

Africa Adaptation Programme

Laying the Foundations for Climate Resilient Development

Voices from Africa



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INTRODUCTION

In 2008, the Government of Japan provided US\$ 92.1 million for the Africa Adaptation Programme to support integrated, comprehensive approaches to climate change adaptation in Africa by building the capacities of 20 African countries to adjust their national development processes to incorporate the risks and opportunities of climate change. UNDP's partners in implementing the Africa Adaptation Programme (AAP) in several countries were the United Nations Industrial Development Organization (UNIDO), the United Nations Children's Fund (UNICEF) and the World Food Programme (WFP). AAP was established under the Japan-UNDP Joint Framework for Building Partnership to Address Climate Change in Africa, created at the Fourth Tokyo International Conference on African Development (TICAD) in May 2008.

Climate change is changing Africa

Africa is acutely vulnerable to climate change. Many African countries already face semi-arid conditions that jeopardize food production, while others suffer increasingly from floods, deforestation and depleted soils. Despite some advances in adaptation to climate change, this phenomenon is likely to cause variability in extreme weather conditions and potentially reduce the length of growing seasons, resulting in severely compromised food security. Projected reductions in crop yields in some countries could be as much as 50 percent by 2020, and crop net revenues could fall by as much as 90 percent by 2100, with small-scale farmers being the most affected. It may exacerbate the economic, political and humanitarian stresses that African countries already face, and greatly reduce their capacity to eradicate extreme poverty. The poorest segments of society will be the most severely affected because they are the least able to adapt.¹

Even without climate change, several countries in Africa, particularly in northern Africa, will exceed the limits of their economically usable land-based water resources before 2025. About 25 percent of Africa's population (some 200 million people) currently experience high water stress. The population at risk of increased water stress in Africa is projected to be between 75-250 million and 350-600 million people by the 2020s and 2050s, respectively.

In 2011 the region had the lowest aggregate human development indicators—life expectancy, education and standard of living. Nevertheless, there has been considerable progress on the economic front. In 2012, seven of the world's ten fastest-growing economies were in Africa, which is experiencing its longest income boom for 30 years, with gross domestic product growth rates averaging about 5 percent annually over the past decade.²

Africans have long understood the threat that climate change poses to development. Yet the acceleration of changes in climate and the increasing frequency and intensity of climate-related disasters, coupled with weak adaptive capacity, have made climate change an ever more urgent

1 Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda, 2007: Africa. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge UK, 433-467.

2 Regional economic outlook. Sub-Saharan Africa. — Washington, D.C.: International Monetary Fund, 2003–v.; cm. — (World economic and financial surveys, 0258-7440)

development issue in the region. Responding to these threats and adapting strategically to climate change will require concerted, systematic action on an unprecedented scale across all levels of development planning and implementation (regional, national, sub-national, and local) if the gains of development are to be sustained.

More and more, African leaders are becoming convinced that unless evidence-based adaptation strategies are put in place without delay, climate change and variability, and associated increased disaster risks, will seriously hamper future development. Many understand that decisive, innovative steps must be taken now to enable African countries to adapt and build resilience to the environmental, social and economic effects climate change.

The Africa Adaptation Programme

In 2009, 20 countries drawn from every sub-region of Africa—including 10 Least Developed Countries—signed on to make adaptation to climate change a national priority, with AAP providing support, both at the national and regional levels, in five key areas:

Outcome 1. Countries have introduced dynamic, long-term planning mechanisms to manage the inherent uncertainties of climate change.

Outcome 2. Countries have built leadership capacities and developed institutional frameworks to manage climate change risks and opportunities in an integrated manner at the local and national levels.

Outcome 3. Countries are implementing climate-resilient policies and measures in priority sectors.

Outcome 4. Financing options to meet national adaptation costs have been expanded at the local, national, sub-regional and regional levels.

Outcome 5. Knowledge on adjusting national development processes to fully incorporate climate change risks and opportunities is being generated and shared across all levels.

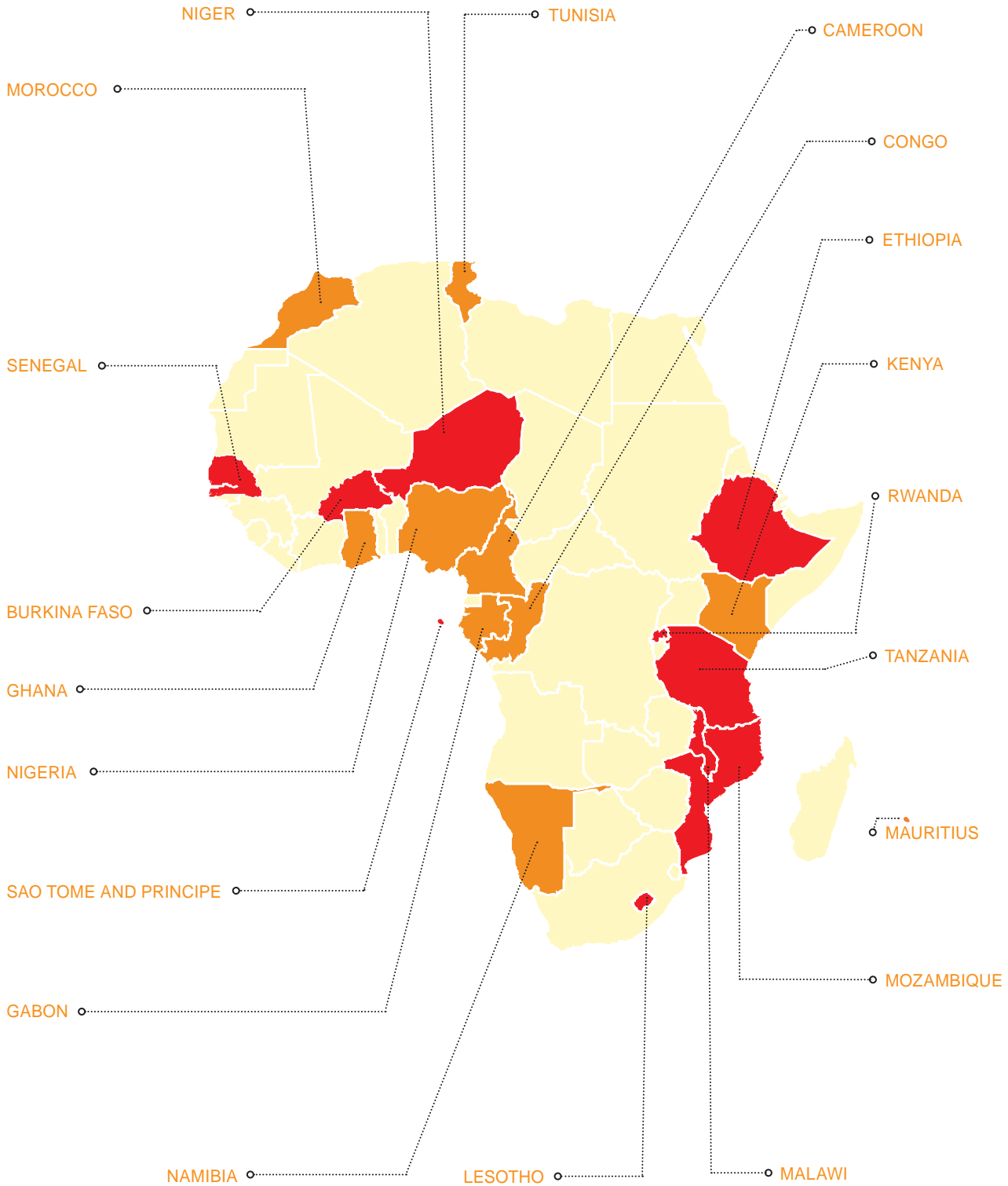
Guidance, training and technical support to AAP country teams has been provided by the Inter-regional Technical Support Component (IRTSC), based in Dakar, Senegal. AAP has also worked with UNDP's Cross-practice Team to integrate key cross-cutting issues such as gender, poverty alleviation, capacity development and knowledge management.

During the four years of its implementation (2009-2012), AAP has laid the foundations for an ongoing, dynamic adaptation process in harmony with each country's social, environmental and economic priorities. In all 20 countries, AAP has nourished an environment in which decisions and activities in support of adaptation can be evidence-based, strategic and appropriate to the goals of sustainable development, resulting in long-term investment to increase resilience to climate change.

This report seeks to chronicle the successes of AAP by giving a voice to the people who have implemented the programme on the ground, including National AAP Directors, representatives of UNDP Country Offices and individuals working with local NGOs. It gives them an opportunity to describe some of the programme's most important impacts and the gradual, incremental transformations in people's understanding, ways of working, attitudes and capacities that are taking place as a result of AAP. It provides a snapshot of a highly ambitious and innovative programme that has laid the foundations for climate-resilient development in Africa.

AAP COUNTRIES

Red indicates Least Developed Countries



EXECUTIVE SUMMARY

The Africa Adaptation Programme (AAP) was launched by UNDP in 2008 as a four-year programme with US\$ 92.1 million from the Government of Japan. In 2011, Japan approved a one-year extension of the programme until early 2013. Its aim was to help the governments of 20 African nations to further develop their capabilities to more effectively identify, design and implement holistic climate change adaptation initiatives that are aligned with national development planning and priorities.

AAP worked through its Inter-Regional Technical Support Component (IRTSC), based in Dakar, Senegal, to build African capacities to adapt to climate change in five essential areas:

Outcome 1. Countries have introduced dynamic, long-term planning mechanisms to manage the inherent uncertainties of climate change.

Outcome 2. Countries have built leadership capacities and developed institutional frameworks to manage climate change risks and opportunities in an integrated manner at the local and national levels.

Outcome 3. Countries are implementing climate-resilient policies and measures in priority sectors.

Outcome 4. Financing options to meet national adaptation costs have been expanded at the local, national, sub-regional and regional levels.

Outcome 5. Knowledge on adjusting national development processes to fully incorporate climate change risks and opportunities is being generated and shared across all levels

OUTCOME 1

Countries have introduced dynamic, long-term planning mechanisms to manage the inherent uncertainties of climate change.

No country can develop policies or programmes to adapt to climate change without reliable data. But in Africa up to now, the means and the technical capacity to collect and apply such data was lacking. AAP provided state-of-the-art hardware and software for climate data gathering and modeling, including 74 automated weather stations, eight high performance computers (HPCs) and seven HPC servers. It also trained hundreds of government workers to use this equipment.

Data-gathering enables evidence-based policy development

Access to climate data has enabled all of AAP's 20 countries to draft evidence-based climate change adaptation policies, programmes and strategies and to implement transformative local projects. For example, in Kenya, "The projections of our new climate modeling tool have been fed into the National 2013-2017 Medium-term Plan and into the country's longer-term plan, Vision 2030." says Dr. Harun Warui, AAP's National Project Manager in Kenya. "This tool enables us to incorporate adaptation initiatives into planning, agriculture, natural resources, animal husbandry, etc. This means that we are prepared for climate change. The scenarios the tool projects for different sectors outline the interventions that will enable us to adapt the whole country to climate change."

With technical and financial support from AAP, countless national-level studies were carried out and are helping to inform targeted adaptation and development initiatives. In Ghana, 16 researchers trained by AAP conducted nine baseline studies focused on the effects of climate change on nine different sectors. Each study includes sector-specific strategies for adaptation to climate change. Access to weather data is also enabling AAP countries to exploit new opportunities. Since Lesotho has the potential to generate considerable hydro- and wind power, AAP supported training in forecasting and generating complex climate models for five officers from the Lesotho Meteorological Services. Using this data, AAP supported the preparation of a Draft Policy Document on Renewable Energy in Lesotho. In Mozambique, AAP was able to cull, organize and digitize data that had been recorded manually over many decades and that would otherwise have been lost.

In Tunisia, AAP provided over 20 km of anti-wind poles to protect coastal dunes and beaches, as well as equipment that measures tidal variations, sea level rise and risks of flooding. Thanks to data collection, Tunisia's new National Strategy for Coastal Adaptation to Climate Change lists 44 different actions people can take to protect the coastline. In Congo, government officials were trained in the use of HPC systems, geographic information systems, climate modelling and actionable information. The result is an integrated policy framework incorporating climate change. In Rwanda, more than 1,000 people from all of the country's 30 districts were trained by AAP in climate analysis and climate change adaptation measures.

Providing climate data and weather forecasts to farmers

With AAP support, the Mauritius Ministry of Environment and Sustainable Development set up an Agricultural Decision Support Programme to provide real-time weather information—gathered by seven weather stations provided by AAP—to farmers via the Internet and text messages. In Burkina Faso, AAP trained more than 60 smallholder farmers in how to apply the results of weather projections to their own farms. AAP Malawi established seven Climate Centres where local people could learn about climate change and monitor weather patterns. But the system failed to reach many farmers, so UNDP plans to build on AAP Malawi by supporting a new, four-year National Climate Change Programme that will include community radio for weather forecasts in local languages.

Strengthening Early Warning Systems for disaster risk reduction (DRR)

Early warning systems have been strengthened by AAP in nearly every programme country. In Ghana, officials in all 170 districts were trained in DRR, which is now integrated in district development planning. A wireless Short Message System (SMS) for sharing disaster-related information, first developed by AAP Ghana, was adopted by Lesotho, where a new data collection system now enables the Disaster Management Authority to map climate-related disasters, vulnerability and risk. In Rwanda, vulnerability and risk assessments were carried out, a map of climate change risk zones was updated and the National Adaptation Plan of Action was amended to include early warning systems (EWS). In Senegal, AAP supported the installation of an EWS in a key farming region where forecasts are sent out to farmers and extension workers through community radio broadcasts, SMS text messaging and the Internet-based news outlet Seneweb. Nigeria is training citizens—including schoolchildren—to prevent conflicts that may erupt due to climate change.

