ACTS

STRATEGIC PLAN 2014-2018:

ACCELERATING AFRICA'S TRANSITION TO INCLUSIVE KNOWLEDGE AND GREEN ECONOMIES

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"FOR TOMORROW BELONGS TO THE PEOPLE WHO
PREPARE FOR IT TODAY"
AFRICAN PROVERB

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ACRONYMS

ACTS	African Centre for Technology Studies
AU	African Union
CBD	Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change
CODESRIA	Council for the Development of Social Sciences Research in Africa
EAC	East Africa Community
SADC	Southern African Development Community
COMESA	Common Market for Eastern and Southern Africa
ECOWAS	Economic Community of West African States
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on Research and Development
ICT	Information, Communication, and Technology
IGAD	Intergovernmental Authority on Development
NEPAD	The New Partnership for Africa's Development
NORAD	Norwegian Agency for Development Cooperation
SIDA	Swedish International Development Cooperation Agency
DFID	Department for International Development
MVA	Manufacturing Value Added
KEI	Knowledge Economy Index
R&D	Research and Development
RBM	Results Based Management
SSA	Sub Saharan Africa
MDGs	Millennium Development Goals
ST&I/STI	Science Technology and Innovation
STPI	Science, Technology, and Policy Institute
UN	United Nations

EXECUTIVE SUMMARY

Africa's development landscape is changing. Its economy has recorded an increase in the productivity of investment in the first decade of the 21st century attributed to improved infrastructure, better access to technology, and policy reforms that have reduced transaction costs linked to production, distribution and trade. Relatively good economic growth in many countries over the last decade; a 'commodity boom'; growing foreign direct investment (FDI); increasing discovery and exploitation of natural resources; a growing middle class and changing demographics (particularly the youth bulge); the rise of China and other emerging economies; changing development paradigms; globalization and; increasing use of modern technology, especially, information and communication technologies (ICTs), has occasioned rare Afro-optimism: scholarly and populist discourses on 'Africa Rising'– potentially unique opportunities for structural transformation of the continent in the 21st century.

Yet this Afro-optimism must be tempered by caution. In spite of its recent GDP growth rates, Sub-Saharan Africa (SSA) remains the most likely region to miss the first Millennium Development Goal (MDG1) of reducing by half extreme hunger and poverty by 2015. It is also the most vulnerable region to the impacts of climate change. The claimed economic growth creates few employment opportunities for the approximately 11 Million youth who join the labour market each year. Additionally, Africa has 10 per cent of world's oil reserves, 40 per cent of gold reserves, and 80-90 per cent of chromium and platinum group metals and 60 per cent of the world's arable land yet to be cultivated. With serious mineral exploration and development only now picking up speed, the vast potential of the continent's natural resources is yet to be realized. The major development challenges facing Africa—ensuring food security, clean water, sustainable energy access, adapting to and mitigating climate change, fighting infectious diseases, and conserving biodiversity, creating employment for a growing youth population —require a diversification and structural transformation from low technology and low knowledge intensive sectors to high technology and high knowledge intensive sectors.

The African Centre for Technology Studies (ACTS) is a Nairobi-based, non-partisan, non-profit, international development policy think tank, working on issues of science, technology, innovation, economic development, and environmental change. Founded in 1988, ACTS is mandated to pursue policy oriented research towards strengthening the capacity of African countries and institutions to harness science and technology for sustainable development. ACTS' vision is a knowledge-based African continent of sustainable and diversified livelihoods, economic, social, and environmental progress, equity, and sustainability. ACTS' mission is to enlarge the policy choices for sustainable development in Africa. We inform, influence, broker, leverage, and build capacity for inclusive policy, organizational, institutional, and technological change for economic, social, and environmental sustainability in Africa.

ACTS New Strategic Plan 2014-2018: ***Accelerating Africa's Transition to Inclusive Knowledge and Green***

Economies, taps into the Afro-optimism to transform the African continent and reinforces ACTS' prominent role in pioneering high quality research, policy analysis and dialogue, and capacity strengthening on contemporary issues in African development. The New Strategic Plan seeks to unlock Africa's potential for inclusive growth by catalysing investments, policy, institutional and organizational incentives in knowledge based and green economies through five programme areas: -

1. **Inclusive Bio economy** aiming at an African economy where bio resources, bio sciences, and biotechnologies contribute a significant share of economic output particularly from agriculture, food, water, and renewable energy sectors.
2. **Information Economy** aiming at an African economy in which knowledge is the primary raw material and source of value drawn from the application of Information and Communication Technologies (ICTs), development of ICT infrastructures including Open and Big Data (i.e. the Data Revolution).
3. **Climate Resilient Economies** aiming at an African economy that has transitioned from a state of vulnerability to a state of resilience to the impacts of climate change through: climate change adaptation and mitigation; disaster risk preparedness; climate resilient infrastructure; and low carbon development.
4. **Responsible Natural Resource Economies** in Africa characterized by responsible extractive industries; the triple bottom line (people, planet and profits); sustainable use and conservation of biodiversity resources; natural capital accounting and ecosystem valuation.
5. **Gender, Youth and Inclusive Development** aiming at an African economy that recognizes the significant role of women, youth and other marginalized or vulnerable groups in harnessing science, technology and innovation for economic development and sustainability in Africa.

The rest of this document is organized as follows:

Section I is an overview of ACTS over the last quarter century and highlights ACTS Value Proposition.

Section II provides a background to the situation in Africa and the role of ACTS through the New Strategic Plan.

Section III discusses the New Strategic Plan.

Section IV provides an overview of the Implementation Strategy while

Section V concludes by placing the new strategy within the Results Based Management Framework.

1.0

LOOKING BACK: A QUARTER CENTURY OF POLICY OPTIONS FOR A SUSTAINABLE AFRICA

ACTS Vision

Knowledge for better livelihoods

ACTS Mission

To strengthen the capacity and policies of African countries and institutions to harness science, technology and innovation for sustainable development

ACTS Value Proposition

To conduct high quality research, policy analysis, capacity strengthening and outreach on applications of science, technology and innovation policies to sustainable development in Africa;

To facilitate and convene evidence based policy dialogue and debate;

To inform development policy and practice;

To put critical issues of science, technology innovation on the Development Agenda; and

To provide independent and objective policy advice to African governments and agencies, regional economic communities and institutions, private sector, civil society and community actors and agencies.

Working with global, regional, and national scholars, policymakers, communities, public, private, and civil society organizations our goals are to:

- Conduct high quality research, policy analysis and capacity strengthening on harnessing applications of science, technology and innovation for sustainable development;
- Broker and leverage science, technology and innovation research, knowledge and expertise for development policy and practice in Africa;
- Convene and facilitate evidence based, multi-stakeholder dialogue and debate;
- Inform, influence and enhance development theory, policy and practice;
- Expand the African development policy space by putting issues critical to Africa's development on global, regional and national policy agendas and;
- Promote science diplomacy for global development

We are committed to expanding Africa's range of policy options as evidenced in our last four 5-year Strategic Plans implemented over the last two decades. Under the first strategic plan (1992-1997), ACTS prioritized Agenda 21 and related conventions on climate change and biodiversity. ACTS was the first to organize an international conference to discuss options that African countries could adopt to mitigate the impacts of climate change. We played a major role in the negotiations for the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC) particularly with access to genetic resources and benefits sharing; technology transfer; traditional knowledge and intellectual property protection. During the strategic period 1997-2002, ACTS advanced the potentials for Biotechnology and Biosafety in Africa by influencing patent (i.e. industrial property) legislation and policy (Kenya); environmental impact assessment standards (Eastern and Southern Africa); bio-energy and biofuels policy (Kenya, West Africa); agricultural policy, bio-diplomacy, biotechnology and biosafety policies(Africa-wide). In the period 2003-2008 ACTS strategic focus was to enlarge the range of policy options and dialogue to support Africa's quest for sustainable development. The just concluded strategic period 2008-2013, was ACTS landmark in advancing policy options for agriculture and food security; water and energy security; biodiversity and natural resource management.

