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1. Workshop Context

Horizon 2020 commenced in January 2014 as the new Framework Programme to implement research and innovation with funds of €80 billion from 2014 - 2020.

Horizon 2020 addresses all research and innovation funding that was previously provided through the Framework Programmes for Research and Technical Development (e.g. FP7), Competitiveness and Innovation Programme (CIP) and European Institute of Innovation and Technology.

Three main priorities:

- **Excellence Science** – Research Infrastructures, Marie Curie (Mobility Grants)
- **Leadership in Enabling and Industrial Technologies (LEIT)** – Components & Systems, Advanced Computing, Future Internet, Content Technologies and Information Management, Robotics, Micro and Nano-electronics and photonics
- **Societal Challenges** – Health, Food Security & Agriculture, Energy, Transport, Climate action and Environment, Innovation and reflective Societies and Secure Societies

The National Commission for Science and Technology as the partner in Malawi for the IST-Africa Initiative and CAAST-Net Plus organised the Joint IST-Africa CAAST-Net Plus Horizon 2020 Workshop in Lilongwe on 24 January 2014. All relevant stakeholders were invited to participate to raise awareness of the opportunity for research cooperation at international level.

The workshop was very well attended with 50 participants from the Ministry of Education Science and Technology, Department of Science and Technology, Department of eGovernment, Department of Energy, Environmental Department, Ministry of Health, National Commission for Science and Technology, UbuntuNet Alliance, Baobab Health Trust, Chancellor College, Mzuzu University, The Polytechnic of Malawi, Malawi College of Health Sciences, Natural Resources College, Kamuzu College of Nursing, LUANAR, DARS, MACRA, College of Medicine, University of Malawi, National Library Service, EAD and EU Delegation to Malawi. Media attended from MBC TV, NPL and ZBS.

During the organisational introductions, the following research areas were highlighted; eInfrastructures, Health (data diagnosis, 3D imaging, wearable devices, medical implants (need to be energy efficient), Mobile Applications for Healthcare (SMS based), Health Informatics Systems, Neural medicine, telemedicine), ICT (Electronics, eHealth (point of care medical systems, maternal health), TV White Spaces), Green energy (urban and rural, low power sensors), Content Technologies (Digital Repositories collaboration with University of Sussex, Local language content), Climate change and Environment (weather stations), eLearning, Renewable Energy, Food Security, Food Production (Sustainable Agriculture), Agriculture (animal breeds), and Informatics.

2. Workshop Report

2.1 Introduction



Catherine Chaweza, National Commission for Science and Technology (NCST), Director of Ceremonies welcomed Honourable Dr. Lucius Kanyumba MP, Minister of Education, Science and Technology; Anthony Muyepa, Director General, National Commission for Science and Technology (NCST); Mr Kaludzu, Director of Education, Ministry of Education, Science and Technology; Dr Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to

the African Union; Paul Cunningham & Miriam Cunningham, IIMC International Information Management Corporation Ltd, Ireland / IST-Africa Initiative; Melissa Plath, UniPID, University of Jyväskylä, Finland & Constantine Vaitas, FORTH, Greece (CAAST-Net Plus), distinguished guests and participants to the Joint IST-Africa CAAST-Net Plus Horizon 2020 Workshop.

Catherine invited Paul Cunningham to present the IST-Africa Initiative,



Paul Cunningham, IIMC / IST-Africa Initiative, Ireland thanked NCST and the Ministry of Education Science and Technology for hosting the Joint IST-Africa CAAST-Net Plus Horizon 2020 Workshop in Malawi. As will be presented by Constantine and Stephane during the workshop, Malawi was well

represented in Framework Programme 7. It is very positive that the Government of Malawi has committed to participate in Phase II of AfricaConnect and that the initial payment has already been secured with the balance to be paid shortly. It is necessary to also support the National Research and Education Network to develop eInfrastructures across the country as a tool to support research. It would be good to also set up a National Research fund in the near future to support more active research in Science, Technology and Innovation.

Overview of IST-Africa Initiative

Paul then provided an overview of the **IST-Africa Initiative** which was founded in 2002 by IIMC, Ireland and has now grown to a partnership with Ministries and National Councils responsible for Information Society, ICT and/or Innovation in 18 African Member States¹. The

¹ IST-Africa partners: IIMC International Information Management Corporation Limited ("IIMC", Ireland); Ministerio da Ciencia e Tecnologia ("MINCT", Angola); Ministry of Transport and Communications ("MTC", Botswana); Ministère de l'Enseignement Supérieur et de la Recherche Scientifique ("MESRS", Burundi); Agence Nationale des Technologies de l'Information et de la Communication ("ANTIC", Cameroon); Ministry of Communications and Information Technology ("MCIT", Egypt); Ministry of Communication and Information Technology ("MCIT", Ethiopia); Ministry of Education, Science and Technology ("MOEST", Kenya); Ministry of Communications, Science and Technology ("MCST-L", Lesotho); National Commission for Science and Technology ("NCST", Malawi); National Computer Board

IST-Africa is supported by the European Commission and African Union Commission with co-funding under FP7.

The IST-Africa Initiative facilitates and supports:

- International Innovation, Policy and Research Cooperation;
- Knowledge sharing and Skills Transfer between IST-Africa partners;
- Collaborative Innovation, Entrepreneurship and Adoption of Living Labs Methodologies;
- Information Society, ICT and Innovation Aspects of the Africa-EU Strategic Partnership;
- Awareness of African Research Capacity, cross-border cooperation and participation in Horizon 2020
- Establishment of National Contact Points in IST-Africa partner countries

NCST leverages the IST-Africa Initiative to actively promote the national research community through

- Presentations at International events
- Compiling a chapter on Malawi as part of the overall IST-Africa Study on ICT Initiatives and Research capacity
- Publishing articles on ongoing and emerging ICT and Innovation activities in Malawi on the IST-Africa portal and in the Newsletter
- Raising awareness of upcoming Calls for Proposals and international funding opportunities
- Assists institutions in preparing for new opportunities such as Horizon 2020
- Raises awareness of activities being undertaken in other African countries
- Supporting the publishing of Organisational profiles on IST-Africa portal to raise awareness of activities in wider community
- Having access to IST-Africa Network including Ministries and National Councils in 17 African Countries to share knowledge, experiences and success stories
- Having a first-hand experience of what is involved in being part of International funded activities under the European Framework Programme.

Participants were encouraged to visit the IST-Africa portal² and download relevant papers and reports. Paul also encouraged the participants to complete and return their organisational profile to NCST for publication on the IST-Africa portal.

("NCB", Mauritius); Instituto Nacional de Tecnologias de Informacao e Comunicacao ("INTIC", Mozambique); National Commission on Research, Science and Technology ("NCRST", Namibia); Ministère de l'Enseignement Supérieur et de la Recherche ("MESR", Senegal); Department of Science and Technology ("DST", South Africa); Ministry of Information Communication Technology ("MICT-S", Swaziland); Tanzania Commission for Science and Technology ("COSTECH", Tanzania); Ministère de l'Enseignement Supérieur et de la Recherche Scientifique ("MHESR", Tunisia) and Uganda National Council for Science and Technology ("UNCST", Uganda).