Support for Data Information Management at the regional level

In all, 450 people from all 20 countries attended nine regional, and one Africa-wide, training workshops on climate data and information management for adaptation planning and decision-making. AAP also strengthened the capacities of four African Regional Centres of Excellence that provide technical support and services to help countries address their developmental needs.

OUTCOME 2

Countries have built leadership capacities and developed institutional frameworks to manage climate change risks and opportunities in an integrated manner at the local and national levels.

AAP helped to transform the way government officials do their jobs, share responsibility and work as a team. As a result, sectoral ministries in many countries are now collaborating with one another for the first time, producing policies and programmes that are integrated and coherent and that serve the needs of every sector.

“AAP was crucial in bringing together people from different ministries to discuss climate change adaptation, what the problems are and how they can work as a team to design an effective adaptation process that would really change things,” says Clara Landeiro, Chief Technical Advisor of AAP Mozambique.

In Kenya, AAP supported the establishment of a new Climate Change Planning Unit within the Ministry of State for Planning, National Development and Vision 2030. The Unit's 12 modelers, based at different ministries, meet regularly to use the new long-term modeling tool that AAP provided, share ideas and discuss how best to integrate adaptation into their respective development sectors. In Tanzania, guidelines for mainstreaming climate adaptation into development activities were developed and 5,000 copies were printed and will be used by central government ministries, 140 local government authorities, NGOs and the private sector. And under AAP, Niger established a Consultation Framework on Climate Change Adaptation with the mandate to help all relevant actors working on climate change to share lessons learned and experiences. In Gabon, the government decided that climate change and the environment must be at the centre of development. It created a department of environment in every ministry.

All of the 20 AAP countries have established new national institutions to plan and implement adaptation to climate change. Many key staff members of these institutions received training in areas such as climate change awareness; economic analysis of climate change and its effect on poverty; gender and climate change; participatory approaches for problem solving and conflict management in the context of climate change; the preparation of adaptation programmes, environmental plans and fundable projects and long-term climate modeling integrating economic, social, environmental priorities.

In Ethiopia, Parliamentarians attended workshops supported by AAP on climate change and more than 1,000 individuals from federal sector institutions, regional units, women and youth groups, civil society, chambers of commerce and community organizations participated in trainings, sensitization workshops, field visits and dialogue forums on climate change adaptation.

In Burkina Faso, AAP built the capacities of government institutions to design and implement effective adaptation programmes and facilitated a workshop to identify strengths and weaknesses in the institutional capacities required to address climate change challenges. In Ghana, AAP held an intensive, innovative workshop on the implications of climate change for development for over 160 high-level policy-makers in order to facilitate their inclusion of adaptation measures into the plans and programmes of their institutions. Innovations included Adult Learning techniques such as videos, drama and sculpture presented by a professional theatre group. Ghana also established a mentoring system whereby 10 senior experts in environmental issues, climate change and development, mentor 26 junior development activists who are positioned to influence action on climate change.

Building capacities for adaptation at the local level

AAP is also strengthening the capacities of government workers at the local level, where demonstration projects are carried out and lessons are learned that can be replicated on a national scale. This ensures that adaptation to climate change is really transformative. In Ethiopia, AAP prepared guidelines to mainstream climate change into policies, programmes, plans and projects at the regional, district and local levels. Twelve Sectoral Technical Working Groups (TWGs) were established, in addition to 12 Regional TGWs, bringing together all the relevant stakeholders to mainstream climate change. All of the Regional TWGs and eight of the Sectoral TWGs have already prepared adaptation programmes.

In Senegal, 10 Regional Climate Change Committees were established. In Sao Tomé e Príncipe, AAP supported the creation of a cooperative for small-scale farmers focused on resilient agriculture and agro-forestry. In Rwanda, 1,094 local government officials were trained to mainstream climate change into District Development Plans and 26 of the country's 30 districts have established environmental committees and included climate change activities in their annual action plans. In Ghana, representatives from each of the country's 170 districts received training on how to mainstream climate change adaptation into their development plans, using a Mainstreaming Guide produced by AAP.

Cross-cutting Issues

Gender

In order to ensure that gender issues are integrated within all climate change policies and programmes, AAP trained 329 government employees and members of civil society to understand the linkages between gender and climate change and how to include gender equity as a key priority in climate change adaptation policies and programmes. Gender was officially mainstreamed into the national adaptation plans of 11 AAP countries. Nigeria conducted an assessment of gender-sensitive climate adaptation initiatives for sustainable livelihoods development. In Rwanda, 540 women from the National Women's Council in 12 districts were trained in climate change adaptation, the impact of climate change on women, entrepreneurship, microfinance and the role of cooperatives in poverty alleviation. In Mauritius, the UNDP gender team facilitated a Training of Trainers workshop on gender and climate change for 66 participants. In Congo, AAP enabled a leading women's organization, Femmes Energie, to conduct research on fuel-efficient stoves. The findings were used in a proposal to the World Bank for a carbon-offset project.

Poverty alleviation

Climate change threatens livelihoods, but adaptation to climate change can strengthen and diversify livelihoods and ensure that they are sustainable. To emphasise the link between climate resilience and poverty reduction, AAP and the UNDP Poverty Group produced a toolkit on Climate Change and Poverty Alleviation, as well as presentations on climate resilience readiness that were used at both regional and national workshops.

Knowledge management

Country support was provided by promoting the generation of content by developing knowledge, codifying it for easier access and disseminating it through appropriate modalities; promoting sharing through platforms, both existing electronic or traditional platforms for knowledge sharing; and by providing technical assistance in response to specific needs that arose in the implementation of national programmes.

OUTCOME 3

Countries are implementing climate-resilient policies and measures in priority sectors.

When countries face many challenges, adaptation to climate change can seem a low priority. AAP helped put climate change adaptation front and centre on the agendas of African governments, demonstrating that the process of adapting to climate change can hold the key to resolving other crucial issues.

In Niger, poverty and the threat of famine have created an environment of near-perennial crisis. “Niger’s socio-economic situation means that adaptation to climate change was not considered a priority,” says Julie Teng of UNDP Niger. “Yet the country is extremely vulnerable to the harmful effects of climate change.” AAP helped government officials see the need to make climate adaptation an essential component of national policies. “AAP has built their capacities to integrate climate change into policies, strategies and programmes.”

In every AAP country, policies are now in place, or close to ratification, that will help chart a course of adaptation to climate change within a process of sustainable, equitable development. In some countries, laws and regulations are strengthening the adaptation process. In Ethiopia, nine line ministries—more than 90 per cent of the total—have prepared their own climate change adaptation plans. The government’s five-year Growth and Transformation Plan outlines how Ethiopia will follow a “green” path of economic development, while Ethiopia’s Climate-Resilient Green Economy (CRGE) strategy aims to create a carbon-neutral, climate-resilient, middle-income country by 2025.

Laws supporting climate adaptation

In several AAP countries, policies supporting climate adaptation have been backed up by national legislation. In Mauritius, the Climate Change Law of 2013 includes the establishment of a Climate Change Division in Ministry of Environment. Gabon drafted a National Coastal Adaptation Law and Senegal’s Supreme Court has adopted a Coastal Protection Law. In Ghana, AAP supported a review of the National Building Code in order to include climate change indicators to strengthen domestic structures against flooding.

Adaptation plans and strategies at the local level

During AAP, many countries began working with local authorities to enable them to take on adaptation at the local level. In Burkina Faso, where local communities are responsible for formulating and implementing their own development plans, adaptation is now a part of those plans. In Mozambique, representatives from the Ministry of Planning are traveling throughout the country to promote the adaptation process. In Ethiopia, all of the country’s nine regional governments and two city administrations have developed their own climate adaptation plans.

Pilot projects spread green technologies

AAP supported countless examples of highly replicable “green technologies” through pilot projects designed to demonstrate the effectiveness of climate adaption activities and lead to large-scale replication. For the most part these are simple, low-tech, practical interventions that enable people not only to adapt to climate change in tangible ways, but even reverse the environmental deterioration that has already depleted many of Africa’s natural resources. As the most successful of these projects are replicated on an ever-wider scale, lessons are being learned and capacities developed that will enable adaptation to climate change to become a part of everyday life in Africa.

Green technologies supported by AAP in the water sector are replenishing and conserving groundwater (Ethiopia, Morocco); restoring sustainable fisheries (Gabon, Ethiopia); maintaining water quality (Tanzania, Senegal, Tunisia); preventing sedimentation, salinization and pollution caused by run-off (Morocco); improving water storage and irrigation (Rwanda); restoring watersheds (Ethiopia) and enabling the safe reuse of wastewater (Morocco). Projects supported by AAP in Ethiopia are retaining unstable hillsides; controlling and preventing erosion (Kenya, Senegal), reclaiming land (Niger), rehabilitating ecosystems (Rwanda), promoting sustainable agriculture (Namibia, Lesotho, Morocco, Rwanda, Nigeria). AAP projects also focus on reforestation (Congo, Kenya, Sao Tomé e Príncipe), container cultivation (Namibia), restoring and protecting coastlines (Gabon, Senegal, Tunisia), waste management (Kenya, Morocco), agro-forestry (Senegal, Ethiopia), use of organic pesticides (Senegal), sustainable animal husbandry (Kenya, Sao Tomé e Príncipe) and food preservation and storage (Mozambique).

Morocco's AAP programme built on and supported activities already being carried out by the national government to restore the country's life-giving oases. AAP funded feasibility studies on wastewater treatment and reuse, supported the creation of a management plan for a water purification project and lobbied for the involvement of national institutions. It also supported a study on aquifer replenishment for a project implemented by a rural community and a state agency. In Tanzania, AAP's water projects included rainwater harvesting, boreholes, pipelines and the repair of two hillside U-shaped dams. The lessons learned from the pilot projects will be documented and applied at the national level to influence policy-making and enhance informed decision-making. In Gabon, AAP supported a project to restore coastal mangroves that had been cut down for fuel, and in Sao Tomé e Príncipe it supported farmers in restoring forests that had been nearly destroyed for charcoal production. In Rwanda, communities vulnerable to climate change are creating cooperatives for fruit and fisheries production. In Kenya, AAP supported the installation of greenhouses managed by community members that provide sustainable, climate-resilient livelihoods.

Interagency activities in support of AAP

Interagency partnerships with WFP, UNICEF, UNIDO and UNITAR strengthened many AAP initiatives: Food security and livelihoods (WFP), school-based and youth-focused development, gender, child protection and education (UNICEF), industrial development (UNIDO) and training and research (UNITAR).

OUTCOME 4

Financing options to meet national adaptation costs have been expanded at the local, national, sub-regional and regional levels.

Helping countries acquire the expertise to raise funds to support climate change adaptation is a key priority of AAP. Several governments have shown their commitment to adaptation by allocating funds, and all are learning how to navigate the range of funding sources. The successes of AAP projects and programmes are attracting the interest of donors who see that the positive effects of investing in climate change adaptation can be exponential. And successful projects are attracting public-private partnerships. In Namibia, an AAP project promoting drip irrigation and container cultivation caught the attention of a local foundation that is planning to support similar projects on a much larger scale in partnership with government ministries.

Financial commitment from African governments

In Ethiopia, a Climate Resilient Green Economy framework allocates 2 percent of the annual budgets of the country's nine regions for environmental activities. One of the first things this money needs to accomplish is to complete the implementation of six unfinished green technology demonstration projects launched by AAP (out of a total of 15). "The government is committed to finishing what AAP started in these pilot projects," says Ababu Anage of UNDP Ethiopia. "These projects are being implemented by communities that have been organized, and many people have high hopes for their outcome. It will create a certain discomfort if the government cannot continue and show people the results of what they have started."

In Kenya, climate change is included for the first time in the national budget for mid-term planning. In Morocco, AAP played a catalytic role in six major adaptation projects by funding studies in four instances and providing seed money in two others. In addition, a range of government agencies, as well as a private company, have so far invested nearly US\$ 3.5 million (out of a total of US\$ 8.1 million needed) to complete the six projects. The remaining funds are being sought, in some cases, by the communities themselves. And in Mozambique, a framework for funding adaptation to climate change is now in place, thanks to the multi-sectoral approach promoted by AAP.

Building capacities to access funding

To acquaint African officials with the range of funding options available and prepare them to access adaptation funds, AAP held two regional and six national workshops on climate finance, in which a total of 17 countries participated.

AAP assisted the government of Malawi in creating a National Programme for Managing Climate Change that includes a projects that addresses planning for climate financing. Tanzania's National Climate Change Communication Strategy, developed with the guidance and advice of AAP, is an important step in expanding that country's capacity for financial planning and strengthening its climate finance readiness. In Burkina Faso, in order to strengthen national capacity to mobilize adaptation funds, AAP initiated the National Implementing Entity Support Programme (NIE) to identify a government entity that can be formally accredited by the UN Adaptation Fund as an NIE. The NIE Support Programme builds national capacities not only to access climate finance, but also to effectively manage, programme, implement and monitor those funds.

As AAP drew to a close, 11 programme countries were working on, or had submitted new funding proposals, some of which have already borne fruit. In total, 35 proposals were prepared and/or submitted to donors either by AAP or with technical support from AAP.

OUTCOME 5

Knowledge on adjusting national development processes to fully incorporate climate change risks and opportunities is being generated and shared across all levels.

