



## THE AFRICAN NETWORK FOR ECONOMICS OF LEARNING, INNOVATION AND COMPETENCE BUILDING SYSTEMS

AFRICALICS OUTREACH EVENT – AFRICAN INNOVATION SUMMIT  
KIGALI, RWANDA, 5 JUNE 2018

### 4<sup>th</sup> INDUSTRIAL REVOLUTION (INDUSTRY 4.0/4IR) AND AUTOMATION TECHNOLOGIES IN THE CONTEXT OF AFRICA'S DEVELOPMENT

#### Background

The continent's political and governance dynamics are changing as are those at a global level which has triggered a growing interest in science technology and innovation (STI) for economic and social development within policy rhetoric. The countries and stakeholders who are shaping the innovation landscape are constantly evolving while the sustainable industrialisation agenda gathers pace. Yet African stakeholders in the innovation practice and policy arena are struggling to keep up with these changes. There is an urgent need for stakeholders in the STI arena, whether in research, business or policy settings to dialogue on how to promote innovation that will foster sustainable development.

The African Network on Learning, Innovation and Competence Building Systems (AfricaLics) brings together innovation scholars interested in Africa's development. The Network takes cognisance of the above mentioned contextual gaps and ongoing challenges and thus provides the opportunity to develop a new and larger cadre of innovation and development scholars in Africa who are able to study, research and provide relevant advice to businesses and policymakers in opportunistic, new or under-researched topic areas. Such research is essential if innovation and development studies is to take hold in Africa. This would consequently provide sufficient knowledge on the continent not only of how to promote innovation at firm and country level but also how to maximise innovations' potential benefits for sustainable economic and social development.

The Network has a set of thematic areas where there is a dearth of academic research undermining the ability for policy makers and business sector to promote innovative activity in their countries and Africa as a whole. AfricaLics is convening discussions during the Summit that will focus on the following thematic areas.

## **Prospects and challenges**

There is wide acknowledgement that emerging technologies hold promise for promoting sustainable development and improving the quality of life. This notwithstanding, deployment of these technologies has raised great concern about their potential negative impacts. Some of these concerns include absolute decline in the number of jobs as machines displace workers and their impact on skills and occupations. There is evidence in some developed nations that robotics and Artificial Intelligence (AI) offer opportunities for transforming intermediate-level skilled tasks, including white collar ones, into routine tasks resulting in labour market polarization. This may contribute to increased earnings and income inequality. Another key area of concern in developed countries is the impact of digital platforms for labour or personal services, such as Uber or Taskrabbit, on social security and welfare provision.

With respect to the context of Industry 4.0, it may be noted that as a result of the co-evolution of Industry 3.0 and globalization the divide within and between countries has become wider than ever before. Thus, at a global level the differential take-up of new emerging technologies raises concerns about a growing technology gap between industrialized and less industrialized or emerging economies. Emerging economies near the technological frontier may be in a position to catch-up or even in some cases leap-frog into a leadership position in some of these technologies. Other emerging economies with relatively weak industrial bases and lacking the requisite production knowledge may fall further behind. A possible scenario is that with the skills and capabilities needed for adopting these new technologies concentrated in developed nations, the resulting lowering of production costs in developed nations will, through trade, make it even harder for least developed nations to compete and possibly will exacerbate an existing trend towards deindustrialisation.

While Industry 4.0 could be a guaranteed source of prosperity for a few, it is likely to spread disaster for those who are not capable of taking advantage of the new technologies, further accentuating the inequalities which has already shown to be high. More research is needed to assess the extent of adoption of emerging technologies, factors affecting their dissemination or scaling across countries at different levels of industrial development, and their impacts on employment, jobs, social welfare and distributive justice.

## **Research agenda and dialogue**

This AfricaLics outreach event aim to address the above mentioned issues taking an innovation systems approach that recognizes that institutional frameworks and local context mold and support innovation and technology adoption in countries at different levels of industrialization. The Network scholars acknowledge the relevance of building learning innovation and competence building systems at the level of individuals and organization. Further, it is acknowledged that stakeholders must dialogue towards shaping the research agenda and propose evidenced based policies and interventions to reduce potentially negative impacts and to support sustainable development paths.

## **Speakers/discussants**

1. Prof. K J Joseph, Centre for Development Studies, Karella, India.
2. Prof. Bitange Ndemo - Chair, Taskforce on Blockchain and Artificial Intelligence, Kenya.
3. Dr. Julius Gatune, African Centre for Economic Transformation (ACET), Ghana. Reflections on Industry 4.0 and Future of Africa in achieving of SDGs.
4. Prof. Edward Lorenz, Leader University of Côte d'Azur, France and Aalborg University, Denmark.