² <http://www.ist-africa.org/home/default.asp?page=reports>

Overview of CAAST-Net Plus



Melissa Plath, UniPID, University of Jyväskylä, Finland provided an introduction to **CAAST-Net Plus**, a Coordination Action supported by the European Commission under FP7 with 25 partners. CN+ has a focus on Advancing Sub-Saharan Africa-European Union research and Innovation Cooperation. It is focused on supporting cooperation in Research and Innovation between Africa and Europe in particular on Health, Food Security and

Climate change, which are multidisciplinary areas with good potential. CN+ objectives including:

- To encourage new and diverse multi-stakeholder partnerships that through research and innovation tackle global challenges in health, food security and climate change that affect African and Europe
- To enable better understanding between the public and private sector in Africa and Europe of the link between research and innovation and to identify and share opportunities for cooperation through networking and communication
- To facilitate exchanges that result in learning that support formal policy dialogues

WP5 is focused on Strengthening Africa-EU Research Cooperation Partnerships - three of the CN+ partners are actively involved in this - UniPID, University of Jyväskylä, Finland, FORTH Greece and CSIR-STREP, Ghana,. The objectives include awareness raising of Horizon 2020 among African and European STI research community and supporting the enlargement of National Contact Points in African Member States, conduct analysis and monitoring of activities in Health, Food Security and Climate Change.

Malawi participation in FP7



Constantine Vaitsas, FORTH, Greece provided an overview of Malawi participation in FP7, with 20 EU-funded projects (excluding Marie Curie actions) and over €3 million in research funding, making Malawi the 17th most successful African country in FP7 in terms of participation.

Malawi institutions had a success rate of over 24% in terms of proposals submitted that receive funding under open competitive calls for proposals under FP7, which is an excellent outcome, given that the average success rate for European countries is 15%.

Malawian participation has evolved over the life of FP7 - 2008 (2 projects funded), 2009 (2 projects funded), 2010 (3 projects funded), 2011 (7 projects funded), 2012 (2 projects) and 2013 (4 projects funded). The most prominent themes with Malawi participation are in the areas of Health (8 projects), eInfrastructures (5 projects), Environment (2 projects) and ICT (2 projects). The most prominent participants from Uganda include: UbuntuNet Alliance (5 projects), University of Malawi (3 projects), National Commission for Science and Technology (3 projects).

European Coordinators with most projects including Malawi organisations include IIMC (Ireland), Liverpool School of Tropical Medicine, Zentrum für Soziale Innovation (Austria), University Gent (Belgium), Unifversitat Automona de Barcelona (Span), Royal College of Surgeons in Ireland (Ireland), Trinity College Dublin (Ireland), Centro Euro-Mediterraneo per i Cambiamenti (Italy), Karolinska Institutet (Sweden), Association of Commonwealth Universities (UK), University of Llverpool (UK), University of Warwick (UK) and University of Stirling (UK).

Constantine briefly presented two funded projects with participation from Malawi: **ETATMBA** (Enhancing human resources and use of appropriate technologies for maternal and perinatal survival in Sub-Saharan Africa) and **REACHOUT** (Reaching out and linking in: Heath systems and close-to-community services).

Welcome Address and Introduction to the Minister



Anthony Muyepa, Director General, National Commission for Science and Technology (NCST) welcomed Honourable Dr. Lucius Kanyumba MP, Minister of Education, Science and Technology; Anthony Muyepa, Director General, National Commission for Science and Technology (NCST); Mr Kaludzu, Director of Education, Ministry of Education, Science and Technology; Dr Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union; Paul Cunningham & Miriam Cunningham, IIMC International Information Management Corporation Ltd, Ireland / IST-Africa Initiative; Melissa Plath, UniPID, University of Jyväskylä, Finland & Constantine Vaitsas, FORTH, Greece (CAAST-Net Plus), Master of Ceremony Catherine Chaweza, distinguished guests and participants to the Joint IST-Africa CAAST-Net Plus Horizon 2020 Workshop.

Anthony outlined that it gave him great pleasure to co-host this important workshop. The high participation of researchers from all parts of Malawi is a clear manifestation of the importance the national institutions attach to Science, Technology and Innovation for socio economic development. He particularly thanked the Guest of Honour, Honourable Dr. Lucius Kanyumba MP, Minister of Education, Science and Technology, for taking time out of his busy schedule to

formally open this Horizon 2020 Workshop. This demonstrates the commitment of the Malawi Government and the Minister's personal resolve to support development that is driven by Science, Technology and Innovation as well as paying attention to emerging issues such as International Research, Policy and Innovation Collaboration, knowledge sharing and skills transfer between partners. This workshop has been organised to raise awareness among national stakeholders involved in research in the areas of ICT, Health, Agriculture and Environment with a view to exploring opportunities for international research collaboration under Horizon 2020. NCST has been a partner in the IST-Africa Initiative since 2011 and in CAAST-Net Plus since 2013 and has benefited significantly from this cooperation.

The Government of Malawi is putting greater emphasis on the development of and application of ICT in all sectors of the economy. A significant support is going to Higher Education Institutions to ensure that ICT is not just a course to be studied but a tool to make teaching and learning smarter and a tool to deliver services to citizens. The Government of Malawi through the AfricaConnect project is investing in the provision of sufficient bandwidth to all public Universities including Research and Education Institutions to enhance teaching, learning and research efforts. The optic grid infrastructure will establish a high capacity Internet Network for Research and Education to provide the country with a gateway to global research collaboration. Malawi like many other countries is facing constraints in terms of funding research and can benefit greatly from collaborative research and partnerships across borders. Cross border research requires special attention and focus in the 21st century.

NCST would like to actively encourage cross border partnerships as well as international partnerships in research. The motivation is not only research funding but also the significant benefit of exchange of knowledge and expertise, gaining confidence in international dimension and having the capacity to support people in their communities and identifying solutions to the challenges in their communities.

One area that needs support and linkages is Innovation and Entrepreneurship. This has the capacity to become an economic pillar in addition to agriculture, mining and tourism. NCST would like to partner with international communities to facilitate the establishment of Innovation Spaces, Incubators and Accelerators as a way of diversifying and moving away from tobacco. In other countries Universities are hosting Innovation Spaces. Malawi has high levels of unemployment in graduates and needs to build indigenous SMEs around Research and Innovation. NCST would like to leverage some of the experiences from Europe based on collaborative research and adapt them to the Malawian context. The EU-Africa research partnership promises to the platform to build the much-needed capacity for researchers and to bring about and accelerate innovation and entrepreneurship in Malawi.

In conclusion Anthony highlighted that NCST as advisor to the Government on ICT will continue to work with international partners and policy makers to identify capacity gaps and challenges

and facilitate the design and implementation of responsive Interventions that will strengthen skills needed to enable utilisation of research evidence and data in policy formulation, planning and programming.

Anthony invited the Guest of Honour, Honourable Dr. Lucius Kanyumba MP, Minister of Education, Science and Technology to officially open the Workshop.

Official Opening

Honourable Dr. Lucius Kanyumba MP, Minister of Education, Science and Technology extended a warm welcome to the participants and the partners from IST-Africa, CAAST-Net Plus and European Commission. Dr. Kanyumba outlined his hope that the participants take advantage to this workshop to learn as much as possible about opportunities under Horizon 2020 and to establish the much needed networks to actively participate.



The importance of Science, Technology and Innovation in general and Research and Development in particular cannot be overemphasized, as it has led to tremendous transformation of many economies, in fact the most successful economies are principally built around the successful development and application of Science, Technology and Innovation. Dr. Kanyumba urged the participants to take advantage of this programme by developing proposals that address the challenges our various countries face. The Malawi Government through the Ministry of Education, Science and Technology and other relevant Ministries, recognise the role of Science, Technology and Innovation, and will continue to implement programmes that foster the inculcation of a science and technology culture in the country. This is because as a country Malawians realize that we can achieve not only meaningful but sustainable developments, only if we invest and promote Science, Technology and Innovation.

Dr. Kanyumba highlighted that Malawi has a growing research community and has had a good track record in Framework Programme 7 which ran from 2007 -2013 in which several institutions in the country have successfully participated in FP7 projects in the areas of ICT; Environment; Health; International Cooperation; Infrastructures; Food, Agriculture and Biotechnology; and Science in Society. Such institutions include the University of Malawi, UbuntuNet Alliance for Research and Education Networking, National Commission for Science and Technology, Ministry of Health, Mzuzu University among others. It is therefore very important that Malawi leverages the existing track record and experience within the country when exploring the opportunities under Horizon 2020.

