HORIZON 2020

IST-AFRICA 2016 – 2017
Grant Agreement No. 723240

D1.1 IST-Africa Horizon 2020 Workshop, Gaborone, Botswana, 17 November 2016

Workshop Report prepared by IIMC and DTPS, Ministry of Transport and Communications, Botswana

Deliverable D1.1 Report on IST-Africa Events
Version 1
Date: 17 November 2016
Document ref: IST-Africa_Horizon2020_Report_Botswana_171116.doc

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

DTPS, Ministry of Transport and Communications, as the IST-Africa Initiative partner in Botswana, organised the IST-Africa Horizon 2020 Workshop in Travel Lodge, Gaborone on 17 November 2016. 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** Call with a deadline of 25 April 2017. The aim is to launch a set of targeted collaborative Innovation Actions 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 more than 85 participants from University of Botswana (Faculty of Science, Faculty of Engineering and Technology, Department of Computer Science, Department of Environmental Science, Mobile Data Labs), Botswana University of Agriculture

and Natural Resources (Department of Animal Sciences and production, Department of Engineering, Department of Economics and Extension), Institute of Development Management, ABM - University College, Botswana Accountancy College (BAC), BIPA, BCET, CEDA, National Museum, Botswana Tourism Organisation (BTO), BOCRA, Limkokwing University of Creative Technology, Ministry of Agricultural Development and Food Security, Ministry of Transport and Communications, Department of Research Science and Technology, Department of Information Technology, Department of Postal and Communications, National Vet Lab, Roads, TPS, Department of Tourism, AgriBusiness Botswana, Centre for Applied Research

Each organisation presented their current research capacity and areas of most interest for International Cooperation. This knowledge exchange at national level was very interesting for the participants as they were able to identify potential synergies in relation to future research.

Areas of thematic interest include eAgriculture & Food Security; e(m)Health; Water Resources, Energy and Tourism.

2. Workshop Report

2.1 Introduction & Welcome Address

Delight Thebeetsile, DTPS, Ministry of Transport and Communications, invited one of the participants to open the workshop with a prayer.

Delight then invited Mr John Vassiliadis, the Acting Permanent Secretary to deliver the Welcome Address on behalf of the Permanent Secretary, Ministry of Transport and Communications.

Mr Vassiliadis confirmed that it was a great honour and pleasure to officiating at this important workshop that facilitated the bringing together representatives from academic, research and innovation industry and the ICT sector and thanked the participants for attending, despite their busy schedules. The H2020 Training Workshop was hosted by MTC in partnership with IST-Africa with the aim to advance research and Innovation Capacity in Botswana. In this context the Ministry brought together researchers and ICT practitioners to discuss ICT Research and Innovation issues, and by so doing is creating a platform for knowledge exchange along with sharing experiences. It is important to share success stories as well as any challenges encountered so that mitigation plans can be devised.

Mr Vassiladis outlined that the workshop is being undertaken under the mentorship of IST-Africa and that he was very happy to welcome Miriam Cunningham, the IST-Africa coordinator who will provide the training today in cooperation with Phodiso Phole, DTPS. This workshop provides a platform to learn more about the ongoing activities supported by IST-Africa, Calls for proposals open under Horizon 2020 as a research and innovation funding mechanism and benefits and opportunities available.

Mr Vassiladis provided a brief background on the IST-Africa Initiative, which is a strategic partnership between IIMC Ireland and Ministries and National Councils responsible for ICT in 18 African Member States of which Botswana has been an active member for more than 10 years. IST-Africa receives co-funding from the European Commission under Horizon 2020 to support:

- Strategic engagement with Africa focused on International Research, Innovation and Policy Cooperation
- Knowledge sharing, capacity building and skills transfer between IST-Africa Partner Countries
- Collaborative Innovation, Entrepreneurship and Adoption of Living Labs Methodologies
- ICT and Innovation aspects of the Africa - EU Strategic Partnership
- Awareness of African Research Capacity, cross-border cooperation & participation in H2020
- Establishment of National Contact Points (NCP) in IST-Africa Partner Countries

It also increases awareness within the IST-Africa consortium of the importance to align ICT research and innovation priorities with national priorities such as the National Development Plan with the objective of strengthening socio-economic impact. This is very important in the context of Botswana where there is significant effort being undertaken to work around the clock to diversity its economy. As a country Botswana has relied on farming and mineral resources for decades, which can no longer effectively sustain the economy. Therefore this is the time to explore other means of sustenance. As part of the global village, Botswana has since analysed the global trends and thus embracing research, development and innovation (RDI) recognizing it as one of the key drivers to economy growth.

It is within this context that DTPS through IST-Africa organised this workshop to focus our debate on ICT Research & Innovation as ICT evolution is catalysed by research and innovation. Amongst its national strategies, Botswana is aiming at “establishing herself as an ICT regional hub with highly competitive service sector in the global scale” and to realise that vision, research & innovation is critical. To advance our research and innovation industry it is important that Botswana fully leverages the opportunities being promoted by IST-Africa is offering us, which includes opportunities for International Research Cooperation through Horizon 2020. Horizon 2020 is the new European Framework Programme for Research and Innovation for the

period of 2014 – 2020. Research institutions can participate as part of International Consortia with partners from Europe, to apply for research and innovation funding as part of an international project.

Although Botswana has benefited from participation in FP7 and Horizon 2020, we are still lagging behind compared to other African countries who have leveraged this research and innovation funding more. IST-Africa has supported capability building locally through training, workshops and conferences and have proved to be successful with overwhelming turnouts. It is now necessary for organisations undertaking research and innovation to more actively engage with Calls for Proposals open under Horizon 2020, provide updated organisational profiles that illustrate their track record for publication, leverage the comprehensive reports prepared and published by the IST-Africa Consortium to learn more about activities ongoing in other African Member States, and nominate a focal point for DTPS to engage with to disseminate opportunities and provide results for publication.

Mr Vassiladis congratulated the DTPS for working tirelessly in organising this Horizon 2020 Training workshop on behalf of the Ministry to support awareness raising of opportunities among the ICT industry and the country at large.

In conclusion Mr Vassiladis wishes the participants to a fruiitful day with good deliberations and lead to taking full advantage of the opportunities offered by Horizon 2020 to grow the ICT industry in Botswana and impact significantly on the country's economy.

Delight thanked Mr Vassiladis for presenting the welcome speech on behalf of the Permanent Secretary who is currently travelling on official business and invited Miriam Cunningham, IIMC/ IST-Africa to provide more details on the focus of the training workshop.

Overview of IST-Africa Initiative

Miriam thanked DTPS and MTC for hosting this knowledge exchange workshop and encouraged the participants to ask questions, share knowledge and showcase research capacity in Botswana during this interactive workshop. Miriam thanked the Acting PS for opening the workshop and for participating.

Miriam 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 Namibia and other Sub-Saharan African countries. Namibian organisations have a track record of cooperation with European institutions that can be leveraged.

