISD research programme. University of Nairobi-Meteorology Department is already working on projects under external programmes such as AFRICANESS, ICSU-ROA Science Plan, PAGES and IDRC-CCAA. In all these models, a key challenge faced by institutions is the harmonization of donor priorities (each of their key donors has unique but conflicting priorities around a common issue and those of the recipients. For example, many donors prefer funding community development projects on adaptation as opposed to research activities preferred by the institutions.

#### 4.2.2. Environmental Conservation as a Priority

A general link to environmental management can be detected in the themes of research programmes of most institutions. These are presented in Table 4.1 which classifies institutions according to three main categories. Those with climate change being a key priority include WIOMSA, whose members are implementing projects targeting conservation of coral reefs in the western Indian Ocean zone against impact of temperature rise; each of the CGIAR Centres has projects on climate change e.g. CIMMYT projects targeting adaptation of maize and wheat germplasm to drought and moisture stress; and ILRI's (i) adaptation of pastoral communities to climate change, and (ii) dual-purpose crops and by-products of sorghum as fodder—adding drought resistance to fodder quality objectives (working with ICRISAT).

Table 4.1 classification of institutions' programmatic interests in climate change

Climate change programmes	Climate change relevant	Environmental-No climate
WIOMSA	ASARECA	HoARECN
CG Centres (ILRI, IWMI, CIMMYT)	AHBFI	EIAR
ACTS, ICPAC	NACRRI, NARLI, MARI	GLUK
KEMRI, KMFRI	AAU, UoN, MMUST, IMS	ACODE
Practical Action, CEEST	ALIN, UWA	

ICPAC's mission includes the development of drought monitoring and early warning tools, ACTS has climate change adaptation work going on under its energy and water security and environmental governance programmes. KEMRI has a climate change and health programme currently having a CCAA-supported project.

Institutions with climate change adaptation/mitigation implied in their work include ABHI, ASARECA and its constituent National Agricultural Research Institutes that are strongly involved in biotechnology work to develop drought-resistant crop varieties. MMUST is spearheading innovative disaster management programmes that cover floods and droughts in Kenya. Research institutions with environmental but no clear or intended climate change intervention include HoARECN whose objective is the improvement of environmental governance in the 6 countries of the Horn by working bottom-up with institutions and policymakers. Its focal areas are: parks and buffer zones; wetlands and lakes; and degraded lowlands and highlands including coastal areas (focusing on biodiversity). In fact the World Bank has chosen HoARECN as the platform for Climate Change adaptation work for Ethiopia, given its experience in capacity building for foreign affairs officials.

#### 4.2.3 Research Funding

It is difficult to determine how much of institutions' budget went to research and administrative functions. Some institutions, for instance, would never include researchers' salaries under administration costs while others consider that standard practice. However, majority of the institutions are in agreement that—as research institutions, between 50 and 70% of all the monies go into supporting research while the rest go into offsetting administrative overheads.

In general, the IRIs are the most well-funded research institutions, most having long-running programmes as well as core/unrestricted funds. Then come research partnerships and networks, as well as RRNGOs such as Africa Harvest that are fairly well-funded by international donors (mainly private Foundations) to implement their mandates. The NRI generally receive little funds from their respective governments—funds that mainly go into payment of staff salaries and administration. However, partnerships among the national agricultural research institutions and the IRIs (and in some cases through ASARECA) have endeared these institutions to considerable research funds.

At least 50% of all research institutions across all classes engage in contract research but for different purposes. Some engage out of good will given their well-endowed infrastructure and technical capacity. ILRI and IWMI for instance may from time to time undertake short tasks on request by their host governments<sup>16</sup>. Then there are those institutions that deliberately engage in contract research as a fund-raising strategy. ACTS for instance engages in short assignment commissioned by partners including UNEP, IIED, IISD etc. MARI in Tanzania engages in contract research tasks by farmers and seed companies. Universities have not been left behind in this. To boost their financial bases, MMUST is carrying out short-term tasks commissioned regularly by relief agencies such as Action Aid and Red Cross, while IMS is carrying out short assignments for UNDP and Government of Zanzibar. In both cases, the revenues are directed towards programme development. HoARECN is currently developing a business plan for the establishment of a non-profit consultancy unit at the secretariat in Addis Ababa.

The clear message emerging from this study is that (i) strategic partnering and networking, and (ii) contract research may be important sources of project financing if well planned.

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<sup>16</sup> Past experience at ILRI Ethiopia include advisory service on emergency relief for livestock or livestock insurance for the Ethiopian Government.



#### 4.2.4 Availability and Adequacy of Research Facilities

Other than the CGIAR Centres that boast excellent research facilities for research within their mandated areas, other institutions report mixed picture on availability and adequacy of the facilities. For instance, ASARECA member institutions have a varied state of research facilities, some with fairly modern facilities while others have inadequate. Strategic partnerships and aggressive fund-raising have been instrumental in delivering research facilities in some national research institutions. Strategic partnerships include the KEMRI and US-CDC partnership that has ensured a well-established research facility for malaria studies in Kisumu. Similarly, ICPAC enjoys the collaboration among IGAD, WMO, IMTR and KMD, all located at the Dagoretti Campus in Nairobi, with excellent facilities for drought monitoring, weather prediction and other modeling tools.

Outstanding cases of fund-raising include efforts by MARI in Tanzania, which was found to be about 90% sufficient in biotechnology for drought resistance research facilities and was expecting more equipment from the Bill & Melinda Gates Foundation. MARI also hosts CGIAR centres including ICRAF and IITA. Similarly, with US\$90 million support from the World Bank, significant agricultural research capacity has been built for the Ethiopian Institute for Agricultural Research. Upto 6 complete stand-alone EIAR campuses have been built around the country, though scientists and technicians were never trained in operating some of the modern facilities supplied by the project. This aspect was not included in the plan and the World Bank is currently resolving this anomaly.

### 4.3 Research Implementation

#### 4.3.1 Partnering and Networking among Institutions

A wide range of institutional partnerships and networks were observed in ongoing projects. All institutions visited have experience working in diverse institutional arrangements. Some of these were established purely by research institutions with similar mandates in countries within the sub-region. There were also knowledge networks that were formed by research institutions and development institutions including universities, private research NGOs and development NGOs with strong community links. In all such cases, the members are bound together by a common course through research and dissemination. Some of these jointly develop and implement project after project in their defined areas of interest.

Many are also of a temporary, single project-based partnerships, mainly initiated by the stronger partners such as international research institutes. These were found common between the CG Centres (IWMI, ILRI, CIMMYT, and IITA) and national agricultural research institutes. To realize their objectives and mandate in the countries and sub-region of interest, the CG Centres are obliged work with local institutions, hence their leading role in initiating such strategic partnerships with local agricultural institutes or universities. The scenario is similar with respect to RRNGOs. Being mainly private organizations, they require partnerships with public institutions to realize policymakers' buy-in and achieve their overall goals. Similarly, they easily partner with other regional-level organizations to synergize expertise by bringing on board multi-disciplinarity. They

also tend to rely heavily on associates (part-time researchers) in local universities to cut on costs of hiring full-time researchers.

National level research institutions were also known to have local research partnerships and knowledge networks e.g. local agricultural research institutes working with relevant departments at state universities, Parastatals, private seed companies and community based organizations. Another typical example is that of KEMRI, University of Nairobi, COHESU (NGO in western Kenya) and local referral hospitals on its malaria project. In general these are not limited by the type and number of institutions.

#### 4.3.2 Collaboration with Development Agencies and Communities

Collaboration between research institutions and development agencies as well as NGOs/CBOs is largely in the unpackaging and dissemination of outputs. For example, CIMMYT works with World Vision and Catholic Relief Services (CRS) on demonstration and dissemination of improved maize technologies in Kenya. CIMMYT has similar arrangements with CBOs in Tanzania and Uganda. In Ethiopia, IWMI has worked with NGOs such as WaterAid, CARE, CRS and local communities to translate research outcomes into consumable forms before dissemination. For instance, this partnership supported the Godino Irrigation Scheme to develop by-laws for water use. In Uganda, NARLI works with CARITAS and World Vision in a symbiotic relationship where these development agencies receive critical field data required to operationalise relief programmes, for which they in turn unpackage research outputs into appropriate forms for dissemination to end users. Still in Uganda, NACRRI also works with World Vision and Action Aid to disseminate cassava stems, beans and rice varieties in resettlement areas. In Kenya, KMFRI works with NGOs such as Kwetu, who translate research findings into training and sensitization programmes on mangrove conservation to Coastal communities. MMUST in Kenya supports field programmes of Action Aid and Red Cross based on findings from its disaster management research.

Secondly, collaboration is through participatory action research, where communities are also engaged directly on research project activities. Examples include COHESU's involvement in the implementation of KEMRI's climate change/malaria programme, EIAR's Promotion of Local Innovation by Farmers (POLINOVA) Project in Ethiopia, and the UoN-Met Department engagement of Red Cross Society and CBOs in Nakuru town to integrate meteorological considerations in their programmes. GLUK in Kisumu also works with community through health centres to collect data on a wide range of rural development parameters. Other eye-catching examples include a case in Uganda where ACODE collaborates with CARE, Action Aid and Oxfam to translate its research results into policies for the benefit of "animal-challenged" communities, and Uganda Wildlife Authority engages research assistants from local communities around the parks—where they participate in development activities that concurrently contribute to UWA's data gathering efforts.

Through strategic partnerships with government agencies, ILRI has relied on communities for the identification of animal epidemics such as bird-flu, while in Zanzibar, WIOMSA is working with communities on mariculture projects involving pearl fish and milk farming funded by USAID and EU. Farmer field schools were also found to be very popular by NACRRI and MARI for translating research results into the field.

### 4.3.3 Engaging Graduate Students from Local Universities

Most research institutions have as a policy, engagement of interns, graduate students and post-docs to undertake certain tasks under supervision of senior research staff. To some institutions, this is free manpower to undertake some tasks that would ordinarily be undertaken by consultants. Yet to others, it is a key duty and also viewed as social responsibility and have a continuous admission programme all year round.