ACTS competence and leadership in science, technology and innovation policy research has been acknowledged worldwide having been rated amongst the top Environment[1] and Climate Change[2] Think Tanks in Africa and the world in 2013. ACTS is also a past winner (1991) of the Justinian Rweyemamu Prize from CODESRIA (Africa's Social Science Research Council) for its work in expanding the knowledge base for Africa's development.

The New Strategic Plan taps into ACTS past successes and ventures into future possibilities of ACTS niche in Africa's development. The 2014-2018 Strategic Plan to accelerate Africa's transition into inclusive knowledge and green economies can be seen as an ambitious strategy which aligns itself with contemporary African economic diversification and structural transformation agendas including the African Union (AU) Agenda 2063; AU Mining Vision 2050; AU Science, Technology, and Innovation Strategy 2024 (STISA-2024); Vision 2030/2040 national strategic plans in a number of African countries including Kenya, Uganda, Tanzania, Botswana, South Africa; and the Green and Resilient Climate Economy Strategies of Rwanda and Ethiopia.

In essence, the thrust of the New Strategic Plan is the realization of the immense opportunities presented by information availability and connectivity, technological advancements, the demographic dividend, natural capital assets, and increasing vulnerability of Africa to the impacts of climate change vis a vis current economic growth and a transforming geopolitical policy environment.

2.0

AFRICA RISING? A CHANGING CONTINENT IN SEARCH OF INNOVATIVE POLICY SOLUTIONS

Africa is rising. High growth rates; increasing foreign direct investment (FDI); falling aggregate poverty rates, projections of rise in the collective GDP (from present USD 1.6 trillion to USD 2.1 by 2020); increasing economic and political liberalization; rising middle class; a commodity boom; are all indicators of a transforming African continent. By 2030, much of Africa will attain lower-middle- and middle-class majorities. Africa's population, currently at 1 billion, is projected to rise to 2 billion by 2050, with some countries potentially standing to reap the 'demographic dividend' from as early as 2030 [3].

Despite this, far too many people in Africa remain untouched by the explosive scientific and technological progress, at a time when food, health, and energy, as well as information, communication, and other technologies are becoming rapidly more important for human development, innovation, and prosperity. The commodity and natural resource dependent nature of many African economies is not conducive for 'inclusive growth' necessary to lift millions out of poverty[4]. Because of the enclave nature of the resource sector, it cannot be relied upon to create enough jobs to absorb the 11 million youths who enter the labour market each year[5].

Available data indicate the share of manufacturing in total value added has declined over the past two decades, showing an average fall from 14 per cent in 1990–1999 to 11 per cent in 2000–2011. Africa has also witnessed a decline in the importance of manufacturing in its exports. The share of manufactures in Africa's total exports fell from 43 to 39 per cent between 2000 and 2008. A total of 23 African countries had negative MVA per capita growth between 1990 –2010. Only five African countries achieved an MVA per capita growth above 4 per cent during the same period[6], with the rest recording stagnation.

ACTS is convinced that Africa's economic diversification and structural transformation in the 21st century hinges on its capacity to harness applications of science, technology and innovation to create inclusive knowledge and green economies. ACTS will contribute to this transformation through high quality research,

policy analysis and dialogue and capacity building and outreach.

Our core business in the next five years shall be to facilitate the development of policies, institutions, organizations, and technologies that will effectively transition Africa into knowledge based and green economies. In committing to this objective, we respond to a number of fundamental questions in the global and African development discourse:

1. How can Africa 'seize' the emerging geopolitical, economic and knowledge order, characterized by increased globalization for its economic and social transformation?

2. What policy, organizational, institutional and technological capacities would Africa need in order to successfully 'negotiate', 'mediate' or 'seize' this new world order in favour of its economic and social transformation?

3. How can Africa harness applications of science, technology, and innovation for its economic and social transformation in the new global order?

4. What, if anything, have economically successful countries and regions done differently? What lessons might Africa learn from their science, technology, and innovation policies?

5. What are the opportunities and risks posed by the new world order to Africa's economic development and how might Africa maximize the opportunities and minimize/mitigate the risks?

ACTS acknowledges the increasing role of knowledge in Africa's economic development. A knowledge economy "makes effective use of knowledge for its economic and social development. This includes tapping into foreign knowledge, and adapting and creating new knowledge for specific needs[7]". It is an economy in which productivity; growth and sustainability largely depend on the production, distribution, exchange and use of knowledge, as opposed to the traditional means of production – natural resources, physical capital and low skilled labour.

Data is crucial for Africa's transition into a knowledge-based economy. Africa's competitiveness over the next decade will depend on its ability to harness the 'Data Revolution'. Generation, storage analysis, dissemination and application of data in policy and governance processes is taking a totally new approach with the advent of Big Data, Open Data, Smart Machines and numerous new ICT infrastructures. Providing policy and institutional frameworks where researchers, partners, and other stakeholders can easily access and make use of data for policy and governance is ACTS priority towards creating a knowledge based African economy.

There is also a growing international consensus on the need to harness green economy as one pathway towards sustainable development and poverty reduction within the context of global climate change and degradation of ecosystems[8]. Green economy is one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is characterized by low carbon use, resource efficiency, and social inclusiveness.

ACTS added value shall be found in its ability to seize the synergies provided by the intersection of a knowledge based economy and a green economy while tapping into their enablers: the growing information society, bulging youthful population, degrading natural capital assets, and

increasing vulnerability of Africa to the impacts of climate change vis a vis current economic growth, a demographic dividend and a transforming policy environment.

2.1 TOWARDS KNOWLEDGE BASED AFRICAN ECONOMIES

Africa must transform into a knowledge economy. Approximately 60 per cent of the difference in income between SSA countries and the advanced economies is attributable to gaps in the stock of knowledge. Transforming a majority of Africa's predominantly agricultural based economies into knowledge based economies will require technological 'leapfrogging' to industrial and information economies (See Figure 2.1[9]). While late-industrializing economies like China and Brazil[10] have demonstrated that technological leapfrogging is possible, Africa's case will be harder and urgent as the gap between it and the rest of the world is widening. There are several reasons why ACTS believes that accelerating this transition is necessary for African economies. First, is the indispensable role of knowledge in economic development. There is a clear correlation between the global distribution of knowledge and the global distribution of poverty as shown in the World Bank's Knowledge Economy Index (KEI). There is a positive correlation between KEI and level of economic development/GDP per capita. Africa's overall score in the KEI fell between 2000 and 2009, suggesting that the 'knowledge gap' between Africa and the rest of the world is widening. Since the KEI is a good predictor of GDP per capita, economic growth and human development, this does not augur well for Africa's long term economic growth and competitiveness[11].

