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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

IST-Africa organised a series of Horizon 2020 Workshops in Malawi, Kenya, Ethiopia, Uganda and Burundi during November 2014, specifically focused on raising awareness of opportunities under the ICT-39 Call.

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 17 November 2014. All relevant stakeholders were invited to participate to raise awareness of the opportunity for research cooperation at international level.

This workshop was specifically focused on **ICT-39 International partnership building in low and middle-income countries** with a deadline of 14 April 2015. The aim was to launch a set of targeted collaborative research projects addressing the requirements of end-user communities in developing countries. Specific technological targets could include for example co-design, adaptation, demonstration and validation (e.g. pilots) of ICT related research and innovation in relevant thematic areas addressed by Horizon 2020 including Content Technologies and Societal Challenges.

Activities under this objective should be led by a clearly defined **user need/market opportunity** for the technology being adapted; they should in particular include requirements of developing countries, and where possible, have the potential for wider impact by involving a number of countries from the same region. Proposals should be submitted by a complementary partnership with a particular focus on the participation of relevant developing country innovation stakeholders and end-user community representatives (e.g. relevant public, private, education and research, and societal sector organisations, Innovation Spaces and Living Labs).

The workshop was well attended with 38 participants from Adama Science and Technology University (Department of Computing); Addis Ababa University (IT Doctoral Programme, College of Information Science); Andalem; Arba Minch University; Axsum University; Bahir Dar University; Debre Birhan University (College of Computing); Debre Markos University; European Commission; Gondor University (Institute of Public Health, Department of Health Informatics); Haramaya University (College of Computer Science); Hawassa University (ICT Incubation Centre); ICT CoE; Jimma University; MCIT; Mekelle Institute of Technology and Wollega University (ICT Directory).

Each organisation provided a comprehensive overview of their current research capacity and areas of most interest for International Cooperation. This was very interesting for all participants as it provided an important opportunity for staff members from different institutions across the country to meet and share their experiences. Areas of thematic interest included eAgriculture; Cyber Security; eHealth / mHealth (Telemedicine, Tele-education, Health Informatics, Electronic Medical Records, Maternity Registration System, Radiology Information Systems); eTourism; Energy; eInfrastructure; Internet of Things; Localisation; Technology-enhanced Learning and Wireless technologies.

A number of projects idea were also presented by Arba Minch University (Department of Computer Science) in relation to information retrieval for pastoralists, by Addis Ababa University and Gondor University in relation to eHealth and by Jimma University in relation to Indigenous Knowledge.

2. Workshop Report

2.1 Welcome Address



Dr Leulseged Alemie, Director, Capacity Building in Ministry of Communication and Information Technology (MCIT) invited H.E. Getachew Negash, State Minister of MCIT to open the IST-Africa Horizon 2020 Workshop.

H.E. Getachew Negash welcome the participants to the second Horizon 2020 Workshop hosted by MCIT in Addis Ababa, bringing together participants involved in research at national level. The Ministry joined

the IST-Africa Initiative in 2012 and has actively participated in a number of international meetings in Mauritius and Ireland during 2014 promoting the Ethiopian research community.

H.E. Negash outlined that this second IST-Africa workshop provides stakeholders with the opportunity to learn more about Horizon 2020 - ICT and Societal Challenges. This is important

to boost national research alongside the national research strategy. This strategy has been used to identify and support key research areas.

MCIT is actively supporting the take up of ICT at national level including integration of ICT in all aspects of Ethiopian life. It provides an opportunity to look at Horizon 2020 as a mechanism to support this further. H.E. Negash thanked the organisers and participants for attending this training event, emphasising the importance to identify low cost devices that can support the take up of ICT and exploit the opportunities. H.E. Negash formally opened the workshop and wished the participants a productive day.

Overview of IST-Africa Initiative

Paul thanked H.E. Negash and MCIT for hosting this knowledge exchange workshop and encouraged the participants to ask questions, share knowledge and showcase research capacity in Ethiopia during this interactive workshop.