Miriam 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 in18 African Member

States[1]. IST-Africa is supported by the European Commission and African Union Commission with co-funding under Horizon 2020.

The IST-Africa Initiative facilitates and supports:

- Strategic engagement with Africa focused on International Research, Innovation and Policy Cooperation;
- Knowledge sharing, capacity building and skills transfer between IST-Africa Partner Countries;
- Collaborative Innovation, Entrepreneurship and Adoption of Living Labs Methodologies;
- 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

DPTS is gathering intelligence in cooperation with national stakeholders in relation to the state of research and innovation in Botswana. DTPS leverages the IST-Africa Initiative to actively promote the national research community through

- Presentations at International events
- Compiling a chapter on Botswana as part of the overall IST-Africa Study on ICT Initiatives and Research capacity; Innovation Spaces and Living Labs; and Bilateral and Multilateral Cooperation
- Publishing articles on ongoing and emerging ICT and Innovation activities in Kenya 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

[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 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).

- 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.

Miriam highlighted the importance to clearly identify research capacity and track record within departments in national institutions and to ensure that this is highlighted in chapters on Botswana being compiled by DTPS as input to public reports published by IST-Africa and disseminated widely. It is important to identify previous research that can be leveraged in future projects and why it would be beneficial as evidence of relevance and knowledge of the state-of-the-art in a national and regional context.

Miriam provided an overview of knowledge resources on the IST-Africa portal including access to up to date information on Horizon 2020[2] (Work Programmes, Guides to Calls for Proposals); Project Repository[3] to identify previously funded projects as contributions to the state of the art in specific domains; Organisational repository[4] to identify potential partners and previous projects that they have been involved; Country profile section to highlight ongoing activities at national level and Paper Repository[5] with open access to papers published through the IST-Africa conference from 2006 which is one of the largest African focused paper repositories. IST-Africa reference documents[6] that should be leveraged in the context of ICT-39 proposal generation include:

- IST-Africa Guide to National ICT Initiatives and Research Capacity, January 2016, Published by IIMC, ISBN No: 978-1-905824-47-2, which provides Insight into environment, ICT initiatives, research and innovation priorities and capacity;
- IST-Africa Report on Innovation Spaces and Living Labs, January 2016, Published by IIMC, ISBN No: 978-1-905824-49-6, which provides a mapping of operational Innovation Spaces and Living Labs supporting ICT and Innovation related activities in IST-Africa partner countries;
- IST-Africa Report on ICT and Innovation-related Bilateral & Multilateral Cooperation Initiatives, January 2016, Published by IIMC, ISBN No: 978-1-905824-48-9, which provides an Overview of ICT and Innovation related activities supported through bilateral and multilateral cooperation in IST-Africa partner countries
- Horizon 2002 Guides[7]

Participants were encouraged to visit the IST-Africa portal[8] and download relevant papers and reports. Miriam also encouraged the participants to complete and return their updated

[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
[6] http://www.ist-africa.org/home/default.asp?page=reports
[7] http://www.ist-africa.org/home/default.asp?page=horizon2020

organisational profile to DTPS for publication on the IST-Africa portal that reflects up to date research capacity and track record. It is important to frame this in the context of Collaborative Research.

Miriam took the opportunity to encourage participants to leverage NCRST hosting IST-Africa 2017[9] to raise awareness of research and innovation being undertaken at national level. There are three opportunities to make presentations during IST-Africa 2017 - 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.

Miriam summarised the impact that has been achieved through IST-Africa as including an increase in African participation under FP7 and Horizon 2020 across IST-Africa partner countries; increase in the level of international research publications from Africa and about Africa through IST-Africa conference proceedings; knowledge sharing between Europe and Africa as well as within 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 and showcasing African research and innovation context and research and innovation potential and provides an effective research collaboration support framework.

During FP7, over €171.5 million in research funding was received across 45 African Member States.

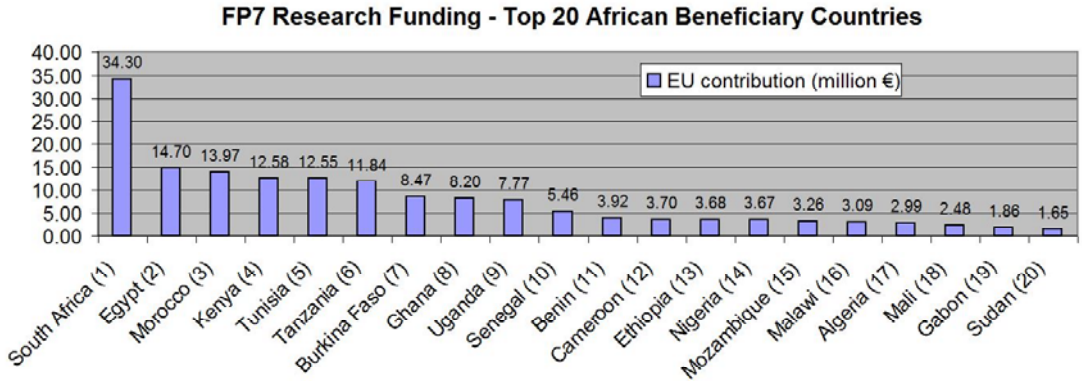

Diagram 1: Leading African Countries in terms of FP7 research funding

[8] http://www.ist-africa.org/home/default.asp?page=reports
[9] http://www.ist-africa.org/Conference2017

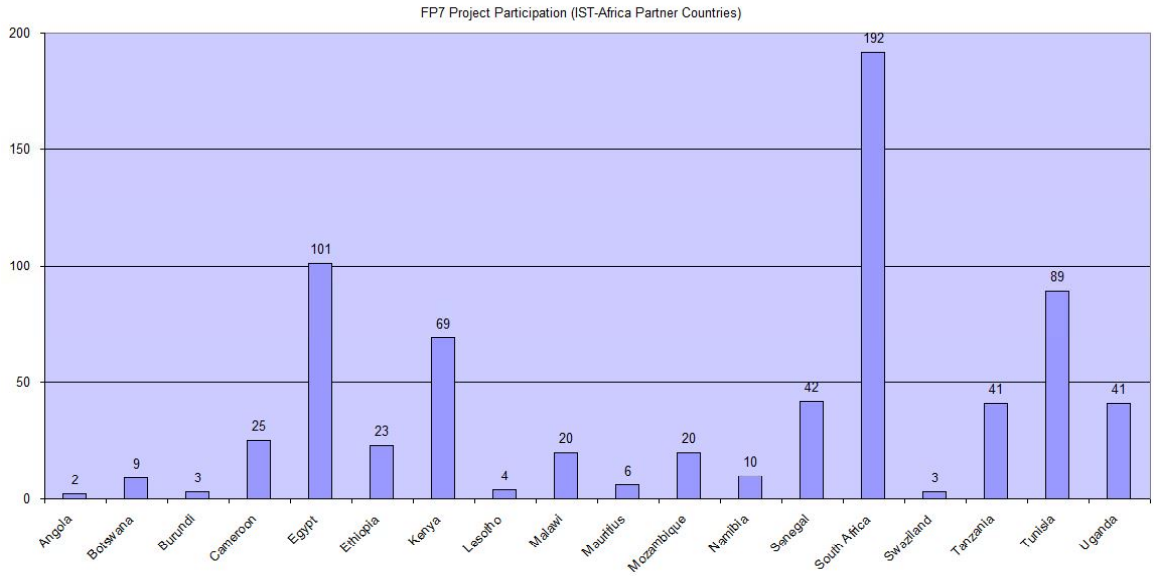

Diagram 2: FP7 Project Participation from IST-Africa Partner Countries

Botswana secured research funding through 9 projects under FP7 in the following thematic areas bringing research funding of over €826,000 into Botswana organisations:

- **ICT (4):** IST-Africa 2008 (2007-2009) (Ministry of Communications, Science and Technology) Coordination and support action; IST-Africa 2010 – 11 (2009-2012) (Ministry of Communications, Science and Technology) Coordination and support action; IST-Africa 2012-13 (2011-2014) (Ministry of Communications, Science and Technology) Coordination and support action; IST-Africa 2014-2015 (2013-2016) (Ministry of Transport and Communications) Coordination and support action;
- **INCO (1):** CAAST-NET (2008-2012) (Ministry of Communications, Science and Technology) Coordination and support action;
- **Health (2):** HURAPRIM (2011-2015) (University of Botswana) Collaborative project; RN4CAST (2009-2011) (University of Botswana) Collaborative project;
- **Environment (1):** DEWFORA (2011-2013) (Waternet Trust) Collaborative project;
- **Food, Agriculture and Biotechnology KBBE (1):** TXOTX (2008-2011) (Coldstream Holdings Ltd Trading as NFDS Africa) Coordination and support action;

Forty **(40)** European and Associated Country organisations partnered with Botswana organisations in successful FP7 projects including: IIMC International Information Management Corporation Limited; Dublin City University ***(Ireland)***; European Centre for Medium-Range Weather Forecasts; Imperial College of Science, Technology and Medicine; King's College London; The Chancellor, Masters and Scholars of the University of Oxford; The Secretary of State for Environment, Food and Rural Affairs ***(United Kingdom)***; Fundacion Azti; Instituto de Salud Carlos III; Mediterranean Agronomic Institute of Zaragoza; Ministerio de Economia y Competitividad; Universidad Politecnica de Madrid ***(Spain)***; Joint Research Centre, European Commission; Katholieke Universiteit Leuven; Universiteit Gent ***(Belgium)***; Deutsches Zentrum

Fur Luft und Raumfahrt E.V.; Helmholtz-Zentrum Potsdam Deutsches Geoforschungszentrum; Potsdam Institut fuer Klimafolgenforschung; Technische Universitaet Berlin ***(Germany)***; Karolinska Institutet; Stockholms Universitet; Verket för Innovationssystem ***(Sweden)***; University of Jyvaskyla; University of Eastern Finland ***(Finland)***; Stichting Deltares; Stichting Katholieke Universiteit; Stichting Wetlands International; UNESCO-Ihe Institute for Water Education ***(Netherlands)***; Fundacao para a Ciencia e a Tecnologia; Universidade do Porto ***(Portugal)***; Medizinische Universitaet Wien ***(Austria)***; Centre de Cooperation International en Recherche Agronomique pour le Developpement; Institut de Recherche pour le Developpement ***(France)***; National and Kapodistrian University of Athens ***(Greece)***; The Commonwealth Network of Information Technology for Development ***(Malta)***; Norges Forskningsrad ***(Norway)***; Uniwersytet Jagiellonski ***(Poland)***; Universitaet Basel (Switzerland); Turkiye Bilimsel ve Teknolojik Arastirma Kurumu ***(Turkey)***. This provides a good network for future collaboration under Horizon 2020. More information on FP7 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: 978-1-905824-42-7[10]

Horizon 2020

IST-Africa actively encouraged participation of African institutions in relevant calls under Horizon 2020, including (but not exclusively) those focused on Africa. IST-Africa provided evidence to justify €25 million for African-focused research and innovation cooperation under LEIT (ICT-39-2015 & ICT-39-2017). The ICT-39-2015 Call for proposals was very successful with 45 proposals submitted (194 participations from Africa – 78% from IST-Africa partner countries) of which 23 proposals were scored over threshold. Within the funding envelope for ICT-39-2015, four projects were selected for funding (2 Health-related, land tenure, IoT) with 11 African countries of which 6 IST-Africa partner countries participating in all 4 projects: Ethiopia (3), Kenya (2), Cameroon (1), Malawi (1), South Africa (1), Senegal (1).

As at November 2015, there were 107 participants from 25 African MS in 48 H2020 Projects bringing research funding of €17 million into African research institutions in the first year of Horizon 2020. To date there has been 185 participations from 31 African Member States. The diagram below provides an overview of participation in Horizon 2020 projects from IST-Africa partner countries

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

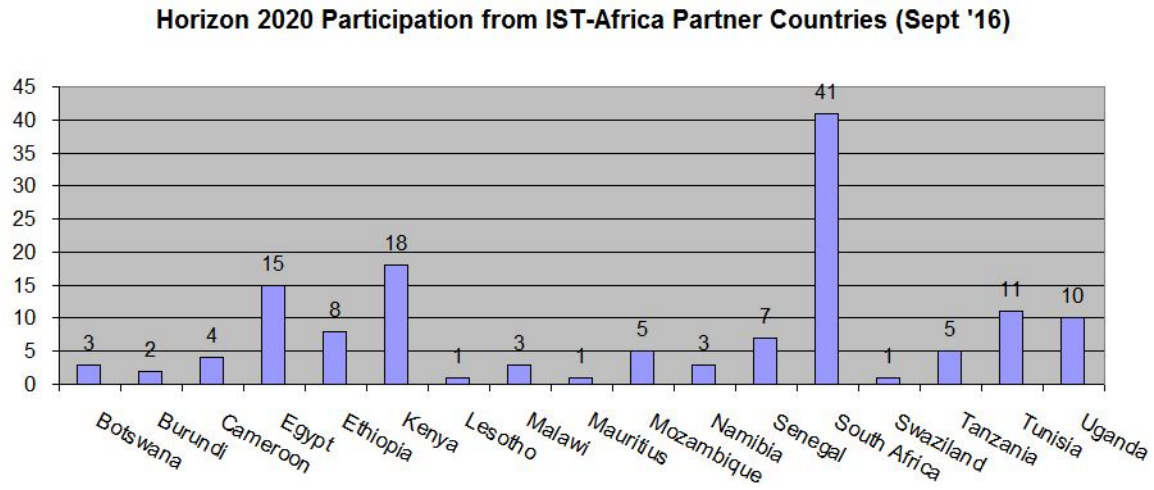

Diagram 3: Horizon 2020 participation by IST-Africa partner country (September 2016)

During the first year of Horizon 2020, Botswana is already involved in three funded projects across the following thematic areas:

- ICT (1): IST-Africa 2016-2018 (2016-2018) (Ministry of Transport and Communications) Coordination and support action;
- Sustainable Food Security (1): PROIntensAfrica (2015-2017) (Centre for Coordination of Agricultural Research and Development for Southern Africa) Coordination and support action;
- Water (1): AfriAlliance (2016-2021) (Waternet Trust) Coordination and support action;

2.2 Introduction to Horizon 2020

Phodiso Phole, DTPS, Ministry of Transport and Communications presented Horizon 2020[11], 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 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.