Figure 2. 1 The increasing role of knowledge in economic development

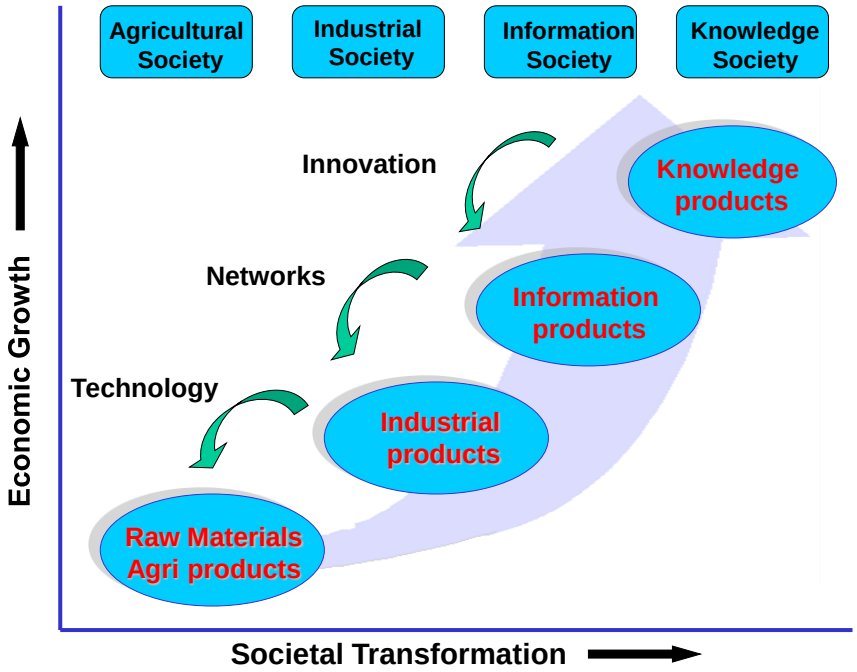
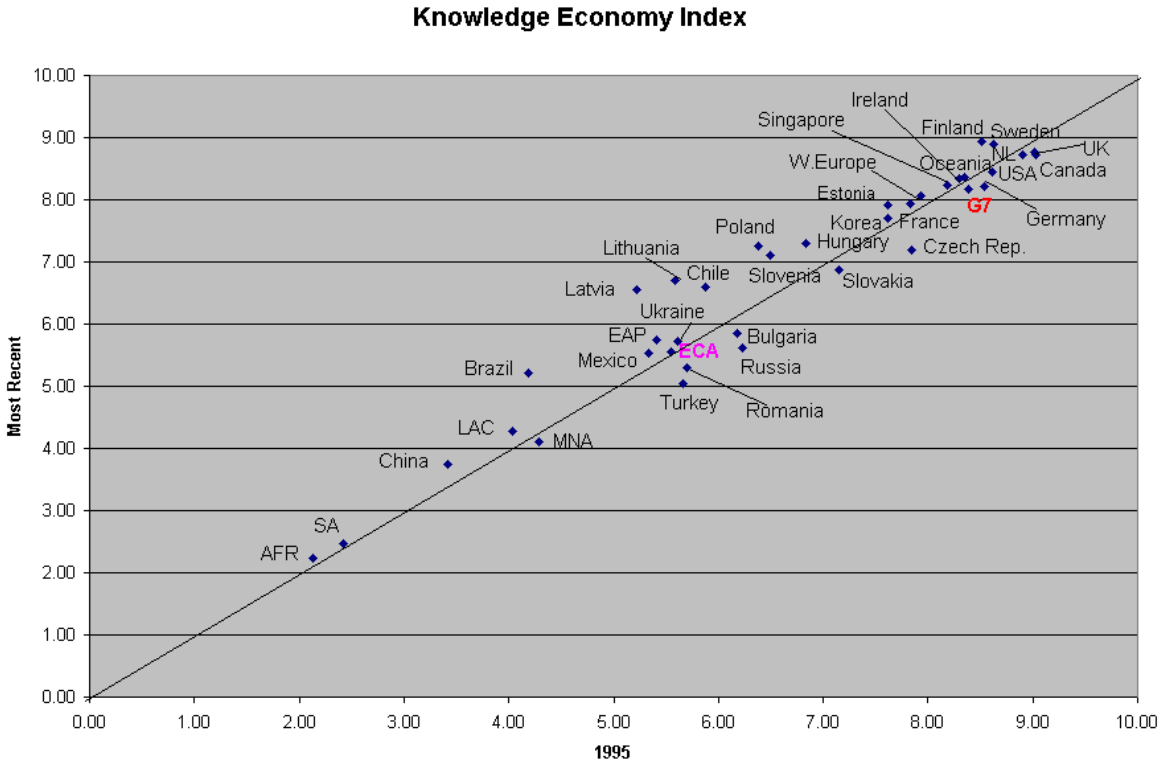


Figure 2. 2 Knowledge Economy Index



Second, global technology trends[12] indicate a continued R&D, market development, and debate around certain global technologies: biotechnology, nanotechnology, materials technology, and information technology. Applications of these technologies have the potential for significant and dominant global impacts by 2020 by addressing some of the most significant problems facing many developing countries especially in Africa: food, water, agriculture, industry, health, energy, economic development, and the environment.

Third, Africa needs to enhance the competitiveness of its economies. Several countries have recognized this and developed long-term visions, technological projections & foresight studies ; national innovation or S &T development strategies; sector specific technology roadmaps: (e.g. South Africa Vision 2030 ; 10 year National Innovation Strategy; Qatar Vision 2030); increased spending on education and R&D as a share of GDP ; establishment of specific agencies to direct knowledge based economy initiatives. Further, a submission to the post-MDG consultation group by Africa suggests science, technology and innovation as one of the post 2015 sustainable development goals.

Fourth, African countries need to invest in an expanded education and R&D system if they are to achieve a knowledge based and green economy. Between 2006 and 2008, Sub-Saharan Africa produced less than 25% of combined Brazil and India's scientific publication in biosciences. In most African countries, expenditure on R&D is still below target of 1% of GDP[13]. South Africa devotes most resources to R&D with GERD of almost five billion dollars. Malawi and Uganda have an R&D density (GERD/GDP ratio) of over 1% (1.70% and 1.10%, respectively) while the percentages for the rest of Africa range from 0.20% to 0.48%.

ICTs are increasingly becoming an integral part of the social, economic, and political fabric in Africa. The World Bank estimates that between 2000 and 2008, African countries that were the first to liberalize their ICT sectors enjoyed an extra 1.2 per cent boost to GDP compared to those that liberalized their sectors later. It's estimated that ICTs directly contribute about 7 per cent of Africa's GDP[14]. This is higher than the global average because mobile telephony in particular, has been creatively deployed to substitute many other services and/or to correct long running 'market' and 'government' failures in sectors such as finance (i.e. mobile banking; electronic payments, money transfers, crop insurance; taxation) , agriculture (market information, weather, extension services), health (telemedicine), education (eLearning, e-schools) , Trade (e-trade), climate change (e-mapping, better management of natural hazards and disasters, climate adaptation information), government (e-participation, e governance) among others.

Some 650 million people, or nearly two thirds of all African adults, have access to mobile phones in Africa – higher than the number of people with access to clean water, electricity or clean cooking facilities. The indirect contribution (i.e. its transformation of other sectors) of the ICTs sector to African economies is even more significant. By one account, increasing access to mobile networks by 1 per cent may translate into a 0.5 per cent increase in real GDP per capita[15]. In 2011, the mobile phone ecosystem provided 5 million jobs and $15 billion in direct government revenues (sales and import taxes, regulatory fees) to African economies.

Africa has only 16 per cent internet penetration, 167 million internet users, 67 million smartphones and 52 million Facebook users. The internet contributes $18 billion to the African economy today. These figures are

projected to rise to 50 per cent, 600 million, 360 million, and 300 billion respectively by 2025[16]. McKinsey estimates that if the Internet were to achieve impact on the same scale as mobile telephony in Africa, the internet contribution to the GDP or iGDP could account for as much as 10 per cent of total GDP or $300 billion, by 2025. The largest economic and social impact of the Internet is likely to be concentrated in six sectors - financial services, education, health, retail, agriculture, and government – that face specific 'market and government failures' (e.g. service delivery challenges and information asymmetries) and that can easily be solved by use of internet technologies. Technology-related productivity gains in these sectors alone could reach $148 billion to $318 billion by 2025. Given the impacts of these sectors on large sections on the population, any transformative changes in these sectors have the potential to fundamentally transform African economies.

2.2 TOWARDS GREENING AFRICAN ECONOMIES

There is growing international consensus on the need to harness green economy as one pathway towards sustained growth within the context of global climate change and degradation of ecosystems. The Rio+20 Summit reiterated this consensus by launching "Sustainable Development Goals" and laying down "ground-breaking guidelines on applying green economy policies as useful tools in advancing sustainable development and ending poverty[17]". While green economy emerged from a need to find lasting solutions to multiple global crises - global warming, climate change and degradation of ecosystems - it has the potential to help countries address many other pressing problems such as water scarcity and poor sanitation, unemployment, income inequality, food security and energy insecurity.

The African Union (AU) highlights the rationale for 'greening the economy' in Africa[18] as inclusive growth and poverty eradication; employment creation; food security and; resource scarcity and environmental risks. In response to the global and regional efforts, a number of African countries, including Malawi and South Africa have justified the push for a transition to green economies on the basis that it would promote long term equitable growth, green and decent jobs, resource efficiency and sustainable production and consumption, human health and well-being[19]. Despite the consensus and willingness of many African countries to advance green economies, only few have the requisite capacities to successfully transition to green economies across sectors. The lack of a "…*proper package of capacity building, technology transfer and financial assistance*"[20] in green technologies and industries"[21] as outlined by Malawi and South Africa respectively at the Rio +20 Summit, means that investments need to be made in strengthening of technical and scientific cooperation, including North-South, South-South and triangular cooperation[22].

