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D3.1.1 IST-Africa Living Lab Workshop, Gaborone, Botswana, 22 November 2013

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

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1. Workshop Focus

The IST-Africa Initiative has taken a leadership position in promoting the adoption of Collaborative Open Innovation and Living Labs Methodologies to support socio-economic development in Africa

This workshop focused on providing an introduction to the Living Labs concept, examples of operational and emerging Living Labs and how these have evolved in other African States as well as in Europe. It was participatory in nature with group work and presenting of outputs to the entire group. The participants discussed the potential roles of stakeholders in Living Labs in the context of Botswana in terms of motivations, contributions and expectations. This encourages the participants to think about different perspectives and how different types of stakeholders could be encouraged to participate in Collaborative Open Innovation and the role Living Lab methodologies could have to support this collaboration. Emerging issues were also identified.

This training workshop was facilitated by Paul Cunningham and Miriam Cunningham, IIMC Ltd, Ireland (Coordinator of the IST-Africa Initiative).

By the end of the workshop, the participants had identified thematic areas that are national priorities where Living Lab methodologies could be used to support Collaborative Open Innovation.

2. Workshop Report

2.1 Introduction

The workshop was officially opened by Ms Phodiso Phole, Department of Telecommunications and Postal Services (DTPS), Ministry of Transport and Communications. Phodiso welcomed the participants and the facilitators – Paul Cunningham and Miriam Cunningham and outlined the participatory nature of the workshop. The workshop was structured to provide an insight into Living Lab methodologies, the role of Collaborative Open Innovation and how Living Labs are being used to support user-centred Open Innovation in other African countries. The participants then undertook several group activities as teams both to reinforce the knowledge provided as well as sharing their own sight and knowledge with their peers and then reporting back their findings to the entire group.

Paul Cunningham, IIMC Ireland provided an overview of the IST-Africa Initiative which is supporting this workshop. The IST-Africa Initiative was founded in 2002 by IIMC, Ireland and has now grown to a partnership with Ministries and National Council responsible for Information Society, ICT and/or Innovation in 18 African Member States¹. The IST-Africa is supported by the European Commission and African Union Commission with co-funding under FP7.

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); Ministere de l’Enseignement Superieur et de la Recherche Scientifique (“MESRS”,

IST-Africa facilitates and supports:

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

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

- Facilitating national workshop on Living Labs and Horizon 2020
- Presentations at International events
- Chapter on Botswana 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 Botswana on the IST-Africa portal and in the Newsletter
- Raising awareness of upcoming Calls for Proposals and international funding opportunities
- Assists institutions in preparing for new opportunities such as Horizon 2020
- Raises awareness of activities being undertaken in other African countries
- Supporting the publishing of Organisational profiles on IST-Africa portal to raise awareness of activities in wider community
- Has access to IST-Africa Network including Ministries and National Councils in 17 African Countries to share knowledge, experiences and success stories
- Has first-hand experience of what is involved in being part of International funded activities under the European Framework Programme.

Participants were encouraged to visit the IST-Africa portal² and download relevant papers and reports

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).

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

The participants introduced themselves by organisation and by activity. The workshop was well attended with participants from Botho University; Botswana Accountancy College; Botswana University of International Science and Technology; Botswana Accountancy College; Department of Agriculture Research; Department of Information Technology; Directorate of Public Services Management; Klater Affairs; Limkokwing University; Ministry of Agriculture, Dept of Research; Ministry of Education, Skills and Development (DEPRS); Ministry of Education, Skills and Development (ICT & MS); Ministry of Transport and Communications; Molepolole College of Education; National Food Technology Research Centre; University of Botswana and University of Botswana (School of Medicine).

2.2 Introduction to Living Labs

Paul Cunningham and Miriam Cunningham provided an introduction to the basic concepts behind Living Labs, the different forms and focus that Living Labs can take, how Living Labs support Innovation and examples of sustainable Living Labs in other African Member States.

