

CSP

Climate Sense Programme



Making sense of Climate Change issues for Africa

“ Once in every season the earth that we feed and sit on asks for food and we hurry to do her will. ”
Osmond Enekwe “Broken Pots” Enugu. 2004.

Key Questions to be explored by this Innovative New Programme

What did Kyoto do for Africa?

The Kyoto Protocol drafted in 1997 is an amendment to the United Nations Framework Convention on Climate Change. It required many countries to reduce their emissions of greenhouse gases by 2012. It was ratified in 2005, but was not fully ratified by all countries and many feel that Africa, the most vulnerable continent to climate change profited least from the provisions of the protocol.

The Clean Development Mechanism whereby rich industrialized countries generate revenues through a levy for an Adaptation Fund to help poor countries, did not raise significant funds to help the African continent.



What are the rules of the game in Copenhagen?

By December 2009, at the Climate Change summit in Copenhagen, world leaders will sign a new agreement that will reduce CO² emission by at least 25% by 2020. The global challenge is to avert a 2 degree Celsius rise in global temperature, which could cause the destruction of at least 30 per cent of all known species on earth, increase extreme weather events such as floods, droughts, cyclones and cause a sea level rise of at least one or two metres.

At Copenhagen the global climate deal will be decided. Who pays for the Adaptation Fund? How will rich and poor countries share the burden of developing cleaner technologies? How does the Polluter Pays Principle apply to Climate Change Adaptation Policies? Can Africa exercise its comparative advantage in natural resource endowments for Climate Change Adaptation? How do Climate change adaptation policies support growth and poverty alleviation in developing economies?

“Africa needs strong institutions, not strong men” President Obama, Accra July 2009

Creating an African Platform to Tackle Climate Change

ATPS is helping to build stronger institutions through science, technology and innovation policy research for sustainable development across the African Continent.

The emerging global development challenges, such as increased degradation of land and forest ecosystems, biodiversity loss, variable rainfall patterns, poor air quality, continue to undermine the provision of vital basic ecosystem services on which many African economies depend. ATPS has been creating a common platform for tackling climate change issues in Africa since 2004. The Climate Sense programme intends

to translate complex climate change issues, in ways that promote dialogue at all levels of African society.

It will provide a coordinated, evidence-based advocacy strategy for African communities at the Climate Change negotiations in Copenhagen in December 2009, and beyond.

Programme Focus:

The programme will focus on four integrated goals:

- **Making Sense of Climate Science** (through Science Communication)
- **Making Sense of Climate Economics** (through Policy Analyses)
- **Making Sense of Climate**

Innovation (through Investment Portfolio Analyses and Innovation Incubation programs)

- **Making Sense of Climate Change Politics and Policy Making** (through Scenario Analyses and Training programs).

ATPS will work with key partners across the African continent and internationally to take forward these initiatives.

Target Audience:

The ATPS is a multi-disciplinary network working with the Quadruple Helix; policymakers, science experts, private sector actors and the civil society (see Figure 1) to build Africa’s science, technology and innovation (STI) capacity today for sustainable development tomorrow.



Figure 1: Quadruple Helix

The CSP programme will target the quadruple helix at all phases of the programme using its **P-Q-R-P** framework for socialization of science in African society.

1. The first **“P”** Phase involves **participatory** dialogue with all actors in the quadruple helix to set the agenda for research, policy and actions to address Climate Change in Africa;
2. The **“Q”** Phase involves qualitative research to understand scenarios, knowledge, technologies and innovations relevant to African development
3. The **“R”** Phase involves **quantitative research** to analyze available options, value addition to African economies of policy options, implications for national economies of business as usual and other policy options, costs and benefits of policy options, etc.
4. The final **“P”** Phase involves **participatory dialogue** with the Quadruple helix to interrogate and validate results of the analysis carried out in 1 – 3 above, and map out action plans and policies for adaptation and mitigation at the local, national, continental and global scales.

The programme aims to support all actors in Africa to x-ray and downscale climate science, climate economics, climate innovation, and climate politics from the global to the local scales, and explore opportunities for growth through up scaling tacit and indigenous knowledge and practices for climate change adaptation from local to national, regional and global scales while taking advantage of the policies and market incentives at the global scales.