Paul highlighted the importance to leverage the opportunity of ICT-39 as a dedicated Call focused on Africa to address relevant issues on the ground in Kenya. Areas of importance include

- eHealth
- eAgriculture
- Technology-enhanced Learning
- Government - service delivery.

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

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 ("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).

- 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 is gathering intelligence in relation to the state of research and innovation in Ethiopia. MCIT leverages the IST-Africa Initiative to actively promote the national research community through

- Presentations at International events
- Compiling a chapter on Kenya 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
- 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.

Paul provided an overview of knowledge resources on the IST-Africa portal including access to up to date information on Horizon 2020² (Work Programmes, Guides to Calls for Proposals); Project Repository³ to identify previously funded projects as contributions to the state of the art in specific domains; Organisational repository⁴ to identify potential partners and previous projects that they have been involved; Country profile section to highlight ongoing activities at national level and Paper Repository⁵ with access to papers published through the IST-Africa conference from 2006 which is one of the largest African focused paper repositories and reports.

² <http://www.ist-africa.org/home/default.asp?page=horizon2020>

³ <http://www.ist-africa.org/home/default.asp?page=project-search>

⁴ <http://www.ist-africa.org/home/default.asp?page=org-search>

⁵ <http://www.ist-africa.org/home/default.asp?page=paper-repository>

Participants were encouraged to visit the IST-Africa portal⁶ 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.

Paul took the opportunity to encourage participants to leverage the opportunity that IST-Africa 2015⁷ (Malawi) offers in May to raise awareness of research and innovation being undertaken at national level. Paul highlighted that there are three opportunities to make presentations during IST-Africa 2015 - a) publish research results from ongoing and completed projects; b) write a case study on ongoing activities within a specific domain and c) make an oral presentation if the project results are not sufficiently developed for paper publication at this stage. Participants were requested to raise awareness among their networks and institutions to take advantage of this opportunity.

Paul summarised the impact that has been achieved through IST-Africa as including an increase in African participation under FP7; increase in publications through IST-Africa proceedings; knowledge sharing between Europe and Africa; actively supporting policy dialogue between European Commission, African Union Commission and other key stakeholders; providing evidence to support African-focused Calls for Proposals under Horizon 2020 including ICT-39 Call; access to knowledge repositories and reports.

Ethiopian organisations secured more than **€3.66 million** in research funding under FP7 through successful participation in **23** projects in FP7 in the areas of: ICT (2 projects), Environment (8 projects), Health (5 projects), KBBE (3 projects), Space (2 projects) and SSH (3 projects). In addition 24 individual researchers from Ethiopia received through Marie Curie Actions.

Participating national partners included: Geosas Consulting Service PLC (4 projects); Addis Ababa University (4 projects); Mekelle University (3 projects); Ministry of Communication and Information Technology (2 projects); Arba Minch University (AMU) (2 projects); Union Africane (2 projects); and with **one project each**: Wubet le Arba Minch Micro and Small Scale Trade and Industry Association; University of Gondar; Arba Minch Water Supply and Sewerage Enterprise; Arba Minch Health Center; Arba Minch Town Egnan New Mayet Compost Production Youth Association; Arba Minch Town Municipality; Geological Survey of Ethiopia; Forum for Social Studies; Ethiopian Economics Association; Ethiopian Health and Nutrition Research Institute; and Ministry of Health.

European Coordinators included: Vlaamse Instelling Voor Technologisch Onderzoek N.V., Belgium (3 projects); Stichting dienst Landbouwkundig Onderzoek, Netherlands (3 projects); IIMC International Information Management Corporation Limited, Ireland (2 projects); and with **one project each**: Universitaet fuer Bodenkultur Wien, Austria; Jyvaeskylaan yliopisto-

⁶ <http://www.ist-africa.org/home/default.asp?page=reports>

⁷ <http://www.ist-africa.org/Conference2015>

University of Jyväskylä, Finland; Bureau de Recherches Géologiques et Minières, France; Institut National de la Recherche Agronomique, France; AMRA - Analisi e Monitoraggio del Rischio Ambientale Scarl, Italy; Stichting Deltares, Netherlands; Vereniging Voor Christelijk Hoger Onderwijs Wetenschappelijk Onderzoek en Patientenzorg, Netherlands; Nasjonalt Kunnskapssenter for Helsetjenesten, Norway; Sociedad para el Fomento de la Innovación Tecnológica S.L. - Innovatec, Spain; Universitat Autònoma de Barcelona, Spain; Drugs for Neglected Diseases Initiative Foundation *DNDI, Switzerland; Infoterra Limited, United Kingdom; King's College London, United Kingdom; Liverpool School of Tropical Medicine, United Kingdom and The Secretary of State for Environment, Food and Rural Affairs, United Kingdom.