It is with this background that the Government did not hesitate to facilitate the hosting this important workshop, by the National Commission for Science and Technology. Dr. Kanyumba assured the participants that the Government of Malawi will continue to provide a conducive

environment to facilitate forums of this nature as they are vital in establishing the much needed networks and information sharing. Dr. Kanyumba commended the Director General of the National Commission for Science and Technology and the members of NCST staff for successfully hosting this important workshop. Dr. Kanyumba invited the participants to actively engage during the workshop and seek clarifications as required to ensure that they are also able to share the knowledge gathered during the workshop. Dr. Kanyumba wishes the participants good luck in preparing collaborative research proposals for submission under Horizon 2020 in collaboration with peer organisations in Europe.

In conclusion, Dr. Kanyumba acknowledged the support provided by the European Commission through IST-Africa and CAAST-Net Plus in providing both financial support and thematic expertise to ensure the realisation of this Horizon 2020 training workshop. Dr. Kanyumba declared the joint IST Africa and CAAST Net Plus - Horizon 2020 Workshop officially open.

2.2 Malawi Success Stories in FP7

A number of Malawi organisations presented their experience in FP7 and their plans for Horizon 2020 including UbuntuNet Alliance, Lilongwe University of Agriculture and Natural Resources and College of Medicine of University of Malawi.



Tiwonga Banda of **UbuntuNet Alliance** provided an overview of their experience specifically related to the eInfrastructures and Grid Computing projects that it has participated in since 2008 - **GLOBAL project, ERINA AFRICA, e4Africa, CHAIN and CHAIN REDS**. UbuntuNet Alliance is the regional research and Education Network for East and Southern Africa.

it aims to interconnect all NRENs (National Research and Education Network) in the region and connect them to other regional NRENs across the world. It is actively involved in supporting the roll out of the AfricaConnect project across the region. UbuntuNet Alliance was registered as a not for profit Association of NRENs in 2006 and reflecting its expanding role, it is now established as a Trust in Malawi from May 2013. It was initially established by five founding NRENs in Kenya, Malawi, Mozambique, Rwanda and South Africa and has now grown to a membership of 14 NRENs³, the most recent one being iRENALA of Madagascar. The Secretariat is based at HB House, Lilongwe Malawi.

UbuntunNet Alliance were involved in 8 projects that were submitted under Calls for Proposals during FP7 of which 5 projects were funded - GlobalProject.eu, ErinaAfrica, e4Africa, CHAIN and CHAIN Red. These projects support networking and capacity building in the areas of

³ UbuntuNet Alliance NREN members include: Eb@le, DRC; EthERNET, Ethiopia; iRENALA, Madagascar; KENET, Kenya; MAREN, Malawi; MoRENet, Mozambique; RENU, Uganda; RwEdNet, Rwanda; SomaliREN, Somalia; SudREN, Sudan; TENET, South Africa; TERNET, Tanzania; Xnet, Namibia and ZAMREN, Zambia

eInfrastructure. Chain was a global project including China, South America, Africa and Europe focused on grid computing and standards. ChainRed extended the CHAIN project to address challenges beyond grid computing and standards - this project will finish in May 2015. eI4Africa focuses on promoting eInfrastructures in Africa illustrating demos of what has been achieved and will finish in October 2014.

Tiwonga provided insight into how UbuntuNet Alliance got involved in FP7 projects. Based on the regional coverage of its membership in East and Southern Africa, it was approached in 2008 to join the Global project. This success led to invitations to participation in other projects. During IST-Africa 2010 UbuntuNet Alliance brainstormed with other partners who were attending the conference, which led to the eI4Africa project to be submitted. The proposals were developed collaboratively with the project partners based on splitting the work into work packages and commencing from this structure. WPs then need to relate to each other to form a coherent project that addresses the specific Call under which it will be submitted.

In the first project (GLOBAL) UbuntuNet Alliance were an active participant supporting coordination but not a task leader. In eI4Africa UbuntuNet Alliance is now a task leader based on their past experiences. Participation in EU projects provides exposure to international projects and cutting edge research. This helped raise awareness of eInfrastructures in the research community across Africa. UbuntuNet Alliance has been an active participant and presenter during the IST-Africa conferences since 2007 (Mozambique). The IST-Africa conferences have provided a platform to share the outputs from these projects to an international community and to raise awareness of the development of NREN in Africa. Want researchers to use the network for data collaboration.

In terms of H2020, initial discussions started with a brainstorming meeting in December 2013 with DANTE that led to a decision to pursue a proposal for submission under ICT7-2014 Advanced Cloud Infrastructures and Services. Partners have been short listed from Europe, Africa and Latin America. UbuntuNet Alliance wishes to increase the number of NRENs participating as partners.

Climate change predictions in Sub-Saharan Africa: impacts and adaptations (CLIMAFRICA)



Dr David Mkwambisi and Dr. Wilfred Kadiwa of Lilongwe University of Agriculture and Natural Resources (LUANAR) presented their experience of FP7 based on the CLIMAFRICA FP7 Project. The Methodology for WP6 Data collection in African countries was prepared by LUANAR based on PhD studies of the national principal investigator

(Dr David Mkwambisi).

CLIMAFRICA objectives include:

- I. Develop improved climate predictions on seasonal to decadal climatic scales, especially relevant to SSA.
- II. Assess climate impacts in key sectors of SSA livelihood and economy, especially water resources and agriculture.
- III. Evaluate the vulnerability of ecosystems and civil population to inter-annual variations and longer trends (10 years) in climate.
- IV. Suggest and analyse new suited adaptation strategies, focused on local needs
- V. Develop a new concept of 10 years monitoring and forecasting warning system, useful for food security, risk management and civil protection in SSA
- VI. Analyse the economic impacts of climate change on agriculture and water resources in SSA and the cost-effectiveness of potential adaptation measures.

There are 18 partners including Centro Euro-Mediterraneo Per I Cambiamenti Climatici SCARL, Italy; Lunds Universitet, Sweden; Commissariat a L'energie Atomique (CEA), France; Max Planck Gesellschaft zur Foerderung der Wissenschaften E.V., Germany; Vereniging Voor Christelijk Hoger Onderwijs Wetenschappelijk Onderzoek en Patientezorg, Netherlands; Centre Tecnologic Forestal de Catalunya, Spain; Potsdam Institute for Climate Impact Research, Germany; Centre de Cooperation International En Recherche Agronomique Pour Le Developpement (CIRAD) France; Food and Agriculture Organisation of the United Nations (FAO), Italy; Stichting Onderzoek Wereldvoedselvoorziening Van de Vrije Universiteit, Netherlands; Unite de Recherche sur la Productivite des Plantations Industrielles, Congo; University of Cape Town, South Africa; University of Malawi; University of Lomé, Togo; Agricultural Research Corporation, Sudan; IGAD Centre For Climate Prediction and Application, Kenya; Council for Scientific And Industrial Research Crops Research Institute, Ghana; and Cerpinedd Centre D'etude de Recherche et de Production en Information pour l'Environnement et le Developpement Durable, Burkina Faso.

Preparation for this proposal started in 2009, was submitted in 2010 and the project commenced with funding under FP7 in October 2010. The principal investigator extended the national team to undertake the project work. Lessons learnt include that time is of importance in relation to responding to queries and providing contributions for deliverables; it is important to have support from your hierarchy and to have institutional engagement; It is necessary to have leadership skills; good partners and effective communication.