Knowledge is the engine that will drive adaptation to climate change in Africa, and knowledge and information-sharing are central to every objective of AAP. The programme produced and disseminated a number of publications to support knowledge of climate adaptation, including the Baobab Coalition Journal— a newsletter that chronicled AAP activities and gave a voice to many

participants in the programme. In addition, AAP produced a series of manuals that explore in depth key focal areas of the programme.

AAP countries spread the word about climate adaptation

At least 12 AAP countries have climate change communication strategies. AAP Rwanda printed 5,000 copies of a module on climate change in the local language and developed Web-based databank software, the Environmental and Climate Change Information System” as well as GIS-based software for monitoring and evaluation. Two films produced in Rwanda, one on drought prevention and the other on improving soil quality, were screened for some 500,000 viewers, 200,000 in rural areas. And 416 Rwandan senior citizens shared their knowledge of traditional adaptation practices in five consultative workshops, one in each province.

Ethiopia’s Climate Change Adaptation and Knowledge Management strategy has five objectives: to generate, collate, analyze and share information to transfer knowledge to wider public; to promote networking among relevant stakeholders; to influence policy and mainstream climate change issues in sectoral development programs; to influence behavioral and social change and to mobilize appropriate action in relation to climate change adaptation and resilience. Ethiopia produced two detailed, highly accessible colour brochures, Ethiopia’s Climate-resilient Green Economy Strategy (1,000 copies distributed, 500 in Amharic, 500 in English) and Green Technologies (200 copies distributed in English). In Tanzania, AAP supported the government in developing a comprehensive national communication strategy that covers knowledge on climate change, adaptation, mitigation, climate change research, gender-specific climate issues and financing, including a list of climate change funding options. The strategy also provides a framework for generating and delivering key climate change messages to targeted audiences at all levels of society.

In Mozambique, the Ministry of Environment has launched a public education campaign to raise awareness among different target groups, from youth to academia to the private sector. AAP Ghana published a Policy Advisory Series to inform policy-makers about climate change, its impacts, how it affects the economy and other key sectors and the opportunities that climate change presents. So far, over 400 individuals have used at least one of the publications and copies are still being disseminated. The series has also been used in developing Ghana’s climate change policy document.

Eight countries—Cameroon, Congo, Ethiopia, Morocco, Mozambique, Niger, Nigeria and Senegal—have shown enormous commitment by including climate adaptation and environmental studies in school curricula. Other knowledge-sharing activities in AAP countries include climate resource centres; the documentation and dissemination of Best Practices in climate adaptation; Knowledge Fairs, exhibits, a Climate Awareness Week and a Youth for Climate Change Music Festival; Interactive Climate Knowledge platforms such as databases and websites and interactive climate change forums; youth programmes and an Information Tool-kit on climate adaptation that was published and translated in local languages.

AAP’s Media Capacity Building Project (MCBP)

A total of 448 journalists from all 20 AAP countries were trained in how to cover climate change and environmental issues accurately, objectively and persuasively. As a result, Africa’s print media, airwaves and television broadcasts have been flooded with features and news stories about climate adaptation.

Youth as agents of change

Young people were seen as key advocates for climate adaptation in a number of AAP countries. In Lesotho, AAP launched an innovative campaign called Youth Climate Change Ambassadors to bring the message of climate adaptation to communities and local governments through drama, poetry and song. In Namibia, AAP helped establish a Climate Change Adaptation Youth Action Programme that prepares young people to be future decision-makers and development agents, as well as present-day disseminators of information in their communities.

A permanent platform for knowledge-sharing among AAP countries

Examples of reluctance to share information can be found throughout the world, and the benefits of open communication have not been fully enjoyed in Africa. AAP has made it a priority to promote communication, knowledge-sharing and the interchange of experiences, expertise and ideas among African countries. The AAP website www.undp-aap.org/ will be active through 2013. And UNDP's interactive website Teamworks—AAP's knowledge platform of excellence—is now, and will continue to be, available as a means of communication for all participants in the programme, enabling them to share their experiences in climate change adaptation, learn from one another and experience a sense of African solidarity and mutual support.

Climate Action Intelligence

CAI is an institutional mapping tool; a “directory” designed to document climate adaptation activities and make them assessable to climate change stakeholders in the 20 AAP countries. It enables people working on adaptation in these countries to find answers to the basic questions of who is doing what, where and when, thereby promoting exchanges of information among AAP countries. CAI was introduced in five countries in 2011—Kenya, Congo, Ethiopia, Malawi and Senegal, and in Lesotho in 2012.

Support for knowledge management at the regional level

AAP provided programme countries with support in knowledge management through regional-level conferences and workshops. All 20 countries participated in regional forums, conferences and workshops that enabled them to share best practices and lessons learned. In collaboration with AAP Mozambique, the IRTSC organised a regional knowledge management workshop in Maputo in May 2012 on The Capitalisation of Experiences in Climate Change Adaptation. The workshop brought together some 50 participants, mainly knowledge management and communications staff, from 17 AAP countries to learn and develop techniques for improved knowledge-sharing. It provided practical tools to national programmes to ensure that their AAP experiences serve as a foundation for ongoing adaptation activities.

Looking to the future

The foresight and generosity of the Japanese Government enabled AAP to help set 20 African countries on a course to effective climate change adaptation. As this report will show, AAP has enabled African countries to build key capacities that will enable them to adapt to climate change—a process that is only beginning.

OUTCOME 1

Countries have introduced dynamic, long-term planning mechanisms to manage the inherent uncertainties of climate change.

Climate data and projections inform government policies

No country in the world should design policies or programmes to adapt to climate change without evidence of how this phenomenon is affecting its own people—their livelihoods, security and resources. And such evidence must be backed up with reliable data analysis. But up to now, climate data in Africa has been hard to come by; many countries have lacked the means and the capacity to gather such data, interpret it, store it and make it accessible to people who need it, both for day-to-day decisions that affect their livelihood and to inform development plans and policies.

AAP made it possible for countries to acquire many state-of-the-art tools to monitor weather patterns and project the impacts of climate change, including a total of 74 automated weather stations, high performance computers (HPC), servers, hardware and software. In Mauritius, where AAP provided seven automatic weather stations, the Mauritius Ministry of Environment and Sustainable Development reported, “The availability of accurate historical data over time enables statistical analysis and identifying of trends; studies of periodic plant and animal life cycle events and how these are influenced by seasonal and inter-annual variations in climate; and better understanding of crop response to climate, (such as predicting crop flowering and thus production), insect behaviour and pest outbreak risks.”

In Kenya, AAP’s National Project Manager Dr. Harun Warui says that the single most valuable element of AAP for his country has been the acquisition of a customized software programme—an integrated, long-term climate simulation modeling tool—and the training of 12 government staff to use it effectively. “The projections of our new climate modeling tool have been fed into

“The projections of our new climate modeling tool have been fed into Kenya’s National 2013-2017 Medium-term Plan and Vision 2030. ... This means we are prepared for climate change.”

**Dr. Harun Warui,
AAP Project Manager,
Kenya**

Kenya’s National 2013-2017 Medium-term Plan,” says Dr. Warui, who is also Senior Research Scientist and National Coordinator of Kenya’s Environmental Research Programme. “They have also been fed into the country’s longer-term plan, Vision 2030.” Kenya’s Climate Action Plan was also shaped by the data produced by this tool, which factors climate change into development planning. “It enables us to look at different scenarios of climate change and incorporate adaptation initiatives into different sectors—planning, agriculture, natural resources, animal husbandry, etc. What this means is that we are prepared for climate change. The scenarios the tool projects for different sectors outline the interventions that will enable us to adapt the whole country to climate change.”

The importance to Kenya of being able to forecast long-term weather conditions is illustrated by the fact that, according to the Ministry of Planning, 75 percent of Kenyans depend on natural resources for their livelihoods. Since 1977, nearly 12 million Kenyans have been affected by either floods or drought. Currently, climate variability accounts for a 3 percent loss in GDP per

year. This dynamic new tool enables government staff to quantify the cost of adaptation, which is key to attracting much-needed funding. (In addition to Kenya, Burkina Faso, Congo and Mauritius are now using this modeling tool.)

When climate adaptation is factored into development planning through the use of this new tool, the results can be surprisingly positive. According to a presentation given at the AAP Final Country Conference in Dakar in November 2012, Kenya's agricultural productivity can actually be enhanced through the use of sustainable production approaches that support adaptation. Reducing the chances that the production system could collapse due to floods and droughts would remove uncertainty and hence encourage commercial farming, rising output and improved food security. "Crop production in Kenya is set to increase," says Dr. Warui, "if the government implements the planned climate change investments, using smart, sustainable agricultural practices that have been recommended for vulnerable areas. On the other hand, simulations created by this tool show that livestock mortality is going to rise as a result of climate change-induced pests. But with this kind of projection being fed to policy-makers, interventions such as livestock insurance schemes are being introduced."

When development planning is guided by comprehensive, reliable data, the opportunities presented by a changing climate can be harnessed to offset the negative impacts of climate change.

Dr. Warui explains that projected patterns of warming may indicate, for example, that tea should be grown in higher altitudes; rainfall projections may suggest that crops should be planted at different times to take advantage of periods of higher rainfall or that livestock should be moved to avoid diseases resulting from wetter conditions. He insists that the ability to see climate change coming and to respond to it strategically means that climate change can actually produce benefits, as well as risks.

In Ghana, 16 young researchers were trained to gather, analyse and interpret climate data for informed decision-making. They then formed a Community of Practice that conducted nine baseline scoping studies focused on the effects of climate change on nine different sectors—water resources, energy, agriculture, etc. "Each study contains its own sector-specific strategies for adaptation to climate change," says Antwi-Boasiako Amoah, Project Manager of AAP Ghana and Programme Director of Greenad, a Ghanaian environmental advocacy organization.

Best practice: Analysing climate data from a multi-sectoral perspective.

Ghana's National Climate Change Policy incorporates seven of the studies and outlines strategies based on their findings. The Policy is currently awaiting Cabinet approval. "Once the Cabinet approves it," says Mr. Amoah, "it becomes a national document for implementation. We are happy these findings were picked up by the National Policy."

In Burkina Faso,—a Sahelian country that is expected to experience extreme effects of climate change in temperature rise and rain variability³—AAP's main focus has been on long-term planning of adaptation, which includes data-gathering. "The country's climate information infrastructure has really improved since AAP provided 16 weather observatory stations as well as high performance computers to collect, process and disseminate data. This enables the government to mainstream adaptation within local, regional and national-level planning," says Aki Kogachi of UNDP Burkina Faso.

³ Intergovernmental Panel on Climate Change Fourth Assessment Report, *Climate Change 2007: The Physical Science Basis*, http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

The information generated by the new weather stations is disseminated via local radio and through bulletins published by the Meteorological Department (DM). “Given the fact that many smallholder farmers have mobile phones,” says Aki Kogachi of UNDP Burkina Faso, “Dissemination of real time data by text message is one of the options we are trying to put in place, in collaboration with DM.”

Staff members from key ministries and research institutions have been trained in climate change research and how to mainstream adaptation issues. Four Memoranda of Understanding have been signed to promote research collaboration among Ouagadougou University, national research institutions, the Directorate of Meteorology and the Ministry of Environment and Sustainable Development. This has resulted in access to quality climate data that enables researchers to conduct in-depth analysis of climate tendencies and carry out climate modeling. Based on this data and the inter-institutional platform that supports it, climate analyses have been conducted by a team that includes a climatologist, economist, environmentalist, agronomist, animal resource specialist, health specialist and hydrologist in order to address multi-sectoral issues of climate change adaptation. In addition, the Millennium Institute (MI) and the University of Ouagadougou are collaborating on developing an intensive course in the use of climate tools to conduct multi-sectoral dynamic modeling. This will be the first time a francophone country offers a course in this technology in collaboration with MI.

The partnership established by AAP that is coordinating Burkina Faso's National Adaptation Programme of Action (NAPA) with the University of Cape Town, the MI and a Burkinabe laboratory, LAME, is an example of a new phenomenon in Africa. Traditionally, institutions representing different sectors seldom talk to each other or share ideas, let alone actively collaborate. Yet this partnership produced a document that is highly significant, despite its unwieldy name: “*Analysis of multi-sectoral vulnerability for the formulation of a National Strategy to Adapt to Climate Change in the mid-term (2025) and the long-term (2050) in Burkina Faso.*” It is expected to be validated in the second quarter of 2013.

Perhaps even more important, AAP supported training for more than 60 Burkinabe smallholder farmers in how to apply, on their own farms, the results of weather projections based on 30 years of data collected from the areas where the farmers live. As data is fed to the Climate System Analysis Group of University of Cape Town (<http://www.csag.uct.ac.za>) for modeling, the models and projections help the Burkinabe farmers understand how various global climate scenarios affect their local environment through changes in rainfall patterns, rising temperatures and increasing dry spells. “When farmers are informed about changes in rainfall patterns, this helps them reconsider when to plant, what crops to plant and whether to modify the overall agricultural calendar,” says Aki. “Because they have learned about increases in temperatures, farmers now understand the importance of using drought-resilient seeds; they understand the increasing risk of locust infestations and the importance of water conservation.”

Lesotho is a country that stands to benefit greatly from enhanced climate measuring tools. Although it receives very erratic rainfall, it has the potential to generate considerable hydro- and wind power for rural electrification. AAP supported training in forecasting and generating complex climate models for five officers from the Lesotho Meteorological Services (LMS).