Making Sense of Climate Science

The Climate Sense Programme will find new ways to communicate the science of climate change better to African communities, using their own starting point as a basis for multi-lateral global

dialogues. Weather has always seemed to transcend politics “the rain falls on the just and the unjust”, but human induced climate change is now firmly in the domain of contentious politics. It has polarized many communities and is so embedded in ideological and even moral standpoints that it has become a shorthand for many people’s worlds. The basic science behind climate change is well-accepted across many knowledge communities and disciplines now, but there remain vocal sceptics and the difficult questions about the nature of global climate remain a barrier for effective dialogue between researchers, policy makers, the private sector and civil society.

Since Louis Agassiz introduced the notion of ice ages in the 1830’s, it has become clear that prehistoric climates differed markedly from the present. In the last few decades the world has recognized that human induced carbon dioxide and other greenhouse gases keep the planet warmer than it should otherwise be. More needs to be done to cover the uncharted territory about how best to live our lives in Africa to preserve the things we value most.

This forms the **“P”** Phase of the climate sense program and involves a series of science communications workshops and activities with key partners using participatory dialogue models.

ATPS will also launch **“The World Science Cafe”** model which exemplifies the Quadruple Helix model for science communication as it involves all the key ATPS stakeholders - Policy makers, civil society, researchers and policy-makers. It is adapted from the African Science Cafe model which engages mainly researchers with civil society and The World Cafe Model which engages social scientists with the general public.

Making Sense of Climate Economics

The Climate sense programme intends to translate complex climate economics in ways that promote dialogue at all levels of African society and globally.



Figure 2: Most African countries rely on agriculture for their survival. They depend on natural ecosystem services and regular rainfall for food security and rural livelihoods; abundant biodiversity and wildlife for tourism to thrive. Picture Credit: Joshua Wanyama



The Kyoto protocol sought to offer Africa a way out of poverty by promoting clean development with minimum environmental impact, but the financial incentives through market driven emission reduction credits, do not encourage good practice in critical ways. It rewards polluters when they reduce their emission but ignores green technologies which maintain healthy systems. For instance only, reforestation and afforestation projects can benefit from CDM, clearing forests and replanting trees brings more rewards than sustaining primary forests.

Questions regarding the distribution effects of climate market incentives, global policy priorities, the true costs of no action, the implications of the adoption options for national growth, etc still persist.

In collaboration with international partners, ATPS will conduct a baseline studies on the African Perspectives on climate change economics, costs and benefits of adaptation, opportunities for decoupling growth from environmental degradation through clean technologies, understanding CDM and Carbon Markets etc. Other pertinent questions emerging from African stakeholders will also be addressed.

Making Sense of Climate Innovation

Combination of science, technologies and innovation provide simple solutions to complex challenges. Investing in the right technologies and innovations for climate change adaptation will help Africa out of poverty, address biodiversity loss, water scarcity, droughts, floods, poor agricultural productivity, etc.

Africa holds the greatest potential for most abundant clean energy. Yet natural resources such as wind, hydropower, solar power and geothermal energy are not properly harnessed for economic growth and development on the continent. The solar capacity of the Sahara desert can provide sustainable energy to many Sub-Saharan African countries. Yet, these are not explicitly supported by the CDM which only recognizes sources that that replace fossil fuels. In Africa over 90 per cent of energy sources come from unsustainable biomass burning, thus electrification produces cleaner fuel.

CDM does not support cogeneration electricity plants that use biomass feeds if they are connected to the grid. In Africa

these plants are far from demand centres and are only useful when connected to the grid. Carbon capture technologies from municipality waste systems are also not rewarded by CDM. Investing in the right technologies and infrastructure, such as harnessing the Congo River which accounts for nearly 30 per cent of Africa's water resources, could generate up to 400,000 megawatts of power. A combination of solar, hydropower and wind energy could meet 80 per cent of the continent's electricity demands. When the wind is low the water is high, when the water is low the sun is shining. The CSP will support strategic research and innovations to harness these opportunities in Africa through adoption of emerging technologies for climate change adaptation both at the local and global markets.