The European partners provided input on using climate data from other parts of the world and how to downscale this data to regional level. It was necessary for the project partners to agree models and put support mechanisms in place to provide capability building on modelling for the African partners. Within WP6 the African partners are undertaking case studies related to

climate predications in their country and to determine the correct site upon which to collect the necessary data. There were also language problems when discussing and agreeing protocols

As an output of the project there is now a Masters Programme which did not previously exist. University of Malawi / LUANAR believe that it is important for Malawi to engage with international research projects as it provides opportunities to be involved in activities as well as standards committees in specific thematic areas related to the project work and this participation can continue after the project ends.

In relation to Horizon 2020, University of Malawi is in discussion with Agricultural Research Corporation in Sudan in relation to rice cultivating, University of Nairobi in relation to modelling and CMCC (Centro Euro-Mediterraneo per i Cambiamenti) Italy in relation to how Post Docs can continue to work with University of Malawi and projects that can be submitted under H2020.

Clinical Officer Surgical Training in Africa (COST) FP7 Project



COST was presented by Gerald Mwapasa, College of Medicine (COM) of University of Malawi. It is focused on "An impact and cost effectiveness evaluation of strengthened district level surgery". COST is led by Prof Ruairi Brugha, Royal College of Surgeons in Ireland (RCSI). Previously Prof. Brugha was a country Principal Investigator (PI) on a FP6 project while at RCSI and country co-PI of a FP 6 while at London School of Hygiene and

Tropical Medicine (LSHTM). Due to a partnership between RCSI and the College of Surgeons of East, Central & Southern Africa (COSECSA) he was advised that the most fertile environment for the research question he had was Malawi and Zambia. He got in touch with Prof. Eric Borgstein (University of Malawi) and Prof. Muhammed Labib (University of Zambia) – both actively involved in COSECSA and co-designed the FP7 grant proposal. The project implementation started in July 2011 led locally by COM in Malawi and Surgical Society in Zambia, RCSI overseeing both.

The aim of the project is to reduce surgical morbidity and mortality in Africa and contribute to a sustainable district health system. Most surgically avoidable morbidity and mortality occurs at the community level. Only a district hospital response will provide an accessible service that meets the need of the population. It was acknowledged that it will not be feasible or cost-effective to provide a surgical specialist delivered surgical service at the district hospital. As a result it was necessary to train and retain Clinical Officers to deliver surgery. This provided capacity and qualifications for clinical officers who tend to stay the longest time addressing these challenges.

COST Africa aims to change the types and numbers of general surgical procedures at the intervention hospitals:

- Change the type and numbers of general surgical procedures at the intervention hospitals
- Improve competence of COs/MLs to undertake general surgery, measured in terms of enhancements in: rates of referral for general surgical procedures and in morbidity and mortality from surgical conditions, improved quality of life; and
- Reduced expenditure, both for hospitals providing surgery and patients undergoing surgery

Achievements to date include:

- BSc in General Surgery for COs developed by COM and approved by UNIMA senate with other programs (Anaesthesia, Obstetrics and Gynaecology, Medicine and Paediatrics)
- For the first time we have created a career path for COs which is in line by MOH needs
- UNIMA selected 17 CO of which 16 are under COST Africa scholarship all deployed to 8 intervention DHs
- Conducted a situation analysis of surgical capacity of DHs
- Maintained a cluster randomised trial of 8 pairs. Data collection is in progress.
- In-service-training underway whereby specialist surgeons travel and teach students at the 8 intervention hospitals

There have been some challenges dealing with Medical Councils in each country and taking the curriculum through the University of Malawi. Training logistics across 8 areas needs good planning. There are opportunities to also look at using mobile devices as situational analysis opened the eyes of the researchers in relation to what support was required to facilitate medical care. The College of Medicine were not aware of Horizon 2020 prior to being invited to this workshop but will now discuss it further with existing collaborators to identify opportunities.

2.3 African Participation in FP7

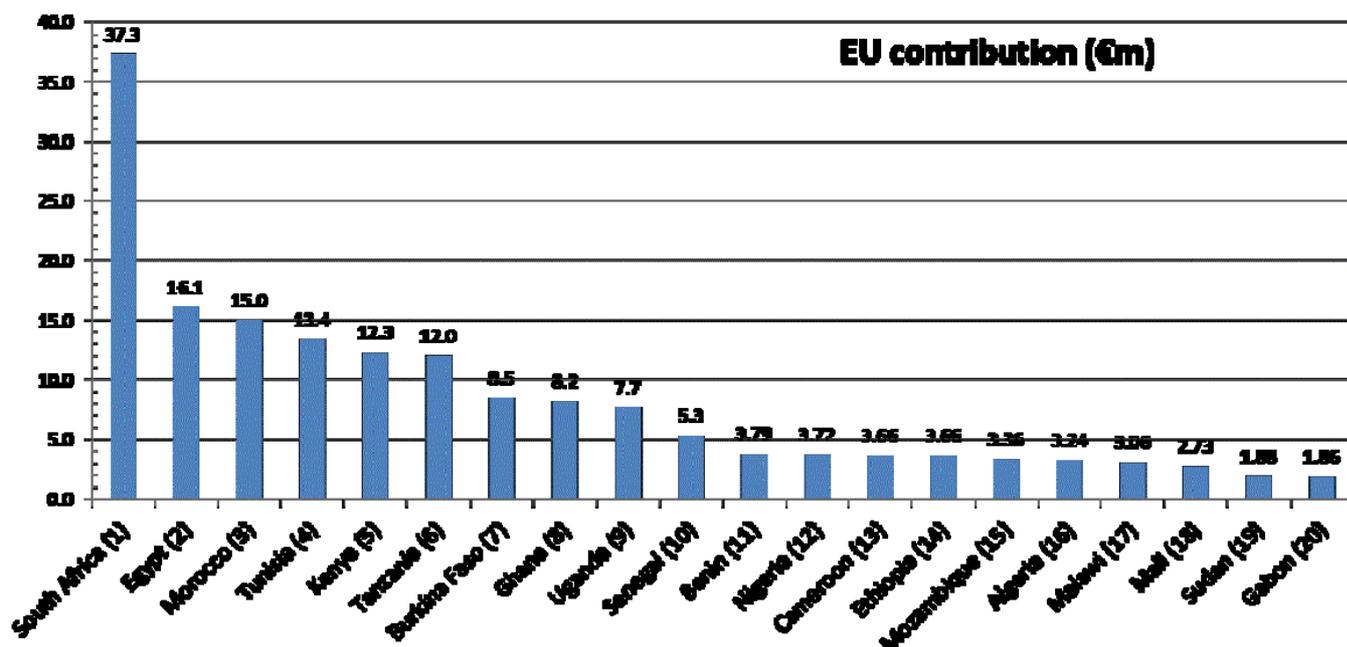


Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union presented African participation in FP7, which has grown steadily over the past seven years. The European dimension is additional to the types of projects that can be funded at national level. Topics addressed are based on global

research challenges. Europe has continued to invest in Higher Education and Research and Innovation.

European Programmes are open to International Cooperation and this remains a feature in Horizon 2020. Africa as a region has been very successful in FP7. As at September 2013 there

were 1315 participations from 45 African countries in 565 projects with a total grant funding of 178 million euro from the European Commission going into African institutions.



Stephane presented the countries with the highest level of funding under FP7 as at September 2013. This demonstrated that Malawi has been successful participating in FP7. It is important to leverage this track record during Horizon 2020.

Stephane highlighted a number of funded projects with Malawi participation including ETATMBA (Enhancing human resources and use of appropriate technologies for maternal and perinatal survival in Sub-Saharan Africa); QWECI (Quantifying Weather and Climate Impacts on Health in Dev. Countries to understand the climate drivers of vector-borne diseases) and the IST-Africa Initiative.

