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# D3.2 IST-Africa Horizon 2020 Workshop, Addis Ababa, 05 December 2013

Workshop Report prepared by IIMC, Ireland and Ministry of Communications and Information Technology, Ethiopia

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# 1. Workshop Context

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

Horizon 2020 will address 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 Ministry of Communications and Information Technology (MCIT) as the IST-Africa partner in Ethiopia organised the IST-Africa Horizon 2020 Workshop in Addis Ababa on 05 December 2013. All relevant stakeholders were invited to participate to raise awareness of the opportunity for research cooperation at international level.

The workshop was well attended with 48 participants from OSH/ICT-ET; AA Teg. Poly Technic College; AAU; AMU; Arba Minch University; ATA; B/Dar Incubation Center; Center for Education ICT; EIABC-AAU; Ethio Telecom; EU Delegation; Haramaya University; HilCoE; ICT CoE; ICT-BIA Ethiopia; Jimma University; JIT-JU; Mekelle University; Ministry of Communication and Information Technology (MCIT); Science & Technology Institute of Tigray; St. Mary's University and University of Gondor.

The IST-Africa Consortium collaborated with Dr Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union and CAAST-Net Plus in relation to this Horizon 2020 workshop.

# 2. Workshop Report

## *2.1 Introduction*

Dr Leulseged Alemie, Diretor, Communication and IT Capacity Building Directorate, Ministry of Communications and Information Technology welcomed the participants to the IST-Africa Horizon 2020 (H2020) Workshop and thanked them for accepting the Ministry's invitation to participate and learn more about opportunities for collaborative research under H2020 Calls during 2014. Dr Alemie invited H.E. Mr. Getachew Negash, State Minister at Ministry of Communications and Information Technology to make the Opening Speech.

 

H.E. Mr. Getachew Negash, State Minister at Ministry of Communications and Information Technology welcomed Dr Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union, the participants, and colleagues from IST-Africa Initiative (Paul Cunningham, Miriam Cunningham) and CAAST-Net Plus (Melissa Plath, UniPID, University of Jyväskylä, Finland and Masahudu Fuseini, CSIR, Science and Technology Policy Research Institute, Ghana). He expressed his pleasure to welcome the participants to the IST-Africa H2020 Workshop in Addis, which is taking place at a time when the Government is aggressively undertaking ICT initiatives at a national level to make the public service responsive to the needs of the country and its citizens. To this end, the Ministry of Communication & Information Technology is carrying out various ICT projects at a national and Regional level as well, including School Net, Woredanet, Telemedicine and Tele Education projects.

H.E. Mr Negash outlined that the Ethiopian Government has acknowledged the tremendous effect of ICT in boosting the national development effort and as a result it has made the development of ICTs one of its strategic priorities in which development of ICT Research and Development strategy has taken the ICT R&D activities one step forward. This strategy is basically being used as a reference to identify different thematic areas in ICT and it would provide research grants to public universities.

As part of Government initiatives the Ethiopian government has also implemented the EthERNet project which is connecting public institutions through a network and providing high speed Internet which is actually going to be implemented on phased manner to all public Universities. At the present time, EthERNet has a network with 20MBPS or better Bandwidth that ties many of the established Universities in Ethiopia. This infrastructure development helps the Universities to facilitate their Research and Development.

The Ministry has recently joined the IST-Africa Initiative and had the opportunity to present Ethiopian research capacity during an IST-Africa workshop at e-Challenges e-2013 in Dublin, Ireland in October.

H.E. Mr Negash outlined that this H2020 Workshop is very important in that it will give Ethiopian researchers an opportunity to learn more about the components of Horizon 2020 and how to participate in collaborative research. H.E. Mr Negash thanked the organisers of this workshop for the contributions they have made to the development of the ICT in Ethiopia. He reiterated that the Ministry is ready to provide support to those companies which would like to work in the area.