The session was interactive with discussion around the types of Innovation supported, types of support that a Living Lab can provide during Pre-Incubation, how a Living Lab can start focused around training and skills transfer in a specific sector or thematic area and gradually ramp up to provide pre-incubation and incubation support and mechanisms that have been successful in other African countries to secure engagement from industry as an innovation stakeholder.

There was a lot of discussion in relation to the differences between Invention, Innovation and Collaborative Open Innovation.

2.3 Participatory Session 1: Stakeholders Roles in Living Labs – Motivations, Contributions and Expectations



Based on the overview provided the participants then split into working groups to discuss stakeholder roles in Living Labs from a Botswana perspective. They discussed motivations (Why would they get involved in a Living Lab?), expectations (what would they hope to achieve?) and contributions (how they could make a difference?) for four initial stakeholder groups – public sector, private sector, research and education sector and communities (end users). This is an important exercise as it encourages team members to think about the perspective of other stakeholder groups and to get a better insight into how to encourage them to be involved in Collaborative Open Innovation Each group then reported back their findings to the entire group.

The motivation, expectations and contributions attributed to each stakeholder group is summarised below based on the outputs presented by each group:

Public Sector	
Motivation	Promote Innovation; Create Jobs; Competitiveness; Self Reliance; Possibility of value addition; Import substitution; Improve service delivery; Promote the country in all aspects; Capacity building; Employment Capacity Building; Development of tech skills; Alignment with National development; Economic Empowerment / Diversification; Business Development; Reduce Rural/Urban Migration
Expectations	Community Engagement; Creation of Employment; Economic diversification; Community Empowerment; Improve the life of Botswana people; Taking country forward; Improve living standards; Economic Growth; Competitiveness; Improve Employment; Poverty Reduction; Foreign Exchange – Import substitution; Poverty Eradication; Lower Employment; Promotion of local business; Rural Development; Youth Empowerment
Contribution	Create enabling environment; Policy development (enabling policies); Financial Support; Providing the expertise, infrastructure; Privatisation; Promotion of Incubation; Infrastructure; Leadership; Industrial Support; Resources (land, people, structures, roads etc); Legal Support

Private Sector	
Motivation	Profit; Competitiveness; Quality; Recognition; Market Share; Expansion; Diversification; Provide relevant product and services; Expertise to build necessary skills; Product Development; Social responsibility; Alignment to Business Strategy; Corporate Social Responsibility (Marketing); Profitable and Viable; New products / projects; Innovation Projects; Reduce Importation; Increase Exportation
Expectations	Improve product acceptance; Collaboration; Improved Infrastructure from Govt; Value addition; Enabling policy environment by Govt; Economic gain; Market share; Profit; Publicity; Growth; More profit; Expansion; Improved branding; Competitiveness; Youth opportunities; Large contribution to GDP; Produce new products (environmental friendly); Create employment; Botswana Brand Promotion
Contribution	Funding for R&D; Support for Incubation; Provide Expertise; Quality assurance; Skilled human resources; Provide technology for development; Social responsibility; Leadership; Funds; Equipment; Training; Financial Support; Trading Platform (Fair); Partnership for Research

Education and Research	
Motivation	Skills development; Recognition and improve rankings; Quest for improved community engagement; Capacity building; Informed nation; Encourage Innovation – Research and Incubation; An educated and innovative nation aligned with Vision 2016 pillar; Create skilled labour that is aligned with market forces; Research on new products; Produce scarce and rare skills (e.g. doctors, engineering etc)
Expectations	Increased availability of research funding; Technological Playground; Improved research outputs; Graduates more employable, more enterprising; Improved relevance to communities; Improved collaboration with industry (e.g., SAP, CISCO, Oracle – provide technological playground) and government; Informed and educated; Improved skills; Solution to challenges; Higher Literacy; Research; Improved pedagogy;