ACTS, therefore, seeks to fill this void by facilitating high quality research, policy analysis and dialogue and capacity building on applications of science, technology and innovation in advancing green economies. We shall build on the four pathways to building a green economy in Africa as outlined by the African Union:

- Recognising the economic importance of natural capital assets in wealth creation, employment, livelihoods, and poverty reduction in Africa. These include assets in agriculture, water, biodiversity-based industries, and in mineral resources

- ❖ Developing green opportunities for industrial growth by increasing the efficient use of material input, and thereby achieving greater international competitiveness in manufacturing and energy efficiency
- ❖ Creating enabling policies and institutions. These might include targeted public spending and private investment; developing regulations and standards; seizing trade opportunities; reforming harmful policies; technology transfers; strengthening institutions and processes; financing and international cooperation[23].

3.0

ACTS STRATEGIC PLAN 2014-2018: PROGRAMMATIC PRIORITIES WITHIN THE KNOWLEDGE AND GREEN ECONOMY FRAMEWORK

- INCLUSIVE BIO ECONOMY: **Agriculture, Food, Water and Renewable Energy**
- INFORMATION ECONOMY: **Information and communication technologies (ICTs); Applications and infrastructure; Open Data; Big Data, Smart Machines**
- CLIMATE RESILIENT ECONOMIES: **Climate Change and Mitigation; Disaster Risk Management; Climate Resilient Infrastructure; and Low Carbon Development**
- RESPOSIBLE NATURAL RESOURCE ECONOMIES: **Ecosystem Valuation; Natural Capital Accounting; and Responsible Extractive Industries**
- GENDER, YOUTH AND INCLUSIVE DEVELOPMENT

ACTS 2014-2018 Strategic Plan is based on a framework for inclusive knowledge and green economies for the African continent that recognises the role of information, skilled human capital, and advances in STI in ensuring sustainable development in Africa. ACTS is positioning itself as a stakeholder in inclusive bio-economies, information economies, climate resilient economies, natural resources governance and gender, youth, and inclusive development.

While looking forward into areas of emerging technologies and contemporary development challenges in Africa, the New Strategic Plan consolidates ACTS past successes in our long running core areas of expertise: climate change, biotechnology and biosafety agriculture, food, water and energy security nexus; biodiversity and natural resource management. In each of the programme areas, ACTS will focus on harnessing applications of science, technology, and innovations to provide policy solutions through high quality research, policy analysis and dialogue; and capacity building and outreach as per our value proposition.

3.1 INCLUSIVE BIOECONOMY

PROGRAMME VISION: ***An inclusive, pro poor and thriving bio-economy for economic, social, and environmental sustainability in Africa***

PROGRAMME MISSION: ***To provide policy choices that support the generation, uptake and harnessing of biosciences, bio resources, and biotechnologies for sustainable and diversified livelihoods, socio-economic development, and biodiversity conservation in Africa***

PROGRAMME GOAL: ***To support the development of enabling policies, organizations and institutions for harnessing applications of biosciences, bio resources and biotechnologies for agriculture and food security, energy access and security, water quality and security, biodiversity and natural resource management in Africa.***

This programme area prioritizes bio resources, biosciences, biotechnology, and bio-innovation as essential pathways to achieving a knowledge based and green economy, thereby sustainable development. ACTS seeks to accelerate the development of bio-based products and services, technologies, institutions, and policies. Additionally, it will train bio-entrepreneurs, with a view to enhancing the applications of bio-innovations to address agricultural productivity, food and nutrition security; access to clean and renewable energy; sustainable water management, adaptation to climate change and sustainable use of natural resources.

ACTS considers bio economy as a strategy for Africa to 'catch-up' with most advancing countries whose economies have flourished due to advances in biosciences research, innovation, and development. Biotechnology offers technological solutions to many of the economic, social, and environmental sustainability challenges facing Africa and much of the world. Applications of such can increase the supply and environmental sustainability of food; improve water quality; provide renewable energy; improve the health of humans and livestock; enhance manufacturing, and conserve the environment and biodiversity.

As biotechnology can also be potentially and radically disruptive, economically, socially and environmentally, Africa need to develop capabilities and competencies either to convert the potentially disruptive capabilities of biotechnologies to its advantage or to develop appropriate policies and regulations to protect the continent from potentially disruptive impacts of this technology. This is the role of ACTS in enabling countries to develop policies that tap into these opportunities and mitigate the disruption caused by bio-innovations. This will require evidence based and science led development policy making, including efforts to boost research, policy analysis and capacity strengthening in agricultural, industrial and environmental biotechnologies; reducing barriers to biotechnological innovations; turning the potentially disruptive power of biotechnology to Africa's economic advantage; promoting the integration of biotechnology research across commercial applications; and facilitating dialogue and public education among governments, industry, civil society and national populations.

3.2 INFORMATION ECONOMY

PROGRAMME VISION: ***An inclusive, pro poor and thriving information economy for economic, social, and environmental sustainability in Africa.***

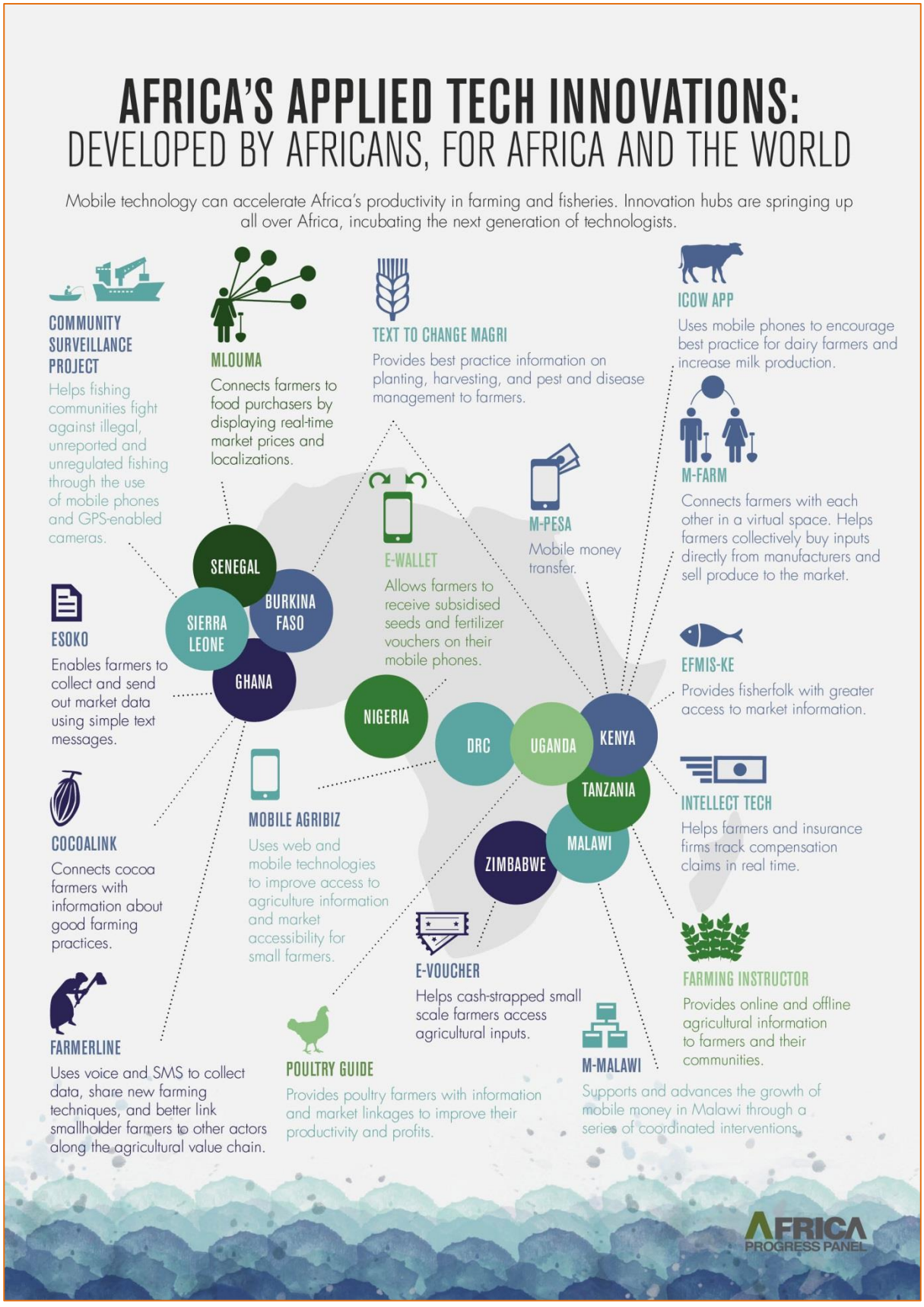
PROGRAMME MISSION: ***To provide policy choices that support the generation, uptake and harnessing of information and communications technologies, open data, big data and smart machines for sustainable and diversified livelihoods, socio-economic development and biodiversity conservation in Africa.***