Local data is generated and shared with relevant Ministries to document what is happening at the village and district levels. Systems have been developed for modeling both climate and the economy to analyse the economic impacts of climate change on the agriculture sector and on poverty. This data and information will inform the national development planning process.

“AAP installed wind and solar measuring devices to collect data on the energy available for rural electrification from wind and solar sources,” says Thabang Phureo of UNDP Lesotho. “It also

developed GIS-based wind and solar atlases to identify areas of greatest potential for generating wind or solar electricity in order to inform national energy planning. The data collected will be used to constantly update the wind and solar atlases. It will also provide information to the Department of Energy on the economics of wind and solar facilities.” Based on this data, AAP supported the preparation of a Draft Policy Document on Renewable Energy in Lesotho. The Department of Energy is discussing the document with stakeholders preparatory to its submission to Parliament for approval.

In Mozambique, in addition to providing training in data-gathering, AAP undertook a programme of “data rescue.” Since the 1950s, climate data collected on reams of paper had languished in storage facilities because no one recognized its utility. But now that climate change has become a crucial national issue, such historical data is needed for climate modeling. AAP was able to cull, organize and digitize it and it is now available for climate projections.

In Tunisia, AAP provided nearly 21 km of anti-wind poles to protect coastal dunes and beaches. AAP also provided equipment that measures, for the first time ever in Tunisia, tidal variations, sea level rise and risks of flooding along the entire coastline, as well as training of government staff to gather, store, interpret and apply the findings to the country’s new Strategy for Coastal Adaptation to Climate Change. “We now have projections that indicate that the sea level may rise between 30 and 50 cm over the next 50 years,” says Jihène Touil of UNDP Tunisia. “These are very important tools for Tunisia because they enable us to understand which areas are particularly vulnerable to sea-level rise. The National Adaptation Strategy lists 44 different activities people can carry out to protect the coastline.”

AAP’s work is laying a foundation for evidence-based decision-making that will far outlast the programme itself. In Congo, government officials were trained in the use of HPC systems, geographic information systems, climate modelling and actionable information provided by Climate

Box 1: Data collection leads to water collection and storage in Rwanda

More than 1,000 people from Rwanda’s 30 districts were trained by AAP in climate analysis and climate change adaptation measures. These new skills built on earlier analysis conducted under Rwanda’s National Adaptation Programme of Action prior to AAP.

In one village, Mwima, the earlier analysis showed a decrease in annual rainfall since 2000, a shorter rainy season, greater variability of rainfall and an increase in temperatures. These findings helped people understand why their community sometimes ran out of water for drinking, other domestic needs and irrigation.

The data prompted AAP to support the construction of 139 rooftop water harvesting tanks—one for each household in Mwima. The villagers, including women, were taught by a construction company how to build the water tanks, mostly from local materials. AAP arranged for the contractor to pay a total of US \$10,000 for their labour, which helped them cover basic needs such as health insurance and school fees. Water from the tanks now meets the families’ household needs as well as irrigating their vegetable plots in the dry season.

AAP Rwanda also developed a Climate Change teaching module and printed 5,000 copies in the local language. Using this handbook, the villagers in Mwima received training in climate change adaptation techniques and in how to ensure the sustainability of their water tanks. After the training, they established a cooperative to which each family regularly contributes a small amount to cover the maintenance of the tanks. Administrators of the District where Mwima is located, who were also trained by AAP, are now hoping to hire the newly experienced Mwima villagers to replicate this project in other communities. They are developing a proposal to secure new funding from government and/or donors.

Action Intelligence (CAI), an analytical tool introduced by IRTSC that enables users to track and analyse climate change initiatives being implemented within and outside of AAP countries. “We will continue to use these systems long after AAP has ended,” says Marcel Mpounza, AAP Congo’s Project Manager.

The challenge of providing climate information to farmers

AAP has also enabled a number of countries to use climate data technologies to help farmers plan which crops to plant, and when; when to harvest and how to protect animals from flooding or drought. In nearly all countries, agro-meteorological and hydro-meteorological weather stations, many of them automated, some solar-powered, are now in place, streaming climate data to national meteorological agencies and to support EWS. But often, the final link in the chain—making climate projections constantly available, accessible, relevant and useful to local people, especially the farmers who need them most—remains a challenge.

In Ghana, the newly available weather forecasts are broadcast on television and on local radio stations, as well as being disseminated by the Disaster Management Organization. But no effort has yet been made to ensure that weather information is conveyed in a form that is useful to the average person, especially small-scale farmers. “From what I have read so far, it looks like the weather forecasts are meaningless to farmers,” says Abena Baafi, a participant in AAP Ghana’s mentorship programme. “They’re too scientific. The farmers say, ‘Yes, there are weather forecasts, but we don’t understand them; the information has not been broken down to our level.’”

Uncovering such problems is a major contribution of AAP, whose pilot projects act as a catalyst of learning through experimentation, laying the groundwork for new initiatives based on lessons learned.

One country that has tackled this challenge head-on is Mauritius. There, the Ministry of Environment and Sustainable Development set up an Agricultural Decision Support Programme to provide instant, current data to farmers from the seven automatic weather stations provided by AAP. The real-time data, available both through the Internet and via text messages, helps farmers make decisions regarding day-to-day operations such as irrigation, fertiliser application or pest and disease control. When used effectively, this data enables farmers to adjust their activities to mitigate the effects of heavy rains, floods or heat stress that can cause economic loss; damage to the environment and health impacts.

But in larger countries such as Tanzania, reaching all farmers with the weather information they need can be difficult. According to Faraja Ngerageza, AAP National Coordinator in Tanzania, “Radio weather forecasts reach many villages, as does television. However, since the country is very big it’s still a challenge to ensure that every village receives these radio weather forecasts.”

Malawi tried to reach farmers with a different approach. AAP Malawi established seven Climate Centres, one in each of seven pilot districts. The centres were intended to be a resource where local people could learn about climate change and monitor weather patterns. “Farmers are able to access information through the Climate Centres,” says Jane Swira, AAP Project Manager. “We encourage them to come to the centres and get the weather forecast for the week.”

AAP’s pilot projects act as a catalyst of learning through experimentation, providing lessons that will help in the design of new initiatives.

But experience showed that this system failed to reach many farmers. “We quickly noted the gap,” says Jane. “We realized that we need to give farmers information in their villages.” UNDP plans to build on AAP Malawi by supporting a new, four-year National Climate Change Programme. “With our new programme,” says Jane, “we plan to support village radio stations in each of the seven pilot districts, reaching communities that up

to now have no local radio and broadcasting in local languages.” She explains that the radio scheme would likely be supported with GEF funds. And like many adaptation initiatives, the new community radio stations would serve a variety of development needs. “For sure, they will not only broadcast weather information, but other development information and discussions on issues such as gender, village savings and loans, HIV/AIDS,” says Jane. “One organization is already doing this in the south of Malawi and it’s working very well, so we’ll use their model.”

Early Warning Systems Reduce the Risk of Hazards

Long before AAP, climate change in Africa was already producing natural hazards such as floods and drought, which disrupted—or even ended—many lives. For most people, these events came without warning, leaving no time to escape or save livestock or homes. With adequate advance notice, many might have been spared.

But climate change can cause loss of life in other ways too. The civil war in Sudan’s Darfur region is believed to have its origins, at least in part, in conflicts over dwindling pastureland.⁴ Among AAP countries, Nigeria may be the only one that has been training citizens—including school children—to respond to and prevent conflicts and violence that may erupt due to climate change. With AAP support, Nigeria developed teaching materials for the country’s new elementary and secondary education curricula that focus on climate adaptation, emergency preparedness and DRR. These include adaptation and mitigation packages and participatory, gender-sensitive teaching packages, as well as skill-based materials on school gardening as a core adaptation strategy. So far, these materials have been used to build the knowledge base and capacities of 340 tutors and 1,352 student teachers at pre- and in-service levels at six Colleges of Education—one in each of Nigeria’s six geopolitical regions.

Preventing violence resulting from climate change

Nigeria also developed a framework and participatory approaches for problem-solving and the management of conflict due to climate change. This includes early warning systems (EWS), hazard forecasting and management, safety measures such as drought and erosion control, fire prevention, first aid, disaster risk management and response to civil unrest and epidemics. These frameworks are the focus of training for 170 senior trainers in 10 states—from the national, state and local levels—as part of life skills and leadership training. Systems have been established to prevent and mitigate community-level conflict resulting from climate change and the capacities of trainers and students have been built in the prevention, reporting and response to violence.

In Ghana, officials in all 170 districts were trained in DRR and mechanisms were put in place to ensure that DRR is integrated into district development planning, especially short- to medium-term plans. And the regional impact of AAP is seen in the fact that a wireless SMS system for sharing disaster-related information, first developed by AAP Ghana, was adopted by Lesotho. Through this system, information is shared among the ministries of Forestry, Agriculture and Health and the Disaster Management Authority, who then send disaster warning messages to disaster management teams.

Also in Lesotho, a new data collection system that enables the Disaster Management Authority (DMA) to map climate-related hazards will aid in understanding vulnerability and risk. It is now an essential management tool of the DMA, and since it uses open-source software, which is freely available on the Internet, its sustainability is assured.

4 Bechtold, P. K. (2009). A History of Modern Sudan. *Middle East Journal*, 63(1), 149 – 150.

In Rwanda, a map of climate change risk zones was updated, vulnerability and risk assessments were carried out and the National Adaptation Plan of Action was amended to include EWS. The Ministry of Local Government received support from AAP to train local officials and establish and sustain the Rwanda Integrated EWS, which was produced as a result of multi-sectoral working group discussions. Representatives from 11 government agencies were trained in

climate modelling, forecasting and disaster management preparedness for generating, packaging, transmitting and acting on early warning information. This team of 11 institutions now constitutes the Disaster Management Steering Committee of Rwanda's Early Warning System, coordinated by the Ministry of Disaster Management and Refugees.

While many AAP countries are seeking better ways to reach farmers with weather forecasts, AAP supported the installation of an EWS in a key farming region of Senegal that may prove to be a model. Forecasts for the coming rainy season, including high winds, rainfall, storms and lightening, are sent out to farmers and agricultural extension workers through community radio broadcasts, SMS text messaging and the Internet-based news outlet Seneweb. This advance rainy season profile helps farmers plan their activities: which crops to plant and whether short- or long-cycle varieties will have a better chance of survival. It provides warnings of drought or excessive heat to enable farmers to take steps to avoid crop loss. It also provides information on where the best pastures can be found at any given time, which is shared with local authorities, pastoralists, and the local news media. Depending on the urgency of the information, radio programmes are broadcast at 72-, 48-, 24- or three-hour intervals.



Broadcaster on community radio, Senegal

Source: Evaluation of the Emergency Warning System, Kaffrine, Senegal 2012

Farmers and herders appear as guests on the broadcasts, and extension workers make field visits to verify that the information provided to producers has been useful. When the system was evaluated in December 2012, 82 percent of the weather bulletins broadcast that year were found to have been accurate. "Farmers are consistently taking into account the climate information that is provided to them." The evaluation report noted, "Checking the latest weather forecasts has become a reflex among farmers and their trust in local management structures has increased and food security has improved."

Support for Data Information Management at the regional level

With 20 African countries from every corner of the continent participating—including two Arab States and 10 Least Developed Countries—AAP's impact is regional as well as national. In all, 450 people from all 20 countries came together for a total of nine regional and one Africa-wide training workshops focused on climate data and information management. The Africa-wide workshop brought together AAP participants with multi-disciplinary backgrounds for training in the generation and use of climate scenarios for adaptation planning and decision-making.

AAP also supported four African Regional Centres of Excellence that are part of the World Meteorological Organisation (WMO). ACMAD, based in Niamey, Niger, which covers the entire continent as well as West Africa, and AGRHYMET (the Centre on Food Security, Desertification and Water Control and Management, also based in Niamey) plus ICPAC in East Africa and SADC in Southern Africa. Their mandate is to provide technical support and services to help countries in their respective regions address their developmental needs.

However, before AAP their capacity for climate data and information management was weak, especially the application of climate data to development in areas such as water resources, agriculture and infrastructure. As with many AAP activities, the support provided aimed at strengthening the way these institutions worked. “We helped them to rethink the way they look at climate data, to place it within the context of development,” says Joseph Instiful, a Component Manager at IRTSC who specializes in climate data and information management.

AAP conducted capacity-building workshops for each of the sub-regional WMO institutions as well as providing them with toolkits on topics such as Integrated Water Resources Management—how water levels are changing within the river basins in Africa and how to use hydrological modeling to predict the distribution of water resources. Another toolkit provided by AAP was a hydro-economic model that analyses water use in terms of competing needs: commercial, agricultural, domestic and other applications. “Our approach was integrated,” says Joseph. “We brought together the scientific side with its applied to decision-making, taking into account the needs and contribution of all stakeholders.”

AAP also trained the staff of each of the regional organizations in the use of HPCs for climate data analysis and provided funding for two staff members from ACMAD and two from AGRHYMET to take a course on computers and physics at a UNESCO centre in Italy. “We had a plan to roll out this UNESCO training in the other two regional centres, but the project ended before we could do this,” says Joseph.

At the pan-African level, AAP also worked with the UN Economic Commission for Africa (UNECA). “We helped them to put together a climate modeling centre, gave them advice on procurement and on capacity-building of a technical staff,” says Joseph. “But more needs to be done. We started processes that really need to be built upon.”

OUTCOME 2

Countries have built leadership capacities and developed institutional frameworks to manage climate risks and opportunities in an integrated manner at the local and national levels.

