

UNIVERSITY OF DAR ES SALAAM

INSTITUTE OF RESOURCE ASSESSMENT



Draft Annual Report

July 2012-June 2013

Cover Photo:

Two Floor Vertical Extension of that Institute of Resource Assessment Building of Block “B” (New Building), University of Dar es Salaam. Photo by **C. Kikwaya, June, 2013**

VISION AND MISSION**Vision**

“To become a high performing and reputable institution that excels in research, teaching and service provision to the community in natural resources management at national, regional and international levels.”

Mission

“To enhance sustainable capacity in human, financial and physical resources in order to excel in quality research, teaching and service provision to the community in natural resources management; and further IRA’s image as a centre of excellence in knowledge creation and skills development at a postgraduate level.”

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ACRONYMS

ADP	Area Development Programme
AIACC	Assessment of Impact and Adaptation to Climate Change
CBD	Convention on Biological Diversity
CLEHA	Climate – Environment and Human Dynamics in Africa
CSITR	Central Slave and Ivory Trade Route Base Map
DA	Division of Antiquities
EAAlA	Eastern Africa Association for Impact Assessment
EAC	East African Community
EIA	Environmental Impact Assessment
EU	European Union
GIS	Geographical Information System
GISP	Global Invasive Species Programme
GoT	Government of Tanzania
IDRC	International Development Research Centre
IDS	Institute of Development Studies
ILRI	International Livestock Research Institute
IPCC	Intergovernmental Panel on Climate Change
IRA	Institute of Resource Assessment
IUCN	International Union for Conservation and Natural Resources
IWSD	Institute of Water and Sanitation Development
MSc.	Master of Science
MALISATA	Man-Land Inter-relations
MLA	Macro Level Assessment
MNRT	Ministry of Natural Resource and Tourism
NBS	National Bureau of Statistics
NCA	Ngorongoro Conservation Area
NEMC	National Environment Management Council
NGOs	Non Governmental Organisations
NRM	Natural Resource Management
OPAC	Open Public Access Catalogue
PA	Protected Areas
PADEP	Participatory Agricultural Development Programme
PRAs	Participatory Rural Appraisals
REDD	Reducing Emission from Deforestation and forest Degradation
REDD	Reducing Emission from Degradation and Deforestation
REPOA	Research on Poverty Alleviation
SADC	Southern African Development Community
SAREC	Swedish Agency for Research Cooperation
SEA	Strategic Environmental Assessment
SIDA	Swedish International Development Agency
START	System for Analysis, Research and Training for Global Change Science
SUA	Sokoine University of Agriculture
TANAPA	Tanzania National Parks
TANESCO	Tanzania National Electric Supply Company Ltd
TANRIC	Tanzania Natural Resources Information Centre
TANROAD	Tanzania Roads Agency
UCLAS	University Colleges of Lands and Architectural Studies
UDSM	University of Dar es Salaam
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
USA	United States of America
USAID	United States Agency for International Development
VPO	Vice President's Office
WARFSA	Water Research Fund for Southern Africa
WMAs	Wildlife Management Areas
WVT	World Vision Tanzania
WWF	World Wildlife Fund for Nature

BOARD OF DIRECTORS

The Board that started in 2012/2015 has continued to provide guidance to IRA.

IRA's Board Members (2012/2015)

1. **Prof. A. E Majule**, Director/Chairman, Institute of Resource Assessment, University of Dar es salaam.
2. **Prof. F.P Maganga**, Associate Director and Coordinator, Social and Policy Analysis, Institute of Resource Assessment, University of Dar es Salaam
3. **Mr. S. B. Salula**, Permanent Secretary, Vice President's Office, Dar es Salaam
4. **Mr. P. Mkongwa**, Director Policy Planning, Prime Minister's Office- RALG, Dodoma
5. **Eng. B. T. Baya**, Director General, National Environmental Management Council (NEMC), Dar es Salaam
6. **Eng. M. Futakamba**, Deputy Permanent Secretary, Food Security Division, Ministry of Agriculture and Food Security, Dar es Salaam
7. **Eng. B. J. Mrindoko**, Deputy Permanent Secretary, Water Resources Division, Ministry of Water and Irrigation, Dar es Salaam
8. **Ms. L. Raphael**, Institute of Development Studies (IDS) University of Dar es Salaam
9. **Dr. P. K. Mwanukuzi**, Geography Department, University of Dar es Salaam
10. **Prof. J. O. Ngana**, Coordinator, Natural Resources and Environment, Institute of Resource Assessment, University of Dar es Salaam
11. **Prof. A. G. Mwakaje**, Coordinator PhD, Institute of Resource Assessment, University of Dar es Salaam
12. **Dr. E.T. Liwenga**, Coordinator, Agriculture, Food Security and Poverty Alleviation, Institute of Resource Assessment, University of Dar es Salaam
13. **Dr. J. G. Lyimo** Coordinator, Training Programmes, Institute of Resource Assessment, University of Dar es Salaam
14. **Dr. Florian S. Silangwa**, Coordinator, Population and Human Settlement, Institute of Resource Assessment, University of Dar es Salaam
15. **Prof. R.Y.M. Kangalawe**, Coordinator, Information Technology and Remote Sensing, Institute of Resource Assessment, University of Dar es Salaam
16. **Mr. O. Sawuka**, Senior Administrative Officer/Secretary, Institute of Resource Assessment, University of Dar es Salaam
17. **One representative of MSc (NARAM) Students**

DIRECTOR'S FOREWORD

During the reporting period (July 2011-June 2012), the Institute of Resource Assessment (IRA) continued to prepare a number of Programmes as a way of implementing the Research Agenda and Revised Strategic Rolling Plan. The IRA put much focus on the following activities:

- Implementation of the Research Agenda;
- Implementation of the NARAM Master's Programme;
- Conducting Applied and Action Research;
- Providing Community Services and Short Course Training
- Teaching and Supervision of Postgraduate Students
- Implementation of the NARAM/ PhD Programme

The Institute continued with the implementation of the project planning process, whereby research proposals from its staff members were submitted to various funding agencies. The proposals are based on the five thematic areas presented in the IRA's Research Agenda, namely:

- Natural Resources Management;
- Environment (including, among others, Climate Change Adaptation and Mitigation);
- Agriculture, Poverty Alleviation and Food Security;
- Population and Human Settlement;
- Social and Policy Analysis.
- The Remote Sensing and Information Technology unit continued to support all the five research areas.

The Institute successfully continued with the implementation of the MSc. Programme on Natural Resources Assessment and Management (MSc. NARAM), with the admission of the fifth batch of 48 students. The Institute also initiated a PhD programme on Natural Resource Assessment and Management by receiving six applications of which three were officially registered. Members of staff were fully involved in the supervision of the second batch of PhD students, as shown in Section 2.3.

A number of recent events have raised the Institute's profile as far as climate change research is concerned. First of all, IRA continued to be a secretariat for REDD (Reducing Emission from Deforestation and forest Degradation), with the main task of preparing the National REDD Strategy through a consultative process. IRA continued to host the Pan-Africa START Secretariat (PASS) which was re-located to the Institute from the University of Nairobi in April 2007. It also continued to host two major programs namely the African Climate Change Fellowship Program (ACCFP) funded by IDRC and the Tanzania Partnership Program (TPP) funded through Michigan State University (NSU).

With regard to international collaboration, IRA continued to collaborate with the Stockholm Environmental Institute (SEI) – a globally distributed institute with research centres in Sweden, Estonia, Thailand, the United Kingdom and the United States – which has established its Africa Centre at the Institute. Through SEI, a number of collaborative research and training activities were implemented including, Bio-resources and development and staff exchange visit from IRA to Sweden. Collaboration with Rockefeller Foundation through two key research and training programmes continued. The Institute through the Director and other academic staff was also participated and/or facilitated various national and regional international meetings and workshops.

SECTION ONE: OVERVIEW OF THE INSTITUTE

1.1 Institutional Set-up

The Institute's mandate remains as presented in the 2011/2012 Annual Report, as per its interim constitution that stipulates its establishment, administrative structure and staffing. The Director manages the Institute. He/she is an appointee of the University Council and reports to the Deputy Vice Chancellor (Academic, Research and Consultancy).

Through the office of the Director, IRA has two participatory organs which facilitate decision-making, i.e. the Board and the Management Committee. The former is a statutory organ of the University, whereas the latter is an informal but useful arrangement for assisting the Director to exploit the fertile treasure of ideas from the members of the Institute.

By this reporting period Prof Amos Enock Majule is the Director of IRA and Prof Faustine Maganga is the Associate Director. Mr. O. Sawuka a Senior Administrative Officer; and Mr. D. Nassoro an Assistant Accountant assists the Director on administrative and financial issues. The Director is also advised by 5 research team leaders or co-ordinators that also form part of the Management Committee. These are the principal advisors to the Director and are responsible for planning and reviewing the Institute's research and academic activities, based on the University's guidelines. The Management Committee may also co-opt other staff when necessary and include a representative from the administrative/technical staff.