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

Phodiso 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 portal[12] - access to Work Programmes, Guides to proposals under 2016 and 2017 as well as the European Commission Participants Portal[13] and Horizon 2020[14]

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 Sklodowska-Curie actions on training and career development (€6.2 billion)
  4. European research infrastructures (including eInfrastructures) (€2.5 billion)

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

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

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

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

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

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

[12] http://www.ist-africa.org/
[13] http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html
[14] Horizon 2020 website http://ec.europa.eu/research/horizon2020

7. Secure Societies (€1.69 billion)

Phodiso 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 commercalisation).
- 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 a 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

Phodiso 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 2016 Calls for Proposals and Guide for 2017 Calls for Proposals in Horizon 2020. This guide lists each thematic area, deadlines and links to the Participants portal[15] for more detailed information. It can be downloaded from

http://www.ist-africa.org/home/files/IST-Africa_Guide_2016Calls_Horizon2020.pdf
http://www.ist-africa.org/home/files/IST-Africa_Guide_2017Calls_Horizon2020.pdf

IST-Africa has a specific section focused on Horizon 2020[16], which provides links to all the Work Programme - Marie Curie, Infrastructures, Societal Challenges (Health, Food Security and Agriculture, Energy, Transport, Climate action and Environment, Inclusive and Reflective Societies; Secure Societies) and LEIT.

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

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

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

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 ICT-39

Miriam Cunningham, IIMC/IST-Africa presented the **ICT-39-2017** Call, which closes on **25 April 2017**. This call provides a unique opportunity for African institutions undertaking Research and Innovation to co-design an Innovation Action based on addressing end-user requirements in low and middle-income countries in sub-Saharan Africa in cooperation with European partners.

The aim of ICT-39-2017 is to launch a set of targeted Innovation Actions 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 expected impacts 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

Miriam highlighted that Innovation Actions are focused on technological improvements/adaptations as well as innovative service creation based on existing technologies. Activities should be led by a clearly defined user need/market opportunity for the technology being adapted based on requirements of sub-Saharan African countries identified through co-design.

- Innovation Actions have limited research and development, focused on adaptation of existing technology.
- It is expected that any research related to the challenge to be addressed and understanding of the state of the art in the thematic area is already undertaken and demonstrated in the proposal submitted.
- Since demonstration and market validation is the primary focus of an Innovation Action, the consortium must demonstrate relevant links with end-user communities who will be involved in the validation process and this needs to be clearly demonstrated in the proposal submitted.
- Important to identify a project focus that is relevant in a number of African countries from the same region with a sustainability plan for wider roll out following successful validation and project funding.

Proposals should feature an explicit element exploring technology adoption, through understanding and evaluating behavioural responses to the introduction of new technologies in different regional settings. Societal and gender issues will be taken into account.

Miriam outlined that based on the focus of this call it will be necessary to ensure that there are multidisciplinary teams – thematic experts in the target domain as well as ICT experts.

Based on a number of African countries being involved, it is also necessary to co-design a proposal that addresses a common challenge at national level that can be validated in a number of scenarios in the different countries.

Horizon 2020 proposals are submitted by consortia,, which brings together necessary complementary expertise to address the project focus from Africa and Europe. It is a requirement of the funding instrument that there are a minimum of 3 European partners from 3 different Member States in addition to the relevant African partners.

Horizon 2020 projects are based on a grant to the legal entity who is the partner providing reimbursement of actual costs (personnel rates from payroll, necessary equipment and travel).

Based on group work undertaken key priority areas identified by the researchers included eAgriculture & Food Security; eHealth; Water Resources, Energy and Tourism. The participants worked in smaller groups to identify:

- Who are the end-user needs for each of the specific thematic areas short-listed – bearing in mind that this is a innovation action?
- Who are the key stakeholders that should be consulted (e.g. public, private, education and research and societal sector organisations) for each of the short listed thematic areas?
- Who are the key stakeholders that could undertake the project work and what work exactly could they do?
- What other African countries should be involved in addition to the necessary European countries and why?
- What European organisations has your organisation already engaging with in relation to the thematic areas selected?

The participants found this brainstorming and moderated group work to be very interesting in visualising how to start to prepare a proposal.

In the context of identifying relevant African countries and institutions Miriam presented research undertaken by IST-Africa (IST-Africa Guide to National ICT Initiatives and Research Capacity, January 2016, Published by IIMC, ISBN No: 978-1-905824-47-2[17]).