Anywhere in the world, when public institutions are weak or lacking in leadership and the people who work in them are untrained and inexperienced in good governance, the result is often delayed

Leadership can be defined as the capacity to inspire others to behave in such a way that the desired outcomes are achieved. It involves personal commitment as well as concrete action. A key principle is that leadership can reside in anyone regardless of job title, seniority or social status.

**AAP Final Report,
Ethiopia**

progress at the national, level coupled with an inability to respond effectively to crises or address perennial problems—including climate change. This has been the case in much of Africa, together with a longstanding reluctance to collaborate, to reach outside of one's own fiefdom and work with colleagues as a team. One of the main achievements of AAP has been its success in addressing these problems.

New government institutions support adaptation to climate change

AAP focused on strengthening institutions—in some cases supporting their very creation—and on building the capacities of their staff to establish climate adaptation as an integral part of the development process.

In Malawi, for example, the President created a Ministry of Environment and Climate Change Management in 2012. According to the Ministry's Jane Swira, AAP contributed significantly to its establishment. "There's been a lot of advocacy around climate change from AAP and other programmes," she says. "That raised a lot of awareness—so much so that the President decided to come up with a complete ministry with a climate change focus.

A sector-wide approach will now be coordinated through this new ministry which is responsible for climate change adaptation."

Many key staff members of these institutions received training in areas such as climate change awareness; vulnerability and impact assessment of climate change; economic analysis of climate change and its effect on poverty; gender and climate change; participatory approaches for problem solving and conflict management in the context of climate change; the preparation of adaptation programmes, environmental plans and fundable projects; addressing climate change adaptation at the local level; mainstreaming climate change adaptation into plans, policies and programmes; leadership; institutional reform and improving work efficiency; climate resilience and building a green economy; environmental laws and regulations, waste management; tracking adaptation as part of development projects; media training; REDD; and long-term climate modeling integrating economic, social, environmental priorities.

Promoting inter-sectoral collaboration

In many cases, supporting a culture of collaboration among government departments is more crucial than establishing new government entities. A collaborative, transparent approach is often a new concept in African countries, where the lack thereof impedes government effectiveness. "As in many countries, in Mozambique the various ministries tended to function independently of each

other,” says Clara Landeiro, Chief Technical Advisor of AAP Mozambique. “Communication across sectors wasn’t happening. But climate change is an issue that needs to have all the heads thinking. AAP was crucial in this. Unlike other projects, AAP was able to bring people from different ministries together to discuss climate change adaptation, what the problems are and how they can work as a team to design an effective adaptation process that would really change things.”

At first, three ministries led Mozambique’s adaptation programme: the Ministry of Environment, the Ministry of Planning and Development and the Institute for Disaster Risk Reduction. But they soon realized that they needed to “mainstream” the programme into more sectors in order to design effective ways to reach communities. “The work done during AAP it wasn’t a disjointed effort,” says Clara. “We provided training in a cross-sectoral way to the various ministries in crucial areas like water resources management. We introduced a new way of doing things that was not very familiar to the institutional side of Mozambique.”

Kenya is another example of inter-sectoral collaboration. AAP supported the establishment of the new Climate Change Planning Unit within the Ministry of State for Planning, National Development and Vision 2030. It is a full-fledged government Unit consisting of 12 modelers based at different ministries—the Ministries of Planning, Agriculture, Education, Environment and Mineral Resources, the Kenya Meteorological Department, the Kenya Institute for Public Policy Research and Analysis, the Department of Remote Sensing and Resource Surveys and the Kenya Bureau of Statistics. They all meet regularly to use the new long-term modeling tool that AAP provided, share ideas and discuss how best to integrate adaptation into their respective development sectors. “The focal point of this Unit is from the Ministry of Planning, so he can spearhead climate modeling in different sectors,” says Harun Warui of AAP Kenya. In addition to this Unit, which works to incorporate climate change into the work of various ministries, AAP also supported the establishment of a Climate Change Secretariat with a staff of six housed at the Ministry of Environment. They are responsible for ensuring that various components of Kenya’s Climate Change Action Plan are carried out.

In Tanzania, guidelines for mainstreaming climate adaptation into development activities were developed and 5,000 copies were printed and will be used by central government ministries, 140 local government authorities, NGOs and the private sector. Before they are distributed, the Minister of Environment will hold a one-day workshop to launch the guidelines and acquaint all the relevant stakeholders with their content.

Under AAP, Niger established a Consultation Framework on Climate Change Adaptation with the mandate to help all relevant actors working on climate change to share lessons learned and experiences.

Gabon created a department of environment in every ministry whose focal points are from the Ministry of Environment. “The authorities decided that climate change and the environment must be at the centre of development in Gabon,” says Brice Ibouanga, Technical Advisor to AAP, Gabon.

“With AAP, the various ministries worked together as a team. It wasn’t a disjointed effort. AAP brought people together to discuss climate change adaptation and design a process that would really change things. It introduced a new way of working that was not familiar to the institutional side of Mozambique.”

**Clara Landeiro,
Chief Technical Advisor,
AAP Mozambique**

“The authorities decided that climate change and the environment must be at the centre of development.”

**Brice Ibouanga,
Technical Advisor to
AAP, Gabon**

Building government capacities to support adaptation

No government officials will support adaptation to climate change without an understanding of how climate change will affect—and in some cases derail—development efforts. That is why the

training of government officials, including parliamentarians, to respond to climate change has been a major component of AAP. In Ethiopia, Members of Parliament attended eight days of workshops supported by AAP. Topics covered included Awareness of Climate Change, Mainstreaming Climate Change in Development Programmes, Climate Change and Environmental Issues, Climate Resilience and Building a Climate-Resilient Green Economy. “Investing in the capacities of parliamentarians and other decision-makers to help them understand climate change adaptation is crucial,” says Ababu Anage of UNDP Ethiopia. “Parliaments are law-making bodies that can produce laws and policies that have an impact on the environment and can mitigate the effects of climate change.”

In Burkina Faso, AAP focused on building the capacities of government institutions to design and implement effective adaptation programmes. It conducted in-depth interviews to produce a mapping of government institutions, NGOs, and private sector entities involved in climate change adaptation. Based on this mapping, the government ministries, community groups and others worked together to gauge the capacity of national institutions. AAP facilitated a workshop in which specific strengths and weaknesses in the institutional capacities required to address climate change challenges were identified. As a result, AAP’s institutional capacity development in Burkina Faso focused on four priorities for capacity development:

- Strengthening mechanisms for cross-ministerial and stakeholder coordination
- More effective local-level implementation of climate change priorities
- A new targeted and evidence-based climate change public awareness programme
- A strategy to scale up community engagement in climate change and mobilize women and vulnerable groups.

“This process of institutional capacity development will enable Burkina Faso to stand on its own feet in terms of national climate change decision-making and implementation,” says Aki Kogachi of UNDP Burkina Faso.

Innovative learning techniques

In Ghana, AAP held an intensive workshop to convince high-level policy-makers of the implications of climate change for the country’s development and to facilitate their inclusion of adaptation measures into the plans and programmes of their respective institutions. Over 160 policy-makers attended the workshop, which had been deliberately designed to spark the participants’ interest and inspire them to action.

“We used innovative learning methodologies,” says Antwi-Boasiako Amoah, AAP Project Manager. “This attracted the attention and active engagement of our high-level participants.” The innovations included Adult Learning techniques such as videos, drama and sculpture presented by a professional theatre group from the University of Ghana called Theatre for Development. “This group understands the nexus between climate change and development, so they were able to simplify and dramatize the issues for easier understanding,” says Mr. Amoah. “At the end of the workshop, the participants signed commitment forms saying that they would incorporate adaptation into their plans and programmes.”

In many countries, AAP worked closely with high-level politicians who can drive processes. Their involvement encouraged large numbers of people to attend workshops and other events on climate change adaptation. “The main reason why we had so many participants at our high-level workshops on climate adaptation was that the Minister of Environment, Science and Technology

was personally committed to the workshop.” says Mr. Amoah in Ghana. “Also, our office did a lot of follow-up by phone, in addition to sending out letters.”

Ghana established a mentoring system whereby 10 mentors—senior experts in environmental issues, climate change and development, took on 26 mentees—more junior development activists who are in a position to influence action on climate change in their day-to-day professional activities. The mentors and mentees met weekly, and continue to do so after AAP, in order to build the mentees’ capacities by exploring adaptation issues in depth and enhancing their expertise and communication skills.

Abena Baafi, who works for CARE International (Ghana), is one of the AAP mentees. Her focus is natural resources and environmental governance. “We do advocacy based on evidence to enable people to reduce poverty by managing natural resources and the environment. Her AAP mentor is Mohammed Baba Tuahiru, an advocacy and strategic partnership manager with DANIDA’s Advocacy and Learning Project. “I learned a lot through this AAP mentoring,” says Abena, “not only about climate change, but by developing other skills as well, such as advocacy and community organizing. I have a much better understanding of community-based climate change adaptation and I’m developing the ability to mobilize people, to inspire them to take action.” She says that the mentorship caused her to develop a special interest in climate change adaptation and she is working on a doctoral thesis on indigenous knowledge and the adaptation process.

Building capacities for adaptation at the local level

Ultimately, adaptation to climate change rests with everyone, at all levels of society. This is why a number of AAP countries have been working to build district-level institutions that can implement adaptation activities within local communities.

In Ethiopia, the major implementing partner of the adaptation programme is the Federal Environmental Protection Authority (EPA), which has offices in many of the country’s 600 districts), the Ministry of Water and Energy and the Ministry of Education, both of which also have bureaus at the district level. AAP Ethiopia prepared guidelines to mainstream climate change into policies, programmes, plans and projects at the regional, district and local levels. Twelve sectoral Technical Working Groups (TWGs) have been established, in addition to 12 Regional TGWs, bringing together all the relevant stakeholders to mainstream climate change. All of the Regional TWGs and eight of the sectoral TWGs have already prepared adaptation programmes. Local climate change adaptation activities will be supervised by District Administrators, who can bring together all the other stakeholders, including local communities that implement “green enterprises” promoted by AAP.

Also in Ethiopia, more than 1,000 individuals from federal sector institutions, regional units, parliamentarians, women and youth affairs institutions, civil society, chambers of commerce and community organizations participated in trainings, sensitization workshops, field visits and dialogue forums on climate change adaptation and mitigation.

In Senegal, 10 Regional Climate Change Committees were established. In Sao Tomé e Príncipe, AAP supported the creation of a cooperative for small-scale farmers focused on resilient agriculture and agro-forestry. In Rwanda, 1,094 local government officials were trained to mainstream climate change into District Development Plans and into annual district performance contracts. These officials then contributed to developing annual performance contracts related to climate change for officials from the national to the district levels. This means that they are responsible for achieving certain adaptation benchmarks. In addition, 26 of the country’s 30 districts established environmental committees and included climate change activities in their annual action plans. Examples of these activities include irrigation, terracing, energy efficiency (energy efficiency

stoves and biogas), forestry and agro-forestry, rainwater harvesting, riverbank and lakeshore protection and sustainable land use.

In Ghana, representatives from each of the country's 170 districts received training on how to mainstream climate change adaptation into their medium-term development plans, using a Mainstreaming Guide produced by AAP. However, for lack of funds at the district level, to date only 32 of the 170 districts have produced mainstreaming plans.

Cross-cutting Issues

Adaptation to climate change cannot take place in a vacuum, isolated from other essential development concerns and activities. Climate change presents a new and different type of development issue. It is dynamic, and its impact is likely to increase in the future. It affects everyone and everything: rich, poor, capital cities, rural villages, natural resources and social, economic and environmental conditions. Hence, climate change adaptation must be holistic, embracing essential development issues, and key UNDP practice areas: gender, poverty alleviation, and knowledge management. The process of mainstreaming both climate adaptation and these cross-cutting issues ensures that climate adaptation permeates all development activities, involves all development actors and is sustainable. It also ensures that climate change adaptation activities support key development objectives.

Providing integrated support through a cross-practice strategy—including gender mainstreaming, poverty alleviation, integrated climate policy, capacity development and knowledge management—first took place in Niger in 2010 and became a formal component of AAP in 2011. The following year, AAP launched a cross-practice programme in Lesotho. “AAP aimed to build capacities and put in place necessary mechanisms to facilitate the implementation of climate adaptation interventions in the future,” says Limomane Peshoane of UNDP Lesotho, a member of the AAP Technical Advisory Committee. “However, there was a lot of pressure from government for the project to focus on pilot projects and a lot of time was lost in negotiating how to strike a balance between the original objective and pilots projects. To address this challenge, UNDP Lesotho, headquarters and IRTSC had a joint meeting to see how a cross-practice strategy can support the implementation of AAP.” He says that the cross-practice strategy ultimately enabled AAP Lesotho to “integrate” the implementation of AAP. “It provided us with guidance and technical support from headquarters and IRTSC. AAP was a complex and ambitious project, but the cross-practice strategy, with its emphasis on key sectors such as gender and poverty alleviation, helped us prioritise and focus on strategic areas where we could demonstrate impact with fewer resources. It also helped us develop our Integrated Climate Change Policy Framework.”

Supporting gender concerns and women's leadership in adapting to climate change

Women are responsible for providing the necessities of life to their families: food, water, fuel and health care. They are therefore on the front lines when it comes to climate change, and often feel its effects most acutely, especially when crop yields dwindle, local resources become scarce and environmental conditions deteriorate. Hence, adaptation to climate change cannot be achieved without women's active involvement. In order to ensure that gender issues are firmly integrated within all climate change policies and programmes, AAP trained 329 government employees and members of civil society to understand the linkages between gender and climate change and how to include gender equity as a key priority in climate change adaptation policies and programmes. Gender was officially mainstreamed into the national adaptation plans of 11 AAP countries: Kenya, Niger,

Nigeria, Tanzania, Mauritius, Burkina Faso, Mauritius, Senegal, Mozambique, Ethiopia, and Namibia.