1.2 Management and Administration

1.2.1 The Management Committee

During the academic year 2012/2013, the Institute's Management Committee comprised the following staff members.

Leadership from 01/05/2012

Name	Position
Prof. A.E Majule	Director
Prof. F.P. Maganga	Associate Director and Coordinator, Social and Policy Analysis
Dr. F.S. Silangwa	Co-ordinator, Population and Human Settlements
Prof. J.O. Ngana	Coordinator, Natural Resources and Environment.
Prof. A.G. Mwakaje	Coordinator, PhD Programs
Prof. R.Y.M. Kangalawe	Co-coordinator, Remote Sensing and Information Technology
Dr. J.G. Lyimo	Coordinator, Masters Training Programmes and Short courses
Mr. O. Sawuka	Senior Administrative Officer

1.2.2 Staff Matters

During the academic year 2012/2013, the number of staff members stood at 38 (22 academic, 7 technical staff and 9 administrative staff).

Training

Dr. Catherine A. Masao and Dr. Chisawani Silangwa have completed their PhD studies successfully. Ms. Victoria Moshi, Mr. Joseph Perfect, Mr Emmanuel Hanai, Mr. Simon Mwansansu, Mr. Noah Pauline, Mr. Elikana Kalumanga, Yusufu Katundu and Ms. Madaka Tumbo continued with their PhD studies.

1.3 Links and Collaboration

During the academic year 2012/2013, the Institute continued to maintain links with local, regional and international institutions. Continuing links include those with System for Analysis, Research and Training for Global Change Science (START) on climate change issues, the French through IRD and University of Aix Marseille on research through Rungwe Environmental Scientific Observatory Network (RESON). IRA also continued to get support from IDRC/DFID for research and training

activities on climate change, including a project on adaptation to climate change within the agricultural innovation systems in Tanzania and Malawi.

Also, collaboration was continued with several regional institutions including: the World Wildlife Fund for Nature (WWF); International Union for Conservation of Nature and Natural Resources (IUCN), Southern Africa Institute for Environmental Assessment; International Association for Impact Assessment and; Eastern Africa Association for Impact Assessment (EAAIA). There is collaboration with the Stockholm Environmental Institute (SEI), under which joint research programmes are being developed and implemented in areas of common interest such as: Bio-resources and development, climate policy and adaptation, environmental policy, governance and institutions, sustainable water and sanitation, resilience and vulnerability; mainly through joint research projects, academic training, policy dialogues and communication activities, drawing upon available research resources from both parties.

Within Tanzania, collaborative research also continued with the Institute of Development Studies, Constituent College of Engineering, and College of Natural and Allied Sciences of the University of Dar es Salaam. Public service contracts were undertaken on a routine basis with government ministries such as the Vice President's Office, Ministry of Natural Resources and Tourism, Ministry of Agriculture and Food Security, Ministry of Water and Irrigation, Ministry of Livestock and Fisheries, and PMO (Regional Administration and Local Government). Other partners in the public service included Tanzania National Parks (TANAPA), National Environment Management Council (NEMC) and the National Bureau of Statistics (NBS). Also IRA continued to provide public services to local and international NGOs and development partners such as IUCN, WWF, UNDP and USAID.

1.4 Development of Physical Infrastructure at the Institute

1.4.1 Library Services and Documentation Unit

In the year 2012/2013, IRA's Documentation Unit continued to provide reading materials to the Institute's staff, other university staff, graduate and undergraduate students. The Documentation Unit is fully computerised, and over 450 papers and books have been catalogued and linked to the Main Library Computerized Open Public Access Catalogue (OPAC). That means readers can access documents successfully from the University Main Library website.

1.4.2 Information and Communication Technology Infrastructure

The computer facilities owned by the Institute offer several services including running a computerized information system in Natural Resources and the Environment; data processing and analysis of GIS activities; image processing; word processing; and database management including EIA. A computer has been installed in the Documentation Unit and links the Internet services with the University's main library. The IRA website is up and running, providing information to our stakeholders. The Institute's website is linked to other websites such as the government website, the Climate Change and Adaptation in Africa (CCAA), REDD website, Open Society Foundation (formerly the Open Society Institute) project website and others. Computers are provided to IRA's academic staff, GIS lab and also to students' computer rooms.

1.4.3 Vertical Extension of IRA Building block B

This was categorically planned by the Institute of Resource Management to increase availability of staff and working space in particularly seminars and meetings due to expansion of IRA academic activities. The vertical extension started in 2011 and is not yet completed.

SECTION TWO: TRAINING AND TECHNICAL SERVICES

2.1 Short-Term Training and Fellowships

2.1.1 The African Climate Change Fellowship Programme

The African Climate Change Fellowship Programme is jointly administered by the global change System for Analysis, Research and Training (START), the Institute of Resource Assessment (IRA) of the University of Dar es Salaam and the African Academy of Sciences (AAS). The programme is funded by the International Development Research Centre (IDRC) of Canada and DFID (UK). The purpose of the programme is to support African professionals, researchers, teachers and students to undertake activities that will increase their knowledge, capabilities and experience for advancing climate change adaptation in Africa. A variety of fellowship types are offered to support projects, research and other activities that advance adaptation in Africa. These are policy fellowship, PhD fellowship, Post-doctoral fellowship and teaching fellowships. More details can be obtained at <http://www.pass-africa.org> or <http://www.accfp.pass-africa.org>. The fellowships range in duration, from 2-18 months, and award amounts range from USD \$5,000- \$36,000, depending on the type of fellowship. Eligibility is limited to citizens of African countries. In November 2008, the ACCFP Executive Committee selected its inaugural 48 fellows for the first round. In 2011 the programme received funds to support fellows for 2 rounds, with IRA managing the most part of the programme. Two international staff were recruited and the first call for fellows to apply was advertised in June 2011.

Researchers: Prof. P.Z. Yanda, Prof. R.Y.M. Kangalawe, Prof. J. Ngana

2.2 Teaching and Supervision

2.2.1 Postgraduate Teaching

During this period, all IRA's academic staff with PhD participated in teaching different courses under the MSc. (Natural Resources Assessment and Management) programme, as indicated in the following table.

Course Code	Course Title	Lectures involved
RM 600	Perspectives in Resource and Environmental Management	Prof. Sosovele, H.; Prof. Maganga, F.P., Prof. Ngana, J.O.
RM 601	Integrated Research Methodologies	Dr. Lyimo, J.G.; Prof. Yanda, P.Z.; Prof. Mung'ong'o, C.G; Ms. Kiwasila, H.
RM 602	Environmental Assessment	Prof. Mwakaje, A.G.; Prof. Sosovele, H.
RM 603	Contemporary Issues in Resource Management	Dr. Liwenga, E.T.; Prof. Mung'ong'o, C.G.; Prof. Maganga, F.P.
RM 604	Population, Development and Environment	Prof. Mung'ong'o, C.G.; Prof. Mbonile
RM 605	Development Planning in Natural Resource Management	Prof. Kauzeni, A.S.; Prof. Maganga, F.P.; Dr. Lyimo, J.G.
RM 606	Tropical Ecosystem Management	Prof. Kangalawe, R.Y.M., Dr. Masao, C.A.
RM 607	Applied Ecology	Prof. Yanda, P.Z.; Prof. Majule, A.E, Dr. Masao, C.A.
RM 608	Climate Change and Variability	Prof. Ngana, O.J.; Prof. Majule, A.E.
RM 699	Dissertation	All eligible academic staff

2.2.2 Supervision of NARAM Students

During the year under review, members of the academic staff participated in the teaching and supervision of MSc. (NARAM) students as shown in the following table:

SN.	Name of Candidate	Proposed Research Topic	Proposed supervisor
1	Mkama Wilbard 2011-06-00871	Adaptation strategies in Agriculture Practice in Lowland coastal areas; A case study in Kitonga village, Bagamoyo District	Dr. Lyimo, J.G.
2	Madalla Noel. A 2011-06-00825	Establishing economic values of land resources for community livelihood within the context of REDD: The case of Mgori Forest in Singida Rural District	Prof. Majule, A.E.
3	Iloimo Frida M. 2011-06-00850	Assessment of Agro forestry potential for environmental conservation and poverty reduction in rural Tanzania: A case study of Lushoto district	Prof. Kangalawe, R.Y.M.
4	Simbeye Amani 2011-06-00863	Restriction of forest harvesting and its implication on rural livelihoods	Prof. Kangalawe, R.Y.M.
5	Uisso Amani, J. 2011-06-00813	Towards conserving environment through women participation in agro forestry as a strategy for reducing poverty: A comparative assessment of forest adjacent communities in Morogoro rural and Mvomero Districts	Prof. Kauzeni, A.S. Dr. Masao, C.A.
6	Kasebele Miriam 2011-06-00801	Investigation on implication of different forest management units on the associated carbon stock content for climate change mitigation. A case of Mgori forest reserve	Prof. Majule, A.E.
7	Ndeka E. Kizito 2011-06-00869	Assessments of Community benefits and costs from Participatory Forest Management (PFM) and REDD initiatives: The Case Study of Kondoa Irangi, Dodoma-Tanzania	Prof. Maganga, F.P.
8	Mwangosi Nicodemus 2011-06-01614	Flood Impact on Agricultural land use and crop production in the lower Songwe River basin, Kyela district - Tanzania	Prof. Majule, A.E.
9	Selenge Y. Hamisi 2011-06-00859	Assessment of income levels of the people as a results of climate change impacts in their livelihood activities in Bagamoyo district, A case of Magomeni, Dunda and Zinga wards	Prof. Mwakaje, A.G.
10	Misungwi Mabula 2010-06-00680	Comparative analysis between community based conservation for wildlife and forestry resources in Tanzania: A case of Suledo Village forest reserve/Burunge wildlife management area in Kiteto/Babati district	Prof. Sosovele, H.
11	Makoba Revocatus M. 2011-06-00835	The Impact of anthropological activities on tropical ecosystem. A case study of Saa Nane Island Game Reserve in Mwanza Region	Prof. Sosovele, H. Dr. Masao, C.A.
12	Chitimbe Aggrey B. 2011-06-00811	Smallholder agricultural commercialization and climate change adaptation in semi arid areas of Tanzania. The case of Kongwa district in Dodoma region	Dr. Liwenga, E.T.
13	Joseph Deusdedith I. 2011-06-00822	Small-Scale Fishing and Poverty reduction among local. Communities. A Case of selected villages around Lake Victoria in Muleba District Kagera Region	Prof. Mujwahuzi, M. Prof. Mung'ong'o, C.G.
14	Michael James 2011-06-00806	The role of traditional Agro forestry systems in Enhancing community livelihood. The Case of Chagga home gardens in Rombo District	Prof. Kauzeni, A.S. Mr. Perfect, J.
15	Kiengo Renatha 2011-06-00856	The role of traditional knowledge as a preparedness mechanism in addressing climate change impacts: A case of Nyamwage in Rufiji district	Dr. Liwenga, E.T.
16	Mkwizu Lucas J	Assessment of factors influencing the management	Prof. Mung'ong'o,

	2011-06-00858.	of Arusha National Park Tanzania	C.G
17	Barandagiye Sanzugwimo 2011-06-00827	Butterfly farming for conservation and improving local livelihood's. The Case of Amani butterfly project, Muheza District, Tanga Region	Prof. Sosovele, H.
18	Godfrey Munna 2011-06-00815	Assessment of performance of improved smallholder irrigation schemes as adaptation strategies for household food security and livelihood vulnerability for rain-fed agriculture in Korogwe District.	Prof. Ngana, O.J. Prof. Mujwahuzi, M.
19	Minja Happiness 2011-06-00828	A comparative study of opportunities and challenges of REDD+ within the context of community based forest management: A case study of in Babati and Singida districts, Tanzania	Prof. Majule, A.E.
20	Benedict Edith 2011-06-00830	Agricultural Innovations and Policy Adjustments in Enhancing adaptive capacity of smallholder farmers. The case of Manyoni district in Singida region.	Prof. Majule, A.E.
21	Kakama Grace A. 2011-06-00844	Assessing the history of environmental conservation, governance issues, benefits and costs of different environmental initiatives (PFM, REDD) in environmental conservation, and their implications to community livelihoods. The case study of Kondoa/Lindi	Prof. Maganga, F.P. Prof. Mwakaje, A.G.
22	Komba Peacebenedicta W. 2011-06-00838	The effectiveness of agro forestry system in environmental management and poverty reduction, Mufindi district – Iringa	Prof. Mung'ong'o, C.G
23	Rweyendera Procesius 2011-06-00857	Analysis of policies and polity tools for regulation of population, agricultural, wood fuel and settlement dynamics and their implications for REDD+	Prof. Sosovele, H.
24	Romwald Edson B. 2011-06-00831	Assessment of efficacy of labour intensive irrigation systems in poverty alleviation: A case of the Ngapa irrigation farming in Minepa, Ulanga district.	Prof. Ngana, J.O.
25	David H. Kadomo 2011-06-00826	The Impact of Past and Present Conservation Programmes on REDD Readiness: Experiences from Kolo Hills REDD Pilot Project in Kondoa Tanzania	Prof. Yanda, P.Z.
26	Naima Abdi 2011-06-00805	Implication of Forest Management on lat Babati Wetland and Livelihood of its Adjacent communities in Babati District	Prof. Kangalawe, R.Y.M. Prof. Ngana, J.O.
27	Matokeo Arbogas T 2011-06-00852	Implication of REDD on land use/land cover change and its impacts on gender in Babati district a GIS application.	Prof. Majule, A.E Dr. Lyimo, J.G.
28	Elineema Ezekiel 2011-06-00865	Analysis of land use potential for REDD initiatives in Tanzania: A case of Babati district, Manyara region.	Prof. Maganga, F.P.
29	Ndibalema Sylvester 2011-06-00868	The contribution of mushroom farming on environmental conservation and community livelihood. A Case of Kibaha District	Prof. Kauzeni, A.S.
30	Felix A. Rwegoshola 2011-06-01153	Assessment of land use changes and tenure in area around Naitolia. Case of Naitolia village Monduli Arusha	Dr. Lyimo, J.G.
31	Hyasinta Paul 2011-06-00817	Vulnerability assessment to climate change impact of small scale farmers and adaptation strategies at Naitolia village in Monduli district	Dr. Liwenga, E.T.
32	Katebaka Raymond 2011-06-00820	Evaluating resources for birds availability and persistence of forest dependent species population in deforested areas of central Uganda	Prof. Kangalawe, R.Y.M.

33	Sawe Beatrice R. 2011-06-00842	Water resources management options for smallholder maize growers in response to seasonal rainfall variability in Southern Tanzania: The case of Milola Village, Lindi district	Prof. Mujwahuzi, M. Prof. Ngana, J.O.
34	Chawene Agnes B. 2011-06-00800	Contribution of Sunseed Tanzania Trust (STT) – improved cooking stoves project towards environmental conservation in Dodoma Municipal a case study of Mpunguzi Ward	Prof.Kauzeni, A.S.
35	Ndowo Edastella A. 2011-06-00853	Assessment of the trend in land use changes and its implication to rural livelihood in Engaruka Ward in Monduli district.	Dr. Lyimo, J.G.
36	Mwapinga Sikujua 2011-06-00860	Assessment of Participatory Forest Management (PFM) Institutions: Information flow on legal and benefit sharing, transparency and accountability its implication to REDD initiatives Case of Lindi	Prof. Maganga, F.P.
37	Imakulata Mwalulefu 2011-06-00855	The impacts of agro fuel plantation to the land use cover and livelihood of local communities in Rufiji district	Prof. Majule, A.E. Mr Mwansasu, S.
38	Naomi Shadrack 2011-06-00839	A study on the challenges and influence of land tenure in carbon market in Tanzania. The case study of Lindi or Kigoma (Under CCIAM project)	Prof. Yanda, P.Z.
39	Mzee Sanura I 2010-06-00648	Climate change: Adaptation strategies and its impacts on the ecosystem of the East Coast of Pemba	Dr. Lyimo, J.G.
40	Beatus M. Mbogo 2011-06-00864	Assessment of the local communities participation in implementing the national tree planting day campaign. The case of Milola Village in Lindi Region	Prof. Yanda, P.Z.
41	Ghaka M. Daniel 2011-06-00803	Tourism impacts on land use: A case study of Arusha city	Prof. Mung'ong'o, C.G
42	Baseka R.L. Muholeza 2011-06-00866	Peri-Urban agriculture in the era of climate change/variability, challenges and opportunities	Dr. Liwenga, E.T.
43	Nkonjelwa Victor 2011-06-00849	Charcoal making and its implication to the sustainable forest management. A case study of Kazimzumbwi forest reserve in Kisarawe district	Prof. Mung'ong'o, C.G
44	Makundi Prosper U. 2011-06-01154	Assessment of impacts of land management practices on soil properties in relation to climate change and variability adaptation and productivity in semi arid areas. Case of Sanjaranda and Laikala village in Manyoni – Singida and Kongwa – Dodoma respectively	Dr. Lyimo, J.G.
45	Malley Grace	Check title	Prof. Majule, A.E.