PROGRAMME GOAL: ***To support the development of enabling policies, organizations and institutions for harnessing applications of information and communications technologies, big data and the digital economy for agriculture and food security, energy access and security, water quality and security, biodiversity and natural resource management in Africa.***

ACTS' second niche in a knowledge-based economy will be in accelerating the development and uptake of applications of ICTs, open data, big data and smart machines with specific reference to those targeting agriculture; clean and renewable energy; sustainable water management; climate resilient economies; responsible natural resource economies; and gender, youth, and inclusive development. Harnessing the development and application of ICTs has had enormous impact on key development sectors in Africa as demonstrated by numerous award winning social and commercial innovations and applications in agriculture (e.g. M-Farm, Kilimo Salama, iCow), finance (M-Pesa, M-Shwari), health (MedAfrica, Mobile Baby), energy (Mafutago), water, education, government, environment and climate change sectors (Figure 3.1).

ACTS strategic focus on an Information Economy shall be grounded on four pillars of a knowledge economy[24]. First, ACTS shall invest in economic incentives and institutional regimes for the efficient use of existing and new knowledge and the flourishing of data based entrepreneurship. Secondly, ACTS shall tap into Africa's growing highly skilled and well educated work force. In particular, we envisage investing in building the youthful human capital that, from other research, indicate a high adaptability to technology and innovation and are flexible to structural transformations. Thirdly, we target the dynamic and growing information and communication infrastructure in Africa that includes: internet connectivity and penetration, applications (e.g. e-government, e-commerce, e-agriculture, e-schools, etc.), telecommunications regulations, and open data among others. Finally, ACTS shall support an effective national innovation system to facilitate production, diffusion and use of knowledge – mainstreaming science, technology and innovation in national development and economic policies; better STI policy, technology forecasting; science and technology parks, incubators, university spin-offs, clusters, centers of excellence, venture capital; and social innovation, among others.

Figure 3. 1 Africa's Applied Technology Innovations



3.3 CLIMATE RESILIENT ECONOMIES

PROGRAMME VISION: ***Inclusive, pro poor and thriving climate resilient economies for economic, social, and environmental sustainability in Africa***

PROGRAMME MISSION: ***To provide policy choices that support the generation, uptake and harnessing of climate sciences, technologies, and innovations for sustainable and diversified livelihoods, socio-economic development, and biodiversity conservation in Africa***

PROGRAMME GOAL: ***To support the development of enabling policies, organizations and institutions for harnessing applications of climate sciences, technologies and innovations for agriculture and food security, energy access and security, water quality and security, biodiversity and natural resource management in Africa***

Africa's vulnerability to the impacts of climate change arises from a combination of factors: heavy dependence of livelihoods and economic activities on highly climate sensitive natural resources such as rain-fed agriculture; natural fragility of its ecosystems (degradation and desertification accounts for 67 percent of Africa's surface area); a poorly developed infrastructure (especially water, energy, ICT and transport) that can hardly survive extreme weather events such as floods and drought; and poorly developed economies relatively lacking in financial and technological resources for climate adaptation and mitigation. Predominantly, the impact of climate change on infrastructure (i.e. water, energy, transport, & ICTs) is an important economic, environmental, and social issue. In spite of the near universal emphasis on infrastructure development in Africa, few if any countries

have explicit climate resilient infrastructure strategies and policies. As Africa is embarking on a widespread and long term effort to build a modern infrastructure network, both within and across national boundaries (e.g. the transport, power and agricultural corridors), future climate risks are, therefore, inevitable.

Studies indicate that the combined effects of current climate vulnerability and future climate change are large enough to prevent many African countries from achieving economic growth pose risks to the much sought after 'middle income status' in many African countries, notwithstanding the optimism of the 'Africa Rising' narrative. In response, ACTS programme area on climate resilient economies shall focus on evidence based and concerted policy making and implementation in:-

- Mainstreaming climate change in development, policy and planning;
- Enhancing climate science, technology, innovation and knowledge systems;
- Improving climate change governance and;
- Fostering strategic partnerships & cooperation to support especially among public, private, and civil society actors at all levels.

3.4 RESPONSIBLE NATURAL RESOURCE ECONOMIES

PROGRAMME VISION: ***Inclusive, pro poor and responsible natural resource economies for economic, social, and environmental sustainability in Africa.***

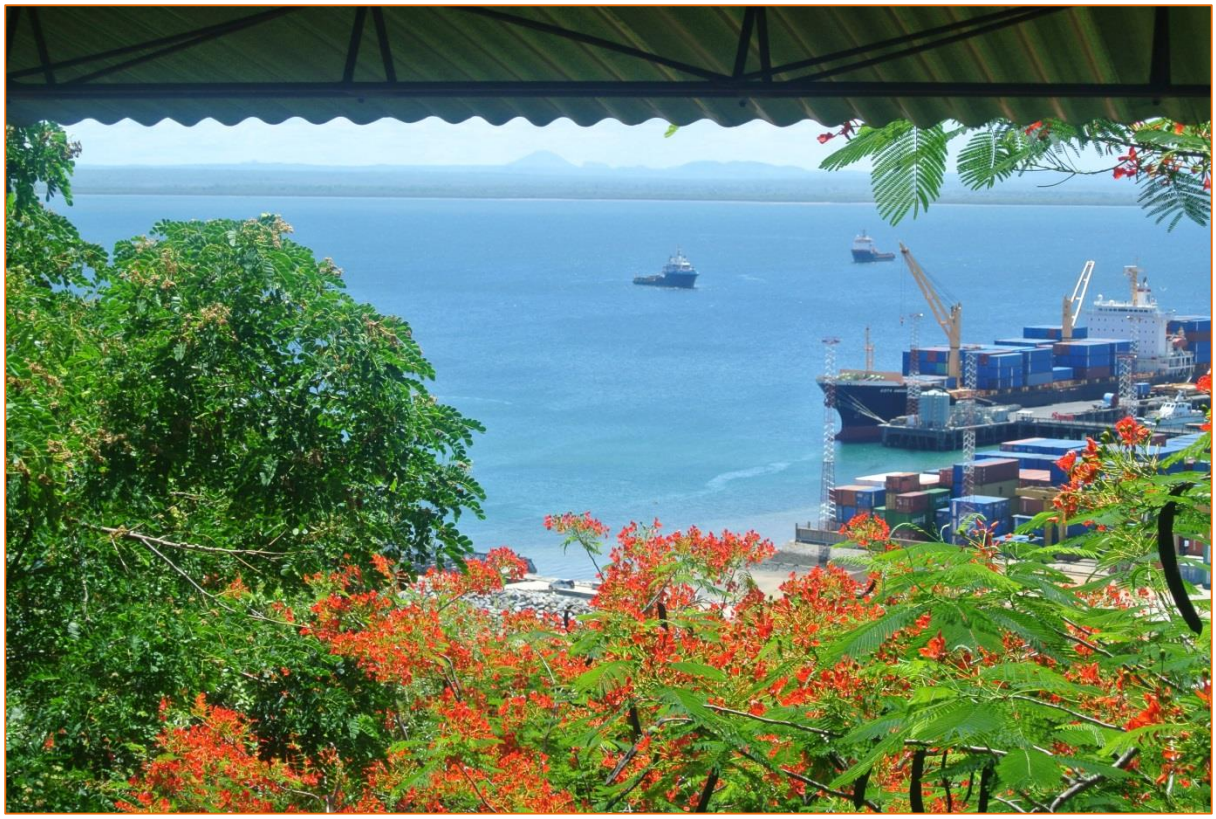
PROGRAMME MISSION: ***To provide policy choices that support 'win-win-win' outcomes or the Triple bottom line (People, Planet and Profits) in the sustainable conservation, use and governance of Africa's natural capital and natural resources***