One hundred and forty nine (**149**) European and Associated Country organisations partnered with Ethiopia organisations in successful FP7 projects. This provides a good network for future collaboration under Horizon 2020. The most prominent organisations that were involved in multiple projects included: Stichting dienst Landbouwkundig Onderzoek, Netherlands (5 projects); Vlaamse Instelling Voor Technologisch Onderzoek N.V., Belgium (4 projects); Internationales Institut fuer Angewandte Systemanalyse, Austria (3 projects); JRC -Joint Research Centre- European Commission, Belgium (3 projects); Centre de Cooperation International en Recherche Agronomique pour le Developpement, France (3 projects); Institut National de la Recherche Agronomique, France (3 projects); Universiteit Twente, Netherlands (3 projects); Gisat S.R.O., Czech Republic (2 projects); Københavns Universitet, Denmark (2 projects); Technische Universitaet Muenchen, Germany (2 projects); IIMC International Information Management Corporation Limited, Ireland (2 projects); Het Koninklijk Instituut Voor de Tropen, Netherlands (2 projects); Institutt for Fredsforskning Stiftelse, Norway (2 projects); Agencia Estatal Consejo Superior de Investigaciones Cientificas, Spain (2 projects); Deimos Imaging S.L., Spain (2 projects); Infoterra Limited, United Kingdom (2 projects); Natural Environment Research Council, United Kingdom (2 projects); and University of Leeds, United Kingdom (2 projects). The full list of all European partner organisations is available in the IST-Africa study entitled "Guide to Bilateral & Multilateral Cooperation Agreements Supporting ICT/STI-related Activities in IST-Africa Partner Countries, January 2014, ISBN: 978-1-905824-42-7⁸.

This provides an important baseline for cooperation under Horizon 2020.

2.2 Introduction to Horizon 2020

Dr Leulseged Alemie, Ministry of Communication and Information Technology (MCIT) presented an overview of Horizon 2020⁹, which is the new European Framework Programme for Research and Innovation for 2014 – 2020, with funding of €80 billion. It is one of the largest

⁸ <http://www.ist-africa.org/home/default.asp?page=reports>

⁹ Visit <http://www.ist-africa.org/home/default.asp?page=horizon2020> and <http://ec.europa.eu/research/horizon2020/>

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

Horizon 2020 addresses 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.



Dr Leulseged highlighted that Horizon 2020 is 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 (with partners from 3 European Countries) addressing the challenges published in the Work Programme. ICT-39 is a specific call focused

on collaboration between Africa and Europe. There are a lot of resources available to support institutions to prepare proposals on the IST-Africa portal¹⁰ - access to Work Programmes, Guides to proposals under 2014 and 2015 as well as the European Commission Participants Portal¹¹ and Horizon 2020¹²

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)

¹⁰ <http://www.ist-africa.org/>

¹¹ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>

¹² Horizon 2020 website <http://ec.europa.eu/research/horizon2020>

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)

Dr Leulseged summarised differences between FP7 (which finished in 2013) and H2020 (which runs from 2014 - 2020)