The table below provides an overview of the number of projects⁴ secured in each IST-Africa partner country as at November 2013:

Country	Thematic areas
Botswana	9 FP7 projects - ICT (4), INCO (1), Environment (1), Health (2) and Food, Agriculture and Biotechnology KBBE (1)
Burundi	3 FP7-ICT projects
Cameroon	23 FP7 projects - ICT (4), INCO (1), Environment (4), Health (7), Infrastructures (1), Food Agriculture and Biotechnology KBBE (1), NMP (1), Science in Society (1), Space (1), SSH (2)
Egypt	96 FP7 projects - ICT (9), INCO (19), Environment (12), Health (6), Space (3), Social Sciences (7), Energy (4), INFRA (4), NMP (1), People (7), Science in Society (2), Food Agriculture and

⁴ Guide to ICT Initiatives and Research Capacity in IST-Africa Partner Countries, January 2014, ISBN: 978-1-905824-41-0. Download from <http://www.ist-africa.org/home/default.asp?page=reports>

	Biotechnology (KBBE) (17), Regpot (2), SEC (1), Transport (2)
Ethiopia	23 FP7 projects - ICT- (2), Environment (8), Health (5), Food Agriculture and Biotechnology KBBE (3), Space (2), Social Sciences (3)
Ghana	43 FP7 projects - ICT (3), Environment (6), Health (17), IDEAS (1), INCO (2), Food Agriculture and Biotechnology KBBE (6), NMP (1), People (1), Space (2), SSH (4).
Kenya	67 FP7 projects - ICT (4), INCO (4), Environment (18), IDEAS - ERC (2), Health (14), Food, Agriculture and Biotechnology KBBE (13), INFRA (3), People (3), Science in Society (2), Space (2), Social Sciences (1).
Lesotho	4 FP7-ICT projects
Malawi	20 FP7 projects - ICT (2); INCO (1), Infrastructure (5), Environment (2), Health (8), Food, Agriculture and Biotechnology KBBE (1), Science in Society (1).
Mauritius	6 FP7 projects - ICT (3), Infrastructure (2), Health (1).
Mozambique	20 FP7 projects - ICT (4), Environment (3), Health (6), Food, Agriculture and Biotechnology KBBE (2), Space (4).
Namibia	11 FP7 projects - ICT (4), INCO (1); Health (1), Infrastructure (1), Food, Agriculture and Biotechnology KBBE (2), Science in Society (1).
Senegal	40 FP7 projects - ICT (6), INCO (3) Environment (9), Health (5), Food, Agriculture and Biotechnology KBBE (9), IDEAS (1), People (1), Space (1), Social Sciences (4).
South Africa	189 FP7 projects - ICT (19), INCO (11), Energy (5), Environment (28), Health (30), Infrastructure (11), Food, Agriculture and Biotechnology KBBE (32), NMP (3), People (8), Security (2), Science in Society (5), SME (3), Space (9), Social Sciences (12), SSH (12), Transport (7).
Swaziland	3 FP7 projects – 2 ICT, 1 Space
Tanzania	39 FP7 projects - ICT (5), Environment (4), Health (19), Infrastructure (1), Food, Agriculture and Biotechnology KBBE (5), SME (1), Space (1), Social Sciences (2), Transport (1)
Tunisia	88 FP7 projects - ICT (5), INCO (17), Environment (13), Energy (2), Health (10), Infrastructure (1), Food, Agriculture and Biotechnology KBBE (19), NMP (3), People (2), REGPOT (6), Science in Society (2), SME (1), Space (1), Transport (2), Social Sciences (3), Security (1)
Uganda	41 FP7 projects - ICT (6), INCO (2), Environment (6), Health (16), Infrastructure (1), Food, Agriculture and Biotechnology KBBE (6), People (3), Social Sciences (1)

2.4 Introduction to Horizon 2020

Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union presented Horizon 2020⁵, which is the new European Framework Programme for Research and Innovation for 2014 – 2020, with funding of €79 billion. It is one of the

⁵ Visit <http://www.ist-africa.org/home/default.asp?page=horizon2020> & <http://ec.europa.eu/research/horizon2020/>



largest research programmes and is open to participation from legal entities involved in research around the world.

Horizon 2020 will address all research and innovation funding previously provided by FP7 Framework Programme, Competitiveness and Innovation Programme (CIP) and European Institute of Innovation and Technology. There is a stronger focus on societal challenges and Innovation.

Horizon 2020 is not a development or a bilateral cooperation programme. It is a programme focused on global challenges open to International cooperation. African research institutions can participate as part of International Consortia with partners from Europe to apply for funding as part of an international project addressing the challenges published in the Work Programme. There are some targeted regional calls but there is also an opportunity to be involved in main stream thematically focused projects. While the primary focus is on Research and Innovation, capacity building related to the research focus can be included as one of the project activities (training, networking).

Work Programmes for 2014 – 2015 were published on 11 December 2013 for a two-year period.

Horizon 2020 Structure

➤ **Excellent science (Total Budget of €24.4 billion, ICT Budget c €4 billion)**

Focus on World class Science as the foundation of tomorrow's technologies, jobs and wellbeing, need to develop, attract and retain research talent

1. The European Research Council (€13.1 billion)
2. Future and Emerging Technologies (€2.7 billion)
3. Marie Skłodowska-Curie actions on training and career development (€6.2 billion)
4. European research infrastructures (including eInfrastructures) (€2.5 billion)

➤ **II Industrial leadership (Total Budget of €17 billion, ICT Budget c €8 billion)**

Focus on strategic investments in key technologies underpin innovation across existing and emerging sectors and support innovative SMEs to create growth and jobs

1. Leadership in enabling and industrial technologies (€13.6 billion)
2. Access to risk finance (€2.8 billion)
3. Innovation in SMEs (€6.2 billion)

➤ **III Societal challenges (Total Budget of 29.7 billion, ICT Budget c €4 billion)**

Focused on Innovation addressing societal challenges, breakthrough solutions coming from multi-disciplinary collaborations including social sciences and humanities, promising solutions that can be tested, demonstrated and scaled up

1. Health, demographic change and wellbeing (€7.47 billion)
2. Food security, sustainable agriculture, marine research & the bio-economy (€3.85 billion)
3. Secure, clean and efficient energy (€5.93 billion)
4. Smart, green and integrated transport (€6.33 billion)
5. Climate action, resource efficiency and raw materials (€3.08 billion)
6. Inclusive and reflective societies (€1.3 billion)
7. Secure Societies (€1.69 billion)

Horizon 2020 aims to have a simpler reimbursement scheme and faster time to grant.

Stéphane highlighted the importance to build long-term strategic partnerships and to be actively involved. There is a need to be aware of what is required both on the thematic work and the administrative requirements to ensure that work is done in a timely fashion.

Stéphane summarise the next steps are being to: Study the work programmes, get involved if you see an opportunity that fits your strategy, find partners quickly but choose them carefully, create/develop your profile (capacities, achievements). Participation in a Framework Programme including Horizon 2020 involves some reporting duties - these need to be properly planned and resourced, Use support structures including National Contact Points.

First calls for proposals were published on 11 December 2013 with total funding of €15 billion over two years (2014 - 2015). First deadlines for submission from March 2014 onwards.

Sources of information include:

Horizon 2020 website <http://ec.europa.eu/research/horizon2020>

Participants portal <http://ec.europa.eu/research/participants/portal>

Horizon 2020 section on IST-Africa

<http://www.ist-africa.org/home/default.asp?page=horizon2020>

IST-Africa Guide to 2014 Calls for Proposals in Horizon 2020

http://www.ist-africa.org/home/files/IST-Africa_Guide_2014Calls_Horizon2020.pdf

2.5 Snap Shot of Societal Challenges and LEIT in Horizon 2020

Miriam Cunningham, IIMC / IST-Africa Initiative provided a brief snap shot of research areas for cooperation under Societal Challenges Work Programmes and Leadership in Enabling Technologies and Industrial Technologies (LEIT) Work Programme. Each area has a separate Work Programme that provides the details for each specific call, deadline, instruments open for submission.