2.2.3 Supervision of PhD students at UDSM

IRA is also running a PhD programme in Natural Resource Assessment and Management by thesis. The names of the candidates who had registered by June 2012 are as listed in the following table. Some IRA staff also participated in supervision of PhD candidates in other academic units of the University.

No	Name	Research topic	Supervisors
1.	Mr Allan Kijazi	Impacts of Climate Change and Variability on Pastoral Wildlife Land Use systems in Tarangire-Manyara Ecosystem, Tanzania	Prof. Yanda, P.Z. Prof. Mung'ong'o, C.G
2	Mr Conrad Ndomba	The Impacts of Climate Change and Variability on Livestock Production in Tanzania: Case of Usangu Plains in Mbeya Region	Prof. Maganga, F.P. Prof. Majule, A.E.
3.	Yassin Mkwizu	Examining the Effectiveness of Information and Knowledge Management Techniques in Climate	Prof. Kangalawe, R. Y.M.

		Change related Initiatives in Tanzania	Prof. Ngana, J.O.
4.	Mr Tumwine Jotham	Effects of Post-harvest Residue Management Practices on Banana Weevil Population Dynamics in South- Western Uganda	Prof. Kangalawe, R.Y.M. Dr. Liwenga, E. T.
5.	Ms. Elitruder R. Makupa	“Socio-Economic Impact of Land Acquisition and Compensation in Tanzania	Prof. Mung’ong’o, C. G
6	Ms. Upendo Matotola	Assessing the Effectiveness of payments for watershed services in improving water quality and quantity in Tanzania: The Case of Ulunguru Mountains.	Prof. Mwakaje, A.G.
7	Ms. Diana R. Mndeme	Contribution for Payment for Environmental Services (PES) on Communities Livelihoods in Upper Catchment areas of Uluguru Mountains	Prof. Sosovele, H.
8	Mr. Brown Gwambene	Assessment of Agricultural Production dynamics in the context of Climate Variability in Rungwe District, Tanzania	Dr. Liwenga, E.T. Prof. Mung’ong’o, C.G.
10.	Ms Angelingisi Makatta	Assessment of Governance in Participatory Forest Management for REDD readiness in Tanzania. A Case study of Manyara Region	Prof. Maganga, F. P. Prof. Majule, A.E.
11	Berling Sospeter Magolyo (IDS)	Livelihood dynamics of fishing communities in response to declining fisheries resources. A case of selected Islands in Lake Victoria, Tanzania	Dr. Niboye, E.P. (IDS) Prof. Kangalawe, R.Y.M.
12	Amina K. Kaumo (Geography Dept)	Assessment of climate change impacts on freshwater provision to community in Pangani River basin, Tanzania	Prof. Mwakalila, S.S. (Geography Dept.) Prof. Kangalawe, R.Y.M.
13	Atupakisye Samwel	Assessment of Impacts of Livelihood diversification on Land use Management practices in Tanzania	Prof. Kangalawe, R.Y.M. Dr. Lyimo, J.G.

SECTION THREE: RESEARCH AND COMMUNITY SERVICES

3.1 COMPLETED RESEARCH AND COMMUNITY SERVICE ACTIVITIES

3.1.1 *Environmental Monitoring Assistance to DAWASA*

In this programme, IRA is coordinating a team that is providing technical advice to DAWASA in the implementation of the Environmental Management Plan (EMP). The objective of this assignment is to ascertain the extent DAWASA is complying with the EMP and the level the services have improved. The EMP is guiding DAWASA in their major rehabilitation of water and sewerage project in Dar es Salaam. IRA's role was to ensure compliance with the EMP by assessing various parameters including samples of water and examination of physical development projects. Reports were submitted to DAWASA for administrative decisions. Prof Sosovele leads this team which involved staff from CoET and Ardhi University. The final comments have been submitted.

Participating Researchers: Prof. H. Sosovele, Ms. H. Kiwasila, Dr. R. Mato (ARU), and Prof. D. Mashauri (CoET)

3.1.2 *Districts wetlands inventory and Resource Assessment Guide*

This was DANIDA funded activity through the Ministry of Natural Resources and Tourism. The task was commissioned to IRA and PEM Consult and was conducted in February 2013. This assignment was accomplished well on time and report submitted to the client as expected.

Participating Researchers: Prof. O.J, Ngana and Prof A.S, Kauzeni.

3.1.3 *Environmental Impact Assessment study for the Proposed Smallholder Sugar Cane Irrigation Project at Mtibwa/Turiani Morogoro Region in Tanzania.*

This assignment was conducted between July and October 2012. The objective was to undertake Environmental Assessment study that would identify the negative impacts and proposing some mitigation measures while helping to propose the positive impacts that could be enhanced for the potential sugarcane smallholder farmers in the area.

The Purpose of the study:

- To establish baseline information on both natural and built environment including socio-economic conditions of the proposed project area
- To undertake scoping exercise and prepare a scoping report and terms of reference for the study and submit to NEMC for approval
- To identify, predict and evaluate foreseeable impacts both adverse and beneficial of the proposed project and
- To develop mitigation measures that aim at eliminating or minimizing the potentials of negatives and strengthen the positive ones
- To develop management clause and monitoring aspect to be observed during project implementation.

This assignment was well accomplished and the required deliverables submitted well on time to the client.

Participating Researchers: Prof. A.Mwakaje, Prof A.E Majule, Prof H.Sosovele, Prof O.J, Ngana and Prof R.B,B Mwalyosi.

3.1.4 *Strengthening Capacity of Agriculture Sector to Adapt to Climate Change Impacts In Africa*

In many sub-Saharan African countries, poverty and food insecurity are linked to low agricultural productivity which accelerating climate change and variability (CC&V) threatens to make even worse. In Tanzania, a key challenge for decision makers is to understand the context and strategies of farming

communities which depends on rain fed agriculture and other stakeholders in agriculture for adapting to CC&V, including increasingly variable climatic conditions in a sustainable way. Diverse farming environments and complexities associated with the context of peoples' livelihoods varying over time and space suggest a need for localized agriculture innovations to enhance and sustain agriculture and other related resources productivity through capacity building of different stakeholders at various levels in Tanzania. On the other hand climate change adaptation needs participation and sharing of knowledge among different stakeholders through various means. Short course training is among the ways of sharing such knowledge to build their capacity. In summary this capacity building program was well implemented and it has widen knowledge of climate change and its impact to most participation institutions and members and more action work in the field is now be though to strengthen adaptation in agriculture sector. In Tanzania some of the members are now taking part to assist the Ministry to develop its own climate change adaptation strategy. IRA would like to than the Foundation for supporting this program as it has somehow contributed to the Establishment of a Master program on Climate Change and Sustainable Development at University of Dar es Salaam through IRA. IRA is looking forward working with the Foundation on Resilience Building in order to improve community livelihoods under changing climate.

The overall objective of the proposed project was to strengthen the capacity of communities and organizations/institutions within the agricultural sector in Tanzania based on agricultural zones adapt to the challenges and opportunities arising from CC & V.

Specifically, this two years program intends to address the following objectives

1. To develop training modules for different agro ecological zones in Tanzania on climate change and offer training to trainers and trainees including downscaling climate change model including downscaling techniques and interpretations.
2. To undertake sub region short course training to trainers and researchers in the Seven Ronal Agricultural Research to enhance the resilience of the stakeholders within agriculture sector.

Capacity building to 7 Tanzania National Agricultural Research Institutes from the seven zones has been conducted through training and sharing of research information on climate impacts on agriculture. The final reports have been submitted to the foundation and dissemination process is going on.

Researchers: Prof Amos E Majule, Prof O.J Ngana and Prof P.Z, Yanda

3.2.5 Establishing Relationships between Demographic Factors and Natural Resources Degradation in Kagera Basin

This is a regional research project under VicRes research programme and the study is being implemented in Tanzania, Burundi, Rwanda and Uganda in areas within the Kagera River Basin. The project started in 2007 and will continue for three years. In many respects, river basins are extremely convenient natural resources management units. A river basin management deals, among other things, with technical, as well as socio-economic and ecological aspects, and hence calls for an integrated approach especially if the basin is transboundary in nature. Kagera basin includes important environmental resources, which are now under increasingly great threat, largely due to demographic factors resulting into wide-spread environmental degradation. Land degradation, water resources degradation and biodiversity loss are central issues in the basin, but the extent and severity of the degradation pressures on the environmental resources and inter-linkages among different terrestrial activities are not yet clearly illustrated and their implications are largely unknown.