For more information please contact Dr. Ann Kingiri on [ann@africalics.org](mailto:ann@africalics.org) or [secretariat@africalics.org](mailto:secretariat@africalics.org)

About the Summit, visit <http://www.africainnovationsummit.com/>

About AfricaLics, visit [www.africalics.org](http://www.africalics.org)

## Speakers' profiles

### Prof. K J Joseph



Prof. K. J. Joseph is Ministry of Commerce Chair Professor at Centre for Development Studies (CDS), Trivandrum, India. He is a Gold Medalist of the Calicut University for MA Economics. He earned M Phil and PhD Degrees from Jawaharlal Nehru University and undertook post-doctoral research at Yale University (Economic Growth Center) as a Ford Foundation Fellow. Earlier positions that he held include Expert in Innovation Studies, Tianjin University of Finance and Economics, Visiting Senior Fellow at RIS, New Delhi, under the Ministry of External Affairs; Professor (on secondment from CDS) at Jawaharlal Nehru University (CSSP) and IT Policy Consultant of UNESCAP for Cambodia,

Laos, Myanmar, Vietnam, Thailand and the Yunnan Province of China. He has also been a consultant to UNCTAD. His areas of expertise include, innovation and development with focus on information technology, industry studies, especially electronics; FDI, trade, globalization and WTO, regional development with focus on Kerala economy and plantation agriculture.

Apart from over 80 research papers and a number of policy-oriented reports, he has co-edited six books published by five leading international publishers.

He is the President Globelics and the Editor-in-Chief of Innovation and Development published by Taylor and Francis. He also serves as the Editorial Board Member of International Journal of Technological Learning, Innovation and development, Inter-science Publishers; International journal of Institutions and Economics; African Journal of Science, Technology, Innovation and Development, Routledge (AJSTID) and Millennial Asia, Sage Publications.

He has been a Member of the Committee of Direction and Governing Body of CDS, Steering Committee of India-EU Cooperation in S&T, Review Committee of HSRC South Africa, Indo-Japan

Committee of Social Sciences and Humanities, and different expert committees appointed by the Government of India and Government of Kerala; the latest being the Co-Chairman of 13th Five Year Plan Working Group on Micro, Small and Traditional industries, Kerala State Planning Board. He has delivered invited lectures, keynote addresses and presented papers in over 150 seminars/conferences held in more than 30 countries.

### **Prof. Bitange Ndemo**



Prof. Ndemo is a Professor of Entrepreneurship at the University of Nairobi's Business School. He holds a PhD in Industrial Economics from the University of Sheffield in the UK, an MBA and Bachelor's degree in Finance and Accounting from The University of St. Thomas and University of Minnesota respectively. Prof. Ndemo was recently appointed by the government of Kenya as chairman of a taskforce on Blockchain and Artificial Intelligence, Kenya. Prof. Ndemo is also the immediate former Permanent Secretary of Kenya's Ministry of Information and

Communication having served from 2005 to 2013. He is credited for initiating many transformative projects including infrastructural and development programs, as well as marketing Kenya as a destination for Business Processing Outsourcing.

His research centers on the link between ICT and small and medium enterprises in Kenya with an emphasis on how ICT influence economic development in Kenya. He has published in several journals and book chapters, and given talks at various international conferences.

Prof. Ndemo is an advisor to several organizations including iHub, the premier innovation hub in Sub-Saharan Africa, Senior Advisor to the UN on global digitization of payments – Better than Cash Alliance and immediate former Chairman of the Global Alliance for Affordable Internet (2013 – 2014). He also sits in the Board of Research ICT Africa that is based in South Africa. He is an advisor the Better than Cash Alliance and the I-Hub.

### **Dr. Julius Gatune**



Dr Julius Gatune is a Senior Researcher and Policy Advisor with the African Centre for Economic Transformation (ACET). He researches and advises governments across Africa on issues of economic transformation. His areas of focus include: Foresight and future trends modelling, agricultural value chains and extractive resources management and institutional strengthening. He is currently leading a study on 4<sup>th</sup> Industrial revolution and the future of work in Africa. He was part of the team that wrote the recently launched African Transformation Report II: Agriculture Powering Africa's Economic Transformation. He has led over 30