In conclusion H.E. Mr Negash expressed his belief that this workshop is highly imperative and paramount because it will help the Ministry to make more interventions in facilitating the

 

participation of all stakeholders and ensuring the sustainability and realization of all ICT endeavourers. In addition to this, it can also be taken as a golden opportunity for Ethiopian researchers from Universities, public and private sector to gather round all valuable and remarkable information and ideas from the participants that may allow, at the end of the day, all participants to gain and capitalize common understanding, enough knowledge and shared experience about Horizon 2020. H.E. Mr Negash encouraged the participants to actively engage in the discussions during the workshop and thanked them for their participation.

Paul Cunningham, IIMC / IST-Africa Initiative, Ireland thanked H.E. Mr Negash for opening the Horizon 2020 workshop and MCIT for hosting the workshop and mobilising the national research community.

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 Council responsible for Information Society, ICT and/or Innovation in18 African Member States[1]. The 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

MCIT leverages the IST-Africa Initiative to actively promote the national research community by

- Presentations at International events

[1] IST-Africa partners: IIMC International Information Management Corporation Limited (“IIMC”, Ireland); Ministry of Transport and Communications (“MTC”, Botswana); Ministere de l’Enseignement Superieur 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 Environment, Science and Technology (Ghana); 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 (“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); Ministere de l'Enseignement Superieur et de la Recherche Scientifique ("MHESR", Tunisia) and Uganda National Council for Science and Technology (“UNCST”, Uganda).

 

- Chapter on Ethiopia 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 Ethiopia 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
- Has access to IST-Africa Network including Ministries and National Councils in 17 African Countries to share knowledge, experiences and success stories
- Has 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 portal[2] and download relevant papers and reports.

Melissa Plath, UniPID, University of Jyväskylä, Finland and Masahudu Fuseini, CSIR, Science and Technology Policy Research Institute, Ghana 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 innnovation 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

CN+ organises Information Sessions to raise awareness of opportunities under H2020 in the Sciences area, undertakes mapping of activities, setting up researchers platform and policy dialogue to support EU/Africa cooperation. Objectives include encouraging new and diverse multi-stakeholders partnerships through research and innovation.

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

 

## *2.2 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. As at September 2013 there were 1315 participations from 45 African countries in 565 projects with a total grant funding of €178 million from the European Commission going into African institutions.

Ethiopia has secured participation in 23 FP7 projects with research funding of €3.66 million. The main participating institutions have been Addis Ababa University, Mekelle University and Arba Minch University.

Stephane highlighted a number of funded projects including AGRICAB, ISAC, WHATER, EAU4FOOD, SURE and IST-Africa

The table below provides an overview of the number of projects[3] 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 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 | 68 FP7 projects - ICT (5), 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), Transport (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). |

[3] 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

 

| | |
|---|---|
| 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) |

### *2.3 Ethiopian Success Stories in FP7*

MCIT had invited researchers involved in different thematic areas to present their experiences from FP7 participation:

- CLARA Collaborative Project (Water/Environment), Mr. Teshale Dalecha, Arba Minch University
- AfriCoLeish STREP Project (Health), Dr. Ermiyas Diro, Univeristy of Gondor
- CLUVA Collaborative Project (Environment), Dr. Kumelachew Yeshitla, Ethiopian Institute of Architecture, Building Construction and City Development (EiBAC), Addis Ababa University
- WAHARA Collaborative Project (Environment), Dr. Kifle W/Aregay, Mekelle University

The **CLARA** (Capacity Linked Water Supply & Sanitation Improvement for Africa's Peri-Urgan and Rural Areas) project runs from March 2011 to February 2014. It is focused on strengthening local capacities to adopt, implement and operate integrated water supply and sanitation for small communities in rural areas and peri-urban areas, and contribute to the MDGs and to climate change adaptation in the African water sector. Mr. Dalecha provided an overview of the activities completed to date in terms of field research and setting up the African test sites. It was necessary for Arba Minch University to put new systems in place in relation to administration of the proejct to ensure that accurate timesheets were kept by all researchers working on the CLARA project in order to facilitate the preparation of cost claims. In terms of H2020, the CLARA Consortium are preparing a new proposal to continue the project implementation.