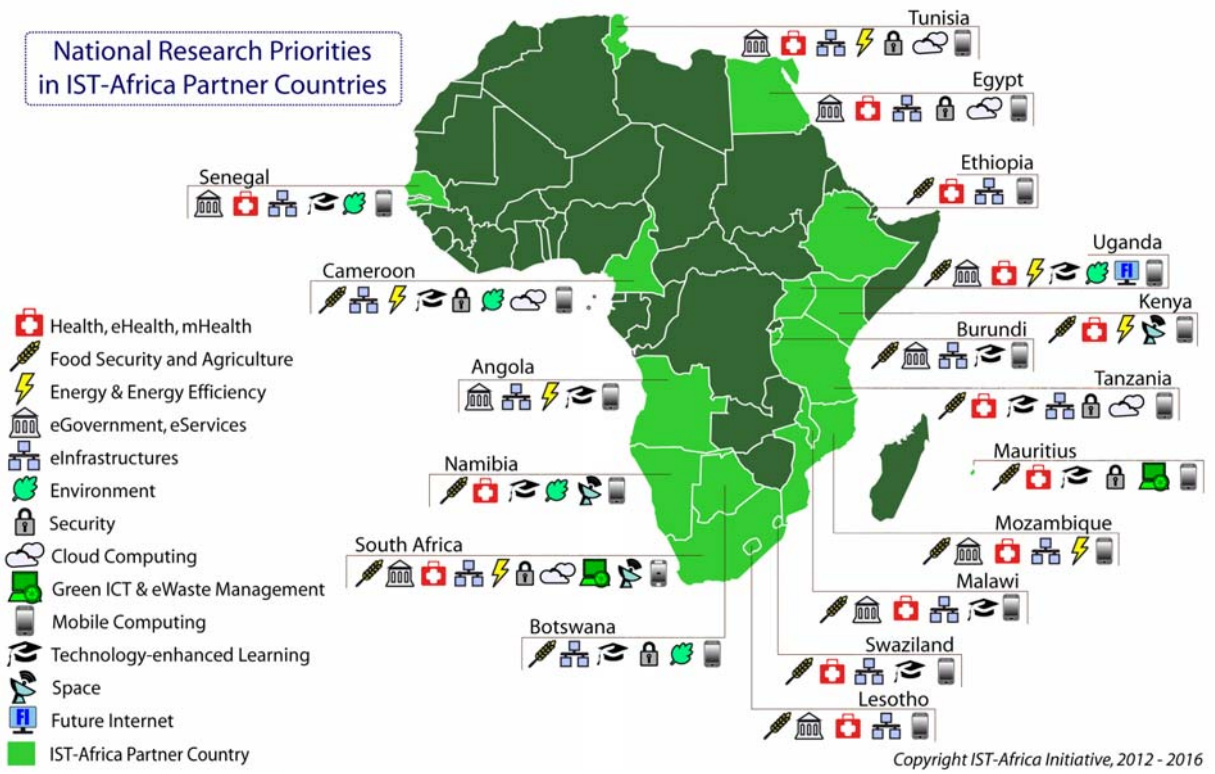

Diagram 4: Overview of National Research Priorities

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

Table 1: National Research Priorities in IST-Africa Partner Countries

IST-Africa Partner Country	National Research Priorities include:
Angola	eInfrastructures, Technology-enhanced Learning, Solar Energy, Informatics & Electronics, Digital Inclusion
Botswana	eInfrastructures, Sustainable Agriculture & Food Security, eHealth, Technology-enhanced Learning, Entrepreneurship, Cyber Security, Energy and Water Ecosystem, Sustainable Development and Climate Change,
Burundi	eInfrastructures, ICT in Education, eGovernment Services, Agro-Food Technology, Medical Science, Energy, Water, Environment, Biotechnology and Indigenous Knowledge
Cameroon	eInfrastructures, Cyber Security, Connected Enterprises, Cloud Computing, Technology-enhanced Learning, Sustainable Agriculture, Energy, Biotechnology, Environment, Culture, eHealth, Forestry, Tourism, Mining
Egypt	Technology Innovation and Entrepreneurship; Biomedical Informatics Research; Digital Identity; Basic Infrastructure (Broadband, Cloud Computing, Submarine Cables); Cyber Security & eSignature; Information Infrastructure & Digital Content; Electronics Design and Manufacturing
Ethiopia	eInfrastructures; eHealth; Natural Language Processing; Big Data; Indigenous Knowledge; eAgriculture
Kenya	Telecommunications, Electronics and Computers (TEC); Science, Technology, Engineering and Mathematics Education; Coordination of Technology, Innovation and Commercialisation; Space Science and Energy
Lesotho	eInfrastructures, eGovernment, eHealth, Technology-enhanced Learning, eAgriculture
Malawi	eHealth, eAgriculture, eInfrastructure and Entrepreneurship, eGovernment, Technology-enhanced Learning, Digital Libraries & Repositories
Mauritius	ICT Energy Efficiency, eWaste Management, eAgriculture, Bio-informatics, Biometric Security, Context Awareness, eHealth, Technology-enhanced Learning, Digital Enterprise
Mozambique	eHealth, Food Security and Agriculture, Future Internet, Technology-enhanced Learning, eGovernment, ICT for Rural Development and Entrepreneurship.
Namibia	Digital Content, Technology-enhanced Learning, eGovernment, eHealth, eAgriculture & Fisheries including Water; Entrepreneurship, Mining & Geosciences, Biotechnology, Logistics and Space Science
Senegal	eGovernment, eInfrastructures, Entrepreneurship, Digital Divide,

	eHealth, Technology-enhanced Learning,
South Africa	mHealth, eServices, Environment, Food Security and Agriculture, Trust and Security, Space, Future Internet (Internet of Things), Cloud Computing, Advanced Sensor Networks, Technology-enhanced Learning, Energy and Energy Efficiency, Robotics and Machine Learning, Data Science, Future Wireless Broadband Technologies and Applications.
Swaziland	eHealth, eAgriculture & Food Security, eInfrastructures, Environment, Entrepreneurship
Tanzania	eInfrastructures, Cloud Computing/ High Performance Computing, Cyber Security, Mobile Computing, ICT for Creativity and Learning, eHealth, eAgriculture
Tunisia	eHealth, eInfrastructures, Cyber Security, Services and Trusted Networks, eServices and Knowledge Economy, Cloud Computing and ICT for Energy Efficiency
Uganda	eHealth, Food Security and Sustainable Agriculture, Energy, Envionment, Future Internet, eGovernment, Digital Content, Technology-enhanced Learning, Robotics, Bioinformatics, Climate change and Energy Efficiency

Table 2 below provides an overview of the Thematic areas of highest priority in the context of the ICT-39 Horizon 2020 Calls. While there are some thematic areas that are common across most of the IST-Africa partner countries such as eHealth, eAgriculture or Technology-enhanced Learning, there are also additional thematic areas in some countries based on national research capacity.

Table 2: Thematic areas of highest priority to ICT-39-2017

IST-Africa Partner Country	**Thematic areas of highest priority to ICT-39**
Angola	eHealth; eAgriculture; Environment
Botswana	eHealth, eAgriculture, Technology-enhanced Learning, Energy and Water Ecosystem, Sustainable Development and Climate Change
Burundi	eHealth; eAgriculture; Energy; Environment
Cameroon	eHealth; eAgriculture; Environment; Technology-enhanced Learning; eGovernment
Egypt	eAgriculture; eHealth; eGovernment; Technology-enhanced Learning; Energy;
Ethiopia	eAgriculture; eHealth; Natural Language Processing and Information Retrieval;
Kenya	eAgriculture; eHealth; eGovernment; Technology-enhanced Learning

Lesotho	eAgriculture; eHealth; Technology-enhanced Learning; Environment; eGovernment;
Malawi	eHealth; eAgriculture; Technology-enhanced Learning; Environment; eGovernment
Mauritius	Energy; Climate action/Environment; Sustainable Agriculture and Maritime Research; Smart, Green & Integrated Transport; eHealth
Mozambique	eHealth; eAgriculture; Technology-enhanced Learning; Environment; eGovernment
Namibia	eAgriculture & Food Security; Water & Sanitation; eHealth; Technology-enhanced Learning; eGovernment, Renewable Energy
Senegal	eHealth; Environment
South Africa	eAgriculture; eHealth; Technology-enhanced Learning; Environment; eGovernment; Digital Inclusion, Environment/Climate Change, Internet of Things, Cloud Computing
Swaziland	eAgriculture; eHealth; eGovernment; Environment
Tanzania	eAgriculture; eHealth; Environment/Climate Change
Tunisia	eAgriculture; eHealth; Environment; eGovernment; Technology-enhanced Learning
Uganda	eAgriculture; eHealth; Technology-enhanced Learning; Environment

Diagrams 5, 6 and 7 below provide visual representation of priority themes in the context of the ICT-39 H2020 Calls and an overview of some of the national institutions who have research expertise in the prioritised themes for ICT-39.