Due to the high number of Work Programmes and the short timeframe for Calls in some thematic areas, IST-Africa has prepared a Guide to 2014 Calls for Proposals in Horizon 2020.

This guide lists each thematic area, deadlines and links to the Participants portal⁶ for more detailed information. It can be downloaded from

http://www.ist-africa.org/home/files/IST-Africa_Guide_2014Calls_Horizon2020.pdf

IST-Africa has a specific section focused on Horizon 2020, which provides links to all the Work Programme - Marie Curie, Infrastructures, Societal Challenges (Health, Food Security and Agriculture, Energy, Transport, Climate action and Environment, Inclusive and Reflective Societies; Secure Societies) and LEIT.

Leadership in Enabling Technologies and Industrial Technologies (LEIT) incorporates six main areas:

1. Components and systems (Smart embedded components and systems, micro-nano-bio systems, organic electronics, large area integration, technologies for IoT, smart integrated systems, systems of systems and complex system engineering)
2. Advanced Computing (Processor and system architecture, interconnect and data localization technologies, parallel computing and simulation software)
3. Future Internet (Networks, software and services, cloud computing, cyber security, privacy and trust, wireless communication and all optical networks, immersive interactive multimedia and connected enterprise)
4. Content technologies and information management (Technologies for language, learning, interaction, digital preservation, content access and analytics; advanced data mining, machine learning, statistical analysis and visual computing, big data technologies)
5. Robotics (Service robotics, cognitive systems, advanced interfaces, smart spaces and sentient machines)
6. Key Enabling Technologies: Micro-nano-electronics and photonics (Design, advanced processes, pilot lines for fabrication, production technologies and demonstration actions to validate technology developments and innovative business models)

Societal Challenges fits under seven areas:

1. Health, demographic change and wellbeing (e-health, self management of health, improved diagnostics, improved surveillance, health data collection, active ageing, assisted living;)
2. Food security, sustainable agriculture, marine research & the bio-economy
3. Secure, clean and efficient energy (Smart cities; Energy efficient buildings; smart electricity grids; smart metering)
4. Smart, green and integrated transport (Smart transport equipment, infrastructures and services; innovative transport management systems; safety aspects)
5. Climate action, Environment, resource efficiency and raw materials (ICT for increased resource efficiency; earth observation and monitoring)

⁶ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>

6. Inclusive, innovative and reflective societies (Digital inclusion; social innovation platforms; e-government services; e-skills and e-learning; e-culture) and
7. Secure societies (Cyber security; ensuring privacy and protection of human rights on-line)

ICT will be incorporated across the three main pillars

- Excellent Science
- Industrial Leadership
- Societal Challenges

2.6 Societal Challenges

Melissa Plath, UniPID, University of Jyväskylä, Finland presented **Societal Challenge 1: Health, demographic change and wellbeing**. There are 32 topics in personalising health and care focus area with a total budget of €1.06 billion.

As highlighted during Constantine's and Stéphane's presentations, Health was a very successful area for research cooperation between Malawi and European peers in FP7 and brought in the highest level of funding. As a result it is particularly important for Malawi research organisations involved in Health research to look in detail at Calls open during 2014 and 2015. There was a good representation from organisations and individuals involved in Healthcare and Health research at the workshop. Melissa encouraged them to take the time after the workshop to look at the specific action lines open under the Health Work Programme⁷.

Melissa focused on presenting action lines of particular African Interest including PHC 3 - 2015) Health promotion and disease prevention: improved inter-sector co-operation for environment and health based interventions; PHC 4 - 2014) Health promotion and disease prevention: translating 'omics' into stratified approaches; PHC 7 - 2014) Vaccine development for poverty-related and neglected infectious diseases: Tuberculosis; PHC 12 - 2014) New therapies for chronic non-communicable diseases; PHC 14 – 2014/15) Clinical research on regenerative medicine; PHC 20 – 2015) Promoting mental wellbeing: in the ageing population; PHC 20 – 2015) Promoting mental wellbeing: in the ageing population; PHC 15 – 2015) Tools and technologies for advanced therapies; PHC 17 – 2015) Establishing effectiveness of health care interventions in the paediatric population; PHC 18 – 2014) Advancing active and healthy ageing with ICT: Service robotics within assisted living; PHC 21 - 2014) Developing and comparing new models for safe and efficient, prevention oriented, health and care systems; PHC 29 - 2014) Foresight for health policy development and regulation; PHC 30 – 2014) Advancing bioinformatics to meet biomedical and clinical needs; HCO 4 – 2014) Support for international infectious disease preparedness research and HCO 5 -201x) Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes.

⁷ Health, Demographic Change and Wellbeing Work Programme
http://www.ist-africa.org/home/files/1587763-08_health_wp2014-2015_en.pdf

Melissa then presented **Societal Challenge 2: Food Security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy**. Calls in 2014 and 2015 focus on finding solutions leveraging the innovation aspect and integrating end-users. All activities are open to third countries, with specific topics stemming from ongoing international dialogues including the EU-Africa dialogue on Research and Innovation. There was a good representation from organisations involved in Agriculture and Food Security at the workshop. Melissa advised the participants to go through the Food Security, Sustainable Agriculture, Marine and Maritime Research, and the Bio-Economy Work Programme⁸ in more detail as soon as possible to identify areas of most relevance for cooperation.

Sustainable Food Security focuses on Sustainable food productions system, safe food and healthy diets and global drivers of food security. Melissa focused on presenting action lines African interest that included: SFS-6-2014/2015: Sustainable intensification pathways of agro-food systems in Africa (deadline of 26 June 2014) and SFS-18-2015: Small farms but global markets: the role of small and family farms in food and nutrition security (deadline 24 February 2015).

2014 - 2015 Calls under **Blue Growth (Unlocking the Potential of Seas and Oceans)** are focused on Sustainable exploitation of the diversity of marine life; New offshore challenges; Ocean observation systems/technologies and Horizontal activities.

Bioeconomy focuses on support for sustainable agriculture and forestry management processes providing public goods and innovative products for sustainable growth; foster innovation (including social innovation) in rural areas for inclusive growth; and enhance innovation in the bio-based industry for smart growth.

Melissa presented Societal Challenge 5: **Climate action, environment, resource efficiency and raw materials**⁹. Specific Calls of African interest presented included WASTE-4-2014/2015, Towards near-zero waste at European and global level, WATER-1-2014/2015. Bridging the gap: from innovative water solutions to market replication, WATER-5-2014/2015. Strengthening international R&I cooperation in the field of water, SC5-5-2014/2015. Coordinating and supporting research and innovation for climate action and SC5-14-2014. Consolidating global knowledge on the green economy in support of sustainable development objectives in the EU and internationally. It is important to look carefully at the deadline for upcoming Calls to ensure that opportunities are not missed.

Melissa highlighted that since ICT is a horizontal enabler, there are Calls under Health, Agriculture, Climate Action and Environment within the relevant Work Programmes.

⁸ Food Security, Sustainable Agriculture, Marine and Maritime Research, and the Bio-Economy Work Programme http://www.ist-africa.org/home/files/1587800-09_food_sc2_wp_2014-2015_en.pdf

⁹ Climate Action, Resource Efficiency and Raw Materials Work Programme http://www.ist-africa.org/home/files/1587803-12_climate_wp2014-2015_en.pdf

2.7 Participation Rules and Instruments under Horizon 2020

Miriam Cunningham, IIMC / IST-Africa, Ireland presented the participation rules and instruments under Horizon 2020. Horizon 2020 has a single set of rules covering all funding programmes to simplify the procedure for applicants. Grant Agreements and Reimbursement of actual costs will remain the main funding mechanism.