 

The **AfriCoLeish** STREP Project runs from 2013 - 2015 and focuses on Visceral Leishmainiasis (VL), which is a neglected disease in Ethiopia with 4,000 - 5,000 cases per year. The population at risk are primarily the migrant workers in the North West of Ethiopia. The Univeristy of Gondor Hospital is close to the major VL endemic areas in Ethiopia. The Gondor Clinical Trial site was established in 2008 in collaboration with DNDi (Drugs for Neglected Diseases Initiative). This existing relationship lead to University of Gondor, DNDi, London School of Hygiene and Tropical Medicine, Institute of Tropical Medicine Antwerp, Medecins Sans Frontieres and Institute of Endemic Diseases cooperating to submit this proposal. Experiences to date have been positive with the consortium working well. Systems have been put in place to administer the project based on EU guidelines and facilitate reporting.

The **CLUVA** (Climate Change and Urban Vulnerability in Africa) project had six African partners (Gaston Berger University, Sengal; University of Ouagadougou, Burkina Faso; University of Yaounde 1, Cameroon; Ardhi University Tanzania; Addis Ababa University (EIABC), Ethiopia; and CSIR, South Africa) and seven European partners (AMRA Italy as Coordinator, University of Copenhagen, Denmark; University of Manchester, UK; Technical University of Munich, Germany; Helmoltz Centre for Environmental Research, Germany; Euro-Mediterranean Centre for Climate Change Research and Norwegian Institute for Urban and Regional Research). It focused on assessing risks and vulnerabilities of urban infrastructure, population, and ecosystem to climate related hazards and developing innovative approaches to enhance the resilience of African cities against climate change-induced risks. It ran from December 2010 to November 2013. The University of Addis Ababa was invited to participate by Environmental Research Centre Leipzig, Germany. The African cities were selected based on the type of climate, hazards, political stability and local academic support. In the case of Addis Ababa, the primary hazard being addressed was flooding. Some research outputs include a map of flood prone areas in Addis Ababa, road networking of Hotspot areas, Hotspot on manufacturing and storage area, provision and need of ecosystem services assessed and green infrastructure planning to be incorporated into a master plan under development. Challenges identified during the project included communication constraints, Insufficient timeframe during 3 year project and difficulty in understanding EU financial regulations. Based on the outputs from CLUVA, Addis Ababa University is looking to continue the activities with support from DANIDA (Danish Government), DAAD (German Academic Exchange Service) and working in cooperation with CLUVA partners to submit proposals under H2020.

The **WAHARA** (Water Harvesting for Rainfed Africa: Investing in dryland agriculture for growth and resilience) project runs from March 2011 - Feb 2016 and was funded under the FP-AFRICA-2010 Call. In developing innovative appropriate Water Harvesting technologies the emphasis is on technology design, impact, integration, learning and action. The study sites are in Tunisia, Burkino Faso, Zambia and Ethiopia. Mekelle University is WP Leader for WP3 focused on Adaptation and Performance. A number of stakeholders meetings were held and

 

collaborating stakeholders identified (Tigray Bureau of Agriculture and Rural Developments, Relief Society of Tigray and Wukro Saint Mary College, Dept of Natural Resources and Management). The final design of the selected Water Harvesting Technologies (WHT) was undertaken in cooperation with the stakeholders and most of the funding for the construction of the WHT came from the stakeholder institutions. There are a number of areas that are complementary to the WAHARA outputs that Mekelle University are interesting in pursuing under H2020.

### *2.4 Introduction to Horizon 2020*


Stéphane Hogan, Counsellor for Research & Innovation, Delegation of the European Union to the African Union presented Horizon 2020[4], which is the new European Framework Programme for Research and Innovation for 2014 – 2020, with funding of €79 billion. It is one of the 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.