PROGRAMME GOAL: ***To support the development of enabling policies, organizations and institutions for harnessing 'win-win-win' outcomes or the Triple Bottom Line in the sustainable conservation, use and governance of Africa's natural capital and natural resources, with specific reference to the agriculture, energy, biodiversity and extractive industry sectors.***

The priority of this programme area is to bridge the gap in the 'governance deficit' in the management of Africa's natural resources. Good natural resources governance is necessary for the successful economic transformation of countries with abundant oil, gas, and mineral resources. However, there is a major governance deficit in natural resources management around the world. This deficit is largest in the most resource dependent countries, where nearly half a billion people live in poverty despite natural resource wealth due to lack of effective ways and means of holding central and local governments, private and state-owned companies accountable. There are two main concerns for ACTS in responsible natural resource economies.

First, is governing biodiversity use and conservation in Africa. About one-fifth of all known species of plants, mammals, and birds and one-sixth of amphibians and reptiles are found in Africa. We are however losing these as a result of both climate change and social and economic activities particularly through deforestation, desertification, coral reef degradation, declining fish stocks, endangered species, and loss of pollinators. In 2008 alone, the global economic cost of biodiversity loss and ecosystem degradation was estimated at between US$2 and US$4.5 trillion; that is, 3.3 – 7.5 per cent of global GDP. The long run cumulative effects of such losses are simply not sustainable, for Africa which is facing the twin challenge of development and climate change. There is therefore need to eliminate perverse incentives that drive biodiversity loss while establishing positive incentives that enhance sustainable biodiversity conservation and use.

Second, is governing the extractive industries in Africa. Extractive industries have emerged as a powerful engine of economic growth in many African countries over the last decade[25]. Several resource rich African countries have contributed to the continent's strong economic growth over the last decade (e.g. Angola, Botswana, Chad, Equatorial Guinea, Ghana, Niger, Nigeria, Mozambique, Sierra Leone, and Zambia). Nevertheless, many of these either remain at the bottom of the international league table for human development (e.g. Sierra Leone, Niger, Mozambique, Equatorial Guinea) or have registered some of the world's largest inequalities in wealth and/or deterioration in poverty reduction efforts (e.g. Equatorial Guinea). Even those resource rich countries that have reduced poverty (e.g. Botswana) have seldom matched the level of economic growth registered.



ACTS role in this programme, therefore, will be to offer advice on options for mandatory and other voluntary national and local level governance mechanisms that require nurturing through concerted state, private sector, community, and civil society. Through this programme, ACTS shall seek to enhance the transparency, accountability and effective public participation and scrutiny of the natural resources and extractive industries sector through specific objectives:

I. Maximize 'win-win-win' (economic, livelihood and biodiversity) opportunities in the governance and management of Africa's natural capital and natural resources;
II. Minimize the environmental and social footprints of the extractive industries sector in Africa;
III. Strengthen capacity and expertise of regulatory agencies, communities and civil society to provide environmental and social monitoring of large scale extractive sector projects;
IV. Facilitate regular and constructive multi-stakeholder dialogue (companies, state, communities, and civil society), information sharing, and decision making on natural resource management in Africa;
V. Enhance the capacity and expertise of companies, government, and civil society to implement, measure, verify, and report on 'no net loss', 'net positive' and/or other innovative biodiversity conservation protocols and practices within the extractive industries sector in Africa and;
VI. Facilitate development and use of methodologies for natural capital accounting, environmental accounting, economic valuation, sustainability reporting, and integrated sustainability reporting.

3.5 GENDER, YOUTH, AND INCLUSIVE DEVELOPMENT

PROGRAMME VISION: ***Empowered women, youth and vulnerable groups harnessing applications of science, technology, and innovation for economic, social, and environmental sustainability in Africa***

PROGRAMME MISSION: ***To provide policy choices that exploit potentials of women, youth, and other groups to harness applications of science, technology, and innovation for sustainable and diversified livelihoods, socio-economic development, and biodiversity conservation in Africa***

PROGRAMME GOAL: ***To support the development of enabling policies, organizations and institutions for harnessing the potentials of gender, youth and other groups in bio sciences, bio resources and biotechnologies, information technologies, climate resilience strategies and in responsible natural resource management in Africa.***

Africa's headline economic growth is not enough, says the African Development Bank: there is need to develop deliberate policies to reduce inequalities and promote inclusive growth. This includes among others addressing disparities in gender, youth, and quality and relevant education, improving the investment climate; and encouraging the private sector. The World Bank defines social inclusion as the process of improving the ability, opportunity, and dignity of people, disadvantaged based on their identity to take part in society. Socially excluded people lack the capacity or access to social opportunities that assure inclusive growth hence political stability, equal distribution of wealth, increased social and productive sectors, creation of decent work, and reduce risks of political uprising.

ACTS, through this cross-cutting programme, will invest in the untapped potentials of disadvantaged groups of women and youth, the growing opportunities of start-ups, and public-private partnerships to enhance inclusive development. The tenets of this programme are, therefore, cross-cutting and expected to mutually benefit the main four ACTS programme areas.

The programme first recognizes that the role of women always found at the lower echelons in the formal sector, or in informal sector, has come to the fore following the rise of technology, connectivity, economic liberalization and policy reforms. Women in Africa are the majority contributors to family food basket through smallholder subsistence farming. With increasing climate vulnerabilities, their ability to feed Africa shall be limited, consequentially reducing the households' livelihoods. Aggravated natural resources degradation affects most the women and vulnerable groups, who then must be the first to benefit from climate resilient development strategies. Nevertheless, there are untapped potentials in enabling women to access and apply ICT in their development projects either at an informal or formal stage. There is already evidence that women are now harnessing new tools (and spaces) for development, governance, networking, and marketing making their contribution to economic growth more mainstream than before.

Secondly, Africa is the fastest growing and most youthful population in the world with implications for job creation and stability. In particular, in view of the "youth bulge" (20 percent of African population is aged 15-24 years) in African populations, policies that expand the opportunity space by transforming and increasing the size of economies and markets will be critical[26]. According to the World Bank[27], "*with more than half of Sub-Saharan*

Africa's population now under the age of 25, and as many as 11 million young Africans expected to join the labour market every year for the next decade, creating millions of productive, well-paying jobs will be vital to boost economic growth, significantly cut poverty, and create shared prosperity in Africa". For a continent that has heavily relied on commodity trade for much of its growth in recent times, creating knowledge and green economies that meets the needs on the youthful population warrants prioritization. Young people will invariably be here longer. Thus the future impacts of climate change, and the consequent adaptation programmes developed should consider the next generation of developers, businessmen, farmers, innovators and consumers. There is potential to create employment opportunities for youth from climate resilient economies.

There is particular interest in Africa to advance the role of youth in ICT innovations and applications. Young people below the age of 35 years already develop a majority of ICT start-ups in Africa. In Kenya, the average age on an iHub member is 30 years, many of whom are involved in developing or applying such innovations in several sectors (agriculture, finance, health, education, environment, and entertainment etc. See Figure 3.1). However, these young innovators mainly lack a sustainability framework that ensures the scaling up, adoption and continuous improvement of their innovations for efficiency. ACTS will invest in policies, organizations, and partnerships that favour successful incubation and roll out of youth-led innovations in our priority areas of agriculture, food and nutrition security, water, energy, information technologies, and biodiversity conservation.

To support the inclusion of gender and youth in ACTS programme areas and in the broader framework of accelerating Africa's transition into knowledge based and green economy, this programme area shall invest in leveraging private sector engagement and public-private partnerships for inclusive development.