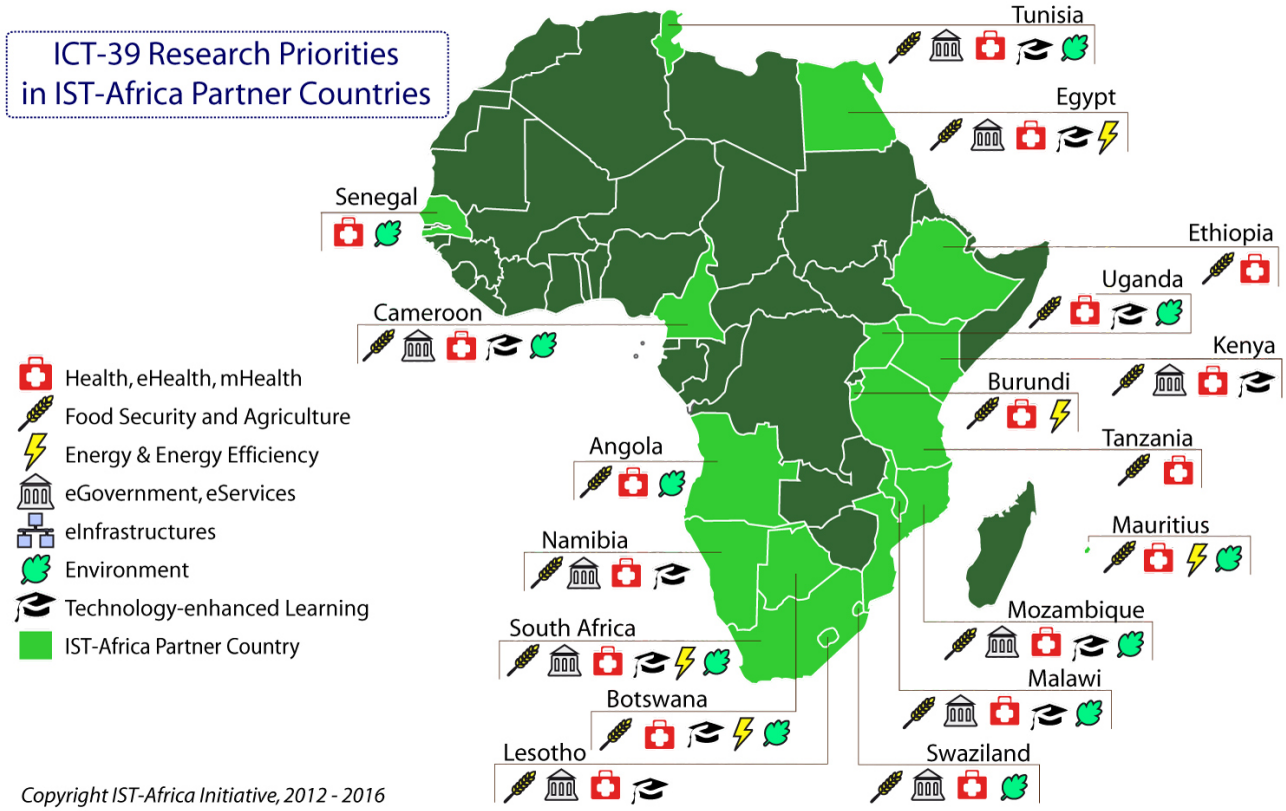

Diagram 5: Horizon 2020 ICT-39 Priority themes in IST-Africa partner countries

Diagram 6 below provides a mapping of North, Central, East and West African institutions in IST-Africa partner countries to ICT-39 priority areas.

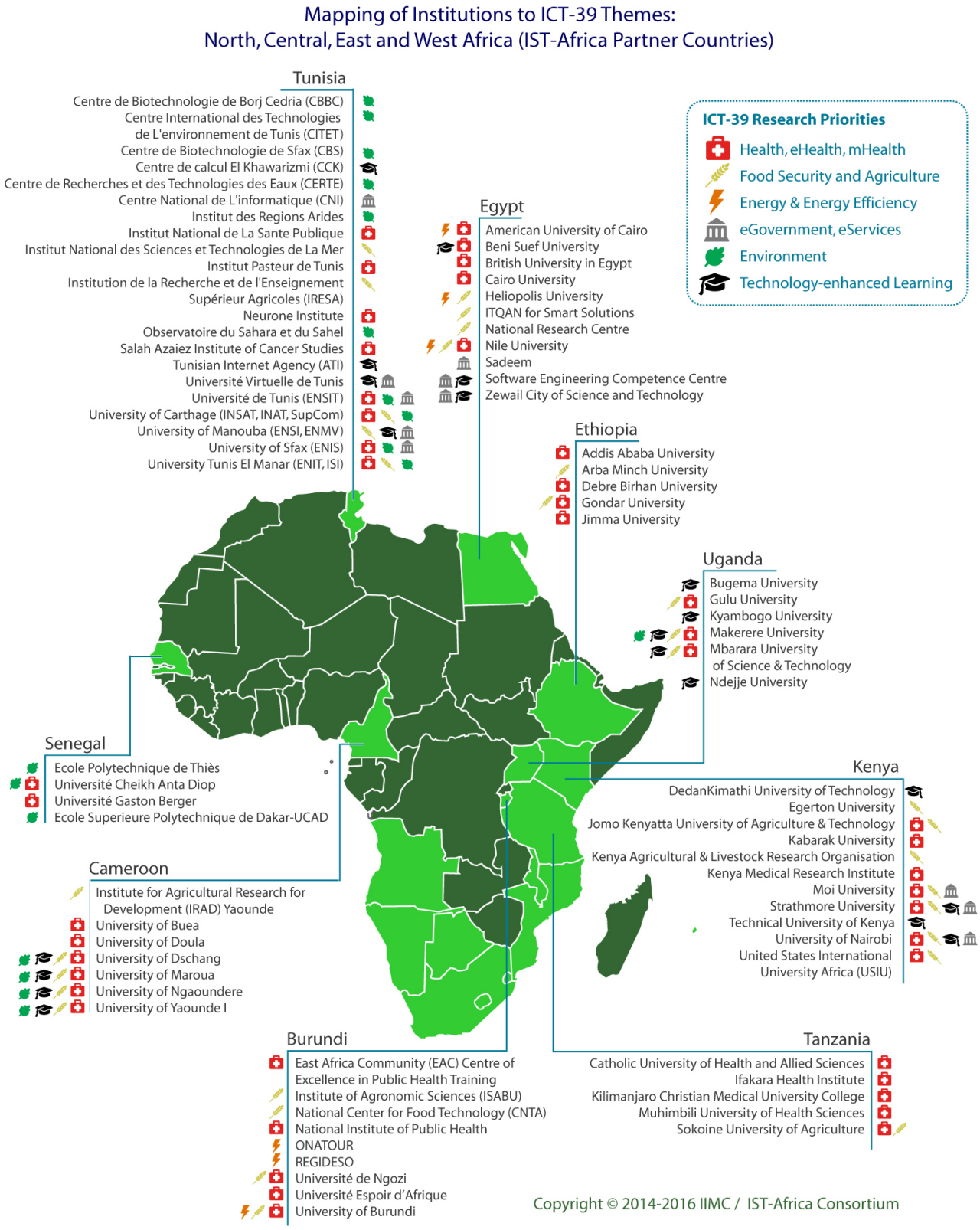

Diagram 6: Mapping of North, Central, East and West Africa Institutions to ICT-39 Themes (IST-Africa Partners Countries)