Nigeria conducted an assessment of gender-sensitive climate adaptation initiatives for sustainable livelihoods development. In Rwanda, 540 women from the National Women's Council in 12 of the country's 30 districts were trained in climate change adaptation, the impact of climate change on women, entrepreneurship, microfinance and the role of cooperatives in poverty alleviation. The training helped them build their formal knowledge of climate

change, to complement the indigenous knowledge developed from managing their environment. The training also empowered the women to influence the decision-making process and develop gender-focused climate adaptation action plans and make a number of commitments for the future, including:

- Giving their opinions at meetings and participating in decision-making,
- Participating in public works and proposing activities for climate change adaptation and environment protection
- Harvesting rain water for domestic use
- Raise the problem of waste management and requesting landfill installation
- Sensitizing their neighbors about sorting biodegradable wastes from non-biodegradable wastes
- Practicing agro-forestry and forest management and planting fruit trees
- Educating their children and husbands about environment protection and ensuring proper hygiene on their surroundings
- Proper management of springs and wells, in order to reduce water-borne diseases
- Installing vegetable gardens to improve their livelihoods and become more resilient to climate change
- Using improved cooking stoves and saving energy from biomass
- Practicing family planning, to reduce the growth of population and promote the sustainable use of natural resources.

In Mauritius, the UNDP gender team facilitated a Training of Trainers workshop on gender and climate change in collaboration with the UNDP Country Office, the Ministry of Environment and Sustainable Development and the Ministry of Gender Equality. A total of 66 participants attended, including government officials, social workers, members of the National Women's Council, representatives of Participatory Advisory Committees, family welfare and protection officers, and representatives of young women's associations, regional women's committees and women's centres. The workshop aimed to:

- Build the capacities and knowledge of communities and women leaders on the links between gender and climate change, including a better understanding at the national and local levels of why women are particularly vulnerable to climate change and why they must be central to any climate adaptation strategy.
- Build awareness of why a gender equality perspective and sense of community (among men and women, youth, minorities, and vulnerable groups) are essential when discussing policy development, decision-making, and strategies for mitigation and adaptation to climate change.

Table 1: Government Officials Trained by AAP in Gender Mainstreaming

COUNTRY	NUMBER OF TRAINED OFFICIALS
Burkina Faso	122
Niger	35
Congo	86
Mauritius	66
Mozambique	20
TOTAL	329

- Demonstrate that women are not just helpless victims—they are powerful agents of change, and their leadership is critical to building knowledge on how to mainstream gender in community based climate adaptation programmes.

As a result of this focus on gender training, participants developed strategic action plans to share the knowledge they had acquired with their colleagues and counterparts in other sectors. The Ministry of Environment and Sustainable Development and the Ministry of Gender Equality joined together to develop a simplified, context-specific gender and climate change module to be used for awareness-raising campaign in four regional workshops and a pamphlet on best practices demonstrating Mauritian women’s role in climate change adaptation and mitigation was produced. In opening the workshop, Mrs. Mireille Martin, Minister of Gender Equality, Child Development and Family Welfare noted, “While women are disproportionately affected by climate change impacts, they are also well positioned to be agents of change through mitigation, management and adaptive activities in their households, workplaces and communities.”

Research by women’s group to protect forests

In order to provide a gender perspective in the work of AAP Congo, a member of a leading Congolese women’s group, Femmes Energie, was involved in the development of the country’s original AAP project document, while another member sat on the AAP National Steering

AAP Support Empowers Congolese Women’s Group

Femmes Energie builds the capacities of its members to:

- **Raise awareness among women about the links between energy needs and environmental vulnerability**
- **Help women understand the centrality of their role in the management of natural resources and the need for sustainable energy sources**
- **Play an active role in implementing projects and programmes that support adaptation and mitigate the effects of climate change**
- **Train women and raise their awareness of climate change.**

Committee. AAP supported research by Femmes Energie, which produced data that informed a proposal to the World Bank for a carbon-offset project that could reduce fuel wood consumption by 49 percent.

Congo’s economy is primarily based on timber and petroleum, and the country’s Poverty Reduction Strategy of 2008 emphasizes the need to sustainably manage natural resources. Fuel wood is used by 90 percent of the population, especially for cooking, which is done by women. Women are also responsible for obtaining daily supplies of fuel wood (or charcoal), which account for 60-80 percent of national energy consumption and cost up to US D .70 per day for wood or US\$.20 for charcoal.⁵ Hence, widespread use of fuel-efficient, less polluting stoves has the potential to benefit women and conserve precious timber resources.

AAP Congo hired a French research institution, Eco-Act, to work with Femmes Energie to study the best way to ensure the widespread distribution of the most appropriate fuel-efficient stoves. AAP supported training for members of Femmes Energie in statistical analysis and sampling of 100 “baseline” households, to record women’s cooking methods,

their preferred fuel and whether they would be willing to make a change.

The study found that 25,000 improved stoves—if deployed quickly in densely population areas—would reduce the amount of fuel wood consumed by an average household by up to 49 percent as compared to traditional stoves. Femmes Energie is currently working with Marien Ngouabi

⁵ *Rapport d’Etude de faisabilité technique et économique pour un projet de foyers améliorés et de compensation carbone au Congo*, Eco-Act, Boulogne, 2012.

University to produce a prototype of the most appropriate, most fuel-efficient stove, to be manufactured locally from local materials. The Congolese government has submitted a proposal to the World Bank for a carbon-offset project to defray the costs of manufacturing the stoves. If the project is funded, Femmes Energie will work with the manufacturer to ensure the rapid distribution of the new stoves.

Poverty alleviation and climate adaptation

Climate change threatens livelihoods, especially in Africa where livelihoods are often precarious to begin with. But adaptation to climate change creates countless opportunities to strengthen and diversify livelihoods and ensure that they are sustainable. To emphasise the link between climate resilience and poverty reduction, AAP produced a toolkit on climate change and poverty alleviation compiled by the UNDP Poverty Group, as well as a package of presentations on climate resilience readiness that were used at both regional and national workshops.

With support from AAP, every country designed and implemented local, community-based projects designed to involve local people in climate adaptation activities while providing economic incentives for them to do so. The result is a wide variety of projects in which the core goal is environmental sustainability, and an important additional objective is income-generation. Whether a project involves planting fruit trees, bee-keeping, producing vegetable, water harvesting, the rehabilitation of fish populations or the restoration of beaches, poverty reduction is a component. In this context, AAP projects produce not only sustainable incomes; they conserve valuable resources that families need to survive and they reduce drudgery, thus leaving women more time for productive activities.

Knowledge management

AAP provided support to countries through different mechanisms :

- (i) promoting the generation of content by developing knowledge, codifying it for easier access and disseminating it through appropriate modalities
- (ii) promoting sharing through platforms, both existing electronic and traditional platforms for knowledge sharing
- (iii) providing technical assistance to respond to specific needs in the implementation of national programmes.

Capturing, codifying and disseminating knowledge

The 20 countries' national AAP project documents include a wide range of country-specific knowledge-related activities, including activities in the area of scientific and social research, school curricula, formulation of knowledge management and communication plans, organization of knowledge fairs, etc. The IRTSC provided technical assistance in capturing knowledge, documenting best practices and making them available through different modalities of dissemination. Follow up assistance was provided so that countries' best practices could be properly documented, constituting the AAP's legacy to the region and to decision making processes.

Through regional workshops, the IRTSC facilitated training for the countries on knowledge management mechanisms and processes in order to ensure that, first, knowledge can be developed and adequate dissemination modalities identified and, second, pilot activities carried out in the field benefitted from this process by being documented and disseminated via both electronic platforms and traditional mechanisms.

In the long term, we expect that the experiences of national initiatives will continue to be systematically documented and disseminated so that the important knowledge generated can be disseminated widely and used for decision making.

Knowledge Sharing Platforms

The IRTSC assisted with training and the promotion of knowledge-sharing mainly through a dedicated knowledge management platform, Teamworks. It is UNDP's knowledge sharing and dissemination platforms with an extensive membership in adaptation, among others in climate change issues, still with a great potential to expand. It is widely used by UNDP, UNEP and other climate change oriented institutions, is supported and facilitated by a dedicated team and has very flexible membership acceptance policies.

The initial focus of the regional support was placed on training and promoting sharing of information and knowledge among practitioners at the technical and managerial levels, in order to build up a national and regional culture of sharing through networks. This platform was also expected to facilitate storage of information and knowledge as well as to provide easy access for it to move across different levels to be used in evidence based decision making. This latter aspect constituted the long term goals of the initiative.

OUTCOME 3

Countries are implementing climate-resilient policies and measures in priority sectors.

In African countries, adaptation to climate change is a relatively new concern—one among many pressing issues. In 2009 when AAP was launched, few African states had put in place national policies to specifically address climate adaptation. Hence, a major focus of AAP's Inter-regional Technical Support Component (IRTSC) has been to provide critical assistance to key ministries and administrative bodies in the 20 AAP countries as they develop evidence-based national policies that directly address the issue of climate adaptation within the development context.

As a result, these countries are now equipped with a range of national policies designed to protect climate-sensitive natural resources, create private sector incentives for adaptation, and establish performance standards and codes that encourage both private and public investment in lasting capital and infrastructure. To implement these policies, countries have also produced programmes, strategies and plans for climate change adaptation—"road maps" designed to lead the countries on a clear path of climate adaptation.

A number of countries—such as Morocco, Burkina Faso and Niger—have policies or programmes that address climate adaptation as part of a broader development process. Some of these were in place before AAP, such as Morocco's two programmes for the sustainable development of Oases and the National Adaptation Plans of Action (NAPA) of Burkina Faso and Niger. AAP provided support to existing adaptation-related plans such as Burkina Faso's NAPA, where AAP's aim was to develop an enabling environment that will support advocacy for adaptation, the implementation of adaptation activities and the monitoring of priority actions identified in the NAPA. AAP activities in Burkina Faso were in harmony with the priorities of NAPA to strengthen capacity to prevent and manage food crises.

And in virtually every country, AAP was implemented concurrently with other programmes that also addressed issues related to climate change, at least peripherally. One of AAP's strengths was that it was able to work in harmony with, and in many cases enhance, these other activities, creating a synergy of results that is greater than the sum of its parts. In some countries,

"AAP made a difference in conjunction with other initiatives," says Clara Landeiro, Chief Technical Advisor of AAP Mozambique. "But certainly, AAP was crucial. It made a big contribution because it was a very focused programme with a very reliable donor—Japan. AAP helped the government to help communities become more resilient because it was a strategic effort to mainstream climate adaptation in government planning instruments and budgeting." The result, Mozambique's National Strategy on Climate Change Adaptation and Mitigation (2013-2025) has been approved by the Council of Ministers as the national response to the challenge of climate change, and implementation has begun.

From an African perspective, adaptation to climate change is often perceived as only one of many pressing problems: emergency situations such as civil conflict and natural hazards as well as chronic conditions such as political instability, widespread poverty, a lack of functioning

The process of adapting to climate change can hold the key to resolving many other problems, such as alleviating poverty, strengthening governance and restoring natural resources.

institutions and fragile, depleted natural resources. Yet in fact, although the process of adapting to climate change can hold the key to resolving many of these problems, climate change is not always seen as an urgent issue.

In Niger, extreme poverty and the constant threat of famine have created an environment of near-perennial crisis. “Niger’s socio-economic situation means that adaptation to climate change—as well as environmental issues in general—is not considered a priority,” says Julie Teng of UNDP Niger, “in spite of the extreme vulnerability of the country to the harmful effects of climate change.” AAP’s role was therefore crucial in helping government officials see the need to make climate change adaptation an essential component of national policies. Normally,

Julie explains, development projects tend to focus on day-to-day operations, especially in the agricultural sector. “This is why AAP has played a key role in encouraging decision-makers to work on adaptation at the institutional level. By providing training, AAP has built their capacities to integrate climate change into policies, strategies and programmes.”

In Nigeria, the National Policy on Climate Change and the National Climate Change Response Strategy are being popularized, not only across sectors but also across the country’s vast and diverse states, Local Government Authorities and geo-political zones. It is also being integrated into national development plans and other sectoral policies such as water, energy, security, health and agricultural policies.

With support from AAP, Kenya has seen the full development of a National Climate Change Action Plan with the support of the Ministries of Environment and Planning. The country’s long-term Vision 2030 plan now includes a section on the environment where climate change adaptation is anchored. “You can see how serious the government is because it has factored climate change into planning,” says AAP Project Manager Harun Warui.

In Ethiopia, nine line ministries—more than 90 per cent of the total—have prepared their own climate change adaptation plans: the Ministries of Health, Wildlife Conservation and Development Authority, Water and Energy, Mines, Urban Development and Construction, Agriculture, Transport, Refugee Affairs and Labour and Social Affairs. “The government’s commitment is amazing, and its development plans are clear indicators of its sincerity,” says UNDP’s Ababu Anage. The government’s five-year Growth and Transformation Plan—a strategic framework for 2010 to 2015 with an important focus on agriculture—outlines how Ethiopia will follow a “green” path of economic development. Moreover, Ethiopia’s Climate-Resilient Green Economy (CRGE) strategy aims to create a carbon-neutral, climate-resilient, middle-income country by 2025. The CRGE strategy is being implemented through the application of green technologies in demonstration projects—many of which target vulnerable groups such as jobless youth and women—and through the development of investment plans by sectoral ministries at the regional level. “The green technologies that are being implemented in demonstration projects are clear evidence of AAP’s support at the grassroots level,” says Ababu.