ATPS will work with Key Partners to support **Climate Innovation Incubation Centres**, identify and support indigenous capacities through Climate Innovation Challenge Awards, Policy Advocacy for North-South and South-South technology sharing, etc. Attention will be paid to types of innovations and technologies that are culturally competent, economically adaptable and scientifically robust for use in Africa. Particular attention will be paid to codifying "Tacit" or "Indigenous" knowledge from Africans themselves working on adaptive technologies and mitigation strategies for climate change.

Making sense of Climate Change Politics & Policy Making

Africans need policies which support the development of sustainable technologies such as advanced renewable energy carriers and efficient stoves.

Africa's energy needs are one tenth of the per capita requirements of the developed world. The cost of existing technologies and appliances are beyond the means of poor communities who live on less than a dollar a day. Support is needed for the use of traditional fuels such as non-edible oils, castor, rapeseed, jatropha or moringa, in rural areas for household energy demands in cooking, lighting and running water pumps. Yet unprocessed plant oil does not qualify for CDM funding as it does not meet the needs of US or European biodiesel standards. The climate change negotiations in Copenhagen need to change the rules of funding for mitigation and adaptation projects, to help Africa develop with minimum impact on the environment.

This will not happen until African Policymakers understand climate science, the economic implications of national and global policies for climate change adaptation and mitigation, and are able to access, management and deploy climate proofed technologies for growth of their economies. The CSP will involve training of policy makers on climate change politics and policy making, and also equip them with necessary skills for negotiations at the global climate platforms.

Figure 3: Receding water levels at Kenya's largest reservoir. Investing in the right technologies and innovations for climate change adaptation will help Kenya and other African countries facing similar problems of Water Scarcity and droughts. *Photo Credits: Marsden Momanyi*



ATPS Activities on Climate Change

ATPS is building Africa's Capacity in Science, Technology & Innovation TODAY for sustainable development TOMORROW.....



Research and Policy Prioritization for Adaptation

ATPS hosted a Pan-African conference on Science, Technology and Climate Change Adaptation in Africa from 19 – 22 November 2007 in Johannesburg, South Africa which:

1. Appraised policy makers and other stakeholders on the effects of climate change in Africa and its impacts on agriculture, health, biodiversity, water and the environment;
2. Identified the institutional, knowledge and policy gaps that may constrain effective response to climate change and how the use of science, technology and innovation (ST&I) may be targeted to bridge these gaps in future;
3. Identified S&T policy research, training, institutional capacity building needs that can inform how African countries adapt and respond to the effects of climate change; and
4. Provided the opportunity for dialogue and knowledge sharing amongst African and non-African stakeholders and development partners.

The conference created a better understanding of the effects of climate change in Africa and the potential contribution of S&T to adaptation and also identified STI capacity building as an urgent need in Africa.

Innovation Challenge Programmes

“The Youth Innovation Challenge” (Y I CAN) program, read as “Why I Can” program is designed to build a culture of innovation amongst young people in Africa by promoting innovation through targeted collaboration/partnerships with the quadruple helix: (Researchers, Private Sector Actors, Civil Society and Policy Makers).

“The Women Innovation Challenge Program” (WE CAN) is an Innovation Network for Transformational Change for women in STI. It is centered around an innovative Mentoring Program, which joins Strategic Women Leaders to at least 5 women each year, working on individual BreakThrough Innovations (BTIs) across Africa. Both programs have been developed under the auspices of the ATPS Phase VI Strategic Plan, 2008 – 2012.

Within these programs lies the **Innovation Challenge Awards** component which involves competitive award of annual prizes for outstanding achievements by African Youths and Women in addressing development challenges in specific sectors, including climate change adaptation and mitigation in Africa; agricultural innovation systems; public health and disease prevention (including HIV/AIDS, Malaria and Cholera); water and sanitation, and sustainable management of ecosystem services.