Diagram 7 below provides a mapping of Southern African institutions in IST-Africa partner countries to ICT-39 priority areas.

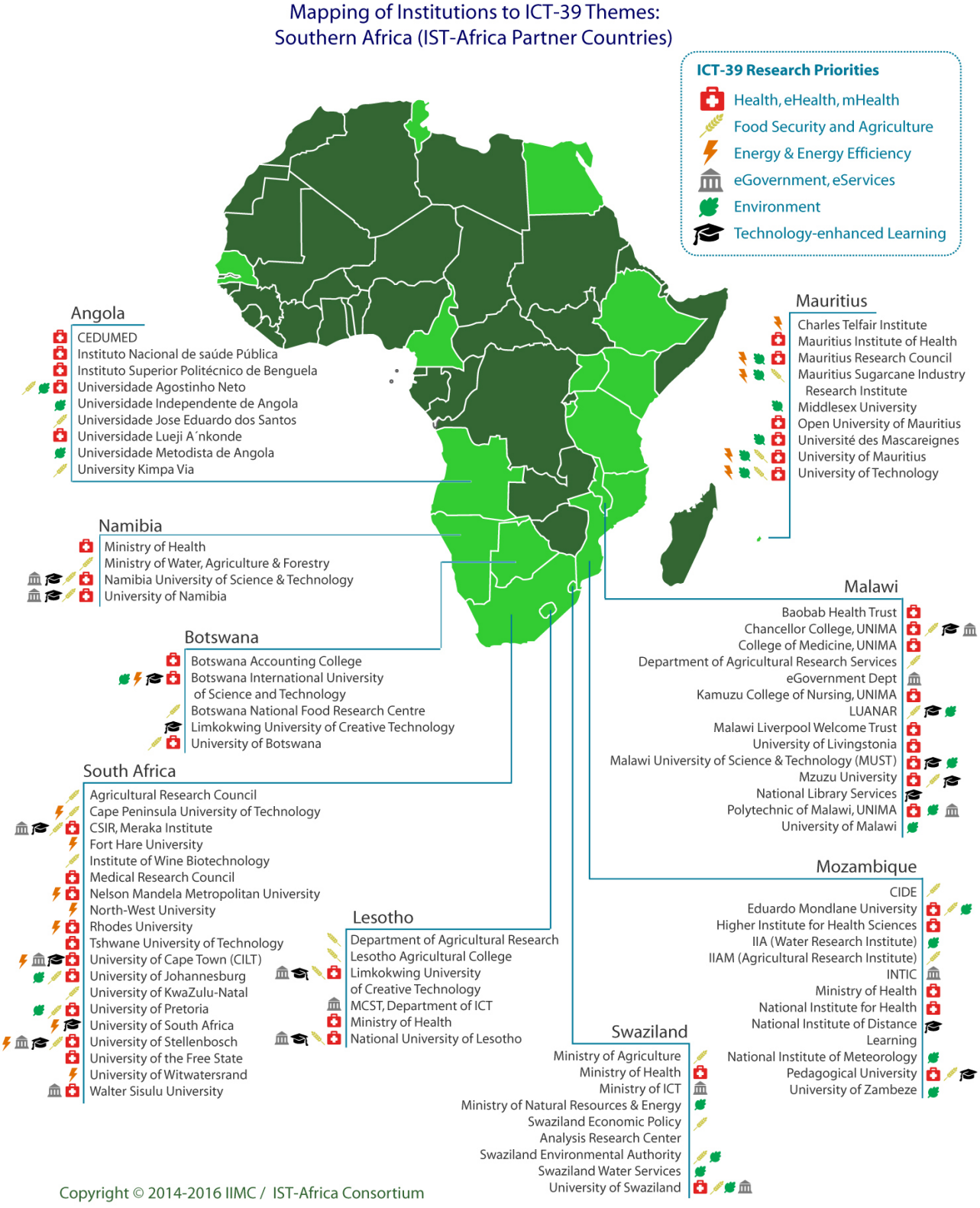

Diagram 7: Mapping of Southern African Institutions to ICT-39 Themes (IST-Africa Partners Countries)

2.5 Participation Rules and Instruments under Horizon 2020

Miriam Cunningham, IIMC/IST-Africa 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-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.

Main Research Instruments in Horizon 2020 include:

- Grants for Research and Innovation – 100% funding of all activities and participants
- Grants for Innovation – 100% reimbursement of eligible costs for not-for-profit entities, 70% reimbursement of eligible costs for for-profit entities
- Support and Coordination Actions - 100% funding of all activities and participants

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 (funding instrument for ICT-39-2017) 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 proposal.

Firstly it is necessary to download and read the ***Work Programme***[18] carefully. As Gift has highlighted earlier, IST-Africa has also prepared a guide to 2016 and 2017 Calls listing each thematic area, deadlines and links to the Participants portal[19] for more detailed information. It can be downloaded from

http://www.ist-africa.org/home/files/IST-Africa_Guide_2016Calls_Horizon2020.pdf

http://www.ist-africa.org/home/files/IST-Africa_Guide_2017Calls_Horizon2020.pdf

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. Ebony 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-39-2017** the funding instrument is **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

[18] 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
[19] *http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html*

- Section 4: **Members of the Consortium** - each partner to provide profile using template provided to facilitate judgement of operational capacity
- Section 5: **Ethics & Security**

Part B Section 1 - 3 must be a maximum of 70 pages in length. Part B is 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. In the case of an Innovation Action not-for-profit entities are reimbursed 100% of eligible direct costs, while for-profit entities are reimbursed 70% of eligible direct costs.
- **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 PIC[20], 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)

[20] http://ec.europa.eu/research/participants/portal/desktop/en/organisations/register.html

- Clarify and pertinence of the objectives
- Credibility of the proposed approach
- Soundness of the concept
- 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 found the workshop to be very interactive and useful in terms of learning more about what research each institution is undertaking, learning about H2020 and specifically ICT-39 and going through the brainstorming and group work associated with preparing concepts for proposals.