Education and training is a key programme of Research Partnerships and Networks and IRIs. For instance, WIOMSA has several scientific research grants from SIDA on marine issues. It also supports MSc and PhD students from overseas, who spend short periods of time at WIOMSA-member institutions. Three Tanzanian MSc candidates sponsored by WIOMSA are based at IMS. Through HoARECN's demand-driven action research (DDAR) programme, 50 proposals by MSc students in member institutions are funded each year—proposals whose design requires clear roles for CBOs in the implementation of the proposed activities. ILRI, IWMI and CIMMYT all have MSc (from host-country universities) and PhD students (globally selected). RRNGOs tend to host mainly post-doc fellows. All NRIs except EIAR<sup>17</sup> admit graduate students as part of their capacity building policy. The “*duals*” admit interns—undergraduate students in continuing degree programmes at local universities.

### 4.3.4 Engaging Local Consultants

In general, institutions tend to hire consultants under various circumstances. First, whenever expertise required is urgent but deficient in-house or among its network membership. Examples include CIMMYT which hires consultants from local universities to support its socio-economic components or for project evaluations. Practical Action has occasionally hired University of Nairobi Chemistry lecturers to undertake indoor air pollution and Kenyatta University ones for climate change adaptation studies. The second model is popular among regional research NGOs, which maintains rosters of research associates in local universities and other think-tanks, and whom they engage on short notice to undertake certain tasks.

### 4.3.5 Embracing Multi-disciplinarity

Multi-disciplinarity is recognized and embraced by almost all research institutions. This is achieved through (i) hiring consultants on needs-basis (ii) harnessing capabilities in partner institutions, and (iii) employing qualified persons into full-time positions. Among the international research institutes, socio-economics seems to be the prime discipline to which consultants are hired. RRNGOs exploit multi-disciplinary expertise among their research associates (mainly private consultants and university lecturers in specific fields). WIOMSA members have challenges getting social scientists with interests in marine studies. The demand for the few trained ones has been so high that many have been lost to western institutions. Capacity building is needed to create a critical mass of social scientists around environmental issues. All NRIs have established positions for needed areas of

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<sup>17</sup> The Ethiopian universities are leading discussions with relevant government entities to allow this to happen as is the case in other countries.

specialization and into which they have employed researchers. For example, KEMRI has on board entomologists, climatologist, GIS specialists, parasitologists, statisticians and hydrologists. When it comes to universities, the departments have problems seeking specialists, something Institutes of the universities do not encounter. Examples include MMUST which has about 15 researchers with PhDs in various fields relevant to disaster management studies while the IMS-University of Dar es Salaam in Zanzibar has employed staff including sociologists, economists, engineers, oceanographers.

#### 4.3.6 Research Output Impact Assessment and Feedback

The success of research projects and programmes may be determined from the impacts brought about by the dissemination of the outputs. There were mixed observations on this parameter across institutions, with at least half of all interviewed institutions not measuring the impacts of their research work. All IRIs did measure impacts as per scheduled project management plans. IWMI Ethiopia, for instance, employs the impact pathway mapping templates as a tool to measure the impact of its research. HoARECN measures the impact of its demand-driven action research outputs through the extent to which environmental governance has changed in countries adopting its varying recommendations. For example, a land use plan for a district in Ethiopia has now been finalized based on a MSc student's thesis. Similarly, Djibouti and Sudan are currently communicating on potential collaboration in renewable energy resource development based on wind energy following information from wind studies by a graduate student citing cross-boarder high wind potential areas. Although all NRIs recognized the importance of impact analysis and feedback, only NACRRI and KMFRI meaningfully engaged their socioeconomists to do impact analysis.

ACODE does a daily monitoring of its advocacy work in Uganda. It monitors perceptions of policymakers in newspapers of ACODE's policy positions. Telephone calls are made to ACODE by some officials seeking discussions or clarifications of positions made. It also carries out impact evaluations. Similarly, UWA is very keen on measuring impacts and does so by tracking the uptake of key outputs by UWA management. Examples include (i) research findings have identified the minimum distances to animal sites for optimum protection and health interventions, and (ii) implementing fire management plans. Both of these were informed by commissioned studies. WIOMSA partners integrate lessons learned from impact assessments into annual programme planning and is reflected in new calls for proposals. HoARECN is in the process of documenting all major outputs and identifying issues for incorporation into its 5-year strategic plan which will be presented for approval to the annual meeting in December 2008. GLUK operates on a continuous improvement model driven by lesson-seeking and integrating change in its programmes on a monthly basis.

Although some institutions were required by their own statutes to carry out annual audits of their research and academic programmes (with a view to using feedback to improve them), little evidence existed to demonstrate this. In other cases, most research outputs were never used since they weren't appropriately packaged.

## 4.4 Engagement and Communication

### 4.4.1 Engagement with Policymakers

For maximum policy influence, it is imperative that policymakers are engaged in appropriate phases of the research process. Four distinct models have been identified of how this is achieved by research institutions in the sub-region.

*(i) Invitation to meetings/workshops:*

policymakers from various relevant government departments are regularly invited for national or even regional workshops organized locally, during which research findings are communicated. This seems to be the most common strategy across the board.

*(ii) Policy briefing and focused consultations:*

Short (1-4 pager) policy briefs are published and distributed to policymakers. Similarly, appointments may be sought with high-ranking policymakers in government where specially packaged messages are communicated. HoARECN secretariat has recently sensitized the Ethiopian Ministry of Foreign Affairs officials on climate change negotiations and is also involved in advising the Prime Minister by having direct audience with his environment advisor. MMUST has disaster management training programmes for Kenyan public servants, mainly those in the provincial administration. A Kenyan Provincial Commissioner is currently an MA candidate. GLUK has influenced public health policy in Kenya through consistent and strategic interaction with the Ministry of Health policymakers through focused meetings, policy briefs. IMS has also influenced Tanzania's marine park policy on the conservation of dolphins through similar engagements.

*(iii) Field Demos and Sensitization/Fact-finding Visits:*

Parliamentary committees and top politicians have also visited NARO (Uganda) and MARI (Tanzania) facilities on fact-finding missions triggered by the high budgetary submissions presented by their parent ministries to Parliament. NACRRI reported recommendation by Ugandan PM for increase in retirement age of scientists. EIAR invites policymakers to its regular thematic field-days while Practical Action has a systematic way of engaging with policy makers that always begins with system demonstrations.

*(iv) Sitting on advisory committees of government*

IWMI seats on the Ethiopian Research Council for Water and also contributes to ASARECA's research agenda development. ALIN is a member of the Kenya ICT Network and is represented on the Kenya ICT Board hence in a good position to influence policy on ICT. ACODE has six members of its staff sitting on senior government committees in Uganda.

### 4.4.2 Repackaging and Dissemination of Research Outputs

Unless research outputs reach end users, the purpose for that research won't be achieved. These outputs must be packaged in appropriate formats and disseminated through the right communication outlets. For instance, UWA is overwhelmed by the number of research outputs its consultants churn in monthly, yet it lacks in-house capacity to repackage and disseminate to users. It

is imperative that institutions and networks have in place policies and guidelines for manipulating research outputs for maximum impact on end-users. Only two institutions demonstrated such a formal strategy. ILRI has seven (7) formats in which to reach out stakeholders with its research outputs with clear guidelines for delivering each of these. Each of Uganda's NARO institutes has a quality assurance unit and research coordination unit that jointly coordinate the filtering of different products for dissemination to different audiences.

*Publications* These range from project reports, workshop proceedings, journal articles, policy briefs, and even posters. The number and type of publications depends on funding available. MMUST publishes *Ukulima* monthly bulletins and uploads its publications on the University website. It deposits some appropriate materials at community centres such as the Shinyalu Multi-media Centre and Lirhandanda Community Centre.

*Technology Demos* COHESU, an NGO working with KEMRI in Kisumu to unpackage research outputs on Malaria intervention technologies before dissemination through social marketing techniques. NACRRI works with Action Aid to disseminate cassava, beans and rice varieties to in resettlement areas in Uganda.

*Workshops* Regional, national and even local workshops are held with stakeholders. Some intermediary NGOs e.g. Kwetu at the Kenyan coast use outputs from KMFRI to prepare training materials used in some training workshops for local community groups working on marine resource conservation and mariculture.

*Radio and TV Talk Shows* The University of Nairobi's Meteorology Department participates in TV and Radio talk shows. Frequently, such talks cover issues around agro-meteorology. The Department hardly follows up on impacts of such programmes on its listeners.

*Websites* Other than the IRIs and some RRNGOs, the rest struggle to keep their websites updated. The most affected are to be found among universities and publicly funded national research institute. A few other institutions are still developing their websites.

## **4.5 Coordination of Research Partnerships & Knowledge Networks**

### **4.5.1 Categories of Partnerships/Networks**

Two clear categories of institutional partnerships and networks were identified during the study. The study wishes to focus on those guided by regional-level institutions. The *first* category (hereinafter referred to as *Project-based Partnership*) is driven by the project theme where the regional research organization's (say ACTS, Africa Harvest or ICPAC) research managers establish longer-term strategic relationships with partners who have complimentary capacity and who share similar interests in their specific research area. The arrangement is usually recognized by a MoU. The members of the partnership jointly generate a proposal for specific donor-funded activities within the framework of a specific research agenda and, perhaps, sharing of personnel. Usually the partnership under the MoU ends with the project conclusion, unless new follow up activities and funds are made available.

The *second* one (hereinafter referred to as *Fixed-Member Partnership*) involves research partnerships or knowledge networks that comprise of permanent partner-institutions who once recognized the importance of such partnerships in filling a specific institutional gap through research. These research networks are overseen by a secretariat which coordinates all activities. Examples found during the study included ASARECA and WIOMSA, both of which were established by research institutions based in countries in the sub-region. There was also a knowledge network HoARECN that was formed by research and development institutions including universities, private research NGOs and development NGOs with community links. Under this model, no MoUs are signed among the member, but a partnership Charter establishing the institution within the legal framework of the host country. The members are bound together by a common course through research and dissemination. They jointly develop and implement project after project in their defined areas of interest.

A critical analysis of the two regional partnerships yields the generic structure described in Figure 4.3, which also spells out the main features of any given regional partnership. On the section A of the framework, are international institutions that fund programmes, exchange knowledge/technology or provide opportunities for knowledge-sharing through joint research, peer-review of outputs and staff exchanges.