- H2020 is more holistic in focus addressing all research and innovation funding with a stronger focus on Societal Challenges and Innovation
- **Work Programme Structure** - Under H2020 Work Programmes (WP) are published for a two year duration to allow stakeholders to plan proposal design sufficiently in advance. Each thematic areas has its own Work Programme but ICT is a horizontal component within Societal Challenges, LEIT and Excellent Science The WP 2014 - 2015 was published on 11 December 2013 and updated for 2015 in July 2014.
- **Funding Levels** - under H2020 organisations receive up to 100% reimbursement of costs for research activities (Research and Innovation Grants) and up to 70% reimbursement of costs for Grants for Innovation (large scale pilots to prepare for commercialisation).
- **H2020 Funding Instruments: *Grants for Research and Innovation*** (new knowledge, applied research, technology development and integration, testing and validation on a small scale prototype); ***Grants for Innovation*** (closer to market, prototyping, testing, demonstrating, piloting, large-scale product validation and market replication); ***Grants for coordination and support action*** (do not undertake research, support coordination of research and activities to the Programme)
- **Indirect Costs (Overheads)** - Under FP7 there were different levels of reimbursement of overheads depending on the instrument and organisational type. Under H2020, there is now a flat rate of 25% reimbursement of direct costs as a contribution towards overheads.
- **No Negotiation phase in H2020:** proposals are now judged as submitted (no timeframe for improvements, changes in partners or budget). As a result if there are inconsistencies, budgetary problems or insufficient justification of the approach, the proposal will receive a

lower score and unlikely to be funded. It is critical that all partners are sure that they can undertake the project work and have the necessary internal support when submitting the proposal as part of a consortia.

- **Proposal Structure & Page Length:** Each funding instrument has specific proposal template that needs to be followed. Part B is now divided into 2 sections for upload via the Participants portal - Section 1 - 3 (Excellence, Impact, Implementation) and Section 4 & 5 (Members of the Consortium, Ethics and Security). There is a **fixed number of pages** for each instrument - Research and Innovation (Part B Section 1 - 3) max of 70 pages, CSA - max of 50 pages. If the proposal is longer than the allowed pages, the extra pages are marked in red and are not considered in the evaluation process.

2.3 Snap Shot of Societal Challenges and LEIT in Horizon 2020

Dr Leulseged 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 and Guide for 2015 Calls for Proposals in Horizon 2020. This guide lists each thematic area, deadlines and links to the Participants portal¹³ for more detailed information. It can be downloaded from

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

http://www.ist-africa.org/home/files/IST-Africa_Guide_2015Calls_Horizon2020.pdf

IST-Africa has a specific section focused on Horizon 2020¹⁴, 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. Marie Curie offers an important opportunity to support capacity building. The next deadlines for RISE (Research and Innovation Staff Exchange) is 28 April 2015 and Individual Fellowships on 10 September 2015.

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)

¹³ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>

¹⁴ <http://www.ist-africa.org/home/default.asp?page=horizon2020>

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 eight 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)
7. Inclusive, innovative and reflective societies (Digital inclusion; social innovation platforms; e-government services; e-skills and e-learning; e-culture) and
8. 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

2.4 Horizon 2020 - Findings from initial Calls

Dr Stephane Hogan, Counsellor for Research and Innovation, European Commission (DG Research and Innovation) presented EU Research and Innovation Policy in the context of opportunities for international cooperation. Dr Stephane outlined that while the initial Calls for H2020 have closed and the reviews have been undertaken, there is still limited information about the outcomes of the 2014 Calls.

Dr Stephane provided an overview of EU Support for Research and Innovation mechanisms:

- EU budget 2014 - 2020 - 2 areas have increased: R&I and Higher Education
- Horizon 2020 - €80 billion - offers many opportunities for research cooperation through Calls for Proposals across broad areas of research based around certain challenges.
- ACP Science and Technology Programme €20 million in 2013 funded by EU and implemented by ACP Secretariat
- Africa Union Research Grants for Collaborative research projects involving African and European



Dr Stephane outlined the rationale for international cooperation in R&I based on mutual benefit. It is important to remember that Horizon 2020 is not a development aid programme or a bilateral co-operation programme. It is focused on global challenges, open to international cooperation. By working in cooperation across borders it is possible to strengthen excellence, attractiveness and competitiveness. It is

necessary to encourage cooperation between Europe and Africa and across Africa.

ICT is horizontal, embedded across all research themes as an enabler. Dr Stephane highlighted opportunities under ERC Grants and Marie Curie Individual Fellowships under Excellent Science.