ICT will be incorporated across the three main pillars

- Excellent Science
- Industrial Leadership
- Societal Challenges

Horizon 2020 is 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.

Horizon 2020 Structure

- ***Excellent science (Total Budget of €24.4 billion, ICT Budget c €4 billion)***
  1. The European Research Council
  2. Future and Emerging Technologies
  3. Marie Curie actions on skills, training and career development

[4] Visit http://www.ist-africa.org/home/default.asp?page=horizon2020 and http://ec.europa.eu/research/horizon2020/

 

4. European research infrastructures (including eInfrastructures)

- ***II Industrial leadership (Total Budget of €17 billion, ICT Budget c €8 billion)***
  1. Leadership in enabling and industrial technologies
  2. Access to risk finance
  3. Innovation in SMEs
- ***III Societal challenges (Total Budget of 29.7 billion, ICT Budget c €4 billion)***
  1. Health, demographic change and wellbeing
  2. Food security, sustainable agriculture, marine research & the bio-economy
  3. Secure, clean and efficient energy
  4. Smart, green and integrated transport
  5. Climate action, resource efficiency and raw materials
  6. Inclusive, innovative and secure societies

Stephane 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.

Stephane 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 will be 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*

Paul 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 portal[5] 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 on the portal[6] 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** 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

[5] *http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html*
[6] http://www.ist-africa.org/home/default.asp?page=horizon2020

 

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. 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)

### *2.6 Societal Challenges*

Masahudu Fuseini, CSIR, Science and Technology Policy Research Institute, Ghana 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.

Areas presented included Advancing Active and healthy ageing with ICT: Service robotics within assisted living environments and ICT solutions for independent living with cognitive impairment; Advancing Active and healthy ageing with ICT: risk detection and intervention; Advanced ICT systems services for integrated care and Digital representation of health data to improve disease diagnosis and treatment.

Melissa Plath, UniPID, University of Jyväskylä, Finland 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. Sustainable Food Security focuses on Sustainable food productions system, safe food and healthy diets and global drivers of food security. Programmes of specific African interest that were presented 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.

***Bloeconomy*** 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 also presented ***Societal Challenge 5: Climate action, environment, resource efficiency and raw materials***. 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.

### *2.7 Excellence Science*

Paul Cunningham, IIMC / IST-Africa briefly presented Marie Curie actions on skills, training and career development and eInfrastructures.

Marie Curie Programme facilities individuals to access mobility grants to facilitate career development and up-skilling for research staff. Individual Fellowships incorporates International Outgoing Fellowships and International Inward Fellowships. Fellowship must be applied for by the host European institution through a proposal submitted under an Open Call. Fellowships provide costs of time and a monthly allowance for living expenses for between 1 - 3 years depending on the project accepted.

The Research and Innovation Staff Exchange (RISE) is a new type of exchange of research staff to stimulate transfer of knowledge. This programme can support African researchers to work with the European host organisation for a period of time or for the European researcher to come to work with an African organisation to support setting up or extending research skills. All levels of research staff can undertake short term secondments. A monthly stipend of 2,500 euro is provided within the project funding to cover living expenses while abroad. The person receiving the mobility grant remains part of the staff of their own institution. The proposal is submitted by a European research institution based on a common research project.