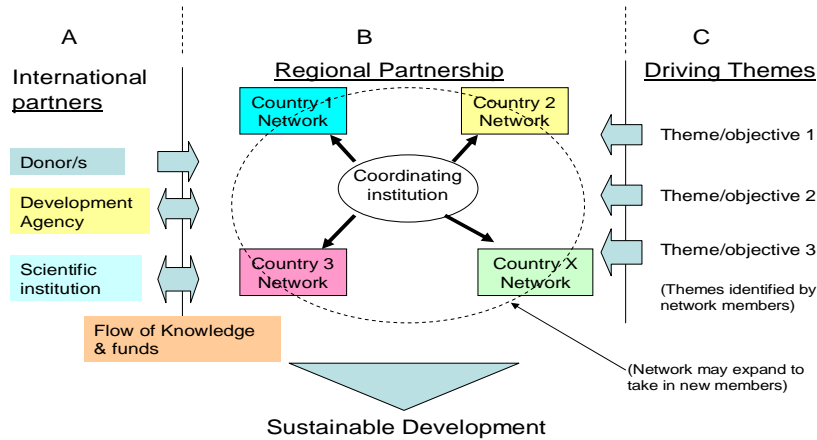


Figure 4.3 General framework of observed research partnerships/knowledge network

Under section B are individual country-based partnerships and networks among institutions based in a given country *X*. The coordinating regional institution in this framework depends on the category of partnership under consideration. In section C are the themes or research objectives bringing the partners together. Table 4.2 lists the key features of the two partnerships identified. Some examples of such institutional arrangements are listed in Table 4.3, which lists institutions collaborating under either partnership model and the theme driving the partnership.

Table 4.2 Key features of the *Fixed-Member* and *Project-based* partnerships

	<b>A</b>	<b>B</b>	<b>C</b>
Project-Based Partnership	<ul style="list-style-type: none"> <li>Partners change with project/theme</li> </ul>	<ul style="list-style-type: none"> <li>Bound together by time-bound MoU</li> <li>Partnership collapses after project closure</li> <li>Partnership MoU may be extended with new funding</li> </ul>	<ul style="list-style-type: none"> <li>Theme of project dependent on coordinating institution's interest. Others just fit in.</li> </ul>
Fixed-member Partnership	<ul style="list-style-type: none"> <li>Partners may change with project/theme</li> </ul>	<ul style="list-style-type: none"> <li>Bound together by institution's Charter</li> <li>Partners remain the same for all projects</li> <li>New partners welcome from member countries</li> </ul>	<ul style="list-style-type: none"> <li>Themes of projects developed within the framework of corporate strategy</li> </ul>



Table 4.3 Some examples of research partnerships under the two categories

Partnership Category	Coordinating Institution	International Partner (A)	Regional/National Partners (B)	Research Themes (C)
Fixed-Member Partnerships	WIOMSA	<ul style="list-style-type: none"> <li>• USAID</li> <li>• Rhode Island University</li> <li>• University of Hawaii</li> </ul>	<ul style="list-style-type: none"> <li>• IMS</li> <li>• CBOs Tanzania</li> <li>• Dept. of Cooperatives</li> <li>• District admin. Authority</li> <li>• Ecuador partners</li> <li>• Nicaragua partners</li> </ul>	Sustainable coastal communities and ecosystems
	ASARECA	<ul style="list-style-type: none"> <li>• USAID</li> <li>• Danforth Centre, US</li> </ul>	<ul style="list-style-type: none"> <li>• NACRRI Uganda</li> <li>• NAADS, ZARDI</li> </ul>	Cassava Mosaic Project
Project-Based Partnerships	AATF	<ul style="list-style-type: none"> <li>• Bill &amp; Melinda Gates</li> <li>• CIMMYT</li> <li>• Monsanto</li> </ul>	<ul style="list-style-type: none"> <li>• KARI (Kenya)</li> <li>• NARO (Uganda)</li> <li>• IIAM (Mozambique)</li> <li>• MARI (Tanzania)</li> <li>• ARC (South Africa)</li> </ul>	Water-Efficient Maize for Africa (WEMA) Project
	Africa Harvest	<ul style="list-style-type: none"> <li>• Bill &amp; Melinda Gates</li> <li>• ICRISAT</li> <li>• DuPont</li> <li>• Univ California Berkeley</li> </ul>	<ul style="list-style-type: none"> <li>• University of Pretoria, SA</li> <li>• FARA, Ghana</li> <li>• CSIR, SA</li> <li>• ARC, SA</li> <li>• AATF</li> </ul>	Africa Biofortified Sorghum (ABS) Project
	ACTS	<ul style="list-style-type: none"> <li>• IIED-UK</li> <li>• BCAS –Bangladesh</li> <li>• SEI-Sweden</li> <li>• IDRC-CCAA</li> </ul>	<ul style="list-style-type: none"> <li>• SECS (Sudan)</li> <li>• EPMS (Tanzania)</li> <li>• DNIVA (Uganda)</li> <li>• CURE (Malawi)</li> <li>• Southsouthnorth (S.A.)</li> <li>• EEC (Zambia)</li> <li>• ZERO (Zimbabwe)</li> </ul>	Community Based Adaptation to Climate Change in Africa (CBAA) Project

#### 4.5.2 National Level Research Partnerships/Knowledge Network

Most of the NRIs belong to research partnerships or networks having at-least 4 institutions including those from other countries in the region and beyond. Most of these are, however, driven by donors and international institutions working in the region. Through the IDRC-CCAA, KEMRI is coordinating a knowledge network on malaria and climate change. The partners include NIMRI, ICPAC, MoH-Uganda, Kenya, Tanzania, MET Dept (Uganda, Kenya & Tanzania) and COHESU. In Ethiopia, EIAR coordinates the JICA-funded Farmer Research Groups (FRG) Project for sharing experiences of researchers, extension agents and farmers who involve in participatory agricultural research. Other partners are Oromea Research Institute and Ministry of Agriculture in Ethiopia.

#### 4.5.3 Challenges in Managing Partnerships

There are various challenges in managing research partnerships in the sub-region. Some general ones include (i) commitment to intense communication among partners (ii) poor IT connectivity in some institutions (iii) disagreements over when to deliver outputs (iv) pressure on partners to report back (v) financial accounting on short notice, (vi) funding and its distribution among partners always creates disagreements, (vii) defining partner roles has been a problem too (viii) conflicting policy on payment among institutions, and (ix) the presence informal interactions based on who-knows-who in collaborating institutions instead of formal MoUs.

The *Fixed-Member* partnerships reported unique challenges such as (i) rigid and demanding donor-reporting requirements that are inflexible to the unique institutional framework of the research partnerships/networks such as WIOMSA, ASARECA etc. (ii) monitoring growing membership in the several countries owing to expensive travel and communication budgets, (iii) weak national partner memberships (iv) too slow, bureaucratic and rigid administrative systems such as one at ASARECA, and (v) varying quality of research and reporting across the countries, that exerts more pressure on the secretariats of the networks to allocate extra resources in capacity enhancement for some partners.

University-based partners also report challenges including lack of resources; weak development research capacity, poor buy-in by central university administration, and high staff turn-over. Others include bureaucracy in university administration systems that lead to long delays in processing payments for partner's activities or in some cases, legalizing institutes and centres to give them regulated semi-autonomy. For instance, HoARECN is facing challenges including legalizing the network in Ethiopia (currently it is a university project, hampering fundraising efforts). A key external challenge for universities is the difficulty in adjusting to financial reporting systems set by partnership coordinating institutions. Perhaps the worst partnership challenge is the *bull-dozing* and *micro-managing* of local coordinating institutions by foreign more financially and technically-endowed partner organizations. An example exists of a Ugandan institution which lacks control of a project it purports to be coordinating with a range of partners. It does not even control the budget to which it only signs cheques.

Towards mitigation of some of these challenges, ILRI research managers are confident in claiming that implementation of its Partnerships Strategy and Management System<sup>18</sup> has eliminated the most

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<sup>18</sup> ILRI's Partnership Strategy and Management System. International Livestock Research Institute.

challenging of issues that bedevil managing of research partnerships. Other than ILRI, other institutions found to have a partnership management strategy include UWA and HoARECN. These instruments could form the basis for capacity building for other institutions and partnerships.

#### 4.5.4 What Institutions Gain from Partnerships

##### *Raised Institutional Profiles and Recognition*

Many institutions have had their profiles raised with the resultant increase in visibility by other potential partners and policymakers. For example, ACODE's profile significantly elevated in international plant genetic resource circles by participating in IPGREN Programme. UWA is now part of various research partnerships and knowledge networks on animal diseases following its participation in the Mountain Gorilla Project. IMS' partnership in mariculture projects in WIOMSA has led it to be invited to advise the government of Tanzania on pearl and oyster farming initiatives. A key intervention so far is the current revision of village-level by-laws to protect pearl and oyster farming.

##### *Skills built and Expanded*

There has been increased knowledge in the use of tools e.g. biotechnology equipment, GIS and proposal writing, communication and scientific reporting skills. Furthermore, technicians have grown to be full scientists, local scientists have gotten exposed to high tech research labs abroad through short visits. Examples of the application of skills gained include the production of video and DVD on marine documentaries by IMS technicians. Similarly, UWA's capacity has also been increased in Gorilla disease management; data collection capacity of lower cadre staff has been immensely developed; have now more funds for monitoring work and for equipment purchase.

##### *Institutions built*

Weaker partner institutions such as CBOs in Somaliland are now developing strong programmes having received much support from interaction with their Djibouti counterparts under HoARECN. The confidence levels of such weaker partners who are considered as equal partners in the knowledge network have increased. For other institutions, facilities have also expanded e.g. labs, vehicles and internet connectivity, and forums created for professional development. Farmer groups have also been motivated through foreign tours such as Ethiopian farmers sent to Japan by EIAR.

#### 4.5.5 Engagement Strategy with Stakeholders

- Only UWA, ILRI and HoARECN had organized and documented strategies for engaging partnerships. Lessons of partnerships and networking learnt from projects are continuously used to review these partnership policies.
- The most common engagement strategy is through field days, demonstrations, workshops and meetings that bring a wide range of stakeholders together.
- Some unique examples exist on how partnerships have engaged policymakers. These include entrenching policymakers from these countries into steering committees. For example, the Nzoia River Project led by MMUST has allowed Ministry of Water to chair project advisory committee in order to have easy policymakers' buy-in.
- Network officials have also sought to interact directly with senior government officials. For example, HoARECN secretariat has made an entry to the Ministry of Foreign Affairs in Ethiopia where it has made presentations to the senior officials. As a result of this, HoARECN has further been invited to prepare a training package for climate change

negotiators in the country. Through invitation by the Danish government, the Secretariat is now organizing training for Foreign Affairs officials in Copenhagen

- Targeting politicians through parliamentary committees. NACRRI and MARI report having had good experience on this front. At regional level, ACODE engages the EAC parliament on behalf of its partners.