4.0

IMPLEMENTATION STRATEGY

4.1 IMPLEMENTATION MECHANISMS

The ACTS 2014-2018 Strategic Plan shall be implemented through the three pillars that anchor ACTS value proposition: (a) High Quality Research (b) Policy Analysis and Dialogue and (c) Capacity Strengthening and Outreach.

Pillar	Actors	Expected Outputs
High Quality Research	ACTS Permanent Staff (Programme Leaders, Senior Research Fellows, Research Fellows, Research Assistants) Non-Resident Research Fellows College of Scholars	Books Journal articles Issue papers Working papers
Policy Analysis and Dialogues	ACTS Permanent Staff Non Resident Research Fellows College of Scholars ACTS partners & collaborators	Policy briefs Policy papers Position papers High Level Policy Dialogues
Capacity Building & Outreach	ACTS Science & Technology Policy Institute (STPI) ACTS Permanent Staff Non-Resident Research Fellows College of Scholars	Policy master classes and other customized courses PhD studentships & professional internships Scientific gatherings- Conferences, symposia, workshops, meetings, etc. New/Strengthened partnerships & networks; Dissemination of literature, policies, manuals & other relevant publications

4.2 PARTNERSHIPS AND NETWORKS

ACTS is privileged to have established partnerships and relationships with a diverse range of partners whose collaboration will be renewed with the New Strategic Plan. ACTS will continue working with, but not limited to these strategic partners and networks:-

(a) *Government agencies (national, regional, and continental levels)* - National Science and Technology Councils (NSTCs); ministries of agriculture, science and technology, environment, water, and energy among others; specialist government agencies and institutes; regional economic communities (EAC, SADC, COMESA, ECOWAS, IGAD), NEPAD and the African Union.

(b) *Academic and research institutions* - Universities - Nairobi, Kenyatta, Jomo Kenyatta, Egerton, Moi, Maseno and Masinde Muliro, Dar es Salaam, Aalborg University, University of Oslo, University of Edinburgh, Open University etc.

(c) *Private sector participation and engagement* - the New Strategy puts a premium on private sector participation in STI policy making and development in Africa and in evidence based multi-stakeholder dialogue and consultation.

(d) *Civil society participation and engagement across Africa,* particularly those advocating for inclusive development

(e) Multilateral and bilateral development partners and donors

4.3 HUMAN AND FINANCIAL RESOURCES

Human Resources: Given the ambition of the New Strategic Plan as well as ACTS orientation towards scaling both the reach and impact of its work across Africa, 'new' staffs are needed to enable the organization to extend the geographical scope and impact of its work. Recent staff hires into the Centre will bring with them considerable expertise in some of the new areas including most notably, information economy, natural capital, natural resource governance and sustainability and climate resilience economies.

The new staff required will take two forms: *Secretariat staff*, who are full time employees of ACTS dedicated to the Centre work; and *non-resident research fellows* who volunteer a percentage of their time to ACTS work. The *ACTS network of alumni and College of* Scholars will offer equally considerable expertise in the areas prioritized by the new Strategic Plan. To ensure broad-based multi-stakeholder participation and outreach, the Non-Resident Research Fellows are targeted at different sectors and classified as follows:

1. ACTS Government Science, Technology and Innovation Policy Fellows
2. ACTS Industry Science, Technology and Innovation Policy Fellows
3. ACTS Civil Society Science, Technology and Innovation Policy Fellows
4. ACTS Distinguished Science, Technology, and Innovation Policy Fellows (from academia; retired high level policy makers or leaders of industry or charities).

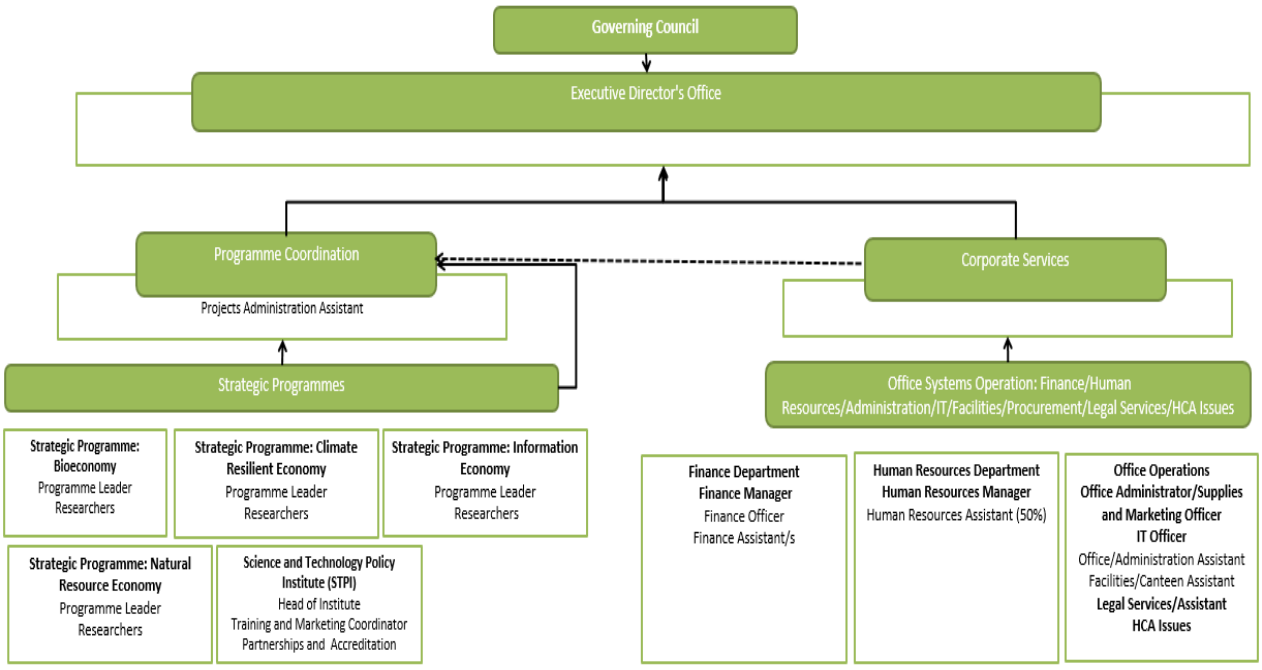
Financial Resources: ACTS is currently funded through a combination of 'core' funding from NORAD and project financing from a number of development partners including SIDA, DFID, DANIDA, ESRC, ESPRC, etc. The Centre shall diversify its funding sources during this Strategic Period to ensure not only the

successful delivery of the Strategy but also the sustainability of ACTS' mission and vision. This Strategy is accompanied by a detailed Business Plan, that includes a resource mobilization strategy to attract more bilateral and multilateral development agencies that provide 'programme' or 'core' funding to ACTS.

The Centre will further seek out new donors and funding sources with particular reference to emerging country donors (including African countries); private sector; African and global philanthropists; collaborative projects (with African governments, private sector, civil society organizations, universities and communities); a revitalized ACTS STI Policy Institute that attracts and funds its own capacity building and training activities; and a revitalized ACTS Press that is commercially viable and sustainable by publishing ACTS and the broader STI & Development research outputs.

4.4 EFFECTIVE INTERNAL CONTROLS

ACTS is committed to continuously improve the effectiveness, efficiency and impact of its governance and operations. The proposed ACTS' organizational structure under the new strategy is as follows:



5.0

RESULTS-BASED MANAGEMENT FRAMEWORK 2014-2018

ACTS has adopted a Results-Based Management (RBM) framework to support the Centre's the implementation, monitoring and reporting of the New Strategic Plan. The framework takes into consideration existing good practices and lays out an approach that (i) incorporates measuring results with widely recognized tools; (ii) assesses risks on an ongoing basis, and (iii) incorporates learning. The RBM framework will help promote efficient management techniques; support a systematic approach to data gathering and assessment; and drive results in a cost-effective way, while diagnosing early weaknesses in the implementation plans. A strong monitoring and evaluation framework will be incorporated. Internal monitoring and evaluation will comprise of monthly project/activities report and meeting, quarterly reporting, and annual reports. There will be a midterm and final monitoring and evaluation carried out by independent external evaluators. A RBM framework developed for the five strategic programmes is summarized in the following tables 5.1-5.4.