The main objective of the study was to establish the link between demographic factors and natural resources degradation in the Kagera Basin. Specific objectives of the project are: (i) To map the ecological status of the natural resources in selected sites in the Kagera Basin; (ii) To isolate the demographic factors that mostly impact on the natural resources in the Kagera Basin; (iii) To identify the challenges and opportunities that are presented by different demographic factors in the Kagera Basin. Assessment of land degradation in the Basin over the last 20 years has been established, including identification of the hot-spot areas. Field verification has also been done in Tanzania, and in the Ugandan parts of the Basin, while socio-economic and demographic studies to establish the factors for natural resource degradation in the Basin have also been conducted. Final report has been submitted and the book chapters (2) have been published.

Participating Researchers: Prof. A.E. Majule, Dr. Jean Marie Sabushimike, Dr. Casim Umba Tolo, Mr. Sylvère Hategekimana and Mr Joseph Perfect

3.2.6 *Political Ecology of Wildlife and Forest Governance in Tanzania (EKOSIASA)*

The overall objective of this project was to improve governance of wildlife and forest resources in Tanzania through applied research and capacity building in political ecology. The main research objective was to investigate the impacts on livelihoods and poverty reduction in cases of community-based conservation and sustainable use of forest and wildlife resources. The specific objectives were as follows:

- To analyse the link between community conservation and poverty in each case; Identify the level of participation, influence and power of various types of actors, including women;
- To employ narrative analysis at national and local levels to investigate the links between dominating ideas, policies and practices;
- To identify possible obstacles preventing community-based strategies to lead to empowerment of marginalised groups and contribute to poverty reduction;
- To carry out scenario building as a support for long-term planning; Outreach of research results to decision-makers and society in general through policy briefs, a project website, oral presentations, and media coverage.

The education component of the project included two PhD and eight MSc students as well as the training of four technicians in Geographical Information Systems. In addition, a postgraduate course in Political Ecology will be developed and run jointly by DWM/SUA and IRA/UDSM. The course will be open for PhD and MSc students from the University of Dar es Salaam and Sokoine University of Agriculture.

Participating Researchers: Prof. F. P. Maganga; in collaboration with researchers from Sokoine University of Agriculture and the Norwegian University of Life Sciences.

3.2 ONGOING RESEARCH AND CONSULTANCY

3.2.1 *The Africa Adaptation Programme (AAP): Mainstreaming Climate Change Adaptation in the National Sectoral Policies of Tanzania*

Tanzania is currently implementing the Project titled “Mainstreaming Climate Change Adaptation (CCA) in National Sectoral Policies of Tanzania”. The project is part of the broader Africa Adaptation Programme (AAP), a Programme which is implemented in 21 African countries with financial support from the Government of Japan through the United Nations Development Programme (UNDP) country offices. The project seeks to mainstream CCA mechanisms in Tanzania’s policy, development and investment frameworks and expects to achieve five outputs namely: introduction of long-term mechanisms that can cope with climate change uncertainties; strengthened leadership and institutional frameworks that can manage climate change risks and opportunities; enhanced climate change resilient policies and measures in priority sectors; national adaptation financing options established and dissemination of climate change knowledge generated, stored and shared nationally, regionally and internationally. The project focuses on enhancing of CCA skills of government (national and local government levels), development partners, private sector, civil society and the general public. In Tanzania, the project is being implemented by eight Implementing Partners (IPs), including government ministries and institutions, and coordinated by the Vice President’s Office. The implementing partners are the Vice President’s Office – Division of Environment, the First Vice President’s Office – Department of Environment in Zanzibar, Ministry of Finance, Ministry of Education and Vocational Training, Ministry of Community Development, Gender and Children, National Environment Management Council (NEMC), Tanzania Meteorological Agency (TMA) and the Institute of Resource Assessment (IRA) – University of Dar es Salaam. Implementation of the project started in mid-April 2011. The project is expected to end by December 2012, culminating the two years (2010-2012) of its life span after being granted a no-cost extension.

In this project the Institute of Resource Assessment is participating in the Activity Result 1: Climate Change information base expanded and recommendations integrated into long-term national planning and decision making processes, such as MKUKUTA and MKUZA, GOT 5-year national, local government and sectoral strategies and plans. Action (1): "Collect and consolidate information on climate risk vulnerability, climate change impacts, adaptation options in sectors such as energy, forestry, wildlife, water (inland and coastal), agriculture, health, gender, infrastructure, livestock and fisheries, tourism and link with existing socio-economic data by UDSM, NEMC, SUA, TMA and others for planning by MDAs and LGAs; and Action (2): “Research and document indigenous knowledge on adaptation of farmers and pastoralists in areas not targeted by the IDRC research programme under IRA.”

Information issues related to climate change adaptation that the various sectors are involved in has been collected and is being analysed to examine the extent of vulnerability of the sectors to climate change and how it is addressed by the sectoral policies. The analysis further aims at identifying the capacity gaps for addressing the challenges of climate change in the sectors. The identified sectors involved include energy, forestry, wildlife, water, agriculture, health, gender, infrastructure, livestock and fisheries and tourism. Also research tools for data collection on indigenous knowledge on adaptation of farmers and pastoralists have been prepared and fieldwork will be undertaken soon in the selected villages in the pilot Igunga district. The fieldwork is aimed at capturing the local perceptions on climate change; how communities learn about climate change; climate trends (especially rainfall and temperature) during the last 20 years; local indicators of changing climate; types of farming systems practiced and changes over time; major problems related to livestock production; land use/cover changes over time; and adaptation practices that have been used by the communities that use indigenous knowledge.

Participating Researchers: Prof. R.Y.M. Kangalawe, Dr J. Lyimo, Prof. M.R. Mujwahuzi, Prof A.E. Majule, Prof. P.Z. Yanda

3.2.2 *Rungwe Environmental Scientific Observatory Network (RESON) project*

This is an ongoing research project in the Rungwe Volcanic areas of Tanzania. It is an extension of the previous CLEHA project. The current project is funded by CORUS programme, involving the North and South scientists. The project seeks to establish an observatory station in Masoko village where Lake Kisiba, a crater lake is located. Specifically, the project aims to (i) To study the contribution of climate change and variability on the livelihood and other environmental processes such as volcanic activities; (ii) To reconstruct the past climate environment based on the present; and (iii) To establish an observatory centre on climate-related studies at Masoko in Rungwe. The project benefits both local communities in terms of research, training and development issues. Scientists involved are from France, Belgium and UK, who form the south team. Scientists from the University of Dar es Salaam (IRA, Geology, and Botany) are involved. Progress to date includes establishment of an observatory station on various scientific issues including monitoring plots, research on different environmental issues including climate change and others.

Participating Researchers from IRA: Prof. A.E. Majule, Prof. R.Y.M. Kangalawe, Dr E T Liwenga, Dr. J. Lyimo and Dr C.Masao

3.2.3 Implications of REDD Initiatives on Smallholders' Livelihoods through Access to Land in Manyara and Singida Regions: Mapping and Assessment of Challenges and Opportunities

Pressure on land in Tanzania is increasing through population growth and rising international interest in cheap African land. This latter process is resulting in 'land grabbing'. More than 40 % of the land in Tanzania is under conservation. When Reduction of Emission from Deforestation and Degradation (REDD) is now being introduced in Tanzania, the new projects should be seen in a broader regional context in order to try avoiding adverse effects on smallholders' access to resources and, hence, to their livelihoods. This interdisciplinary project will focus on Manyara Region and examine the implications of REDD initiatives on smallholders' access to land. The gender dimensions of these challenges will be analysed. Remote sensing and Geographical Information Systems will be applied to analyse land use changes. Qualitative methods will be used at the selected sites. Strategies to meet the challenges of access to land and resources for smallholders will be identified in relation to livelihood security and gender equity. This project will produce important knowledge for Manyara Region and constitute a pilot project with the elaboration of an approach that can be replicated in the implementation of REDD in the other regions in Tanzania as well as in other countries. The overall objective of the research important project is to contribute to the elaboration of REDD initiatives in Tanzania by evaluating the implication of REDD on smallholders' livelihoods through access to land. The project is designed as a pilot project to be carried out in Manyara and Singida Regions, particularly in Duru Haitemba and Mgori villages respectively. Specific objectives include the following: (a) To examine potential areas for REDD initiatives in the context of the existing land uses and projected land use changes; (b) To assess the challenges and opportunities REDD may present on livelihood security through changes in access to land for smallholders; (c) To investigate gender differences associated with REDD on access to land for smallholders; (d) To recommend different strategies to meet the identified challenges; and (e) To provide substantially to capacity-building. The project is funded by the Norwegian Government through Sokoine University. To date a Stakeholders' workshop has been conducted in both study areas whereby different forest management issues related to REDD have been raised. Mapping of land uses in study areas in order to establish changes have started. Also, four Master's students have been admitted at IRA as part of capacity building through UDSM.