#### 4.5.6 Evaluation of Network Performance

As opposed to project evaluation, which is conducted by most regional and international institutions, it is not clear whether any regional partnerships have been evaluated for their performance as partners since most evaluations have tended to focus more on outputs from partners as opposed to the processes. For those who do (e.g. MARI) it is a donor requirement. NARLI Partnership undergoes periodic evaluation of its performance on indicators e.g. number of people trained, no of people adopting the technology, and impact on people. Almost all projects at IRIs are partnerships that undergo M&E based on agreed schedules with donors. ILRI's fodder innovations networks project ([www.fodderinnovations.org](http://www.fodderinnovations.org)) funded by DFID is an example of projects where the partnership undergoes periodic evaluation of its performance.

### 4.6 Research Performance: How the Research Institutions Rank

#### 4.6.1 Performance by Class of Institution

As shown in Figure 4.4, International Research Institutions based in the sub-region emerge as leaders in sustainable development research based on the parameters investigated (**Research planning; Research implementation; engagement and communication strategy; and Research partnerships and network coordination**). They are followed closely by research partnerships/knowledge networks. Regional research NGOs and NRI tie at the next position despite the poor performance by the latter on almost all four parameters except on partnerships where they excel. The points gained here were sufficient to bring NRIs up slightly above the *acceptable* score of 2. The universities performed the poorest across all four parameters and any capacity building initiatives would have to be targeted across all four parameters. The *Duals* performed similarly, but managing well above score 2 on stakeholder engagement and communication, hence a higher mean score compared to the universities.

Further information on the specific performance by each institution class across each parameter is presented in Figure 4.5 below. The IRIs led on all parameters except on stakeholder engagement and communication—in which Research Partnerships excelled above all else. In summary, only the universities and *Duals* end up in the medium capacity class when all the rest manage the high capacity mean score zone. It is worth noting here that were it not for the strong participation in partnerships and knowledge networks<sup>19</sup>, the NRIs would also have found themselves in the lower medium class level with universities. A deeper analysis of the partnerships reveals that these

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<sup>19</sup> These were found to be initiated by donors or international partners who require linkages to local institutions to achieve their mandates.

partnerships are initiated by other partners—mainly international institutions which require national partners to deliver.

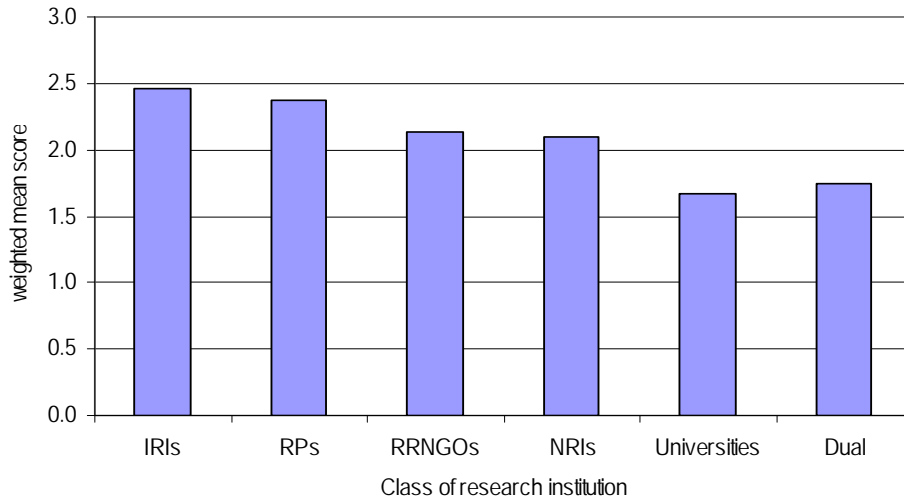


Figure 4.4 Overall research performance ranking across institution type

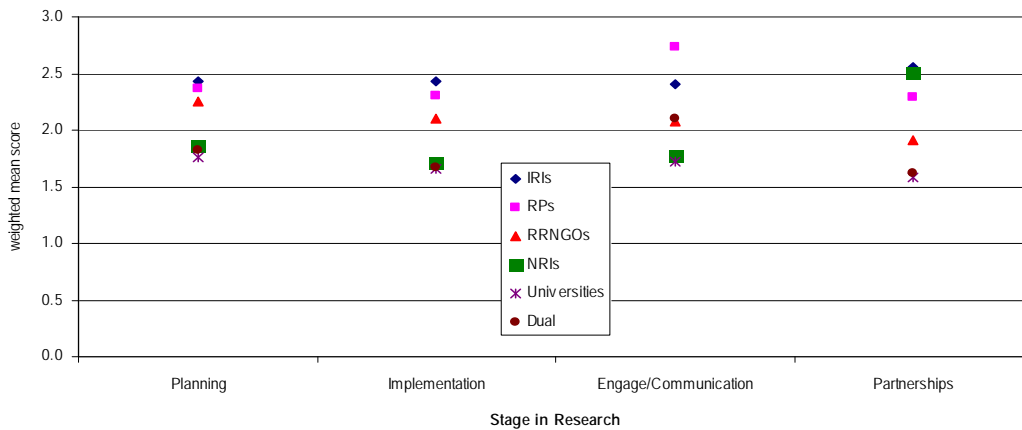


Figure 4.5 Institutional performance across various parameters in the research process

Despite some flaws in their working systems, secretariats of regional knowledge networks and research partnerships such as WIOMSA and ASARECA similarly performed very well in coordinating research among their memberships. Regional research NGOs also performed quite well across all parameters except on their participation in research partnerships. In summary, the scoring system has helped identify institutions that are strong as well as those that are weak in research. It has also clearly identified which components of the research process need strengthening. Towards devolution, it is important to know how different classes of institutions perform under various models of research conduct. In fact this is a form of risk classification that donors may use to judge organizations they wish to support.

## 5.0 ROLE OF NON-RESEARCH INSTITUTIONS

The following section is an analysis of the various responses gathered during the interviews for non-research institutions and inter-governmental organisations. The analysis was based on their participation in environmental research, how they network with research institutions and the way they handle the research outputs. For the intergovernmental organizations, the analysis targeted levels of research and dissemination, partnership and networks, as well as engagement and communication of research outputs for policy change. Finally, this section ranks the non-research institutions depending on their performance on the above parameters.

### 5.1 Participation in Environmental Research

#### 5.1.1 Focus on Environmental Conservation

Most of the institutions interviewed considered environmental conservation as a high priority issue in their programmes. The international, regional and national institutions had clearly-defined thematic areas around diverse environmental issues—almost all touching directly or indirectly on climate change. Those with clear interests in environmental research included IUCN Tanzania and Uganda, TATEDO and National Meteorological Agency Ethiopia. Those whose work had strong connections to climate change included FEWSNET, IUCN and AGENDA Tanzania. The rest had purely development-oriented programmes in areas including forest governance, animal production, chemicals management, coastal conservation and livelihood issues. It was notable that most international NGOs focused only on research that could inform ongoing programmes. IUCN Tanzania has a unique *action learning research* programme which it launched after formal staff training by consultants. GWP and FEWSNET engage in work akin to research but mainly involves assessment of research information and data from other institutions. NEMA Uganda—officially and environmental management regulator—currently has three ongoing research projects which have clearly defined terms of reference, quality assurance framework and are closely supervised. NMA, Ethiopia has a research team leader who focuses on Climate change and Air pollution.

#### 5.1.2 Agenda Setting

Agenda setting for these few institutions with research interests is varying. For instance, IUCN Tanzania, through its action learning research identifies areas of focus and integrates these into its programmes, after which it goes back to the villages to develop forest product harvesting plan. It takes on board the communities' interests. IUCN Uganda sets its research agenda through a committee. There is a secretariat, commission and congress that approve the research programmes proposed. SLUF Ethiopia extracts issues of advocacy from case studies done by consultants from which they determine their area of research for onward communication to Addis Ababa university or other interested Research institutions. TATEDO, REDO Rwanda and NMA, Ethiopia rely on in-house experts to set their research agenda and occasionally consult experts in the sectors.

#### 5.1.3 Data Needs and Sources

All institutions require environmental data. However, in most institutions, it wasn't clear what kind of environmental data they needed. In some selected institutions, their specific data needs were clearly defined. For example FEWSNET uses environmental hazards (drought, floods, etc) as indicators. GWP requires data related to water carrying capacity of rivers. Directorate of Environment, Uganda and Ministry of Agriculture Ethiopia need meteorological data. SLUF relies on rainfall and socioeconomic data while NMA Ethiopia needs GCM data for downscaling purposes. It is clear that most of these data is sourced from government agencies, mainly the Meteorological department and some departments within Agriculture ministries mainly at the grassroots (district) levels. NMA Ethiopia obtains its data from NOAA, Japan.

#### 5.1.4 Research Funding

The budgetary allocation for research activity was vague. GWP allocated 25-35% of its budget to research and IUCN Tanzania on the other hand allocated 5-10%. National NGOs such as AGENDA and REDO had some of its funds dedicated to research, though the amount depended on the donor funding obtained. In the category of ministries/Parastatals only NMA Ethiopia had a significant part of its budget for research while the other institutions did not have any funds allocated to research.

#### 5.1.5 Research Implementation

Each category of institutions carries out their research using full time employed researchers or hired consultants. All international NGOs rely on consultants to conduct environment-related research. This was because it they consider hiring full-time researchers being costly. The national NGOs with research interests as well rely on consultants (mainly university lecturers) for research implementation. Government institutions such as NEMA Uganda also depend on consultants. Whenever it engages consultants, NMA Ethiopia requires the consultants to work together with its researchers and not independently.

Employing of full time researchers is not common among the international NGOs except IUCN Uganda—which has its own researchers. However, they are not effective because the officers have too many programmes to manage. It is uniform that the national NGOs have employed their own researchers—who also serve as project officers. Even though a governmental agency such as NMA Ethiopia employs 5 researchers, others such as the Ministry of Agriculture, Ethiopia uses Farmer Research Groups (FRGs) for validating technologies that need upscaling.