Participants in Horizon 2020 can be legal entities from EU-27 Member States, Associated Candidate Countries, Associated States and International Cooperation Partner Countries. Legal entities from all African States except South Africa are funded on the same basis as their European colleagues – reimbursement of costs.

The types of organisations that are normally involved in research include Research Organisations, Universities, SMEs, Industry and public administration.

It is necessary for grant applications to be made by consortia that have a minimum of three independent legal entities from three different EU Member States or Associated countries. African participants can then be added to this consortium. It is necessary to justify the participation of each legal entity regardless of what country they are established in as part of proving operational capacity.

Instruments in Horizon 2020 include:

- Grants for Research and Innovation – 100% funding of all activities and participants
- Grants for Innovation – 70% funding of all activities and participants –except non-profit (100%)
- Support and Coordination Actions - 100% funding of all activities and participants
- Programme Co-funding Actions
- SME-Instrument – Instrument to support specific SME activities in three phases
- Pre-Commercial Procurement (PCP) – Steer development to public sector needs
- Public Procurement of Innovative Solutions (PPI) – First buyer for innovative solutions
- Prizes – Support for two key categories of prizes (recognition and inducement) – still under discussion

Research and Innovation Actions are primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. May include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment. Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment.

Innovation Actions primarily consist of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this

purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication. A 'demonstration or pilot' aims to validate the technical and economic viability of a new or improved technology, product, process, service or solution in an operational (or near to operational) environment, whether industrial or otherwise, involving where appropriate a larger scale prototype or demonstrator. A 'market replication' aims to support the first application/deployment in the market of an innovation that has already been demonstrated but not yet applied/deployed in the market due to market failures/barriers to uptake. 'Market replication' does not cover multiple applications in the market of an innovation that has already been applied successfully once in the market.

Support and Coordination Actions undertake studies, analysis, development of research and Innovation strategies, raising awareness of European Commission Programmes, setting up thematic working groups to address Challenges in specific thematic areas.

All instruments have an application template that must be used which can be downloaded from the Participants Portal.

The evaluation criteria for proposals include Excellence, Impact and Quality and Efficiency of the Implementation.

Eligible costs for reimbursement include:

- Personnel Costs (Salary and social security costs based on payroll costs, Reimbursement of costs based on timesheet outlining actual work undertaken)
- Subcontracting (e.g. printing of materials, non-core work)
- Other direct costs
 - Travel and subsistence allowances
 - Depreciation of equipment
 - Other necessary goods and services

Miriam presented mechanisms to identify European Partners, the different types of roles that partners can have within a research proposal, how to co-design a proposal as a team activity, intellectual property rights and consortium agreements, and how proposals are evaluated.

2.8 Leadership in Enabling and Industrial Technology

Paul Cunningham, IIMC / IST-Africa, Ireland provided an overview of ICT within Horizon 2020.

ICT is involved in all three pillars as outlined in the diagram below:

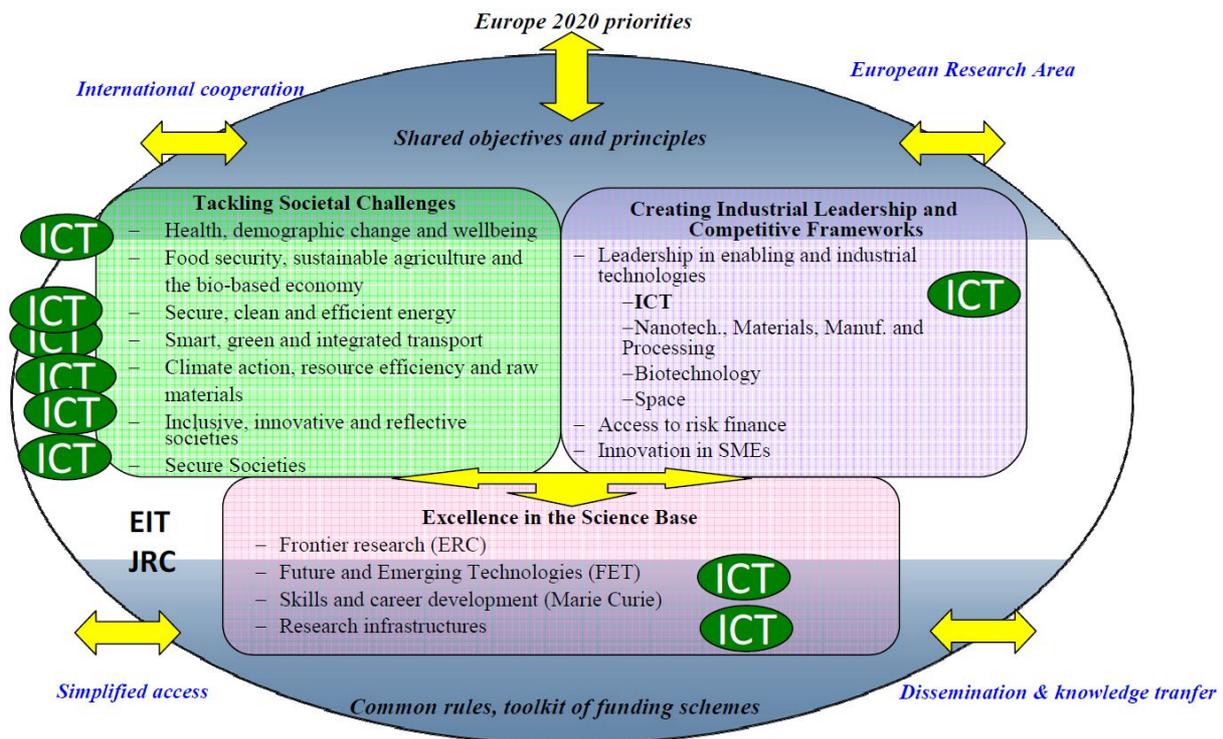


Image provided by DG CONNECT, European Commission

LEIT Call 2014 – Opened 11 December 2013, Closes 23 April 2014

➤ *Components and Systems*

- ICT1 – 2014 Smart Cyber Physical Systems (Research & Innovation Actions; Innovation Actions)
- ICT2 – 2014 Smart System Integration (Research & Innovation Actions; Innovation Actions, CSA)
- ICT3 – 2014 Advanced Thin, Organic and Large Area Electronics Technologies

➤ *Future Internet*

- ICT4 – 2014 Smart Networks and Novel Internet Architectures (Research & Innovation Actions)
- ICT6 – 2014 Smart Optical and Wireless Network Technologies (Research & Innovation Actions, SA)
- ICT7 – 2014 Advanced Cloud Infrastructures and Services (Research & Innovation Actions; Innovation Actions, CSA)
- ICT9 – 2014 Tools and Methods for Software Development (Research & Innovation Actions)
- ICT13 – 2014 Web Entrepreneurship (Innovation Actions, CSA)

- ICT14 – 2014 Advanced 5G Network Infrastructures for the Future Internet (Research & Innovation Actions; Innovation Actions, CSA)
- *Content Technologies and Information Management*
 - ICT15 – 2014 Big data and Open Data Innovation and Take-up (Innovation Actions, CSA)
 - ICT17 – 2014 Cracking the Language Barrier (Research & Innovation Actions; Innovation Actions, CSA)
 - ICT18 – 2014 Support the Growth of ICT Innovative Creative Industries SMEs (Innovation Actions, CSA)
 - ICT21 – 2014 Advanced Digital Gaming (Research & Innovation Actions; Innovation Actions)
 - ICT22 – 2014 Multimodal and Natural Computer Interaction (Research & Innovation Actions; Innovation Actions)
- *Robotics*
 - ICT23 – 2014 Robotics (Research & Innovation Actions; Innovation Actions)
- *Cross cutting areas*
 - ICT31 – 2014 Human-centric Digital Age (Research & Innovation Actions, CSA)
 - ICT32 – 2014 Cybersecurity, Trustworthy ICT

Each area was presented, followed by discussion with the participants. Where participants expressed specific interest in a topic (for example ICT7 Cloud Computing, ICT9 Tools and Methods for Software Development, ICT15 Big Data), more information was provided.