Knowledge Networking

The ATPS and its sister organization, the African Society for Ecological Economics (ASEE) play a key role in mainstreaming environmental and ecological economics for sustainable development in Africa.

The Tenth Biennial ISEE Conference held in Nairobi in 2008 brought together 250 key experts and policy makers in the continent to discuss the role of ecological economic principles for Africa and global sustainability challenges including climate change.



Science Communication on Climate Change Adaptation and Mitigation

ATPS in partnership with UK Parliamentary Office of Science and Technology (UK-POST) and SCIDEV-Net hosted a 5 day training workshop on Communicating Science and Climate change to Parliamentarians in Kampala, Uganda in September 2008.

The workshop developed participants skills in translating scientific and technical information (such as climate science) into a form that is accessible and relevant to policy makers, and developed skills in writing policy briefing papers.

Participants represented a wide range of actors including parliamentary staff, members of parliament, private and public sectors. Some of the outputs of the workshop include:

1. The launch of a discussion forum Network of Parliamentary Staff in Africa – (see <http://www.afripar.ning.com>),
2. A workshop report (under peer review); and
3. The launch of the ATPS Responsible STI Knowledge for Development knowledge Board (see <http://www.atpsnet.org/about/news/2008/Knowledge%20Forums.htm>).
4. A training manual on “Communicating Science to Parliamentarians” which is under development drawing on lessons learned from the workshop. The training manual which will be co-authored by ATPS, UKPOST and SCIDEV-Net will be made available to the trainees so that they can train their colleagues in their Parliaments if needed.



Training of Policy Makers

ATPS in collaboration with the Federal Ministry of Science and Technology (FMST) through the Raw Materials Research and Development Council (RMRDC) in Nigeria, organized a conference on “Building of a National Innovation System in Nigeria”. The conference held from July 6 – 7, 2009 was structured to commemorate the African Science Revival Day which takes place on the 30th of June each year.

One of the core themes at the conference was how Policy Makers can be involved in reengineering the National Innovation System to tackle emerging issues such as Climate Change and for equitable and sustainable social and economic development.

The two day conference brought together about 150 participants representing policy makers from different government agencies and stakeholder groupings/ innovation actors and institutions, and professionals from Nigeria as well as resource persons from within and outside Nigeria. The conference achieved some of the following outcomes:

1. Identified the institutional, knowledge and policy gaps that may constrain effectiveness of science, innovation and technology policies in Nigeria and what needs to be done to bridge these gaps in future;
2. Provided the opportunity for dialogue and knowledge sharing amongst Nigeria and non-Nigeria actors and stakeholders to identify and prioritize issues and action for greater impact of S&T in development;
3. Demonstrated to policy makers and other stakeholders the relevance of a system of innovation in enhancing national development.



Policy Advocacy

ATPS played key roles in the formation of the Global Adaptation Network (GAN) in Africa in a consultative workshop hosted by UNEP from 19-20 January 2009.

Following consultative meetings both globally and in Africa – the Africa component has now been set up, and is evolving under the guidance of the Interim Steering Committee. Dr. Kevin Urama was subsequently appointed as Co-Chair of the GAN Interim Steering Committee Meeting.

The GAN Africa builds on the outcomes of the international consultation meeting held 30-31 October 2008, in Changwon, Korea, as well as on other consultations including those held at UNFCCC COP14 in Poznan, Poland where member states identified a need for a global adaptation network to address climate change issues.

ATPS is also playing key roles in advocating for curriculum change in African Universities to mainstream climate change adaptation and sustainable development through its partners including the Association of African Universities (AAU), UNEP MESA programme and NEPAD.



About the Global Adaptation Network (GAN)

United Nations Environment Programme (UNEP), in partnership with key UN and other international organizations, is facilitating a process for the development of a Global Climate Change Adaptation Network. 13 UN agencies, as well as over 35 organizations, governments, foundations, and research institutions are involved in the development of the Network. The overall objective of the Network is to help build climate resilience of vulnerable human systems, ecosystems and economies through the mobilization of knowledge and technologies to support adaptation policy - setting, planning and practices.

What will the Global Adaptation Network Do?