	Skilled human resources – bridge between workplace and school; Provide collaboration and networks; Improve productivity; Proper Training on various sectors; Export Skilled Labour; Produce an informed nation
Contribution	Impact on Skills in Communities; Contribution towards HR Development – Relevant skills in graduates; Provide incubation park; Provide infrastructure; Social Responsibility; Skills development; Funding / Sponsorship; Infrastructure; Policy Support; Skilled personnel; provide Infrastructure; provide Funding; Financial Support; Learning Structures; Skilled Teacher / Tutors

Community (End-users)	
Motivation	Employment creation; Poverty reduction/ eradication; Inclusion / Involvement in co-design; Improved Livelihood; Pride and self esteem; Self reliance; Improve livelihood and welfare; Community Development; Learning experience; Improved services; End-user communities; User friendly products / services; Hire locals (e.g. for marketing)
Expectations	Affordability; Improved quality products; Life long learning; Availability of products; Community improvement and empowerment; Capacity building; Self actualisation; Self reliance; Relevant solutions to community problems; Poverty reduction; Meeting end user needs; Feels they are involved - part of it; Available services, solutions; Accessibility; Improved standard of living; Creation of jobs; Infrastructure improvement; Innovate Ideas
Contribution	Leadership; Funding; Information in relation to challenges to be addressed; Ideas; Human Resources; Volunteering labour; Enabling environment; Contribute ideas and time (HR); availing themselves for trials as test users; Contribution of land if necessary; Provide feedback on innovation; Resources (land, road etc)

Civil Society	
Motivation	Give back to community; Recognition; Improve service delivery; Advocacy for civil rights; Poverty eradication; Socio-economic empowerment; Equality and advancement; Benefit to community / society; Marketing Platform to raise awareness of activities; Funding for new projects; Community empowerment; Advocate
Expectations	Sustainability and longer existence; Recognition; Job creation; Community engagement; Access to more funding sources; Improved livelihoods of community members; Facilitate trust relationship between communities and government; Donor Support; Improved living Standard (i.e., spiritually, economically etc); Improved living standards (Health, housing, nutrition, employment etc); Collaborations with other countries / stakeholders; Policy change; Donations
Contribution	Contribute funding to society; Skills and expertise transfer; Materials (e.g., wheelchairs, hearing aids, houses, etc); Advisory to Government; Expertise; Liaison between govt and community; Provide Leadership; Funding; Funding; Training; Expertise; Quality control and assurance; Research; Skilled labour; Source and provide / recruit volunteers

2.4 Six Thinking Hats Methodology

Session 2 Harvesting Different Perspectives and Emerging Issues on African Living Labs was based on the Six Thinking Hats Methodology published in a book by Dr Edward de Bono in

1985. It is designed to provide a framework based on creativity and collaboration rather than argumentation (the more traditional “I am right, you are wrong”). The methodology is based on focusing group members on thinking about issues from the same perspective at the same time, before moving on to considering the problem domain from another perspective.

It uses an easy to understand metaphor of six hats, each with a different colour and each focused on a different way of thinking. The participants are asked to put on and take off the same coloured hat at the same time, thus ensuring robust output from working group meetings, by tapping into collective wisdom.

White Hat Thinking - Facts

White Hat Thinking focuses on data, information and facts, and is neutral and objective in style. Relevant questions include “What do I know?”, “What do I need to find out?” and “How will I get the information I need?”

Red Hat Thinking - Feelings

Red Hat Thinking focuses on feelings, hunches, gut instinct and intuition. Feelings can change over time and no reasons are required for having a feeling at a specific point in time.

Black Hat Thinking - Caution

Black Hat Thinking focuses on difficulties, potential problems, the devil's advocate, or why something may not work. It identifies potential risks, and logical reasons must be provided.

Yellow Hat Thinking - Benefits

Yellow Hat Thinking focuses on values and benefits, and why something may work. It identifies potential benefits and useful ideas, and logical reasons must be provided.