International cooperation is crucial to address many H2020 objectives - there is a principle of general openness as well as targeted actions to implement a more strategic approach to international cooperation, for instance resulting from priorities set by High Level Policy Dialogue (HLPD) between the EU and Africa (AU and EU Commissions and Member States).

Dr Stephane provided an overview of the basic principles for calls for proposals and evaluations:

- Horizon 2020 priorities and mechanisms are defined by the European Union
- Calls for Proposals are prepared by the European Commission, based on priorities and extensive consultations (Advisory Groups and Programme Committees representing the EU Member States) including the HLPD
- At the EC, DG Research and Innovation has a Directorate for International Cooperation to ensure that this dimension is addressed
- Project consortia and proposals are entirely self-organised - Each consortia must have a minimum of 3 European partners from 3 different EU countries, consortium decides on the

size and composition of partnership as well as duration of project, overall budget (within limits) and distribution of funds

- Evaluation of proposals are undertaken by panels of individual experts based on Excellence, Impact and Quality of Efficiency of the Action. The general success rate is between 15 - 20% of proposal submitted. African participants are fully funded in the same way as European partners. Reimbursement of research costs is provided at 100% with a 25% reimbursement of direct costs towards overheads.
- All information is available on the Participants portal

Dr Stephane summarised the practical aspects of H2020 - Researchers should analyse the call texts as soon as possible, be proactive to find European partners, need to invest time and energy preparing proposals and leverage networks that support participation such as IST-Africa and CAAST-Net Plus. It is important to identify strengths and weaknesses, leverage bilateral research collaborations with European countries and institutions. Successful participation needs commitment from researchers and support from research and government. In the case of European institutions there is often dedicated resources allocated to support participation in Horizon 2020 - raise awareness within the institution of upcoming calls and provide support preparing proposals.

Under FP7 there were 45 countries involved from Africa, with 1315 participations in 565 projects and funding of over €178 million.

2.5 ICT-39

Paul Cunningham, IIMC/IST-Africa presented the ICT-39 Call, which closes on 14 April 2015. The aim of ICT-39 is to launch a set of targeted collaborative research projects addressing the requirements of end-user communities in developing countries. Specific technological targets could include for example co-design, adaptation, demonstration and validation (e.g. pilots) of ICT related research and innovation in relevant thematic areas addressed by Horizon 2020 including Content Technologies and Societal Challenges.

Activities under this objective should be led by a clearly defined **user need/market opportunity** for the technology being adapted; they should in particular include **requirements of developing countries**, and where possible, have the **potential for wider impact by involving a number of countries from the same region**. Proposals should be submitted by a complementary partnership with a particular focus on the participation of relevant **developing country innovation stakeholders and end-user community representatives** (e.g. relevant public, private, education and research, and societal sector organisations, Innovation Spaces and Living Labs)

Proposals must demonstrate how end user requirements were identified. Projects will be sector in focus using ICT as a horizontal enabler. The consortium needs to decide if existing results

from previous research can be tested on a wider basis or testing in a different country. It is important to demonstrate who will represent end-user communities in the project implementation, how is the needs assessment going to be undertaken and what software is relevant (what existing research outputs can be leveraged and what new research needs to be undertaken). It is necessary to start from a sectoral challenge that effects multiple countries in Africa that can be addressed within one project. There are challenges in different environments even within the one country can be very complex as there is different infrastructure available. The proposal needs to explain why certain countries were selected for inclusion in the intervention.

The expected impacts outlined in the Work Programme include:

- Development of relevant technology responding to specific needs and conditions of the target country.
- Reinforced international dimension of the ICT and Innovation aspects of Horizon 2020 and a higher level of international cooperation with low and middle income countries in ICT R&D and Innovation, focusing on areas that are beneficial to the target countries/region

Thematic priority areas for Ethiopia include: eHealth, eAgriculture and Environment.

Discussion re opportunities under ICT-39 for Ethiopia

Following an interactive discussion among the stakeholders the following thematic areas were considered to be important in the context of ICT-39: eHealth / eHealth; eAgriculture; Natural Language Processing and Technology enhanced Learning.