The Network will support governments, practitioners and communities with knowledge, technologies, good practice demonstration and capacity building. The core Network functions will include:

1. Mobilizing knowledge and technology by improving their availability, accessibility and usability
2. Demonstrating and disseminating good practices
3. Providing packages of adaptation services and policy supporting
4. Building institutional capacity
5. Promoting collaboration between various sectors, and regions

How will the Global Adaptation Network be structured?

As most of the Network core activities will be undertaken at regional, national and local levels, Regional Networks will form the key operating entities forming the Global Adaptation Network. The global level Network structures will support the Regional Networks, facilitate inter-regional co-operation and knowledge management, and provide policy support and

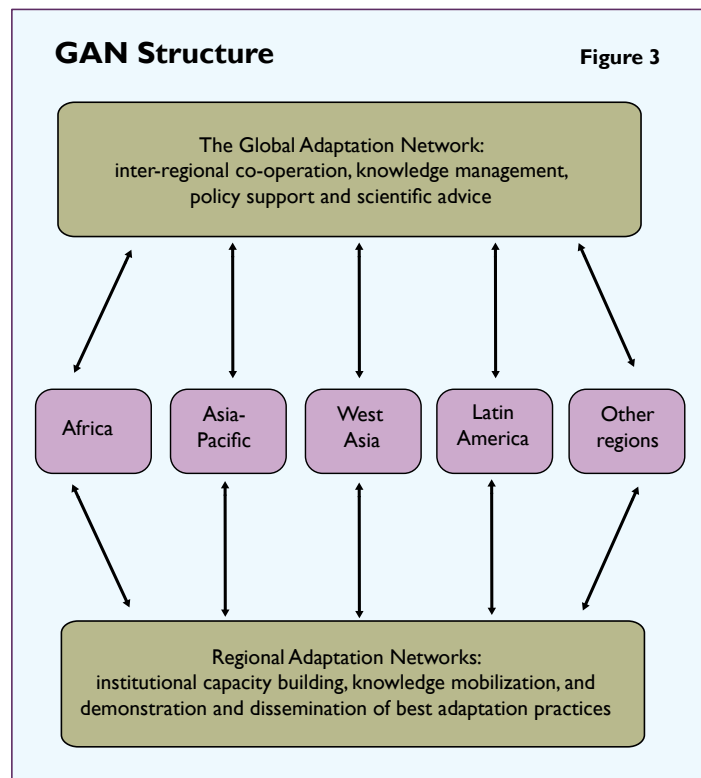
scientific advice. The core Network structure will be built around institutions that will be supported through the Network to expand their capacity on adaptation, and to provide adaptation services to governments, practitioners and communities. These can include for example ground facilities and regional centers that meet agreed criteria for delivering quality services. A group of international institutions will provide technical support to the component members.

At the same time, the Network will be open to the participation of other members, which will be able to benefit from conventional networking activities, such as exchange of knowledge and best practices. The mobilization of knowledge by improving its availability and usability for user communities will be a key function of the Global Adaptation Network. Information on approaches and tools will be built up on the Network website, which will also host a database of good adaptation practices.

The GAN Steering Committee will collaborate with the ATPS on the Climate Sense Programme.



Fig 4: Enhancing adaptive capacity of developing countries by mobilizing knowledge and technologies (Photo credit: Scott Davies/UNEP)



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About the ATPS

The African Technology Policy Studies Network (ATPS) is a leading multi-disciplinary network of researchers, practitioners and policy makers that promotes science, technology and innovation (STI) policy research, dialogue and practice, for African Development. It's mission is to improve the quality of science, technology, and innovation research, policy and practice for sustainable development in Africa, by Africans and for Africans. The

fundamental strategic goal of the ATPS is to build Africa's STI capacity today for sustainable development tomorrow. With a Secretariat Headquarters in Nairobi, the ATPS works through national chapters in 23 countries of sub-Saharan Africa with a vision to cover the whole of the region by 2015 (see Figure 5). The regional secretariat and the national chapters provide ground facilities and platforms for STI capacity building at both regional and national levels.



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