Participating Researchers: Prof. A.E. Majule, Prof. F.P. Maganga, Dr. Jumanne Abdala and Dr. Mwaipopo

3.2.4 Strengthen Local agricultural Innovation Systems in the Lake Victoria Basin to Improve Agricultural Production in Response to Challenges Associated with Climate Change and Variability

This project intends to build the capacity of farming communities in the Lake Victoria Basin to effectively respond to the impacts of climate change on the agricultural systems. The project will develop an understanding of the climate change issues at community level, including perceptions, impacts, vulnerabilities, adaptation and future plans in order to adapt. Of more interest will be to examine different potential agricultural innovations in combination with traditional methods for producing food to achieve food security in selected case studies in the LVB region and strategize on

how these can be promoted. The main objective of the research is to strengthen the capacity of small-scale farmers in the LVB to adapt to climate change and variability for enhancing agricultural productivity, using appropriate innovations for poverty alleviation and ensuring food security in the Basin. Specific objectives of the project are: (1) To review and collate appropriate crop production innovations in the LVB; (2) To assess the magnitude of climate change and variability impacts to small scale farmers; (3) To assess the strengths, weaknesses, opportunities and threats of the current adaptation strategies; and (4) To introduce and demonstrate appropriate agricultural innovations that are suitable and more adaptable to climate change and variability in the LVB region. Field work has been conducted in Bunda, Magu and Ngara districts in the Lake Victoria Basin.

Participating Researcher: Prof. A. E. Majule

3.2.5 The Partnership for Sustainable Community Development-Tanzania Partnership Programme (PSCD-TPP)

The Partnership for Sustainable Community Development-Tanzania Partnership Programme abbreviated as PSCD-TPP, is a 5-year programme which started in Tanzania in January 2008. The programme was first of all established in 2007 under the International Studies and Programmes at the International Centre of the Michigan State University in USA. At Michigan State University, Dean of the Centre for International Programmes is the Overall in-charge of the PSCD-TPP. In Tanzania, the programme is implemented by the Institute of Resource Assessment (IRA), Dar es Salaam University College of Education (DUCE) and the Aga Khan Foundation (AKF). The overall in-charge of the programme is the Director of the Institute of Resource Assessment, where the project is housed. The Director of IRA is assisted by a Team Leader and sectoral professional staff from DUCE, AKF, and IRA who provide professional advice to district authorities and extension workers who are the key implementers of TPP supported activities. TPP activities cover mainly water supply for human beings and livestock, school health and feeding programme, and training for capacity building.

The aim of the programme is to improve community well-being, while generating knowledge about the development process itself. It also aims at establishing long-term collaboration among scholars, development professionals, government and non-governmental organizations and local people in order to improve local level livelihoods, human and animal health and to strengthen local capacity for sustainable development. In Tanzania, PSCD-TPP is being implemented in Naitolia village, which is 72 km from Monduli District Town and in Milola A and B villages in Lindi District (62 km from Lindi Rural District). Funding for the PSCD-TPP is donated by a private family in USA and is channelled through the Michigan State University (MSU) to IRA.

Research has been undertaken by both students (Master's, PhD) and faculty members from Tanzania and MSU in USA, for stimulating knowledge generation through testing of theories and development models is part of TPP's interest. During the year 2013-14 most of the students and faculty members who received research funds during this period went for fieldwork and some had already produced their draft dissertations by the time of this reporting. The IRA students who received research funds last year were in their final stages of their dissertation work. One had already submitted his dissertation to the external examiner. Others were in their final stages of compiling theirs before submitting them to the external examiners.

As for the faculty members who received research funds, they have already gone to the villages to collect data and most of them were during this time writing their reports. One of the faculty members was also able to travel to Milola to provide research feedback to the community before finalizing his report for submission.

New research proposals have been received for TRIG FY 2015 research funding and they were being reviewed by the time of this reporting.

Apart from research, the following community projects have been funded and implemented by TPP during the FY 2013-2014:

- **Training for capacity building of TPP-related village committees.** The training also involved community-wide meetings for democratic selection of committee members and for awareness raising about TPP-supported issues.
- **Improving water access and quality-** borehole-piped water supply scheme the centre of Naitolia Village in Monduli was finalized. Support to gravity-fed piped water supply in Milola A&B was accomplished.
- **Human Health and Hygiene** - mainly supports the two districts' country school health programme through training of the school health team (District, village, school), provision of health cards and tools (microscopes, weighing machines) for body examination and reagents for screening the pupils as required by the government, to facilitate early detection and treatment of diseases by the health authorities, improved class attendance, retention and improved exam passing rate. This activity is on-going.
- **Animal Health** - Implemented in Monduli District in the Maasai community. The cattle dip was successfully built in the reporting period. The training of village livestock committee members and caretakers of livestock as village-based veterinary volunteers for vaccinating and treating emergency cases continued.
- **Out-sourcing funds to cover miscellaneous community's needs.** PSCD-TPP has limited funds but it out-sources extra funds from different international and local funding organizations/programmes to address the many community needs that are beyond the capacity or priority areas of TPP programme. This activity continued during the reporting time.

Participating Researchers: From IRA: Prof. C.G. Mung'ong'o, Prof. R.Y.M. Kangalawe, Mrs Mary Lucumay-Malekela, and Adeline Dyauli; from DUCE: Dr. Emiliana Mwita, Gasper Nturu Shoo (DUCE); from SUA: Prof. S. Kimera and Prof. Mellau, and Mr. Boniface Mbunju from AKF.

3.2.7 Integrated Natural Resources Management Research Programme

This is a five years collaborative research programme between IRA and Swedish institutions that addresses issues of importance and concern to Tanzania, relating to two sub-programmes namely, environmental and natural resources exploitation, governance and management of particular wetlands and lake basins. Wetlands and lake basins are a type of ecosystems that hold immense benefits to human beings. They control floods and filter toxins, pollutants and sediments before they are introduced into major water bodies. They are also important habitats for fish; provide feeding grounds and refuge for certain terrestrial animals and birds. They are resting stations for certain birds; and provide for livelihood and recreation grounds for human beings. Many wetlands and lake basins are also rich in biodiversity and are unique landscapes providing aesthetic and cultural values, as tourist sites. The key area of this programme is capacity building within the University in the area of research, policy development, good natural resources governances and advocacy through providing research opportunities to postgraduate students in areas related to natural resources management and governance. Training among others aims at sponsoring Master's and PhD students who would study and write on integrated natural resource management including governance issues. The various projects in the programme will be carried out in collaboration with both Tanzanian and Swedish collaborating institutions. To a large extent, the Swedish collaborators are involved in student supervision, especially for Ph.D students who are under sandwich programme. The programme is funded by SIDA/SAREC Fund through UDSM.

Participating Researchers: Mr. S. Mwansasu, Mr. E. Kalumanga, Mr. Y. Katundu; and three supervisors from IRA.

3.2.8 The African Climate Change Fellowship Programme phase 11 (ACCFP)

The African Climate Change Fellowship Programme (ACCFP) aims to support African professionals, researchers and graduate students to undertake activities that will enhance their capacities for advancing and applying knowledge for climate change adaptation in Africa. The first phase of the programme was jointly administered by the global change SysTem for Analysis, Research and Training (START), the Institute of Resource Assessment (IRA) of the University of Dar es Salaam and the African Academy of Sciences (AAS), with financial support from the International Development Research Centre (IDRC) of Canada and the United Kingdom's Department for International Development (DFID). In phase I, the programme provided four types of fellowships, namely, Policy Fellowships, Doctoral Research Fellowships, Post-Doctoral Fellowships and Teaching Fellowships.

The second phase is administered by the Institute of Resource Assessment (IRA) as part of the devolution process from START to an African institution. The ACCFP is awarding fellowship grants that will enable fellows to visit other institutions (referred to as “Host Institutions”) to undertake a project or activities that will increase their knowledge, capabilities, and experience for advancing climate change adaptation in Africa. While in residence at a host institution, fellows will execute a fellowship project of their own design. A wide range of projects are supported, including, for example: (i) learning what others are doing to manage climate risks and adapt to climate change, how they assess and prioritize climate risks, current practices for designing and implementing adaptation projects, and approaches for integrating adaptation with programme planning and policy; (ii) undertaking research that supports adaptation decision-making; and/or (iii) developing and implementing curricula for integrating climate change and climate change adaptation into graduate level education.

Participating Researchers: Prof. P.Z. Yanda, Prof. J.O. Ngana, Dr. C.P. Mubaya and Prof. R.Y.M. Kangalawe

3.2.9 Mobility, Networks and Institutions and the Negotiation of Natural Resource Management in Contemporary Africa: Processes, Challenges and Prospects

This project investigates the relation between migration and natural resource management. This is an important and urgent question in the era of globalisation characterised by an increasing flow of people, ideas and capital and a proliferation of new forms of regulation of social-ecological systems. These new mobility dynamics have led to a growing heterogeneity of resource users, dislocated forms of decision making, the hybridization of knowledge, bearing upon resource utilization and institutional development engaging migrants, diasporas, administrations as well as locals in decisions on local resource use. New coalitions but also new conflictive arrangements have led to the emergence of entirely new forms of collective action within social-ecological systems. Our project will facilitate research and build capacities and partnerships specifically around the changing organization of natural resource management in relation to mobility and migration and view social-ecological dynamics mainly but not exclusively from a social sciences perspective.