agricultural value chains study across Africa countries. He is also supporting the International Resource Panel of United Nations Environment in developing a global governance framework to help extractive resources support Sustainable Development Goals (SDGs). He has been involved in advising on extractive resources management Zambia, Sierra Leone and Burkina Faso. He has led a 3 year West Africa Trends monitoring exercise to understand the emerging trends in the region and their implications to the poor and excluded. He has also been part of an effort to map the future of Middle East and North Africa. Prior to joining ACET Dr. Gatune worked at McKinsey & Co at Johannesburg South Africa office as a management consultant. He also worked at the Frederick S. Pardee Centre for Study Longer Range Futures at Boston University and the Frederick S Pardee Centre for International Futures at the University of Denver working on a number of projects that that looked explored the drivers of futures of Africa. He has a Ph. D in Policy Analysis for the Pardee RAND Graduate School and Masters in Computer Science from the University of Cambridge. He also holds a Bachelor of Science in Civil Engineering and an MBA from the University of Nairobi.

**Prof. Edward Lorenz**



Prof. Lorenz is Professor of Economics at the University of Nice-Sophia Antipolis and Assigned Professor at the University of Aalborg. He holds a B.S in Economics at MIT (1975), his M.A. in Economics at the University of California, Berkeley (1977) and his Ph.D. in Economics at the University of Cambridge, UK (1983). His research focuses on the internationally comparative analysis of business organization, employment relations and innovation systems with an emphasis on Europe and Sub-Saharan Africa. He has published articles in journals and book chapters in this area. He has contributed to a number of expert committees and also provides expert advice to the OECD,

EUROFOUND and the European Commission. He is a Board member of Globelics, a worldwide community of scholars working on innovation and competence building in the context of economic development.



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**GENDER AND INNOVATION IN THE CONTEXT OF AFRICA'S DEVELOPMENT**

**Background**

Innovation is now accepted as a key driver of social and economic development in emerging economies. Innovation scholars have noted that the ability to identify how collective processes can give rise to innovation seems to be a general problem within innovation research (Lundvall, 1992). This is despite the acknowledgement that collective processes of “interactive learning” are of vital importance to the development of innovations (Lundvall, 1992). However, innovation is perceived to be gender neutral or gender blind. According to Eriksson (2014), gender considerations in innovation has favorable implications for innovation process. Although gender perspectives have been interrogated from sectoral and organizational contexts ranging from agriculture, health care among others, gender research is implicit about innovation (Nahlinder et al. 2012). This problem is further confounded by the inadequate capacity conceptually and theoretically by researchers to undertake gender research and analysis from an innovation perspective.

**Expected output/outcome**

This thematic session is partly motivated by the fact that a holistic and different approach to gender and innovation is paramount for enhanced inclusivity and economic growth. In addition, including women in innovation is not just about quotas, but reconfiguring the existing systems which exclude women from such processes in the first place. It is further acknowledged that all stakeholders must dialogue towards shaping the research agenda and propose evidenced based policies and interventions to reduce potentially negative impacts linked to gender exclusion and to support sustainable development paths.

The session is convened to bring together stakeholders interested in gender in the context of Africa's innovation and development to articulate a research agenda and identify relevant issues that can inform policy and practice. These include scholars working on or interested in gender and innovation, and who are open to including a gender angle in their policy, academic and practice oriented analysis and other interested stakeholders (e.g. funding bodies, business/private sector, policy). The session will further discuss research questions relating to gender and innovation and how these relate to different scales and contexts (different economies, sectors etc within Africa).

## Speakers

Moderator: Dr. Ann Kingiri, Africalics Secretariat

1. Dr. Shikoh Gitau – Topic TBC
2. Dr. Andrea Jiménez Cisneros - Inclusion of women innovators based on the concepts of situated agency and intersectionality: lessons from Zambia.
3. Dr. Opeyemi Ayinde - Gender and innovation in the African/Nigerian context.

For more information please contact Dr. Ann Kingiri on [ann@africalics.org](mailto:ann@africalics.org) or [secretariat@africalics.org](mailto:secretariat@africalics.org)

About the Summit, visit <http://www.africaninnovationsummit.com/>

About AfricaLics, visit [www.africalics.org](http://www.africalics.org)