Despite many such successes, in some countries policy formulation is still new territory. AAP has introduced fundamental first steps in the process, but more capacity development is needed. In Cameroon, for example, AAP supported the preparation of a government position paper on adaptation to climate change. Yet a report from Cameroon in November 2012 noted that the reasons for formulating a strategy were still little understood, and that the various actors who

“AAP has played a key role in encouraging decision-makers to work on adaptation at the institutional level. By providing training, AAP has built their capacities to integrate climate change into policies, strategies and programmes.”

Julie Teng, UNDP Niger

should have carried forward the strategy development process were not all involved from its inception. It became clear during the strategy development process that a mechanism was needed to obtain necessary information from key stakeholders.

Laws supporting climate adaptation

In several AAP countries, policies supporting climate adaptation have been backed up by national legislation. In Mauritius, the Climate Change Law of 2013 includes the establishment of a Climate Change Division in Ministry of Environment. “An important impact of the law will be the empowerment and reinforcement of the Climate Change Division in terms of its mandate, capacities and status,” says Marion Fortune of UNDP Mauritius.

Gabon drafted a National Coastal Adaptation Law. Senegal's Supreme Court has adopted a Coastal Protection Law, which is currently awaiting parliamentary ratification. In Ghana, AAP supported a review of the National Building Code in order to include climate change indicators to strengthen domestic structures against flooding. Yet while laws and regulations can be an important sign of government commitment, ultimately what counts—and has yet to be demonstrated—is enforcement. “Ghana has the required expertise to design and construct flood-resistant buildings,” says AAP Project Manager Antwi Amoah, “but what is critical is the political will to implement the contents of the revised Building Code.”

Adaptation plans and strategies at the local level

Adaptation to climate change must be guided from the national level, but it will be implemented in large part by the daily activities of women, men and even children in rural villages and urban areas. Local authorities will need to play a key role in communicating the need for adaptation and offering ideas on how people can change the way they do things. During AAP, many countries began working with local authorities to enable them to take on adaptation at the local level. “Burkina Faso is involved in a process of decentralization,” says Ms. Kogachi. “Local communities are responsible for formulating and implementing their own development plans and adaptation is now a part of those plans.”

In Mozambique, the AAP Technical Advisor travelled to AAP's three project districts with representatives of the Ministry of Planning (the main implementing agency of AAP) to assist local officials in drawing up their own climate adaptation plans. Now that AAP has ended, representatives from the Ministry are scheduled to travel throughout the entire country to promote the adaptation process.

In Ethiopia, all of the country's nine regional governments and two city administrations have developed their own climate adaptation plans. Pilot projects implemented under AAP have been designed to put local people at the helm of local adaptation measures, offering economic incentives wherever possible. “People can get economic benefits from adopting green technologies,” said Ababu Anage. “For example, if the selected green technology is the introduction of multi-purpose trees, the community that has been organized to plant and care for the trees will benefit from selling the fruit.”

Pilot projects spread green technologies

In the three years of its on-the-ground implementation, AAP supported countless examples of highly replicable “green technologies” through pilot projects designed to demonstrate the effectiveness of climate adaptation activities and lead to large-scale replication. For the most part these are simple, low-tech, practical interventions that enable people not only to adapt to climate change in tangible ways, but even reverse the environmental deterioration that has already depleted many of Africa's natural resources. These solutions address the effects of climate change in sectors that frequently overlap and where synergies occur, including water; soil, land and agriculture;

waste management and energy. While many are simple, others are ambitious and innovative. AAP Morocco contributed to the installation of 100 solar-powered street lamps in the town of Fezna and Ethiopia has produced a prototype for an electric-powered taxi.

In nearly all cases, the benefits to communities are not limited to climate change adaptation. The application of green technologies often results in the acquisition of new skills for self-sufficiency; healthier living conditions; resilience in the face of natural hazards and income-generation for sustainable livelihoods. For women, green technologies can bring liberation from the drudgery of daily, time-consuming tasks such as fetching water and fuel wood from ever-greater distances; cooking on unhealthy, smoky, inefficient stoves or vainly attempting to coax crops from arid, depleted soils. The beauty of these green technologies is that they can readily be brought to scale and their success can attract new funding. AAP, through a variety of publications and through UNDP's website Teamworks, has made it possible for all programme countries to share their successes in implementing green technologies, learn from each others' experiences and replicate what their peers have accomplished. (See section on Knowledge Management.)

For example, green technologies supported by AAP in the water sector replenish and conserve groundwater (Ethiopia, Morocco); restore sustainable fisheries (Gabon, Ethiopia); maintain water quality (Tanzania, Senegal, Tunisia); prevent sedimentation, salinization and pollution caused by run-off (Morocco); improve water storage and irrigation (Rwanda); restore watersheds (Ethiopia) and enable the safe reuse of wastewater (Morocco).

Water is Morocco's, most precious natural resource. Morocco's AAP programme built on and supported activities already being carried out by the national government to restore the country's life-giving oases, which are in danger of drying up entirely due to climate change and human

Box 2: Morocco's integrated water resource management programme

Morocco's AAP activities have focused on the south of the country where life-supporting oases have become vulnerable to over-exploitation and the effects of climate change. The goal is to ensure that oasis resources are replenished, protected and maintained so that they can continue to sustain life and development. Water management is a crucial part of this process and AAP has laid out a number of core principles to guide community-level water management.

Water management requires a systematic approach integrating social, economic and environmental priorities.

- The effective management and development of water resources depends on the involvement of users, planners and decision-makers.
- The role of women is crucial.
- The economic value of water is of primary importance.

After analysing the vulnerability of water resources in the context of present and future climate change as identified by the AAP, each community in the project areas produced a plan for the management of water resources. The plans include:

- Managing the demand for water
- Managing and developing water sources
- Protecting water resources and fighting pollution
- Reducing the risk of extreme drought and floods
- Adapting infrastructures

Each of these steps is a part of an integrated project in which community councils actively seek the partners and funding they need.

activities. AAP funded a feasibility study on the reuse of wastewater in the oasis community of Azrir. It supported the creation of a management plan for a water purification project in the oasis of Guelmin and lobbied for the involvement of national institutions, resulting in a preliminary commitment from the Ministry of Agriculture. AAP funded a study on wastewater treatment and reuse in the city of Fezna which resulted in a project co-financed by two government agencies and managed by the local community. It also supported a study on the replenishment of the Fezna aquifer, implemented by Fezna's rural community and a state agency.

In Tanzania, water was a principal focus of four AAP pilot projects. Approaches used included rainwater harvesting, boreholes, pipelines and the repair of two hillside U-shaped dams.

"The details of the pilot projects were communicated to all of the districts through awareness seminars," says AAP National Coordinator Faraja Ngerageza. "This is a continuous process since the lessons learned from the pilot projects will be documented and applied at the national level to influence policy-making and enhance informed decision-making."

"Pilot projects teach us that effective implementation requires the incorporation of local social, economic, and environmental characteristics. Adaptation planning cannot take a 'one-size-fits-all' approach," says Ben Twinomugisha, AAP Programme Analyst in Tanzania. "Translating top-down policies into concrete action at the village level is the best way to address unique and diverse local realities. From time to time this even creates new, unanticipated solutions. This is why pilot projects can provide many useful lessons for future government adaptation programmes." Hence, while government policies can set overall objectives, pilot projects can inform policy-making and eventually produce results that lead to a scaling-up of adaptation activities at the national level.

"The lessons learned from the pilot projects will be documented and applied at the national level to influence policy-making and enhance informed decision-making."

**Faraja Ngerageza,
AAP National Coordinator,
Tanzania**

When it comes to soil, land, forests and agriculture, green technologies supported by AAP include the use of gabions in Ethiopia to retain unstable slopes; controlling and preventing erosion (Kenya, Senegal), land reclamation (Niger), rehabilitating ecosystems (Rwanda), promoting sustainable agriculture (Namibia, Lesotho, Morocco, Rwanda, Nigeria), reforestation (Congo, Kenya, Sao Tomé e Príncipe), container cultivation (Namibia), restoring and protecting coastlines (Gabon, Senegal, Tunisia), waste management (Kenya, Morocco), agro-forestry (Senegal, Ethiopia), use of organic pesticides (Senegal), sustainable animal husbandry (Kenya, Sao Tomé e Príncipe) and food preservation and storage (Mozambique).

In Rwanda, trained district officers are supporting populations vulnerable to climate change in the creation of cooperatives for income-generating fruit and fisheries production. This includes the development of fruits nurseries, the training of fruits grafters and the development of fisheries in valley dams, in addition to providing water for cattle.

In Kenya, the agricultural district of Kasambara relies on rain to sustain its crops and is therefore vulnerable to climate change. AAP supported the installation of three greenhouses that are managed by a group of community members, giving priority to people living with HIV/AIDS or disabilities. Today the greenhouses are providing the community with sustainable, climate-resilient livelihoods. In addition, community members are also being trained in poultry management and are planting drought resistant sweet potatoes.

Box 3: Protecting Mangroves in Gabon and Forests in Sao Tomé e Príncipe

South of Libreville on the coast of Gabon, the mangroves—rich spawning grounds for fish and a buffer against coastal erosion—have been dying, damaged by fishing and by local women who cut them down to fuel their fish-smoking businesses.

AAP supported a project aimed at the conservation and integrated management of these valuable ecosystems. The mangroves were studied and a biological inventory taken. AAP-Gabon enlisted the collaboration of a local NGO, CADDE (Action Centre for Sustainable Development and the Environment) which organized meetings with the local fishermen and their wives who smoke the fish, to raise awareness of the benefits provided by the mangroves in terms of biodiversity, fisheries and risk reduction during storms. CADDE constructed two new fish-smoking huts that burn sawdust briquettes—waste material from a local lumberyard, which was discarded—instead of the wood of the mangroves. “We succeeded in getting them to understand the importance of the mangroves and now they’re all using sawdust briquettes,” says Brice Ibouanga, Technical Advisor to AAP Gabon. “No mangroves are being cut anymore. We check regularly.”

After this success was demonstrated, Gabon’s Minister of the Environment made a presentation about it to the Council of Ministers, which designated the preservation of mangroves as an urgent priority and included it in the national budget. CADDE is continuing to encourage the use of sawdust for fish-smoking and restoring gaps in the mangrove with healthy plants.

Recycling wood waste products is also catching on in Sao Tomé and Príncipe, where forests were being decimated to build wooden houses. At the same time, the lumber industry produced mountains of wood chips that were simply burned, creating pollution. But as Laurent-Mascar Ngoma of UNDP Sao Tomé explains, “We said, ‘Why not mix the wood chips with sand and make bricks?’” AAP trained 45 people from rural communities, including five from construction companies, to make bricks reinforced with waste-product wood chips. Ten new eco-houses were built as a demonstration project, and the trainees have returned to their communities with new eco-friendly construction skills. “The idea was that people from different rural communities should learn how to build sustainable, eco-friendly houses,” says Laurent.

He estimates that locally-built eco-houses will cost about US \$6,700 each and says that banks are willing to offer ten- to 15-year mortgages to enable people to buy an eco-house. “Instead of people cutting down trees to build houses, or creating new slums, why not create a system where people can take out an affordable loan for a new type of sustainable housing?” he says.

In many countries, a major cause of deforestation is the production of charcoal for use in cooking stoves. In the north of Sao Tomé this has been a particularly serious problem. The area lacked water for agriculture; so many young people saw no other means of livelihood than charcoal production. After AAP supported the installation of a pipeline to provide irrigation, 22 young men who had been charcoal producers started a successful vegetable-farming cooperative. As AAP ends, says Laurent, “the Ministry of Agriculture has taken over AAP’s work to continue supporting these young men and mobilizing others to reduce tree-cutting for charcoal.”

In addition, AAP supported nine local NGOs who raised awareness about the damage caused by cutting trees for charcoal and mobilized charcoal-producers to replant 100 hectares of deforested land with some 10,000 seedlings of local tree species. “The same young people who were charcoal producers and tree-cutters were doing the replanting,” says Laurent. AAP support enabled the Ministry of Forestry to hire and equip more forest rangers to patrol the forest and to put up a fence to protect newly planted areas. And in a nearby community of some 300 families, AAP provided 300 fuel-efficient stoves in a pilot project to reduce the use of charcoal even further.



A greenhouse built with AAP support in Kasambara, Kenya

Source: AAP, Kenya

Interagency Activities in Support of AAP

UNDP was the lead agency of AAP, but it did not act alone. Interagency partnerships with WFP, UNICEF, UNIDO and, on occasion, UNITAR strengthened initiatives in four countries, as each partner added its unique expertise to address climate change: food security and livelihoods (WFP), school-based and youth-focused development, gender, child protection and education (UNICEF), industrial development (UNIDO) and training and research (UNITAR).

In Kenya, WFP supports a feeding programme in 1,700 schools. AAP provided US\$ 990,000 to enable WFP to install 473 fuel-efficient cook stoves at 413 schools in 15 districts, at a cost of US\$ 1,400—2,700 per stove. “In the arid and semi-arid lands where this project is implemented, communities are already vulnerable to climate change,” says Nyokabi Gachugi of AAP Kenya. “Energy-efficient stoves reduce fuel wood consumption, and the project also establishes wood lots that provide a sustainable supply of wood for the schools.”