### *2.8 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

## *2.9 Leadership in Enabling and Industrial Technology (LEIT)*

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

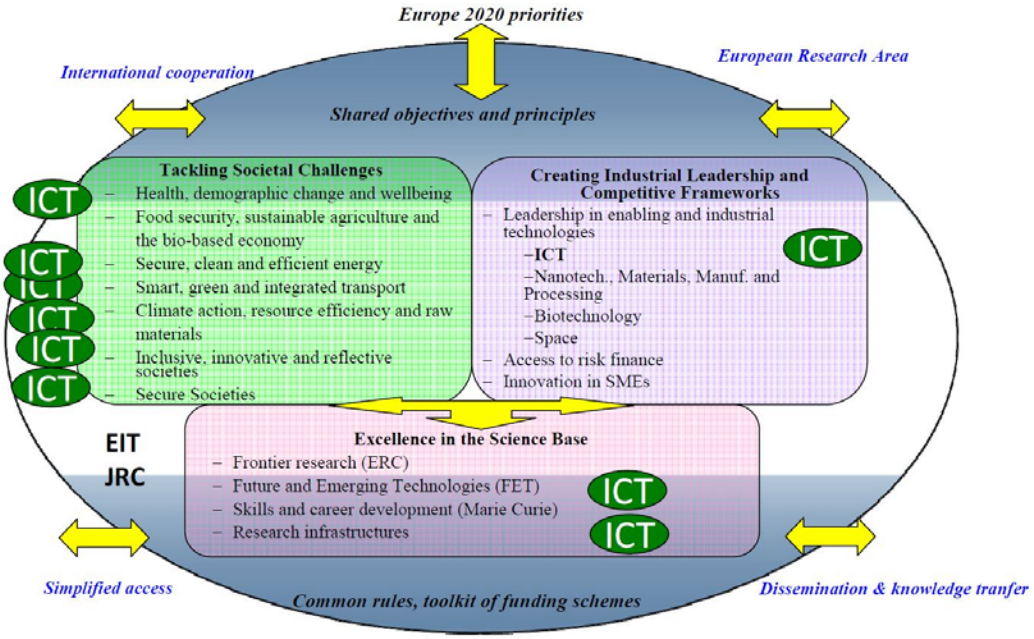


Image provided by DG CONNECT, European Commission

 

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

**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*
  - ICT5 – 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 in terms of the specific areas open for Research project under 2014 Calls for proposals, followed by discussion with the participants.

### *2.10 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 simply 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. 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

There was a general discussion in relation to how 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.

 

### *2.11 Summary of areas of research of participants*

Following the presentation of the different areas within LEIT and Societal Challenges, the participants were invited to present their department and the research areas currently being pursued. The table below summarises the main findings shared during the workshop:

| Organisation | Department | Research areas |
|---|---|---|
| ICT Centre of Excellence | | Localisation; eLearning; Open Source Software; Service management |
| Ministry of Education | Centre for Educational ICT | Cloud Computing; Big Data; Open Source Software; eLearning |
| OSH | R&D | Cloud Computing: Green ICT; Renewable Energy |
| Addis Ababa University | IT Doctoral Programme | Information Retrieval; Language Technologies; Software Engineering; Wireless Communication; IP Networking; Information Systems |
| | School of Information Sciences | eHealth; eGovernment; eLearning |
| Ethiopian Telecom | Network Division | eGovernment; eServices; Content Technologies; Future Internet; Advanced Computing |
| HilCOE | Computer Science / Software Engineering | Applied research and Technology Transfer; eServices; Information System Security; Environment and Green Technology |
| Arba Minch University | Computer Science | Future Internet; Cloud Computing; Big Data; Penetration Testing (Security); eLearning; Language Technologies |
| Jimma University | Computer Science | Language Technologies; IP & Mobile Networking; Internet of Things |
| University of Gondor | Computer Science; Information Science; Information Technology | Information Retrieval; Language Architecture; Wireless Networking; Health Information Systems |
| Haramaye University | Information Sciences | Data Mining; Information Retrieval; eLearning; Cyber Security |
| ICT Business Incubator | Tigray, Addis Ababa | Innovation; Entrepreneurship; Business Development Skills; Capacity Building; Commercialisation |

### *2.12 Conclusion*

The workshop was very interactive in style with participants asking questions and seeking clarification as required. A number of participants had been involved in FP7 and provided insights into their experiences and how they are now better equipped to look at opportunities in

 

Horizon 2020. Clarifications were sought in relation to how to identify European partners and participants were encouraged to look firstly to existing collaborators, bilateral projects and external supervisors for PhD candidates. IPR rights were discussed in detail and the role of the consortium agreement in defining the specific IPR rights agreed among the Consortium. The mechanisms to prepare the project budget was discussed extensively with clarifications provided in relation to personnel costs and allowable subcontracting areas.