## Speakers' profiles

### Prof. Ayinde, Opeyemi E.



Ayinde is an Associate Professor and Head of Department of Department of Agricultural Economics and Farm Management, University of Ilorin Nigeria. She is also a Senior Research Associate Fellow of the South African Research Chair Initiative (SARCHI) on Innovation and Development, Tshwane University of Technology, South Africa. She obtained her PhD in Agricultural Economics in 2008 from University of Ilorin, Ilorin, Nigeria where she also currently serves as an academic Staff. Ayinde key research Interest presently has been in the economics of innovation in agricultural productivity exploring themes such as the agricultural producers' behavior to risk, especially climate risk and as well to innovation; determinants of diffusion of new technologies, Agricultural Management strategies, Effect of Climate change on Agricultural production and gender issues in innovation studies. As a young researcher, she has publications in peer-reviewed journals as well as academic papers at International Conferences. Ayinde has served as consultant to various national and international organization including Africa Rice, International Institute of Tropical Agriculture (IITA), and West Africa Agricultural Programme Project awarded by World Bank. Ayinde is presently carrying out research in gender in innovation: a case study of stress

tolerant maize and research on economics of innovation in stress tolerant maize varieties. These projects are supported by International Institute of Tropical Agriculture (IITA) under Prime Agreement from CIMMYT.

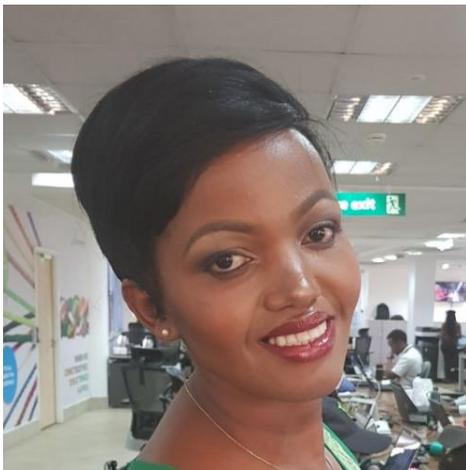
#### **Dr. Andrea Jiménez Cisneros**



Andrea is from Perú and holds a PhD from the School of Management at Royal Holloway University of London. Andrea's thesis critically examines the emerging phenomenon of innovation hubs, specifically in the Global South, and argues for a human-centred perspective in the discourse of innovation for development. She holds a Masters in Sustainable Development, with a focus on social innovation and ICTs for Development. Andrea has previously worked for the Food and Agriculture Organisation of the United Nations (FAO), the International Telecommunications Union (ITU) and the Alliance for Affordable Internet (A4AI). Her research interest revolves around the impact of social

and inclusive innovation, digital entrepreneurship and gender. Andrea has also been featured in the 'Women's Pathways to the Digital Sector: Stories of Opportunities and Challenges' Report, as part of the #eSkills4Girls an initiative by the GIZ.

#### **Dr. Shikoh Gitau**



Dr. Gitau holds a PhD and MSc in Computer Science from University of Cape Town, South Africa. She has over ten years of experience in ICT4D technology design & implementation. Dr. Gitau has established expertise in both African and Emerging Markets specialized interest in issues pertaining to in resource poor communities and marginalized groups including women, youth and children. Her work experience includes Africa Development Bank (AfDB), in the ICT department, developing projects with various governments across Africa, Head of Products, Alpha at Safaricom Limited among other influential positions. Dr. Gitau is an entrepreneur and founded Ummeli, TaaSisi and education Social Enterprise Guitings Trust among others. Shikoh has received several awards in

recognition of her efforts in influencing Business and Government as well as Technology. She seats on various boards in ICT companies and contributes to a number of steering committees and think tanks on Africa.

#### **Dr. Ann Njoki Kingiri**



Dr. Kingiri is currently a senior research fellow, science, technology & innovation (STI) at the African Centre for Technology Studies (ACTS). Previously she was the Director of Research at ACTS, a development policy think tank, working to harness applications of STI for sustainable development. She holds a Bsc degree in Agriculture and Msc degree in Plant Pathology both from University of Nairobi, Kenya; A Master's degree in Biosafety in Plant Biotechnology from Marche Polytechnic University, Ancona, Italy and a PhD degree from UK in Development Policy and Practice discipline focusing on new biosciences policy. Ann is also a visiting researcher at the Development Policy and Practice (DPP) unit, Department of Engineering and Innovation, Open University, UK.

Kingiri's interest is in STI policy and development researcher with a focus on inclusive and sustainable development in Africa. She has been pursuing interdisciplinary research on integrated approach to agricultural development and innovation with relevance to Africa's inclusive and sustainable development. As a policy researcher, she continues to pursue policy oriented research in STI, agriculture and bioenergy, including climate change and gender as cross cutting themes. She has published in these disciplines. Kingiri has over 10 year's public sector and research think tank management experience. She is a member of a number of scientific and academic networks including AfricaLics and Globelics. She is the Secretary General of AfricaLics.