Table 5. 1 Inclusive Bio Economy Programme

Priority Areas	Key Outcomes	Key Indicators	Impact
Agriculture, Food, & Nutrition Security	Increased adoption and implementation of biotechnology and biosafety policies enhancing agricultural productivity and food and nutrition security	At least 2 countries revise/develop effective biotechnology and biosafety policies	Increased Agriculture, food & nutrition security
Clean and Renewable Energy	Bio energy included in national energy policies	At least 4 countries revise/develop policies to increase the share of bioenergy in their national energy mix	Bioenergy contributes to improved energy security in the region
Water Security	Policies and technologies that enhance water accessibility and availability	At least 2 countries revise/develop policies to increase technologies that enhance water accessibility and availability	Improved access to water for agriculture and household and industrial use
Environmental Conservation	Increased adoption of biotechnology and biosafety policies enhancing biodiversity conservation	At least 2 countries have adopted and implemented bio sciences led conservation policies	Enhanced conservation based on biotechnology
Gender and Youth	Mainstreaming gender and youth in national biotechnology and biosafety policies	At least 2 countries have mainstreamed gender and youth in the national biotechnology and biosafety policies	Improved economic empowerment of women and youth in bio-practices

Table 5. 2 Information Economy Programme

Strategic Priority	Key Outcomes	Indicators	Impact
Agriculture, Food, & Nutrition Security	Increased adoption and implementation of ICT and Big Data application policies for improved agriculture, food, and nutrition security.	At least 2 countries revise/develop effective ICT application policies	Improved ICT-driven agriculture and food research, policy and development
Clean and Renewable Energy	ICT and Big Data integrated in national policies enhancing clean and renewable energy	At least 4 countries revise/develop ICT policies/business models for enhanced energy access	ICT and Big Data contributes to improved energy security in the region
Disaster risk and management	Increased adoption of national policies enhancing use of ICT in disaster risk management	At least 2 countries revise/develop ICT policies and tools for disaster risk management	Improved data-enabled early warning systems and disaster risk management
Climate Resilience	Increased generation and use of Big Data in developing climate resilient development programmes in Africa	At least 2 countries harness big data to advance climate resilience strategies	Improved responses by countries and communities to impacts of climate change
Environmental Conservation	ICT and Big Data integrated in national policies enhancing biodiversity conservation	At least 2 countries have integrated ICT and Big Data in national biodiversity conservation policies	Increased data-enabled conservation programmes in the region
Gender & Youth	National policies integrating women and youth-led ICT innovations	At least 2 countries have integrated women and youth –led innovations in the national ICT policies	Improved access & development of ICT-based innovations by women and young people in development and governance

Table 5. 3 Climate Resilient Economies Programme

Strategic Priority	Key Outcomes	Indicators	Impact
Enhanced livelihoods and ecosystem resilience	Climate-smart and livelihood diversification policies and practices adopted and scaled-up	At least 2 countries revise/develop climate smart livelihood diversification policies and practices	Improved livelihood diversification strategies and resilient ecosystems
Climate Resilient Infrastructure	Evidence-based policy on low-carbon development supported	At least 4 countries adopt low carbon development policies	Increased low-carbon development initiatives at a national level
	Policies and mechanisms to reduce impacts of climate variability on water and energy availability supported	Improved integrated water resources management; and energy access and use at household, community and landscape level	Improved capacity to harness water and energy for domestic, agricultural and industrial use
	Policies and mechanisms to enhance ICT-enabled and climate resilient ICT infrastructures supported	At least 2 countries revise/develop policies and mechanisms for ICT-enabled and climate resilient ICT infrastructures	Increased ICT support to manage climate risks in the region Increased resilience of ICT infrastructure to climate change
Community Adaptation to Climate Change	Research and policy on community adaptation & development projects supported	At least 4 countries have developed policies and mechanisms for community training and learning on climate change response strategies	Improved understanding and application of climate adaptation information by countries and citizens
Enhanced understanding of the science, economics & politics of climate change	Training African negotiators on international climate change policy and negotiations supported	At least 2 RECs have been trained on international climate negotiations	Improved capacity for African climate change negotiators
Gender & Youth	Mainstreaming gender and youth in national climate change policies and response strategies	At least 2 countries have mainstreamed gender and youth in the national climate change policies and response strategies	Increased number women and youth developing/adopting climate smart technologies for economic development

Table 5. 4 Responsible Natural Resource Economies Programme

Strategic Priority	Key Outcomes	Indicators	Impact
Win-Win-Win Outcomes (People, Planet and Profit)	Development of bio-policies that increase generation of 'win-win-win' outcomes from the conservation, use and governance of Africa's natural capital resources supported	At least 5 member country individuals with capacity to participate in biotechnology policy and governance matters	Improved capacities of African governments in developing policies that enhance biodiversity conservation and use
Responsible extractive industries	Policies for responsible extractive industries developed and adapted	At least 2 countries develop policies on responsible extractive industries	Enhanced sustainable resource management; Increased understanding of the total economic value of Africa's natural capital, ecosystem goods and services
Internalization/implementation of multilateral/bilateral environmental agreements (MEAs)	Mainstreaming MEAs in national development policies	At least 5 countries and RECs have domesticated at least 3 MEAs	National development policies align with MEAs and promote win-win-win outcomes
	Supporting countries to understand the science, economics & politics of MEAs	At least 5 African institutions assisting in the implementation of at least 2 MEAs	Increased capacity of African policy makers to negotiate MEAs
Technological innovations and entrepreneurship on natural resources management	Enhanced identification & scaling up of technological innovations & bio-entrepreneurship leading to sustainable natural resource use	At least 5 countries have developed policies and strategies to train and equip innovators and entrepreneurs in nature based enterprises;	Nature based sustainable enterprises enhanced;
	Networking of bio-innovators and entrepreneurs for sustainable natural resource use in Africa	At least 2 regional networks of bio-innovators & entrepreneurs formed and operationalized;	Increased contribution of bio-innovators and entrepreneurship to sustainable use and conservation in Africa
Gender and Youth	Mainstreaming gender and youth in national natural resources management policies	At least 2 countries have mainstreamed women and youth in the national natural resources management policies	Enhanced participation of women and youth in natural resources governance

Table 5. 5 Gender, Youth, & Inclusive Development Programme

Strategic Priority	Key Outcomes	Indicators	Impact
Inclusive Bio-economies	Increased capacity for women to develop bio-based products and services	At least 2 countries have developed capacity development for women in bio-innovations	Enhanced knowledge, skills set and financial capacity of women in bio-entrepreneurship
	Youth-focused Bio-innovations integrated in national biotechnology and biosafety policies	At least 2 countries have integrated youth –focused capacity development in the national biotechnology and biosafety policies	Increased capacity of young people in agriculture, energy, water and environmental conservation
ICT and Big Data	Research and policy to increase the number of women and youth ICT-driven innovations and development	At least 4 countries have developed capacity and support mechanisms for women and youth in ICT research and development	Enhanced knowledge on ICT and Big Data with particular focus on women and youth
	Capacity strengthening of ICT applications, development and use among women and youth	At least 2 countries have developed capacity building platforms for women, youth and ICT for development	Increased number of women and youth developing/adopting ICT applications for development and governance
Climate Resilient Economies	National climate change response strategies prioritize women and youth	At least 2 countries have integrated women and youth in their climate response strategies	Increased investment by government in addressing women and youth responses to climate change
Responsible Natural Resource Economies	Targeting women and youth in the identification & scaling up of technological innovations & bio-entrepreneurship leading to sustainable natural resource use	At least 4 countries have developed policies and strategies to train women and youth bio-innovators and entrepreneurs in nature based enterprises	Enhanced youth-led sustainable use of natural resources
Public-Private Partnerships (PPPs)	PPPs harnessed to support the contribution of women and youth in development, research and policy	At least 4 countries develop PPPs that enhance women and youth development, research and policy	Increased number of women and youth in science, technology and innovation development, research and policy in Africa

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