In relation to next steps, the participants were encouraged to download the IST-Africa Guide to 2014 Calls under H2020, the individual Work Programmes when they are published on 11 December and identify relevant core areas for research collaboration under 2014 and 2015. Institutions were encouraged to prepare an organisational profile for publication and to identify key European partners based on existing relationships and bilateral projects.

The participants thanked the IST-Africa Consortium for providing the training workshop, which they found to be very informative and confirmed that they will share the knowledge learnt at departmental level within their institutions.

The session chair closed the workshop on behalf of MCIT thanking the participants for attending and thanking Paul and Miriam for providing the training, which was very well received.

## Participants

| Full Name | Institution |
|---|---|
| Fikre Y. Wendimu | OSH/ICT-ET |
| Teshale Dalecha | Arba Minch University |
| Ermias Diro | University of Gondor |
| Tagese Tagele | ICT-BIA Ethiopia |
| Kumelachew Yeshitla | EIABC, Addis Ababa University |
| Michael Shiferaw | JIT-JU |
| Addis Hailu | Arba Minch University |
| Dr. Kelali Adhana | Science & Technology Institute of Tigray |
| Masahudu Fuseini | CSIR, Ghana |
| Kifle W/Aregay | Mekelle University |

 

| | |
|---|---|
| Dr. Nasir Diro | HilCoE |
| Shambel Gudissa | Ministry of Communication and Information Technology |
| Basilios Tilahun | Jimma University |
| Ermias G/Egziabher | Ministry of Communication and Information Technology |
| Solomon Atnafu | Addis Ababa University |
| Ermias Abebe | Addis Ababa University |
| Tewodrose Mulatu | ICT CoE |
| Tesfaye Guta | Haramaya University |
| Dr.Gebeyehu Workneh | Center for Education ICT |
| Ermias Getnet | Ministry of Communication and Information Technology |
| Dr. Leulseged Alemie | Ministry of Communication and Information Technology |
| Abebe Zewdie | Audio Video |
| Stephane Hogan | EU Delegation |
| Michael Tesfaye | Independent |
| Yohannes Kahsay | Ministry of Communication and Information Technology |
| Elias Hailu | Ministry of Communication and Information Technology |
| Getahun Semeon | St. Mary's University |
| Dawit Phillipos | ATA |
| Biruk Feleke | EU AU |
| Seyoum Damtew | Ethio Telecom |
| Abebe Ambaw | Ethio Telecom |
| Melsew Belachew | University of Gondor |
| Damtew Negash | ICT-CoE |
| Ayele Adugna | Ethio Telecom |
| Debebe Sori | Ministry of Communication and Information Technology |
| Tiru Beza | Ministry of Communication and Information Technology |
| Yemisrach H/Mariam | Ministry of Communication and Information Technology |
| Yoseph Zeleke | Ministry of Communication and Information Technology |
| Senait Berihu | Ministry of Communication and Information Technology |
| Assefa Alemayehu | Ministry of Communication and Information Technology |
| Melkamu Hunegnaw | AA Teg. Poly Technic College |
| Mohammed Nuru | B/Dar Incubation Center |
| Mersha Yifiru | Addis Ababa University - School of IS |
| Yohannes Ezezew | University of Gondor |
| Girum Dagnaw | ICT-CoE |
| Melissa Plath | UniPID, University of Jyväskylä, Finland |
| Paul Cunningham | IIMC, Ireland |
| Miriam Cunningham | IIMC, Ireland |
| H.E. Mr Getachew Negash | State Minister, MCIT |