## 5.2 Networking with Research Institutions

### 5.2.1 Consultation by Other Research Institutions

Very few institutions were consulted for input by other research institutions when setting their research agenda. FEWSNET and GWP are among the international NGOs frequently consulted by research institutions. SLUF is consulted by other NGOs the frequently-held meetings. The ministries/parastatals are perhaps the most constantly consulted by national or regional research institutions.

## 5.2.2 Collaboration with Research Institution in Implementing Research Activities

Each institution has ongoing collaboration with some national, regional or international institution. The only exclusions were FEWSNET and IUCN Uganda. Various examples from the field exist. IUCN Tanzania has collaborated with Darwin's Initiative on Biodiversity, Institute of Resource Assessment on economics, and Pangani Water concerning environmental flows. In the Health Care Waste Management project, AGENDA has collaborated with University of Dar es Salaam to provide the research design of sterilization components, while the prototypes are produced by the Chemical and Process Department. It has also collaborated with JSI (and NGO)—who's role in the project was to train nurses in separating wastes. AGENDA's role was to train staff on the use of the sterilization equipment, monitors its use and performance. NMA, Ethiopia collaborates with other research institutions on research activities related to adaptation to drought.

## 5.2.3 Communication Strategy with Grassroots Communities

Most of the institutions have some existing linkages with the grassroots communities. These linkages have been useful especially in communicating research outputs. IUCN Tanzania functions on a corporate-level communication strategy which has been replicated at the local level, which depends on tools such as focused meetings, Participatory Rural Appraisal (PRA), etc, which depend on district-level and village-level committees. IUCN Uganda communicates directly or through the existing CBOs or their members. GWP Uganda communicates to the grassroots using policy makers who are the chiefs, ministers etc. FEWSNET Uganda does not have a communication strategy to grassroots because its research recipients are mainly decision makers. Among the national NGOs, TATEDO uses the District Clusters to communicate to the grassroots communities whereas SLUF Ethiopia has each of its 20 member organizations having a corporate policy on engagement with users. The ministries/parastatals have geared some efforts in communicating with the local communities. Directorate of Environment, Uganda uses its field officers to communicate with the grassroots. Ministry of Agriculture, Ethiopia has a coordination office at regional office that transmits its research findings to the grassroots. During the NAPA process, NMA Ethiopia involved the communities in identifying who was vulnerable in relation to water, agriculture and health through its three meteorological offices which are located in different parts of the country.

## 5.3 Handling of Research Outputs

### 5.3.1 Collection of Research Outputs For Use in Development Plans

A great number of the institutions included research outputs from various research institutions in their development plans. A notable case was IUCN Tanzania which collects research outputs on environmental flows, it repackages them into an environmental research management plan. From these plans, project proposals are developed for funding. FEWSNET in Uganda also collects data from its partners and shares this in form of reports with the same or different partners and may also spread the information nationally. NEMA Uganda mainly hires consultants to produce State of Environment (S.O.E) reports which come in handy in informing the relevant authorities on the environment situation.



### 5.3.2 Re-Packaging and Dissemination of Research Products to End-Users

Majority of the institutions had tried re-packaging and disseminating research products to end users. In re-packaging, some of the institutions have tried translating some of the research products to the local language. The dissemination process is done directly by the institutions themselves while some prefer to delegate such a process. IUCN Tanzania's has too many publications, some of them printed in Kiswahili or other local languages. IUCN Uganda in contrast, does not re-package or disseminate research products from the research and development office. FEWSNET frequently does a one page of simplified research outputs from its monthly report for targeted dissemination.

HEIFER International Uganda acquires research information from institutions such as ILRI, unpackages and prints it for dissemination, for example, on livestock feeding. It has a list of training guides that create awareness on livestock feeding, environmental conservation and disease management. GWP communicates research products to government officials who are expected to trickle down this information to the locals. In the national NGOs, AGENDA was identified as having the potential to re-package and disseminate but their hindering factor is lack of financial resources to propel such processes. SLUF Ethiopia frequently re-packages and disseminates research products to end-users. For example, it has disseminated highland fruits (apples) and vegetables clones in Amara Yesus, Ethiopia. It got this technology from Chenchu Centre in Ethiopia, which produces bud/clones. SLUF offers training and demonstration to farmers and extension staff. The ministries/parastatals also had efforts in re-packaging and dissemination of research products. NEMA Uganda re-packages and disseminates research product to end users when it wants to trigger off management actions for example new regulations using its newsletters. NMA Ethiopia use radio and television in dissemination. Ministry of Agriculture, Ethiopia on the other hand prefers to outsource re-packaging service at grassroots.

## 5.4 Inter-Governmental Organizations (IGOs)

### 5.4.1 Research and dissemination

LVBC operates in five countries—Kenya, Uganda, Tanzania, Rwanda and Burundi. It always considers environmental conservation as a priority issue and a central component of its corporate strategy. There is a criterion in place for identifying and prioritizing focal areas for research and other operations. Many programme activities have work relevant to climate change adaptation. LVBC requires data on water level changes in the Lake. It receives its climate change research funds through the Inter-University Council of Eastern Africa (IUCEA)—an arm of the EAC. The organization is frequently consulted by regional research institutions in planning their research agenda. They involve village groups at village, district and national level.

UNECA's key environmental conservation thematic areas include trade, climate change and biodiversity. The key research components are focused on trade and environment. The research agenda is internally designed with experience from field which they publish in the Sustainable Development Status reports. UNECA needs environmental data and obtains such data from UNEP and other authoritative sources. It regularly funds consultants to conduct environment-related research which it only coordinates. It apportions a significant portion of its budget for research as

appropriate. UNECA is setting up a climate change centre—*African Climate Policy Centre* to among other things: enable the development of Africa’s climate policy capacity; processing and overseeing the management of ClimDev Africa<sup>20</sup> projects; provide secretariat and administrative functions of for the AUC, RECs and Member States; and organize annual African Conference of Climate Change and Development .

#### 5.4.2 Partnerships and Networks

LVBC uses the National Councils for Science and Technology in the member countries for research advice. These councils frequently have existing partnerships with national research institutions in member countries. They have representatives on advisory boards of several regional research organisations for example ACTS, Cleaner Production Centres, etc. Most councils have also developed MOUs with international institutions such as IUCN, WWF and ICRAF. There is no existing partnership with development agencies or NGOs. They have partnerships with local community groups as a civil society network. They support local resource centres in data acquisition e.g. Universities are to be connected to the regional centres.

UNECA is never consulted by research institutions when they are setting their research agenda. It is, however, usually invited by AERC to sit in its workshops as way of collaborating with research institutions to implement research activities jointly. It communicates with grassroots through its member governments during workshops held annually in Addis Ababa.

The AU is rarely consulted by research institutions when they are setting their research agenda. It rarely collaborates with research institutions when implementing some of the research activities and rarely has a clear strategy of communicating with the grassroots.

#### 5.4.3 Engagement and communication

LVBC has nurtured relationships with policymakers. It communicates to the grassroots using the civil society network. UNECA frequently collect research outputs from research institutions for use in their development plans but they also attend a lot of workshops and trainings where they acquire such kind of outputs. They frequently re-package and disseminate research product to other end-users. AU always collects outputs from research institutions for use in its development plans. It always re-packages and disseminates research products to end-users.

### 5.5 Ranking of Non-Research Institutions

Non-research institutions were studied for their ability to complement the efforts by research institutions in the area of unpackaging and dissemination of research outputs for environmental management among end-users. The leaders among these were IGOs, with a mean score slightly above 2, who repackaged outputs into simpler policy messages for their member governments. The comparison among institutions is presented in Figure 5.1 below. Coming closely to this but scoring well above score 2 on the specific parameter on the usage of research outputs were the international

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<sup>20</sup> ClimDev Africa is a 10 year multipartner (AUC, UNECA, AfDB and GCOS) comprehensive framework programme aimed at mainstreaming climate change into Africa’s core development agenda.

NGOs—particularly relief organizations, which demonstrated great interest in collaborating with research institutions in the countries visited. Good performance by international development organizations on this parameter relates closely to those development institutions in the *dual* category—that excelled only in their stakeholder engagement and communication of research results.

Depending on whether the end-user of research outputs is the regional governments (political) or vulnerable communities, research institutions are advised to harness the capacity in IGOs and International NGOs, respectively. As was the case in ranking research institutions, the scoring system has also identified a potential opportunity among development organizations through which some of their outputs could be repackaged and disseminated among end users.

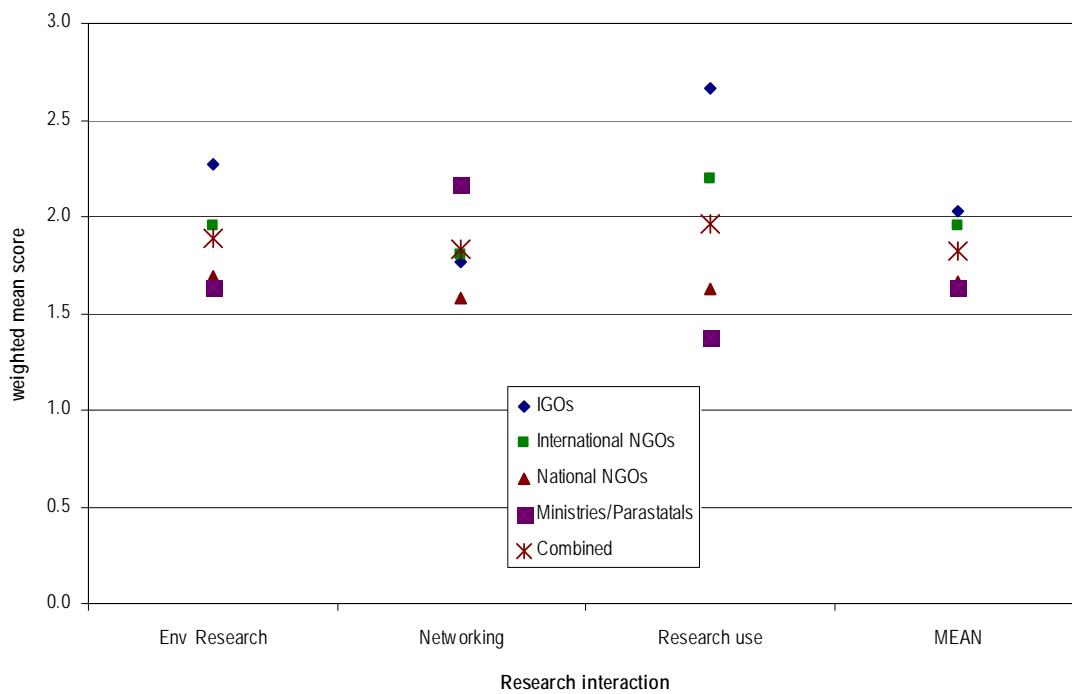


Figure 5.1 Ranking performance by non-research institutions across various parameters

## 6.0 MAJOR GAPS IN RESEARCH CAPACITY

Driven by the interest to develop capacities of national and regional research institutions, the International Research Institutes are left out of the following analysis for research gaps. Being not purely research institutions, the *duals* are similarly left out of this particular analysis. Common weaknesses (albeit of varying intensities) across the four institution types have been identified as (i) lack of database of case studies/success stories in PAR (ii) lack of skills and experience in designing or integrating PAR in ongoing and new projects (iii) the need to pay keen attention to M&E of projects (over 70% of national research institutions and universities hardly evaluate impacts of their outputs) and (iv) integrating climate change adaptation in research and capacity building programmes at the institutions.