Participating Researchers: Prof. P.Z. Yanda, Mr. E. Hannai, Mr. F. Silangwa

3.2.10 Impacts of Climate Change on Water Resources and Agriculture - and Adaptation Strategies in Tanzania (CLIVET)

The overall objective of the project is to contribute to the development of capabilities of Tanzania to encounter the impacts of climate change and develop best strategies to adapt to these changes, particularly as they relate to water resources and the use of water within the agricultural sector. The long-term objective is to increase the resilience of the rural communities towards climatic changes. Further, the project aims at predicting likely climate changes; the associated impact on water resources availability and the future conditions for agricultural production. The specific objectives of the project are: (i) to support the building of individual and institutional capacity to do research within climate change, the prediction of climate changes at various scales, and the related impacts on the hydrology and water resources for agriculture of selected regions in Tanzania; (ii) to support the building of individual and institutional capacity to do research within potential adaptation strategies related to water use in the agricultural sector and to analyze the existing and potential new adaptation strategies and their socio-economic and environmental consequences; (iii) to inform national and development assistance policy dialogue on the appropriate climate change adaptation strategies in water management within the agricultural sector; and (iv) to build climate change research alliances between North-South partners and support international research collaboration to address issues of climate change in agriculture and water management.

Studies are being conducted in mountain regions in Tanzania, where opposing trends in climate change are foreseen. The studies are being conducted in collaboration with the Department of Geography and Geology, University of Copenhagen (Denmark) and Hanoi Agricultural University (HAU) (Vietnam).

Participating Researchers: Prof. P.Z. Yanda, Dr. E.T. Liwenga, Mr N. Pauline and Ms T. Madaka

3.2.11 Coordination of the Natural Resource Management (CBNRM) Policy Programme at WWF-Tanzania Programme Office

This is an activity which WWF contracted UDSM through the UCB to coordinate and facilitate Government implementation of NRM policies. The programme receives funding from USAID that is channelled to WWF. This is not a full-time assignment but a consultancy that UDSM and WWF have agreed. Through this arrangement, Dr. Sosovele is the Programme Director coordinating the activities of the CBNRM Policy team at WWF, helping the Government to implement the Environmental Policy and Wildlife Policy of Tanzania. Several environmental laws and capacity development programmes have been developed through this programme under his coordination. Several villages have established Wildlife Management Areas (WMAs) and are now generating revenue from tourism-related business ventures. Based on the previous successes, the Government and USAID have scaled up the programme to include several areas with the potential to conserve natural resources and expand into more areas of conservation that would increase benefits to communities. The programme is continuing up to 2015.

Participating Researchers: Prof. H. Sosovele

3.2.12 Participatory Capacity Building for Climate Change Adaptation in Agricultural Sector: The Case of Tanzania and Malawi

The overall objective is to strengthen the capacity of vulnerable rural communities and institutions in Tanzania and Malawi to better adapt to climate change and variability for enhanced sustainability of agricultural production.

Specifically, this action research project aims to:

- (1) Building and strengthening the capacity of climate change vulnerable farming communities to enhanced adaptation in agricultural production through actions (training and research) using the innovation system approach.
- (2) To improve service, information and product delivery by agricultural boundary partners such as extension, NGOs, stockiest, media, meteorological agencies and policy makers to target communities through shared and facilitated learning.
- (3) Strengthening research on climate change adaptation in agriculture through partial training support to 4 postgraduate (Masters Degree, 2 each for Tanzania and Malawi) students in doing their dissertations along the project overall objective. It is planned at least 6 papers will be published in peer-reviewed journals based on the M.Sc dissertations.
- (4) Learning and documenting what performs better and could be up-scaled with greater investments and provide such information to policy makers.

A key element of this project is how to improve sharing and learning of information and experiences. This reflects participatory monitoring evaluation by applying few key relevant questions targeted to various stakeholders in case study sites.

Researchers: Prof A.E Majule, Prof R.Y.M Kangalawe, Dr James Lyimo, Dr E.T Liwenga

3.2.13 Enhancing the Measuring, Reporting and Verification (MRV) of Forests in Tanzania through the Application of Advanced Remote Sensing Techniques.

The goal of the MRV project is developing efficient methods for MRV utilizing a combination of ground data and remote sensing techniques to enable the Government of Tanzania to benefit from these techniques as part of their MRV system for REDD. Sokoine University of Agriculture (SUA) is collaborating with local and Norwegian partners is assisting the Government of Tanzania (GoT) to develop the MRV system. The University of Dar es Salaam through the Institute of Resource Assessment is one of SUA's partners in Tanzania in operationalising the MRV system Project duration April 2012 - March 2014

Researchers: Dr. J.G. Lyimo, Ms Olipa Simon and Harun Makandi

SECTION FOUR: PUBLICATIONS

A total of 25 publications were produced, including six books (and book manuscripts); one book chapter; eighteen journal articles; four research reports, three consultancy reports and three workshop proceedings, as indicated below.

4.1 Books

Majule, A.E., Kauzeni, A.S., Mujwahuzi, M and Shishira, E.K (2013). Impact of climate change on natural resources and community livelihood in Tanzania. *Experiences from Semi Arid Areas of Tanzania*. A book. Published by Transworld Research Network, T.C. 37/661 (2), Fort P.O., Trivandrum-695 023, Kerala, India.

O'Brien, K., M. Pelling, A. Patwardhan, S. Hallegatte, A. Maskrey, T. Oki, U. Oswald-Spring, T. Wilbanks, and P.Z. Yanda (2013): Toward a sustainable and resilient future. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 437-486.

4.2 Book chapters

Dr Lyimo???

4.3 Journal Articles

4.3.1 Published Journal Articles

James G. Lyimo, James O. Ngana, Emma Liwenga, and Faustin Maganga, (2013) Climate change, impacts and adaptations in the coastal communities in Bagamoyo District, Tanzania. *Environmental Economics, Vol. 4, Issue1, 2013*.

Richard Y. M. Kangelawe and James G. Lyimo (2013) Climate Change, Adaptive Strategies and Rural Livelihoods in Semiarid Tanzania. *Natural Resources, 2013, 4, 266-278*

Kangelawe, R.Y.M. (2012). Food security and health in the southern highlands of Tanzania: A multidisciplinary approach to evaluate the impact of climate change and other stress factors. *African Journal of Environmental Science & Technology* 6(1): 50-66. [DOI: 10.5897/AJEST11.003], January 2012

Kenneth G, Torben Birch-Thomsen, and Lyimo J. (2012) Transition of shifting cultivation and its impact on people's livelihoods in the miombo woodlands of northern Zambia and south-western Tanzania. *Human Ecology-An Interdisciplinary Journal. Vol. 40 No. 6*

Majule, A.E., Kauzeni, A.S and Mujwahuzi, M. (2013). Exploring opportunities for climate change adaptation in semi arid areas of Tanzania: A case of Nzega District in Tabora region. *African Journal of Environmental Science and Technology. Vol. 7 (81) pp 758-769. DOI: 10. 5897/AJEST12.230.*

Majule, A.E., Stathers, T., Lamboll, R., Liwenga, E.T., Ngongondo, C., Kalanda-Joshua, M., Swai, E and Chipungu, F. (2013). Enhancing capacities of individuals, institutions and organizations to adapt to climate change in agricultural sector using innovative approaches in Tanzania and Malawi. *World Journal of Agricultural Sciences Vol. 1 (6), pp 220-231.*

Mwakaje A.G., Manyasa M., Wawire N., Ongare D., Muchai M., Mugoya C, Masiga C.W, Nikundiwe A (2013): Income Generation and Governance Challenges by Local Communities in Protected Areas: The Case of Serengeti Mara Ecosystem (SME). *Journal of Environment & Development, Volume 22(1) 51-73.*

4.3.2 *Journal Articles Submitted for Publication*

4.3.3 *Research Reports*

Hamudu I. Hamisi, Madaka Tumbo, Elikana Kalumanga & Pius Yanda (2012): Crisis in the wetlands: Combined stresses in a changing climate – Experience from Tanzania. *Climate and Development*. Available online: 27 Feb 2012 **DOI:** 10.1080/17565529.2012.665009

Neil Bird, Helen Tilley, Nella Canales Trujillo, Godber Tumushabe, Bryn Welham, and Pius Yanda (2013): Measuring the effectiveness of public climate finance delivery at the national level; Overseas Development Institute, March 2013

4.3.4 *Consultancy Reports*

Majule, A.E., E. Kalumanga., T. Madaka and Ipopo, J. (2013). Assessment of Environmental and Ecological Sustainability in Geita District, Tanzania. Report submitted to the Global Columbia Center, East Africa, Nairobi, Kenya.