2.9 ICT in Societal Challenges

Paul Cunningham, IIMC / IST-Africa, Ireland provided an overview of ICT components in Societal Challenges within Horizon 2020 in the areas of Health, Energy, Transport, Climate Changes and Environment, Inclusive, Innovative and Reflective Societies and Secure Societies. Specific ICT calls highlighted include:

Health

- PHC 19 – 2014) Advancing active and healthy ageing with ICT: Service robotics within assisted living environments; and ICT solutions for independent living with cognitive impairment
- PHC 20 – 2014) Advancing active and healthy ageing with ICT: ICT solutions for independent living with cognitive impairment
- PHC 23 - 2014) Developing and comparing new models for safe and efficient, prevention oriented, health and care systems

- PHC 26 - 2014 Self-management of health and disease: citizen engagement and mHealth

Energy - Smart Cities

- SCC 1 – 2014/2015: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse projects
- SCC 2 – 2014: Developing a framework for common, transparent data collection and performance measurement to allow comparability and replication between solutions and best-practice identification
- SCC 3 – 2015: Development of system standards for smart cities and communities solutions

Transport

Road transport.

- MG.3.5-2014 Cooperative ITS for safe, congestion-free and sustainable mobility
- MG.3.6-2015 Safe and connected automation in road transport
- *Urban mobility* - MG.5.3-2014 Tackling urban road congestion
- *Logistics* - MG.6.3-2015 Common communication and navigation platforms for pan-European logistics applications
- *Intelligent Transport Systems* - MG.7.1-2014 Connectivity and information sharing for intelligent mobility

Climate Action and Environment

ICT solutions for waste traceability, waste material flow management

- WASTE-1-2014: Moving towards a circular economy through industrial symbiosis
- WASTE-2-2014: A systems approach for the reduction, recycling and reuse of food waste
- WASTE-3-2014: Recycling of raw materials from products and buildings
- WASTE-4-2014/2015: Towards near-zero waste at European and global level

Water management - Development and deployment of advanced ICT solutions for water resources management in agriculture and urban areas

- WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

Inclusive, Innovation and Reflective Societies

Reflective Societies

- REFLECTIVE 6 – 2015: Innovation ecosystems of digital cultural assets
- REFLECTIVE 7 – 2014: Advanced 3D modelling for accessing and understanding European cultural assets

New forms of innovation - Innovation in the public sector by using emerging ICT technologies

- EURO-6-2015: Meeting new societal needs by using emerging technologies in the public sector
- YOUNG-5-2014: Societal and political engagement of young people and their perspectives on Europe

ICT-enabled open government - Personalised public services, M-government, Open participation, Transparency

- INSO-1-2014, 2015: ICT-enabled open government
- INSO-9-2014: Innovative mobile e-government applications by SMEs

ICT for learning and inclusion - INSO-6-2014: Platform for ICT for Learning and Inclusion

Secure Societies

- DS 1 – 2014: Privacy
- DS 2 – 2014: Access Control
- DS 3 – 2015: The role of ICT in Critical Infrastructure Protection
- DS 4 – 2015: Secure Information Sharing
- DS 5 – 2015: Trust eServices
- DS 6 – 2014: Risk management and assurance models

2.10 Discussions and Conclusion

The workshop was very interactive in style with participants asking questions and seeking clarification as required. There was quite a lot of discussion in relation to research challenges, research facilities, the duration of collaboration and level of project funding.

Research facilities are supported through Research Infrastructures.

Projects are typically 2 - 6 years in duration, average FP7 project 3.75 years. Applicants should decide what is the appropriate length and then justify this.

Each call has a specific budget available. Each action line outlines the type of proposal to be submitted - Small contribution (€2 - €4 million), Large contribution (€5 - 10 million). Ultimately the project budget depends on the amount of work required, the personnel rate of the different partners and the total budget available under specific Calls. Some Calls have specific budget envelopes available.

In relation to next steps, the participants were encouraged to download the IST-Africa Guide to 2014 Calls under H2020¹⁰, the individual Work Programmes¹¹ and identify relevant core areas for research collaboration under 2014 and 2015. Institutions were encouraged to prepare an

¹⁰ http://www.ist-africa.org/home/files/IST-Africa_Guide_2014Calls_Horizon2020.pdf

¹¹ <http://www.ist-africa.org/home/default.asp?page=horizon2020>

organisational profile for publication and to identify key European partners based on existing relationships and bilateral projects.

Gift Kadzamira, NCST / IST-Africa thanked the participants for coming to the workshop and thanked the colleagues from IST-Africa and CAAST-Net Plus for providing the training. The participants learnt a lot and NCST looks forward to learning about proposals under development in the coming months.

Participants



NAME	INSTITUTION
Hon. Dr. L Kanyumba	Minister for Education, Science and Technology
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H E L Kaludzu	Ministry of Education, Science and Technology
M. Chipula	Department of E-Government
Anthony Muyepa	National Commission for Science and Technology
Stephane Hogan	Delegation of the European Union to the African Union, Ethiopia
Ilona Gruenewald	European Delegation Malawi
Constantine Vaitsas	FORTH, Greece / CAAST-Net Plus
Miriam Cunningham	IIMC, Ireland / IST-Africa
Paul Cunningham	IIMC, Ireland / IST-Africa
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Gladys Nthenda	MBC – TV (Reporter)
Steven Pembamoyo	NPL (Reporter)

Press Article

4 NATIONAL NEWS

THE DAILY TIMES, Monday, January 27, 2014

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Govt lauds impact of science on development

BY MACDONALD THOM

THE Ministry of Education has hailed the role science and technology plays in development.

Minister of Education Lucius Kanyumba made the observation in Lilongwe on Friday during the opening of a joint IST-Africa CAAST-Net Plus Horizon 2020 Workshop.

The day-long workshop was aimed at raising awareness among stakeholders in research and in

the areas of Information and Communication Technology (ICT), health, agriculture and environment with a view to exploring opportunities for international research collaborations under Horizon 2020.

"You will agree with me that the importance of science and technology in research and development in particular cannot be overemphasised, as it has led to tremendous transformation of many economies. In fact,

most successful economies are principally built around the successful development and application of science, technology and innovation," he said.

Kanyumba urged the participants to take advantage of Horizon 2020, a new funding framework Programme for research and Innovation, so that it benefits their countries.

"I urge you to take advantage of this programme by developing proposals that

address the challenges various countries face. Only through that, can our people appreciate the responsiveness of science and technology to our need," He said.

Horizon 2020 runs from 2014 to 2020. It succeeds Framework Programme (FP7) which ran from 2007-2013.

The day-long workshop was organised by the National Commission of Science and Technology (NCST) in collaboration with IIMC Ireland (IST-Africa Project

coordinator) and CAAST-Net Plus supported by European Commission under Framework Programme (FP7).

Paul Cunningham of IST-Africa Initiative said Malawi will benefit from research.

"Research is very important. It helps to address global, national or even community challenges. This initiative is opportunity for Malawi to improve in the field of research," Cunningham said.