Table 6.1 below summarizes the key weakness and capacity needs identified through a SWOT analysis for research partnerships, regional research NGOs, national research institutions and universities in Eastern Africa. The grey-shaded area represents research activity in which the matching institution class scored above 2. Although such institutions are encouraged to maintain their standards, they too, however, have certain capacity building needs (indicated in the boxes) which could propel their research capacities to even greater heights. The pink-shaded areas (for institution classes that scored below 2) are those in which capacity strengthening is required.

Despite having large sizes of qualified research staff with PhD-level qualifications, the NRIs and universities still performed dismally overall. Key contributing factors have been identified as (a) poor funding allocations from public coffers and weak fundraising strategies to support their own research agenda. Most monies found in national research institutes is due to partnership projects with international research institutions. Yet public institutions could earn revenues from contract research as demonstrated by some of their own type (see Masinde Muliro University examples (b) high turn-over of senior staff due to poor remuneration. A few of the remaining one also serve as research associates in research NGOs or engage in numerous research consultancies that take their time away from university work (c) lack of an organized research planning process to address research issues on their own research agenda.

As demonstrated by the Ethiopian National Meteorological Agency's research division, national research institutions can also produce world class research outputs and international award laureates if given the right external environment. Emerging evidence also shows that even with lean number of qualified staff, local and regional research institutes can still achieve exemplary research outputs if they had proper strategies in place such as engaging in national or regional-level partnerships. Again numerous examples of such successful partnerships have been documented and which could be emulated. Consultation with institutional assessment experts<sup>21</sup> also revealed poor corporate governance of public-funded research institutions as a key challenge to achieving mission objectives. The politically appointed board members and advisors are hardly selected on merit, hence, most are hardly able to competently guide these institutions programmes towards achieving their missions.

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<sup>21</sup> Florence Omosa, Personal communication.

In assisting the institutions to fulfill their capacity needs as indicated in Table 6.1, a range of opportunities exist for facilitating mutual learning that were identified in various institutions in the sub-region. For each research component (planning, implementation or communication), these wide-ranging opportunities are laid out in Table 6.2, which outlines a specific opportunity and corresponding example of good case studies identified. Once an institution identifies its specific area of weakness, it may use this table to identify available opportunities for learning and adoption through potential strategic partnerships. Similarly, these could guide the CCAA in identifying institutions to support in the development of their comparative advantages. Table 6.2 also serves to inform the CCAA of the need to commission an elaborate initiative to identify more case studies for documentation and dissemination of critical lessons among partners in its current pipeline.

Table 6.1 Gaps and capacity building needs

	Research Partnerships	Regional Research NGOs	National Research Institutions	Universities
<b>Planning</b>		<ul style="list-style-type: none"> <li>Integrating wide stakeholder base in their research planning</li> <li>Developing strategies for partner identification</li> <li>Developing strategy for contract research</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening stakeholder consultation strategies</li> <li>Increasing the funding base for research</li> <li>Integrating contract research</li> <li>Increasing access to modern research resources</li> <li>Increasing environmental focus</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening stakeholder consultation strategies</li> <li>Owning research agenda and prioritizing focal areas</li> <li>Increasing the funding base for research</li> <li>Increasing access to modern research resources</li> <li>Designing demand-driven research</li> </ul>
<b>Implementation</b>	<ul style="list-style-type: none"> <li>Developing a critical mass of social scientists who will be interested in environmental matters</li> <li>Strengthening capacities for research outputs impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Developing a clear strategy for identifying research associates (mainly university researchers)</li> <li>Strengthening capacities for research outputs impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Hiring staff based on current or projected needs</li> <li>Integrating output impact assessment and feedback in all research projects</li> <li>Developing strategy for engagement with policy and decision makers</li> <li>Developing strategy for collaboration among the NRIs</li> </ul>	<ul style="list-style-type: none"> <li>Motivating university staff to engage in research</li> <li>Engaging graduate students in research</li> <li>Encouraging participation in research partnerships and networks</li> <li>Encouraging multidisciplinary research</li> <li>Integrating output impact assessment and feedback in all research projects</li> </ul>
<b>Communication/Engagement</b>			Strengthening capacities for repackaging and dissemination of research outputs (especially CBOs and local NGOs)	<ul style="list-style-type: none"> <li>Strengthening capacities for repackaging and dissemination of research outputs</li> <li>Strengthening partnerships for effective dissemination of repackaged outputs</li> </ul>
<b>Partnerships</b>	<ul style="list-style-type: none"> <li>Strengthening national networks and partnerships</li> <li>Developing partnership strategies and management systems</li> </ul>	<ul style="list-style-type: none"> <li>Developing partnership strategies and management systems</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening capacities to identify and integrate appropriate partners in their networks</li> </ul>	<ul style="list-style-type: none"> <li>Minimizing bureaucracy in the administration system</li> <li>Strengthening capacities to adopt and adapt to new management systems</li> </ul>

Table 6.2 Examples of good institutional practices amongst research organizations visited

	Identified Opportunity	Examples of good practices
<b>Planning</b>	Existing agenda setting models for partnership	<ul style="list-style-type: none"> <li>• HoARECN—CBOs identify issues at grassroots each month and submit to HoARECN</li> <li>• IUCN Tanzania – Community forest management</li> </ul>
	Strategy for organized contract research	<ul style="list-style-type: none"> <li>• HoARECN – Business plan for non-profit consultancy unit</li> </ul>
<b>Implementation</b>	Existing tools for output impact assessment	<ul style="list-style-type: none"> <li>• IWMI- Impact pathway mapping template</li> <li>• GLUK – continuous improvement model driven by lesson-seeking by students interacting with patients at rural health centres and integrating change in its programmes on a monthly basis</li> </ul>
	Good but undocumented cases of PAR	<ul style="list-style-type: none"> <li>• IUCN Tanzania – forestry project</li> <li>• UWA – engages local research assistants from communities surrounding national parks to work under guidance from its contracted researchers</li> </ul>
	Education and training programmes to support partnership and networks	<ul style="list-style-type: none"> <li>• WIOMSA – supports PhD and MSc students and offers small grants for research (supervision from partner universities)</li> <li>• HoARECN – demand driven action research (DDAR) programme in which 50 proposals by MSc in member institutions across the 6 countries are funded up to \$3000 each per year and implemented jointly with clear roles for CBOs</li> </ul>
<b>Communication/Engagement</b>	Partnership between researchers and development agencies, local NGOs and CBOs to repackage and disseminate research outputs	<ul style="list-style-type: none"> <li>• CIMMYT, Catholic Relief Services and World Vision- demonstration and dissemination of improved maize technologies in Kenya</li> <li>• NaCRRRI, World Vision and Action Aid -Cassava, beans and rice varieties in resettlement areas of Uganda</li> <li>• KMFRI and KWETU – mangrove ecosystem management</li> <li>• UDSM, AGENDA and JSI – medical waste management project</li> <li>• Chench Centre, Ethiopia and SLUF – fruit and vegetable technology dissemination in Ethiopian Highlands</li> </ul>
<b>Partnership</b>	Existing models of partnership strategies	<ul style="list-style-type: none"> <li>• ILRI –partnership strategy and management system</li> <li>• UWA – partnership policy</li> <li>• HoARECN – Check for Organizational Capacity Assist (COCA)</li> <li>• SLUF – 20 Ethiopian CBOs in land resource management bound together by a Charter</li> </ul>

## 7.0 WAY FORWARD

### 7.1 Addressing Africa's Greatest Climate Change Adaptation Needs

The CCAA program sees capacity development as an ongoing process that should continue beyond the life of the projects it is funding.<sup>22</sup> Project activities are expected to contribute to four outcome areas namely: improved research capacity; knowledge and experience applied by the poor; shared learning and expertise; and policy processes informed and influenced.<sup>23</sup> Priority sectors identified for adaptation include agriculture, where the need to help increase resilience is high. Similarly, effective water resource management is of critical importance for adaptation research and development. Other sectors also found to be of common action research interest among the visited research institutions include addressing impacts of climate change on human health, coastal and marine resources, and biodiversity. The study has revealed gaps in research capacities among these institutions (Section 6), which form a useful guide that may inform future funding strategies and plans for CCAA. Similarly, good cases relevant to PAR have also been identified, and which the CCAA could facilitate their proper packaging and sharing among relevant stakeholders.

Other than the priority sectors, the CCAA has also recognized the significance of a regional approach as one having rich yet unexploited potential to build adaptive capacity to climate change and its impacts. The Addis Ababa inception workshop<sup>24</sup> recommended *inter alia*, making research more demand-driven; supporting interaction between scientists and policymakers at a regional level; identifying potential regional level interventions that do not exclude participation by local communities; making databases of adaptation success stories available to regional and national institutions. Clearly, a proper engagement strategy is required between CCAA and regional-level institutions—particularly research and political<sup>25</sup> ones, a strategy that aims to strengthen their capacities to levels where they may comfortably take on the envisaged devolution.