In terms of eHealth, there are a number of key research areas identified including Health Information Systems/Electronic Health Records; Maternal, Newborn and Child Health (MNCH); Health diagnosis and Telemedicine; prevention and treatment of Malaria, TB, diabetes and tropical diseases; Mechanisms and alarms to deal with compliance issues (remembering to take medication, attend clinic etc); indigenous knowledge system and Networks to support specific patient groups.

In terms of eAgriculture key research areas identified including supporting the pastoralists and a cloud computing model for the Agricultural community.

The participants then selected one of the health challenges and undertook a brainstorming and group work to identify the key stakeholders that should be consulted, how to address end-user engagement and build an implementation team for inclusion with a wider consortia for international cooperation. The participants found this to be useful and helpful exercise to assist in starting the process of further developing concepts into proposal ideas.

2.5 Participation Rules and Instruments under Horizon 2020

Senait Berihu, Ministry of Communication and Information Technology, Ethiopia 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-28 Member States, Associated Candidate Countries, Associated States and International Cooperation Partner Countries. Legal entities from all African States 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.

H2020 is designed to be cross-border in focus 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.

2.6 Preparing a Proposal

Miriam Cunningham, IIMC/IST-Africa presented an overview of steps to consider when preparing a Horizon 2020 Proposal.

It is necessary to read the **Work Programme**¹⁵ very carefully and identify areas of interest within the 2015 Calls for Proposals. As Dr Leulseged has highlighted earlier, IST-Africa has prepared a guide to 2014 and 2015 Calls listing each thematic area, deadlines and links to the Participants portal¹⁶ for more detailed information. It can be downloaded from

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

http://www.ist-africa.org/home/files/IST-Africa_Guide_2015Calls_Horizon2020.pdf

Based on the available information, prepare a departmental roadmap, identify relevant partners to cooperate with, identify research areas of interest to your organisation and be open to how this fits within a global research project.

It is both expensive and time consuming to write a proposal. It is necessary to identify previous projects funded within a specific area both at national and European level to identify and write up the current state-of-the-art. It is then necessary to show how the proposal being submitted

¹⁵ Visit <http://www.ist-africa.org/home/default.asp?page=horizon2020> and

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

¹⁶ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>

for funding goes beyond the current state-of-the-art. Proposals should be co-designed by the partners who are going to work together in the research project.

As Senait has outlined, in the case of ICT-39 it is necessary for the consortium to have legal entities from different EU or Associated Country Member States as well as a number of African partners. It is always better to start with organisations that you have already met (through participation at international conferences, workshops, external supervisors for PhD students) if possible or have formal or informal cooperation agreements in place. As part of general research, it is necessary to look at projects previously funded in a thematic area and identify organisations that have previously participated. It is necessary to prepare an organisational profile that outlined track record, research areas and expertise outlining thematic areas of interest.

The role of each partner must be clearly articulated and illustrate how their expertise is relevant and complementary. As part of the project planning, each organisation should clearly identify the role most appropriate based on human resources, expertise and project focus

- Technical partner - Development role - clearly identify focus and level of cooperation with other technical partners
- Demonstration partner - participation in pilots and user requirements
- Dissemination partner - mechanisms to share results outside the consortium

Having identified the relevant Call and deadline, it is then necessary to carefully identify the **funding instrument** that is open (Grant for Research and Innovation; Grant for Innovation or Support and Coordination Actions) and download the correct **proposal template** from the Participants portal. Senait has outlined the specific activities that can be funded under each instrument.