Green Hat Thinking - Creativity

Green Hat Thinking focuses on creativity; possibilities, alternatives and new ideas. It provides potential solutions or alternatives to address problems identified through Black Hat Thinking.

Blue Hat Thinking – Process (Big Picture)

Blue Hat Thinking focuses on managing and organising the thinking process, providing an overall focus, and identifying and developing next steps and action plans.

Harvesting Different Perspectives and Emerging Issues

Each of the tables below capture the key concepts and contributions made by the individual working groups for the first two of the Six Thinking Hats, as that specific way of thinking applies to Living Labs. All outputs for White Hat Thinking - Facts and Red Hat - Feelings discussed were presented to the entire Working Group.

White Hat Thinking - Facts	<i>What do I know about Living Labs?</i>
	Living Labs are environments / approach that allows open

	<p>Innovation; Collaborative Process (Government, education, industry civil society, community); Focus on user-driven or user centred innovation; Used in other countries like EU, Tanzania, SA; Focused on collaborative efforts; Involves communities to co-develop products and services; Participatory Research; Keywords - collaboration, user driven products and services, open innovation, pre- and post-incubation; Platform that encourages collaboration for open innovation including possible incubation to produce user driven products and services</p> <p>What do I need to find out?</p> <p>Learn more about funding possibility, how to prioritise Innovative ideas and consider potential stakeholders to engage with; Advantages and Disadvantages of Living Labs; Success Stories; Impact; Ethical and legal considerations; Learn more about how to start, organise and run a Living Lab;</p> <p>Where to find out?</p> <p>Living Lab Study from IST-Africa website; Published papers on Living Labs; Profiles of running Living Labs in other African countries; Handouts provided during the workshop, online research; IST-Africa team;</p>
<p>Red Hat Thinking - Feelings</p>	<p>Excitement; Expectant; Motivated; Relevant; Good idea; Encourages collaboration; Facilitates different stakeholders to work together; Allows for cultural exchanges; Allows for idea sharing; Has the potential to change the environment and the way people think about Collaboration and Innovation; Requires good leadership; Enterprising idea; Potential for creativity and innovation; Requires commitment, resources, time, diligence; provide an opportunity for developing products / services to be shared locally; Exciting but fearful of failure due to inclusive approach by fellow collaborators; May be time consuming if you are not well organised; Involve user as focal point; Window for learning experiences; Need to identify the correct stakeholders to involve</p>

It was agreed that the participants would consider Black Hat - Risks, caution; Yellow Hat - benefits and Blue Hat - Big picture after the workshop to allow sufficient time for Brainstorming as a group activity during the workshop.

2.5 Brainstorming & Conclusion

The Working Group members engaged in a brainstorming session around national priorities, policies, public and private sector initiatives that could be implemented by supporting the development of Living Labs, potential stakeholders to be engaged, potential skills and resource gaps that need to be addressed and support that could be provided by different stakeholders.

The following outputs were collected during the workshop:

➤ **National priority areas that could leverage Living Labs**

- *Economic Diversification*
- *Poverty Eradication*
- *Import Substitution & Value Addition Processing*
- *Mining*
- *Energy*
- *ICT*
- *Health*
- *Education*
- *Agriculture*
- *Tourism*
- *Self Reliance of food*
- *Skilled human resource development*
- *Migration on factors hindering economic growth (FMD, HIV, Road Accidents, alcohol, consumption)*

➤ **National priorities that could provide a strategic focus for Living Labs**

- *Maitlamo*
- *Vision 2016*
- *NDP 10*
- *RNPE*
- *Research and Innovation Policy*
- *Energy Policy*
- *Public Health Policy*
- *Inclusive policy*
- *Innovation Hub*
- *eGovernment Framework*
- *Centre of Excellence (to justify national government funding)*
- *National Water Master Plan - Underground dams, artificial aquifer recharge, rainwater harvesting*
- *Youth Policy*
- *CEBA / LEA (Entrepreneurship)*

➤ **Existing and planned public and private sector initiatives that could be complemented by supporting the development of Living Labs**