There is need for structural changes within older institutions—mainly national research institutes and state universities—to reflected dynamics in global environmental change. Many national research institutions were created to address specific issues such as forestry, food security, water conservation, etc. they have not evolved over time to integrate climate change concerns presented by sub-regional vulnerability. On this particular note, NGOs were found to be more flexible—their programmes changing with such emerging areas. National institutions similarly require strengthening their financial management and administrative aspects for effective management of research. Once this is achieved, other spill-over benefits will include their increased ability to establish and coordinate national-level research partnerships and knowledge networks. CCAA has an opportunity to support high-level sensitization missions for senior government and university management officials on the need for dynamic programming and institutional change in the wake of climate change vulnerability. Sensitization of parliamentarians in African countries on climate change issues on the negotiation table is also critical.

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<sup>22</sup> Fatima Denton (2008)

<sup>23</sup> IDRC CCAA Programme Strategy

<sup>24</sup> IDRC-CCAA (2007) Workshop Report: Towards a Regional Strategy in Climate Change Adaptation: Sharing Knowledge on Climate Risks and Adaptation Options. UNECA/CCAA, Addis Ababa, April 16-20, 2007.

<sup>25</sup> Particularly the Regional Economic Communities (RECs) as called for by AMCEN at its 12<sup>th</sup> session in 2008.



The key conclusions from the study and corresponding suggested recommendations are presented in the Table 7.1 below.

Table 7.1 Key conclusions and recommendations

Conclusions	Recommendation (for CCAA)
<ul style="list-style-type: none"> <li>Climate change adaptation concerns addressed indirectly through projects and programmes (e.g. development of drought resistant crops, etc)</li> </ul>	<ul style="list-style-type: none"> <li>Assist them consolidate scattered projects with climate change adaptation links under a common programme for easier coordination, visibility and impact.</li> </ul>
<ul style="list-style-type: none"> <li>Despite having high numbers of qualified staff, the universities and state funded national research institutions continue to perform poorly owing to high inefficiencies in management, low research budgets and lack of innovative research strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate the identification and matching of partners for PAR at local and regional levels. These way resources will be utilized more efficiently and high quality of outputs realized (from multidisciplinary, shared facilities, etc).</li> </ul>
<ul style="list-style-type: none"> <li>There are diverse (about 5) ways of agenda setting identified across the various types of institution, with only 2 of these being consistent with PAR</li> </ul>	<ul style="list-style-type: none"> <li>Promote among project partners, the adoption of the two models (i) national members of regional research partnership/networks submit local research needs to coordinating secretariats for collation and approval by annual general meetings (ii) commissioning baseline studies followed by consultative needs assessment workshops with stakeholders.</li> </ul>
<ul style="list-style-type: none"> <li>All research institutions have experience working in research partnerships and/or knowledge networks. The <i>Fixed-member</i> and <i>project-based</i> partnership models operate, mainly initiated by donors or international or regional research institutions. Their coordination presents a wide range of benefits as well as challenges.</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate the development of partnership strategies and management systems by the institutions</li> </ul>
<ul style="list-style-type: none"> <li>Numerous local examples of PAR exist across the sub-region that could provide important lessons for improving the CCAA programme strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Survey and document local PAR-related activities ongoing in countries in the sub-region and disseminate key lessons widely among CCAA project partners. The lessons may also be used in developing training materials for partners.</li> </ul>
<ul style="list-style-type: none"> <li>Postgraduate students are engaged by research institutions as interns on short term or MSc and PhD candidates under supervision on institution's projects. They get exposed to modern facilities and technologies by interacting with international staff based in partnering institutions. However, most do not get employed thereafter.</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate the streamlining of research and training programmes at national and regional research institutions by (i) identifying climate change adaptation components of projects and programmes for implementation by students, and (ii) developing an all-inclusive student selection system.</li> </ul>
<ul style="list-style-type: none"> <li>Other than international research institutions and some regional ones, the rest hardly carry out research output impact assessment and feedback into new projects and programmes.</li> </ul>	<ul style="list-style-type: none"> <li>Promote partnerships between national and locally based international research institutions to facilitate skills development in research output impact assessment. CCAA could also expand dissemination of its outcome mapping approach.</li> </ul>
<ul style="list-style-type: none"> <li>There are four major engagement strategies with policymakers. (i) invitation to workshops (ii) policy briefs and focused consultations (iii) invitation to field demos and fact-finding missions, and (iv) researchers sitting on</li> </ul>	<ul style="list-style-type: none"> <li>Encourage incorporation of appropriate engagement approach in project development and implementation by partners.</li> </ul>

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government committees.

- On their own, research institutions hardly repackaged and disseminated outputs to end-users. Successful ones achieved this by working jointly with international NGOs. Many development agencies have the unexploited potential for collaboration in repackaging and dissemination to end-users.
  - Institutions within the current CCAA pipeline have a range of opportunities to inform the strengthening of their research capacities through strategic partnerships, etc.
  - Institutions have not effectively shared knowledge among themselves. Similarly, much of the knowledge generated by researchers has not been packaged in forms that may be shared effectively.
  - Most institutions do not utilize PAR approach despite its potential for mutual learning by researchers and vulnerable groups.
  - Regional research partnerships/networks of the *Fixed-Member* type such as WIOMSA and HoARECN emerge the best institution in managing educational programmes including coordinating research grants for graduate students.
  - Formal education and training curricula at local universities do not have climate change courses
  - The criteria for identifying the most suitable regional institution to take on devolution should be guided by (i) research capacity assessment within CCAA programme areas (ii) partnership management performance (iii) sustainability of the institution (iv) human, financial and physical resources available, and (v) institutional capacity to respond to change.
  - Promote identification of appropriate development agencies to collaborate with research institutions in the entire project cycle
  - Commission research capacity needs assessment among institutions and partnerships for currently-funded climate change adaptation projects. CCAA could then facilitate interaction with other well endowed institutions in targeted capacity development areas.
  - Strengthening capacities for repackaging and dissemination of research outputs, as well as supporting knowledge sharing workshop.
  - Support integration of PAR into research processes of partner institutions
  - Facilitate the inclusion of climate change programmes in their corporate strategies. Other such institutional arrangements (e.g. ASARECA) operating within CCAA mandate areas be identified and supported to implement education and training activities.
  - Encourage the development and launch of multidisciplinary climate change courses to tap into the vast, underutilized human resources at these institutions
  - Adopt the suggested criteria in short-listing potential candidates for gradual devolution.
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## Appendix 1: Research Institutions

### Climate Change Adaptation in Africa (CCAA)

#### Institutional Mapping Questionnaire

The **Climate Change Adaptation in Africa (CCAA)** is a research and capacity development program that aims to improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable. The CCAA is a joint program of the International Development Research Centre (IDRC), Canada, and the Department for International Development (DFID), U.K. The Program seeks to , *inter alia*, identify potential collaborative ties with relevant institutions, programmes and initiatives that have an environmental mandate within the context of CCAA's intervention areas. This questionnaire instrument aims to gather information in support of this objective for the eastern African region.

##### 1. Identity of Institution and Respondent

<b>Name of Institution:</b>	
<b>Type of Institution:</b>	
<b>Country:</b>	
<b>Respondent Name:</b>	
<b>Respondent's Position:</b>	
<b>Respondent's Contacts:</b>	<b>E-mail:</b> _____ <b>Tel.</b> _____
<b>Date:</b>	

##### 2. Human Resource Base

a.) How many researchers does the institution employ in general? .....

b.) How many of these are in environment-related areas? .....

c.) What is their level of training? PhD: ....., MSc:....., BSc: ....., Other: .....

d.) What is the turnover situation among these cadres of staff? (tick one)

- (i) unacceptable (scientist leaving with no meaningful replacement)
- (ii) moderate (most of those departing are shortly replaced)
- (iii) not an issue (not significant departures reported)

Reason for the option chosen: .....

### 3. Research and Dissemination

No.	Attribute	Status				General Remarks/Examples
		Never	Rarely	Frequently	Always	
I	<b>Research Planning</b>					
a.	Institution's research not based on an agenda that is set elsewhere					
	Institution identifies its own research needs and mobilizes funds to achieve intended objectives					
b.	Research users engaged in the research planning process					
c.	Environmental conservation a priority issue in institution's research strategy					List thematic areas:
e.	A significant proportion of institutional funds are devoted to research					Give percentage
f.	The institution engages in contract research activity					
g..	Research strategies endorsed/commissioned by highest policy/decision making levels in the region					Give examples:
h.	Education and training a key component of research strategy					
i.	Vulnerable, marginalized groups deliberately identified and engaged in research and analysis					How is this achieved?
j.	Available physical facilities (space, literature, internet					

	access, etc) adequate for environmental research					
<b>II</b>	<b>Research Implementation</b>	<b>Never</b>	<b>Rarely</b>	<b>Frequently</b>	<b>Always</b>	<b>General Remarks/Examples</b>
a.	Collaboration exist with local research institutions					
b.	Collaboration exist with national research institutions in other countries in eastern Africa region					
c.	Collaboration exist with other regional research organizations (e.g. ACTS, ASARECA, etc)					
d.	Collaboration exist with international research institutions based in sub-region (e.g. ICRAF, etc)					
e.	Collaboration exists with development agencies and NGOs					
f.	Collaboration exist with local community groups					
g.	Deliberate efforts exist for engaging nationals in the Diaspora in research activities					
h.	Post-graduate students from local universities engaged as research interns on institution's projects					
i.	Local consultants engaged whenever specialized research expertise is needed					
j.	Local resource centres are supported in environmental data acquisition					
k.	Multi/interdisciplinarity emphasized in all research programs and institutional partner identification					
l.	Impact of research measured and lessons integrated in follow-up actions					
m.	Research strategy and programs often revised to improve them					
<b>III</b>	<b>Engagement and Communication</b>	<b>Never</b>	<b>Rarely</b>	<b>Frequently</b>	<b>Always</b>	<b>General Remarks/Examples</b>
a.	Researchers encouraged to nurture relationships with					

	decision-makers to undertake joint actions					
b.	Clear guidelines exist for identifying appropriate audience and communication tools					
c.	Workshops organised to communicate findings to stakeholders					
d.	Research outputs regularly repackaged in various forms and distributed to relevant audiences					
e.	Key research outputs available on own/partner's websites					
<b>IV</b>	<b>Research Partnership/Network Coordination</b>	<b>Never</b>	<b>Rarely</b>	<b>Frequently</b>	<b>Always</b>	<b>General Remarks/Examples</b>
a.	The institution belongs to a research partnership or network having three or more organizations.					
b.	The network has clear documented guiding principles enshrined in a governance agreement					
c.	The member selection criteria recognizes cross-sectoral, cross-country and multi-disciplinarity					
d.	There is institutional commitment to the partnership and not just driven by an individual's connection.					
e.	There are serious challenges in forming and managing research partnerships in the region					List some:
f.	The research network strengthens capacities of each member in different aspects					How?
g.	The role of young professionals in the research network is highly emphasized					How?
h.	The network has a clear engagement strategy with policy and decision-makers in the region					
i.	The research partnership/network undergoes periodic evaluation of its performance					

## Appendix 2: Non-Research Institutions

### Climate Change Adaptation in Africa (CCAA)

#### Institutional Mapping Questionnaire

The **Climate Change Adaptation in Africa (CCAA)** is a research and capacity development program that aims to improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable. The CCAA is a joint program of the International Development Research Centre (IDRC), Canada, and the Department for International Development (DFID), U.K. The Program seeks to , *inter alia*, identify potential collaborative ties with relevant institutions, programmes and initiatives that have an environmental mandate within the context of CCAA's intervention areas. This questionnaire instrument aims to gather information in support of this objective for the eastern African region.