As outlined in the Guide for Participants each instrument has two parts:

- Part **A** - Administrative Details related to partners (beneficiaries and proposed budget)
- Part **B** - Technical Annex

In the case of **ICT-39** the funding instrument is **Research and Innovation Actions**. Miriam outlined the five main sections for this instrument and the content required:

- Section 1: **Excellence** - Objectives, Relation to the Work Programme, Concept & Approach; Ambition
- Section 2: **Impact** - Expected Impacts, Measures to maximise impact - a. Dissemination & Exploitation of Results; b. Communication activities
- Section 3: **Implementation** - Work Plan (Work Packages, deliverables & milestones), Management structure and procedures, Consortium as a whole, Resources to be committed
- Section 4: **Members of the Consortium** - each partner to provide profile using template provided to facilitate judgement of operational capacity

➤ Section 5: **Ethics & Security**

As Dr Leulseged has already highlighted **Part B Section 1 - 3** must be a **maximum of 70 pages in length** and the Part B is now uploaded as two separate files by the Coordinator in the Participants portal - File 1 - Part B Sections 1 - 3 and File 2 - Part B Section 4 & 5.

Having identified the relevant Call and instrument, the Consortium partners will then split the grant proposal writing among the partners. It is advisable to agree the Work plan structure (Section 3) first. This will then facilitate each Work Package Leader to outline the proposed tasks, agree them with the partners and co-design a detailed description outlining the work to be undertaken with each task. With the work plan structure in place, it is then possible to starting writing the objectives, relevance to the work Programme, concept and approach (Section 1). Based on agreeing the work plan structure and objectives, partners can then start writing the Impact section (Section 2). Each individual partner should prepare an organisational profile using the template provided for inclusion in Section 4.

Miriam then presented an overview of steps to consider when preparing the budget.

All funding under Horizon 2020 for research proposals are **grants**, which is based on reimbursement of actual costs based on the budget submitted and actual eligible costs incurred with no profit element.

Eligible Cost Categories

- **Personnel Costs** - reimbursement of costs based on salary from payroll - actual cost to the institution based on normal salary cost plus social security charges prior to the grant. Calculation of personnel costs are based on calculating person time required for each task in the Work Programme. It is necessary to keep timesheets for actual work undertaken that are signed by the Head of Department each month and put on file.
- **Subcontracting** (work undertaken by third parties outside project partners) - under a Grant agreement it is not allowed to subcontract project management or core project work. Eligible activities include printing of dissemination materials, room hire and catering for meetings and workshops, design of website if partners cannot do this themselves.
- **Other direct costs** include Travel costs and subsistence allowance (based on normal practises for the institution) - need to calculate the number of meetings / dissemination at conferences and work out the budget based on costs of flights and normal per diem rate for accommodation and subsistence. The European Commission has a maximum amount that can be reimbursed as per diem in each city - it is necessary to check this.
- Essential equipment is reimbursed based on depreciation of time when used for project requirements. Any equipment requests need to be carefully considered and well justified. It is also necessary to consider that the partner organisation will be paying for the equipment up front from the supplier and receiving back reimbursement on a yearly basis through the

cost claim using the depreciation model based on actual time the equipment was used for project activities.

The partners in the consortia will agree the administrative coordinator (who interacts with the European Commission on behalf of the partners in relation to submitting the proposal, finalising the grant agreement, distributing the funding and general project management) and the technical coordinator (responsible for technical quality of the project deliverables) based on the skills, track record and expertise of the partners. It is advisable that the administrative coordinator has an existing track record managing Framework Programme projects.

Each partner must provide the administrative coordinator with their organisational Participants Identification Code (PIC), which is a unique number for each legal entity who has a profile on the Participants portal. If your organisation does not have a PIC¹⁷, it is necessary to set this up in order to be a beneficiary of a grant. The PIC application process must be undertaken by the authorised representative in your organisation so this needs to be planned in advance in sufficient time.

It is good practise to provide the co-ordinator with a signed letter from a senior representative from your organisation confirming that your department has approval to participate in this submission and has the necessary resources to undertake the project work if selected for funding.

Miriam provided a brief overview of basic Intellectual Property Rights as this needs to be considered when preparing a proposal. It is necessary to outline an initial strategy for IPR, access right to pre-existing knowledge necessary for the project work and exploitation of results with the proposal.

2.7 Evaluation of Proposals

Miriam provided an overview of the evaluation process.

When preparing for the evaluation of a Call, the European Commission puts together a panel of independent thematic experts to evaluate the proposals submitted.

Each proposal is provided to a number of experts who individually evaluate the proposals based on the agreed criteria and submit their individual report via an online Evaluation system.