Mr Itumeleng Batsalelwang, Director, DTPS outlined that it was very interesting to participate in the workshop, learning more about research activities ongoing at national level and opportunities to participate in cross border research and innovation activities under Horizon 2020 and specifically the ICT-39-2017 Call, which closes in April 2017. DTPS will now expect to receive regular updates from the workshop participants in relation to the progress that they are making preparing proposals and getting involved in consortia. He highlighted that it is important

that Botswana takes advantage of this opportunity to build research collaboration links that support development in the country and to raise the profile of the country as a player in the area of research and innovation. The level of response to participate in this training workshop is a very positive sign and the next step is now to start preparing concepts around which proposals can be co-designed in consultation with end user communities and to leverage existing relationships to build consortia. In this context DTPS plans to call a meeting for two hours in January to review progress with representatives of organisations undertaking research who have capacity to be involved in proposals under ICT-39-2017.

Mr Batsalelwang thanked IST-Africa for supporting the research community in Botswana and the European Commission for providing support to IST-Africa to continue this important work. He thanked Mrs Phodiso Phole and her team for organising the workshop and mobilising the research and innovation community at national level to participate.

Miriam thanked the participants for their active engagement during the day and Phodiso and her team in DTPS for organising the workshop. 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. A number of individual briefing meetings were subsequently set up with specific institutions to ensure that there was a good understanding of the opportunities under H2020 and specifically ICT-39-2017. The participants were requested to keep DTPS up to date in relation to their progress and any additional support that they require from IST-Africa.

Mr Delight Thebeetsile, DTPS, formally closed the IST-Africa Horizon 2020 Workshop thanking all participants for their active engagement during the day and wishing them luck with future proposal preparation.

Participants

Name	Institution	Role
G. Somolekae	ABM University College	DVC Academic
Gape Kaboyakgosi	ABM University College	DVC Researcher /Innovation
Mmadume Nyathi	Ministry of Agricultural Development and Food Security	Director
Goitseone Kgosithebe	Agripayingness Forum Botswana	Consultancy / Research
Simon Chiutsi	Botswana Accountancy College	Lecturer
F. Sidume	Botswana Accountancy College	Lecturer
G. Male	Botswana Accountancy College	Ag, DEP
L. Mokgalo	Botswana Accountancy College	Lecturer
Vuyo Mfazi	Botswana Accountancy College	Lecturer
T. Nage	Botswana Accountancy College	Lecturer
PAT Mwezi	BCET	Researcher
S.M. Motswiri	BDF	Director
Goitseone Modisaemang	BIDPA	Researcher
Jahare Motsatsi	BIDPA	Researcher
M. Raboloko	BIDPA	Researcher
Tshepiso Gaetsewe	BIDPA	Researcher
E. kentshitswe	BOCRA	Engineer
C. Busang	Botswana Tourism Organisation	Market Analysis
S.O. Tswenyane	Botswana University of Agriculture and Natural Resources	Lecturer
K. Thutwa	Botswana University of Agriculture and Natural Resources	Lecturer

O.R. Madibela	Botswana University of Agriculture and Natural Resources	Professor
Pro. A.S. Likuku	Botswana University of Agriculture and Natural Resources	Lecture
Mothusi Mongale	CEDA	Research Officer
Tshepo Setlhogile	Centre for Applied Research	Consultant/Researcher
M.E. Madisa	Crops	Principal
Omphile Nthwane	Daily News	
P.T. Moalosi	Daily News	Photographer
K. Bareeleng	DAR	Researcher
Nametso Monametsi	DAR	Researcher
T. Matale	DEA	PNRO
F.M. Moiruti	DIT	IT Officer
G. Dick	DIT	PSA
B.S. Batunganile	DRST	AG. Director
Delight Thebeetsile	DTPS, Ministry of Transport and Communications	CCO
Itumeleng Batsalelwang	DTPS, Ministry of Transport and Communications	Director
M. Kwada	DTPS, Ministry of Transport and Communications	PCO I
Paul Seakamela	DTPS, Ministry of Transport and Communications	Dep. Director
Phodiso Phole	DTPS, Ministry of Transport and Communications	PCO
T. Karabo	DTVET	PIC
Koketso	Duma f.m	Reporter
L. Nkatogang	GTC	SNR. Lecturer
Majwabe	IDM	Acting IT Manager
Malebogo Gaibebe	IDM	SNR Consultant
O. Seitue Kaola	IDM	
Miriam Cunningham	IIMC / IST-Africa	
Kagiso Mpone	JDS	IT Officer
Mopati Jobe	LEA, Research	Research Manager
DR Olumide	Limkokwing University of Creative Technology	Lecturer
Buti A. Seleke	Limkokwing University of Creative Technology	Head of Facility
Kopano T.	MoA	Reforms Officer
Lesedi Mado mopelwa	MoA	PRSO1
Michall Ramatu	MoA	ASO
Boitshepo Mogorosi	Ministry of Transport and Communications	P.S.A. II
John Vassiliadi	Ministry of Transport and Communications	Ag. Dep. Coordinator
L. Nyadza	Ministry of Transport and Communications	CPRO
N.D. Mokgatlhe	Ministry of Transport and Communications	PPYO
W. Kgwatalala	National Museum	
W. Kapele	Nampaad	
K. Bun	Nat Vet. Lab	Information Officer
Mpho Phologolo	National Vet Lab	Lab Technician

C. Ditsele	National Vet Lab (BUAN)	Veterinarian
M.G. Binta	National Vet Lab.	Principal Vet. Officer
D. Mogaa	OCAAT	Lecture
K. Nthoiwa	ORD - UB	Assistant Director
Bontle Moreetsi	Radio Botswana	Reporter
David Bogasu	Roads	Principal Roads Engineer
Tlhabanelo Mapulane	Roads	PREII
Tshepo Paledi	Stepping Stones International	Ass. Program Manager
K. Phatshwane	Tourism	ATO
C. Malomo	TPS	PIC
Portia Oforile Tapa	UB-FET	Manager
B.F. Alemaw	University of Botswana	Professor
Bothe Phuthego	University of Botswana	GIS Techic
J. G. Maphanyane	University of Botswana	Lecture
Josephine Meeti-Lysson	University of Botswana	Lecturer
K. Tlhalerwa	University of Botswana	Lecturer
Kagiso Motshidisi	University of Botswana	Lecturer
M.C. Molwama	University of Botswana	Coordinator
Masego	University of Botswana	Lecturer
Masikana Andrey	University of Botswana	HOD
Nani Setlhatlhanyo	University of Botswana	Lecturer
O. Bolobilwe	University of Botswana	As. Director
Pro J. Atlhopheng	University of Botswana	Dean, Science
T. Seipone	University of Botswana	Lecturer
T.L. Masaka	University of Botswana	Lecturer
Tebogo Magang	University of Botswana	UB Lecturer
V.L. Narasimaan	University of Botswana	Prof.