Ngana J., Liwenga E.T., Kauzeni S., Munishi P.K.T., Maganga F., & Carlsen J. (2012). District wetlands inventory and Resource Assessment Guide submitted to the Ministry of Natural Resources and Tourism (MNRT).

Kangalawe, R.Y. M. (2012). National Report for the United Nations Conference on Sustainable Development, Rio+20. Draft Report submitted to the Vice President's Office, Division of Environment, Dar es Salaam. April 2012

Faustin Maganga (2013). Towards responsive governance in climate change adaptation" Research. Project funded by University of Eastern Finlands.

4.3.5 Conference Proceedings

Proceedings of Agricultural Production Systems Simulation (APSIM), Crop Modelling Short Course in Response to Climate Change in East Africa. Held at Blue Pearle Hotel on 25 February to 2nd March, 2013. Organized and coordinated by Prof Amos Enock Majule funded by the Rockefeller Foundation.

4.3.6 *Other publications*

SECTION FIVE: FINANCES

5.1 Sources of Funds

5.1.1 Government Sources

During the year 2012/2013, the Institute continued to receive a budgetary allocation from the Government through the University of Dar es Salaam to cover other charges, over and above personal emoluments.

5.1.2 Own Sources

The Institute continued to generate funds from internal sources. These came mainly from contracted research and community services rendered.

5.1.3 Development Partners

Some funds were obtained from Development Partners through various research and capacity building projects and programmes housed at the Institute.

APPENDICES

Box 1: List of Academic Members of Staff

1. **Amos E. Majule, Director, Associate Professor.** B.Sc. Agric. Hons (SUA), PhD (Reading). Environment, Soil Fertility and Conservation
 2. **Faustin P. Maganga, Associate Professor,** BA Hons; M.A. (Dar), MSc. (Zimbabwe), Ph.D. (Roskilde). Institutional Aspects of Natural Resource Management.
 3. **Pius Z. Yanda, Professor,** B.Sc., Hons (Dar), Dip. MNRSA; MSc. (AUN), PhD (Stockholm). Environment, Water Resource Development
 4. **Idris S. Kikula, Professor,** B.Sc. Hons.; MSc. (Dar) PhD (Griffith). Land Resource Management, Environment and Remote Sensing. (retired)
 3. **Athanas S. Kauzeni, Professor,** Dip. Agric; Postgraduate Dip. Agric. Extension (Reading); BSc Agric.; MSc (West Virginia); PhD (Agricultural Extension) (Dar es Salaam).(Retired- on contract)
 4. **Mark R. Mujwahuzi, Associate Professor,** B.A. Hons. (Dar), M.A, PhD (Clark), Postdoc. in Demography (Pennsylvania). Water Resource Management (Retired – on contract)
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 6. **James O. Ngana, Associate Professor,** B.Sc. Hon.; MSc. (Dar), MSc. (Galway), Ph.D. (KTH, Stockholm). Water Resources (retired-on contract).
 7. **Claude G.M. Mung'ong'o, Associate Professor,** Dip. Lib. (Makerere), B.A. Hons (Dar), M.A. (Dar), PhD. (Stockholm). Environmental Sociology.(Retired-on contract)
 8. **Hussein Sosovele, Associate Prof.,** BA Hons; M.A. (Dar), Ph.D. (Bremen). Sociology
 9. **Richard Y.M. Kangalawe, Associate Professor,** Dip. Crop Prod. (Uyole), B.Sc. Agric. (SUA), PGDIP. MNRSA, MSc. (AUN), PhD Physical Geography (Stockholm). Agriculture, Natural Resources Management, Land use, Environment.
 10. **Agnes G. Mwakaje, Associate Professor ,** B.Sc. Agric. Hons (SUA); MSc. Agric. Economics (Reading) PhD Agric. Economics (London), Agricultural economics.
 11. **Hildegard L. Kiwasila, Lecturer,** BA Hons (Dar) M.P.H. (North Carolina) PGWSST (Loughborough) Sociology, Public Health. *
 12. **James G. Lyimo, Senior Lecturer,** B.Sc. Agric. (SUA), PGDIP. MNRSA, MSc. (AUN) Natural Resource Management, PhD Geography (Copenhagen), Natural resource management and Land use systems.
 13. **Emma T. Liwenga, Senior Lecturer,** Dip. Crop Prod. (Uyole), B.Sc. Agric. (SUA), PGDIP. MNRSA, MSc. (AUN), PhD Human Geography (Stockholm). Agriculture, Natural Resources Management and food security issues.
 14. **Simon Mwansasu, Assistant Lecturer,** Visual C++ Programming (QA, UK), B.Sc. Hons; MSc. (Pinar Del Rio, Cuba). Forest Engineering*
 15. **Catherine A. Masao, Lecturer,** B.Sc. (Gen) UDSM, MSc. (Kent – Canterbury UK). Conservation Biology, PhD (Oslo, Norway / SUA)
 16. **Florian C. Silangwa, Lecturer,** Diploma Education (Korogwe), B. Educ. (UDSM), M.A. Demography (UDSM). Demography, PhD (Cologne, Germany).

17	Emmanuel E. Hanai, Assistant Lecturer , B.Sc. Env. Eng. (UCLAS), MSc. Env. Eng. UDSM.*
18	Joseph Perfect, Assistant Lecturer BSc. Forestry (SUA), MSc. Dry-land biodiversity (Addis Ababa University)*.
19	Noah Pauline, Assistant Lecturer , B.Sc. Env. Mgt (SUA), MSc. Env. Science (UDSM).*
20	Victoria Moshy, Assistant Lecturer , B.A. (Geog & Env. Studies) UDSM; M.A. (Geography & Env. Mangt) UDSM*.
21	Madaka Tumbo, Assistant Lecturer , B.Sc. Env. Mgt (SUA), MSc. (NARAM) (UDSM).*
22	Yusuph Katundu, Assistant Lecturer , B.Sc. Forestry (SUA), MSc. MNRSA (AUN)*
23	Elikana Kalumanga, Assistant Lecturer , B.Sc. Wildlife Mgt(SUA), MSc., ARAM (Dar)*
Key:	
*	On study leave
**	Appointed Vice Chancellor Dodoma University

Box 2: List of Technical Staff

1. ++ **Stephen K. Kajula, Chief Technician**, Cert. in Agro-meteorology-WMO (Nairobi Kenya); Cert. Photo Interpretation Land Use/Land Cover (ITC Netherlands); Cert. Laboratory Photographic Technician (PCL UK); Cert. In Image Data Processing (Copenhagen); Cert. Land Resource Management & Image Data Processing (Zimbabwe); Cert. Wildlife Management (Mweka).
2. **Anna Mushi, Cartographic Technician**, GIS (Trondheim, Norway), Diploma Cartography (Horsens Polytechnic, Denmark), B.Sc. Computer Science (UDSM).
3. ++**Chrisant Msonganzila, Principal Field Officer**, Diploma in Crop Production (Uyole).
4. **Evod B. Ulaya, Field Officer I**, Certificate in Rural Development Planning (IRDP Dodoma).
5. **Captain Patrick Kikwaya, Senior System Administrator III**, B.Sc. Electronic Science and Communication, (UDSM).
6. **Olipa Simon, Senior GIS Laboratory Scientist II**, B.Sc. Hons – Survey (UCLAS), MSc. Computer science (UDSM), Cert. Principles and Applications of GIS and Remote Sensing in Natural Resources Management (ITC Netherlands).
7. **Tunu Mdeme, GIS Laboratory Technician I**, Diploma in Computer.
8. **Julitha Ipopo, Senior GIS Laboratory Scientist III**, B.Sc Land Survey (UCLAS), MSc Geo-informatics (ITC Netherlands).

Key: ++ On short term contracts.

Box 3: List of Administrative Staff

1. **Oscar Sawuka, Senior Administrative Officer**, B.Com (Hons) (UDSM), MBA (UB, Botswana), MSc (Frankfurt, Germany).
2. **Dunia Nassoro, Assistant Accountant**, B. Com (UDSM), MSc (Strathclyde , UK)
3. **Ms. Jane Mwamwenda, Senior Supplies Officer**, CSP.

4. **Flora John, Office Management Secretary II.**
5. **Belinda Msumba, Office Management Secretary II**
6. **Lucas Kolowa, Driver.**
7. **Musa Fulano, Principal Driver.**
8. **Pendo Machaku, Office Attendant.**