The evaluation criteria for proposals are closely aligned with the proposal structure:

1. Excellence (Threshold 3/5)

- Clarify and pertinence of the objectives
- Credibility of the proposed approach
- Soundness of the concept

¹⁷ <http://ec.europa.eu/research/participants/portal/desktop/en/organisations/register.html>

- Extent that the proposed work is ambitious, has innovation potential and is beyond the state-of-the-art (e.g. ground breaking objectives, novel concepts and approaches)

2. Impact (Threshold 3/5)

- Aligned with expected impact listed in the Work Programme
- Enhancing Innovation Capacity and Integration of new knowledge
- Strengthening competitiveness and growth of companies by developing innovations meeting needs of global markets
- Effectiveness of the proposed measures to exploit and disseminate the project results (Including management of IPR), to communicate the project and manage research data where relevant

3. Quality and Efficiency of the Implementation (Threshold 3/5)

- Coherence and effectiveness of the work plan including appropriateness of the allocation of tasks and resources
- Complementarity of the consortium partners
- Appropriateness of the management structure and procedures (communication flows, assignment of responsibilities, quality controls, conflict resolution strategy etc) including risk and innovation management

After submission of the individual Evaluation Reports, there is then a discussion among the experts who evaluated the proposal and a combined Evaluation Summary report is prepared. This Evaluation Summary Report is sent to the administrative coordinator following the evaluation process outlining the feedback provided on each criterion and the associated score.

2.8 Next Steps

The participants felt that they learned a lot about research ongoing at national level as well as opportunities to collaborate under H2020 and ICT-39.

Each participant was requested to share the materials provided during the workshops with their colleagues and hold a departmental meeting to agree next steps in relation to preparing concepts for proposals.

Having identified thematic areas of most relevance, each department should then engage with European partners that they have links with (either as a result of external PhD supervisors, meetings during conferences or personal contacts) and discuss how they can cooperate to co-design a proposal for submission under ICT-2015.

Paul asked the participant to provide MCIT with up to date profiles for publication on the IST-Africa portal for wider awareness raising and to keep MCIT up to date in relation to progress. .

Dr Leulseged thanked the presenters and the participants for their active engagement in this workshop. MCIT is working with Higher Education Institutions to promote and lead ICT research and Innovation development at national level. MCIT is leveraging the partnership with IST-Africa to support national participation in future Calls including ICT-39.

Participants



Name of participant	Institution
Mohammed Kemal	Adama Science & Technology University
Dr. Solomon Atnafu	Addis Ababa University
Siraje Ademe	Addis Ababa University
Dr. Solomon Teffera	Addis Ababa University
Ermias Abebe	Addis Ababa University
Micahel Tesfaye	Andalem
Tigist Seyum	Arba Minch University
Kemal Sultan	Arba Minch University
Tulu Tilahun	Arba Minch University
Induraj Ramanurthy	Arba Minch University
Solomon G/mariam	Axsum University
Abinew Ali	Bahirdar University
Gente Mamo	BDU
Bizuayehu Gent	DebreBirhan University
Gashaw Adan	DebreMarkos University
Stephane Hogan	European Commission
Dr. Abebaw Gebayhu	Gonder University
Mihiretu Mola	Gonder University
Atinkut Alamirriaw	Gonder University
Berahanu Mengiste	Haramaya University
Andargachew Mekonenen	Hawassa University
Tewodros Mebratu	ICTCOE
Paul Cunningham	IIMC/ IST-Africa
Miriam Cunningham	IIMC/ IST-Africa
Salahadin Seid	Jimma University

Basiliyos Tilahun	Jimma University
H.E. Getachew Negash	MCIT
Dr. Leulseged Alemie	MCIT
Senait Berihu	MCIT
Yosef Zeleke	MCIT
Gemechu Kenehi	MCIT
Gashaw Iulie	MCIT
Biratu Geresu	MCIT
Tesfaye Edtta	MCIT
Kifle Berhan	MCIT
Mesfine Abate	MCIT
Kindie Alebachew	Mekelle University
Abdi Sitota	Wollega University