- *Innovation, Transport, Education, Diamond, Health Hubs*
- *Privatisation Initiatives - BTC, Botswana Post*
- *Back to school initiatives*
- *Poverty Eradication Scheme (ALOEP, Backyard Gardening)*

- *Empowerment skills*
- *Presidential Housing Appeal*
- *Constituency Football Tournament*
- *NIP*
- *Centre of Excellence*
- *Young Farmers*
- *Public Private Partnership (PPP)*
- *Young Innovators competition*
- *Competition authority*
- *BOCRA - Radio Statcoms*
- *Entrepreneurship*
- *Research and Development Institutes*

- ***Potential skills and Resource Gaps that need to be addressed***
 - *Leadership Skills*
 - *Project Management Skills*
 - *Research skills*
 - *ICT Skills*
 - *Learning and teaching skills*
 - *Seed funding to kick start activities*
 - *Collaborative Skills*
 - *Leadership Skills*
 - *Project Management Skills*
 - *Broadband Capacity / Infrastructure*
 - *Energy*
 - *Policies*
 - *21st Century Skills*

- ***Potential stakeholders who should be engaged based on complementary skills, resources and thematic/geographic focus***
 - *Ministries (depending on the focus of the Living Lab - Ministry of Education, Ministry of Transport and Communications, Ministry of Agriculture, Ministry of Science and Technology, Ministry of Health)*
 - *Research Institutions & Universities*
 - *Private Sector (Industry)*
 - *Funding Organisations / Donors*
 - *Communities*
 - *NGOs active in specific thematic area*
 - *UNDP*

➤ **Support that could be provided**

- *Government: MTC - (Maitlamo) - Policy and Funding, DRST - Policy and Capacity, BOCRA - Policy and expertise, NAFTEC, MEWT: Energy, Hubs: Leadership (expertise and policy)*
- *Industry: ICT sector (expertise, funding, infrastructure and equipment, training, Skills incubation)*
- *Research Institutions & Universities (expertise, capacity building, incubation, research, Qualitative and Quantitative Data)*
- *Civil Society - Leadership, Publicity, Advocacy, Funding, Lobby community to get involved*
- *Mines - Expertise (underground dams)*

Ms Phodiso Phole thanked the facilitators for sharing a depth of knowledge and participants for their active engagement and team effort. She highlighted that the participants had learnt a lot about Living Labs and how these methodologies could be used to support Collaborative Open Innovation in Botswana. The participatory group work was very productive and assisted the participants in using the knowledge gained and sharing their expertise and insight with other national stakeholders. This is the start of the Collaborative Process. It is necessary for the stakeholders to give this further consideration, go through the informative slides provided as handouts at their leisure and revert to Ministry of Transport and Communications with specific ideas in relation to how this new knowledge can be implemented in Botswana.

Participants



Name	Organisation
Boitumelo Tau	Limkokwing University
Rod Mkepu	National Food Technology Research Centre
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Josh Makore	Ministry of Agriculture, Dept of Research
James Katende	Botswana University of International Science and Technology
Doreen Mokgatlhe	Ministry of Transport and Communications, Youth Unit
S Rajalakshmi	Botswana University of International Science and Technology
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T Mokobi	Ministry of Education, Skills and Development (DEPRS)
Daniel Kearabeng	Ministry of Education, Skills and Development (ICT & MS)
Masego Kebaetse	University of Botswana (School of Medicine)
Frank Ibikunle	Botswana University of International Science and Technology
Lesego Moruti	Directorate of Public Services Management
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Sally Bett	Limkokwing University
Gaonyadiwe Mokone	University of Botswana (School of Medicine)
Owen Moalosi	Klater Affairs
Benjamin Seema	Molepolole College of Education
Sivakumar Venkataraman	Botho University
Kagise Lefitile	Department of Agriculture Research
Tshepo Plato Galeromelwe	Molepolole College of Education
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