#### 3. Identity of Institution and Respondent

<b>Name of Institution:</b>			
<b>Type of Institution:</b>			
<b>Country:</b>			
<b>Respondent Name:</b>			
<b>Respondent's Position:</b>			
<b>Respondent's Contacts:</b>	<b>E-mail:</b>	<b>Tel.</b>	
<b>Date:</b>			

#### 2. Recognition of environmental research

No.	Attribute	Status				General Remarks
		Never	Rarely	Frequently	Always	
<b>I</b>	<b>Participation in environmental research</b>					
a.	The organization operates in other countries in the					

	eastern Africa region.					
b.	Environmental conservation a priority issue in institution's corporate strategy					List key themes:
c.	Research a key component of the institution's strategy					List research programmes:
d.	Research agenda is set internally informed by experience from the field					
e.	The organization needs environmental data in its operations					List data type:
f.	The organization obtains such data from other institutions					List sources:
g.	The organizations funds consultants to conduct environment-related research to meet its needs					
h.	The organization employs its own researchers					
i.	The institution allocates a significant portion of its budget to research activity					Give proportion of annual budget

<b>II</b>	<b>Networking with Research Institutions</b>	<b>Never</b>	<b>Rarely</b>	<b>Frequently</b>	<b>Always</b>	<b>General Remarks</b>
a.	Organization is regularly consulted by research institutions when planning their research agenda					
b.	Organization collaborates with research institutions in implementing some research activities					
c.	Organization has clear communication strategy with grassroots communities					
<b>III</b>	<b>Handling of Research Outputs</b>	<b>Never</b>	<b>Rarely</b>	<b>Frequently</b>	<b>Always</b>	<b>General Remarks</b>
a.	Collects outputs from research institutions for use in development plans					
b.	Re-packages and disseminates research products to other end-users					



## Appendix 3: Institutional Visits

### ETHIOPIA

Date	Name	Position	Organization	Telephone	Email
28-07-08	Dennis Friesen	Principal Scientist - Agronomy	CIMMYT	+251 11 6462324	d.friesen@cgiar.org
	Shirley Tarawali	Director- People, Livestock and the Environment	ILRI	+251 11 6172221	s.tarawali@cgiar.org
	Dr. Seleshi Bekele	Head – East Africa and Nile Basin	IWMI	+251 11 6463215	s.bekele@cgiar.org
	Kwadwo Tutu	Environment and Development Officer	UNECA	+ 251 11 5445319/ 551 5761	ktutu@uneca.org
29-07-08	Dr Mekuria Argaw	Coordinator	Horn of Africa Regional Centre and Network	+251 11 1239472	mekuriaa@hoarec.org
	Dr. Abebe Yeshanew	Team Leader, Climate Change and Air Pollution	National Meteorological Services	+251 911 039818	yashanew2008@gmail.com
	Habtemariam Abate	Executive Director	Sustainable Land Use Forum	+251 11 5157656	executivedirector@sluf.org.et
	Mohammed Umer	Group Coordinator	Climate Change Research Group, Addis Ababa University	+251 911 405950	moha_umer@yahoo.com
30-07-08	Teklu Tesfaye	Head – Research, Extension Farmer Link Department	Ethiopian Institute of Agricultural Research	+251 11 6454430	teklenet@yahoo.com
	Dejere Abesha	National Project Coordinator, Participatory Small Scale Irrigation Development Programme	Ministry of Agriculture	+251 911 246267	dejereabesha@yahoo.com
	Dr. Ahmed Hamdy	Head of Science, Technology and ICT Division	African Union Commission	+251 11 551 7700	hamdya@africa-union.com

### TANZANIA (Dar es Salaam/Zanzibar)

Date	Name	Position	Organization	Telephone	Email
11-08-08	Dr Alfred Muzuka	Programme Leader	Institute of Marine Sciences, UDSM	+255 24 2230741	muzuka@ims.udsm.ac.tz
	Dr Julius Francis	Executive Secretary	WIOMSA	+255 24 2233472	julius@wiomsa.org
12-08-08	Newton A. Temu	Head, TTPHT	Agricultural Research Institute, Mikocheni	+255 22 2700552	nastemu@hotmail.com
	Edith Mushi	Public Relations Officer	TATEDO	+255 22 2700771/ 2700438	rsemiono@yahoo.com
13-08-08	Abdulrahman Issa	Country Director	IUCN Tanzania	+255 22 2669084/5	issa@iucn.or.tz
	Hubert Meena	Executive Director	CEEST	+255 22 2667569	meena@yahoo.com
	Haji Rehani	Programme Officer	AGENDA for Environment	+255 22 2461052	hajirehani@hotmail.com

## UGANDA (Kampala)

Date	Name	Position	Organization	Telephone	Email
4-08-08	Dr Fina Opio	Programme Manager	ASARECA	+256 41 4322227	f.opio@asareca.org
	Godber Tumushabe	Executive Director	ACODE	+256 752 841312	g.tumushabe@acode-u.org
	Dr Grace Nakabonge	Regional Officer	PROTA Uganda	+256 414 543647	nakabonge@forest.mak.ac.ug
	Simon Thuo	Regional Coordinator	Global Water Partnership	+256 414 321424	sthuo@nilebasin.org
	John M. Wasswa	Principal Research Officer	National Agricultural Research Laboratories Institute	+256 414 3206328	curator@infocom.co.ug
05-08-08	Francis Ogwal	NRM Specialist	NEMA Uganda	+256 414 342717	fogwal@nemaug.org
	Dr James Ogwang	Director of Research	National Crops Resources Research Institute	+256 414573016	directornacri@naro-ug.org jamesogwang@hotmail.com
06-08-08	Henry Ibanda	Director of Fin & Adm	HEIFER Project International Uganda	+256 414 231828/9	henry.ibanda@heiferuganda.org
	Aggrey Rwetsiba	Monitoring & Research Coordinator	Uganda Wildlife Authority	+256 414 346287/ 355000	aggrey.rwetsiba@uwa.or.ug
	Gershom Onyango	Ag. Director	Directorate of Environment, MoWE	+256 772 491807	ggonyango@yahoo.co.uk
	Andrew Mutengu Barbara Bugembe	Country Representative Programme Officer	FEWSNET IUCN Uganda	+256 41 4532530 +256 414 233738/344508	amutengu@fews.net barbara.nakangu@iucn.org

## KENYA

Date	Name	Position	Organization	Telephone	Email
17-06-08	Eric Kisiangani	Climate Change Project Head	Practical Action	020 2715293/2719313/2719413	eric.kisiangani@practicalaction.org
18-06-08	James Nguo	Executive Director	ALIN	+254 20 2731557	james@alin.or.ke
	Tom Okurut	Executive Secretary	Lake Victoria Basin Commission	+254 57 2023873	okurut@lvbcsec.org
	Prof Achola Pala	Director TICH	Great Lakes University		nyajodo@gluk.ac.ke
	Dr. Andrew Githeko	Chief Research Officer	KEMRI	254 57 20 22902/59/83	agitheko@kisian.mimcom.net
	Prof Laban Ogallo Prof Silvery Otengi	Director Director, CDMHA	ICPAC Masinde Muliro University of Science and Technology	+ 254 20 3878340 + 254 722 351039	logallo@icpac.net sbotengi@yahoo.com
19-06-08	Joseph Khaemba	Managing Director	Lake Basin Development Authority	+254 57 2027227	joekhaemba@yahoo.com
22-06-08	Michael Njuguna	Deputy CEO	Africa Harvest Biotech Foundation International	+254 20 4441113/5/6	mjuguna@africaharvest.org
24-06-08	Dr. Jared Bosire	Programme Coordinator, MEEP	KMFRI	+254 41 475151/4	jbosire@kmfri.co.ke
25-06-08	Innocent Wanyonyi	Research Associate	CORDIO E.A	+254 724 480807	iwanyonyi@crdioea.org

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25-07-08	Prof. N. J. Muthama	SOCMON WIO Department Chairman	Department of Meteorology, University of Nairobi	+254 733 865392	jmathama@uonbi.ac.ke
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### Emailed Questionnaires

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Country	Contact Person	Position	Organisation	Telephone	Email
Kenya	Cynthia Awuor	Research Fellow	ACTS	+254 20 7224711	c.awuor@cgiar.org
	Bernard K. Kigwa	Research Officer	KEFRI, Kitui Regional Research Centre	+254 722 427231	kigwabk@yahoo.com
Rwanda	Gashumba Damascene	Executive Director	Rural Environment and Development Organisation	+250 8408910	redorwanda@yahoo.com
Tanzania	Prof Cleo Migiro	Executive Director	Cleaner Production Centre of Tanzania	+255 22 2602338/40	cpct@arscp.org
Uganda	Stephen Magezi	Head of Department	Department of Meteorology	+256 414 251798	sak_magezi@yahoo.com

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