Once the stoves were installed, the schools were required to pay back 50 per cent of the cost in six installments over two years. WFP partnered with a local NGO, RETAP that collects the money on their behalf. The funds are then used to finance the installation of more stoves in more schools. To date, 850 schools are using the new stoves. The goal is to reach 3,650 schools, which includes 1,700 schools in the marginalized areas that receive hot lunches through WFP, plus 1,950 schools that receive hot lunches through the Ministry of Education.

Also in Kenya, a partnership with UNIDO enabled AAP to establish a 200kw micro-hydro power station in the Rift Valley to replace fuel wood consumption at a tea processing plant with electrical energy produced from the micro-hydro plant. The energy generated also serves to reduce dependence on the tea sector (which will be negatively impacted by climate change) by enabling local people to use the newly available power to diversify their livelihoods. The project applied data generated by AAP to inform a Kenyan report on the economics of adaptation.

In Malawi, WFP works with vulnerable groups (children and adults affected by HIV/AIDS) in areas highly already affected by climate change. It is ideally placed to generate evidence to inform policies and plans supported by AAP for protecting these groups in the face of climate

Box 4: AAP and UNICEF Support the Greening of Ethiopia's Schools

Because of frequent drought, soil erosion and deforestation, much of Ethiopia's Amhara region looks like a barren wasteland, barely able to support the 27 million people who live there. But this apparent desolation is in sharp contrast to what has been happening in areas surrounding many schools in the region. Thick young forests of trees, woodlots of thriving seedlings, shrubs and vegetable crops are turning the land green. Ponds have been dug to collect and store rainwater. Mounds of compost stand ready to enrich the soil.

Launched in Amhara in 2011 with support from UNICEF and AAP, Ethiopia's ambitious Climate Change and Environmental Education (CCEE) programme is part of the Country Programme of Cooperation between the Government of Ethiopia and UNICEF. AAP funding has supported 118 schools connected to 22 hub (cluster) school clubs in seven of the country's nine regions. In these schools, more than 94,400 schoolchildren (40 per cent of them girls) are participating and many have drawn up action plans to manage their school nurseries and gardens.

More than 2,800 teachers and district and regional officials (38 per cent of them female) have been trained to teach environmentally-friendly approaches, monitor the schools' environmental plans and research projects and facilitate a scaling up of the programme to cover more cluster schools and their satellites. The Ethiopian government's goal is to provide environmental education to at least 80 per cent of

all learners, thereby enhancing young people's involvement in their communities' adaptation to climate change. After AAP ends, UNICEF, using globally-raised thematic funding, will continue to support CCEE through the Ministry of Environment until 2015, aiming to reach at least 50 per cent of the schools in the seven regions. Thereafter, the government will continue to implement the programme as part of its Education Sector Development Programme.

Under the CCEE project, schoolchildren join Environmental Education clubs that meet at the centrally located cluster schools. In some schools, as many as 75 percent of students have joined the clubs. Each club commits to plant and care for at least 5,000 indigenous seedlings per year with seeds provided by the project—around 200,000 trees so far. Club activities are designed to teach environmental protection and resilient adaptation to climate change to all the children in the schools as well as teachers, principals, parents, regional education officials and entire local communities.

A portfolio of climate-resilient technologies and practices, including the installation of solar-powered water pumps, is being tested and modeled in 12 selected schools in five of the project's seven regions. In addition to tree planting, club members from all the participating schools are involved in environmentally-friendly agricultural activities (seeding, planting and nurturing), environmental sanitation and waste management and the prevention of soil erosion. Students and community members learn about issues such as global warming, air pollution, compost preparation, terracing and irrigation. They conduct community advocacy campaigns on waste disposal and management and take part in school competitions; panel discussions at the regional level and learning exchange visits to other schools focused on environmental protection issues. Schools are empowered and expected to fundraise in order to expand these activities through the sale of horticulture products. UNICEF provided AAP with technical support in monitoring and evaluation and communication, while its long experience in school-based and youth-focused development, gender and child protection ensured that the programme was sensitive to the needs of women and children and built on the capacities of children and youth as agents of change. The schools' activities are featured in a video documentary produced by UNICEF.

"This is the best strategy for educating the larger public about climate change adaptation through students and teachers," says Ababu Anage of UNDP Ethiopia. "The potential to scale up the lessons learned from the adaptation activities in the cluster schools is very high."

The Ethiopian government's goal is to provide environmental education to at least 80 per cent of all learners, thereby enhancing young people's involvement in their communities' adaptation to climate change.

change. WFP contributed to the Malawi Vulnerability Assessment Committee (MVAC), which is establishing a framework for food security in Malawi.

Also in Malawi, UNITAR provided extra funds through the One UN fund to AAP projects supported by the Flemish government. UNITAR focused on developing a human resources strategy, field demonstrations and projects to strengthen human capacity, learning and skills development to address climate change.

As part of Ethiopia's AAP, the Federal Environmental Protection Agency worked with UNDP, UNICEF and WFP to conduct the Leadership for Results Programme to build the leadership capacities of key sectors to manage issues related to adaptation to climate change.

On the other hand, a number of AAP projects that involve collaboration with WFP in Ethiopia have yet to get under way, because of the blockage of WFP funds, due to matters of procedure between the WFP and UNDP. These include WFP's support for Crisis Prevention and Recovery work, including the preparation of local-level management plans and technology assessments and "quick-win" projects for vulnerable communities such as building a local climate observation network.

In Nigeria, UNICEF has a strong field presence and close working relations with state governments. Actively involved in evidence-based advocacy for child-friendly policies and systems in health, education, water and sanitation and child protection, UNICEF is the lead agency for communication on social and behavioral change and emergency preparedness and response. It is a key member of the International Development Partners' groups on Education and Water—all of which are at the heart of climate change programming.

UNICEF is collaborating with AAP and the Federal Ministry of Education in an ambitious programme to incorporate adaptation to climate change in Nigeria's national school curriculum. In Benue State, UNICEF and UNIDO are collaborating on alternate energy technologies while supporting UNIDO's key priorities: poverty reduction through productive activities; trade capacity-building; and energy and environment. In partnership with the Benue State Ministry of Water Resources, UNIDO's activities focus on developing a small hydro-power plant and on agriculture engineering (the latter implemented in collaboration with FAO). A communication strategy is being jointly developed by UNDP, UNICEF and UNIDO.

OUTCOME 4

Financing options to meet national adaptation costs have been expanded at the local, national, sub-regional and regional levels.

Financial commitment from African governments

Adaptation to climate change in Africa will require solid political commitment, backed up by huge funding allocations—economic resources that African countries lack. Nevertheless, at least three AAP countries—Ethiopia, Kenya and Morocco—have made financial commitments to funding climate adaptation.

In Ethiopia, a Climate Resilient Green Economy (GRCE) framework allocates 2 percent of the annual budgets of the country's nine regions for environmental activities. As an indicator of magnitude, in 2005, 2 percent of the annual budget of Ethiopia's Amhara region was over US\$ 9 million. Ababu Anage of UNDP Ethiopia credits much of this government commitment to adaptation to AAP's awareness-raising among parliamentarians, which convinced them of the central role adaptation needs to play in the country's development. "One manifestation of the importance of investing in the capacities of decision-makers is the allocation of the 2 percent of regional budgets for the environment," he says.

In Kenya, climate change is included for the first time in the national budget for mid-term planning under the newly created National Climate Change Secretariat. However, the small amount allocated for adaptation in the 2012-2013 budget—just under US\$ 700,000—illustrates the difficulty African governments face in earmarking adequate state funds for adaptation. By contrast, the Ministry of Planning estimates that Kenya needs to invest US\$ 2.7 billion per year (2-4 percent of GDP) to mitigate and adapt to climate change. Kenya's Climate Change Action Plan contains a component on adaptation, which will be used to seek more funds from the international community.

In Morocco, AAP played a catalytic role in six major adaptation projects by funding studies in four instances and providing seed money in two others. In addition, a range of government agencies, as well as a private company, have so far invested nearly US\$ 3.5 million (out of a total of US\$ 8.1 million needed) to complete the six projects. The remaining funds are being sought, in some cases, by the communities themselves. Table 2 shows the large number of government agencies that have made a financial commitment to these projects.

In Mozambique, a framework for funding adaptation to climate change is now in place, thanks to the multi-sectoral approach promoted by AAP. "This country normally has different funds for everything—agriculture, energy, the environment," says Clara Landeiro, Chief Technical Advisor to AAP Mozambique. "But this time, the various sectors involved in drafting the Climate Change Strategy—Agriculture, Environment, Disaster Risk Reduction, Planning, Finance—actually agreed on how climate financing was going to flow to fund the implementation of the strategy. The government is really putting money into climate change." Yet although the Medium-term Fiscal Scenario for 2013-2015 includes some adaptation measures, no amounts are mentioned.

Table 2: Morocco: Funds mobilized (in US \$) as a result of AAP

PROJECT	PARTNERS	COST	FUNDS BEING SOUGHT	FUNDS OBTAINED
ASRIR wastewater treatment and reuse	AAP: feasibility study Agency of the South (Moroccan government): technical study Community: raising funds for implementation from National Plan for Sewage Treatment	3,313,609	3,313,609	
OASIS ASRIR PERIMTER to receive purified waters from Guelmin water station	AAP breakdown of institutional roles, socio-economic study and environmental evaluation Ministry of Agriculture project implementation	946,745	946,745	
FEZNA wastewater treatment and reuse	AAP feasibility study Directorate of Local Collectives (50% of costs) and the Directorate of land Management project implementation Community (50% of costs) project management	1,454,545		1,454,545
Public-Private Partnerships FEZNA Renewable Energy Projects	AAP provided a grant for the initial phase (29%). Private company conducted a study and brought funding (discount price for solar lamps 21%). Community contributes 50%	749,112	372,781	376,331
Replenishment of the Fezna aquifer	AAP conducted a technical study with the participation of the community of Fezna The Administration of the Hydraulic Basin of Guir-Ziz-Gheris provided technical assistance, and will implement the project	1,279,881		1,279,881
CC agricultural resilience project	AAP provided initial investment Regional Office of Agricultural Development will cover investment in date farming Agricultural cooperative bought the land Communities developed project proposals through synergy between AAP development programmes (Oasis South and Oasis Tafilalet), and some have funding agreements	348,258		348,258
	TOTAL	8,092,152	4,633,136	3,459,016

Sources of funding for climate adaptation

While the allocation of even these relatively small amounts demonstrates political will and commitment, much, much more is needed—and many sources of adaptation funding exist. According to UNDP, in 2011 there were more than 50 international public funds, 60 carbon markets and 6,000 private equity funds already providing “green finance.”

An important goal of AAP's activities was to build the capacities of countries to navigate and take advantage of this complex pool of potential adaptation funding. Rwanda has put in place a legal and regulatory framework on carbon trading to facilitate investment. It is implementing a Clean Development Mechanism and other carbon-reduction projects. In Tanzania, the next step in the REDD process is to finalize and adopt a National REDD Strategy.

Building capacities to access funding

According to UNDP, for African countries, financial readiness to adapt to climate change is expected to be achieved in four stages: planning, accessing, delivering and monitoring. For example, AAP assisted the government of Malawi in creating a National Programme for Managing Climate Change that consists of two complimentary projects, one of which addresses planning for climate financing. The Malawi government, with support from AAP, compiled a list of financing options to help planners at the national, regional, sub-regional and local levels access funding for adaptation and mitigation. The fact that officials from all levels of government, from national to local can and ultimately must be involved in seeking funding for climate adaptation illustrates the decentralized nature of both the issue and its response. But the process is not always straightforward. So AAP's Climate Action Intelligence component (introduced to Malawi in a workshop in 2011) is informing the investment planning process and policy and reveals the gaps in financing by sector.

Tanzania's National Climate Change Communication Strategy, developed with the guidance and advice of AAP, is an important step in expanding that country's capacity for financial planning and strengthening its climate finance readiness. The strategy addresses the knowledge management gaps that have so far prevented Tanzania from accurately and efficiently planning for future climate change costs. It contains guidelines to help policy-makers estimate the cost of future climate change impacts, as well as suggesting possible adaptation and mitigation measures. It is designed to empower stakeholders not only with knowledge on climate change costs and financing needs, but also on funding sources. This information can then be integrated into national policies and budgets to ensure that Tanzania is ready to access climate finance and to use it effectively and efficiently.

As part of this process, AAP supported two studies commissioned by the Ministry of Finance. One looked at the climate adaptation funding options available to Tanzania and the other looked at incentives for private sector investment in adaptation initiatives. "The findings of these two studies are feeding into a national process of establishing a National Climate Change Financing Mechanism," says Faraja Ngerageza, AAP National Coordinator in Tanzania.

In Burkina Faso, in order to strengthen national capacity to mobilize adaptation funds, AAP initiated the National Implementing Entity Support Programme (NIE). The objective was to identify a government entity that can be formally accredited by the UN Adaptation Fund as an NIE. The NIE Support Programme builds national capacities not only to access climate finance, but also to effectively manage, programme, implement and monitor those funds.

To acquaint African officials with the range of funding options available and prepare them to access adaptation funds, AAP held two regional and six national workshops on climate finance, in which a total of 17 countries participated. According to Brice Ibouanga, AAP Technical Advisor in Gabon, about 40 key players from his country attended one of the regional workshops, including representatives from the Ministries of Finance, Planning and Environment, researchers, officers of public works, elected officials, mayors and municipal prefects—another example of decentralization in the funding process. He says the workshop was instructive, but more of the same is needed.

“Everyone appreciated this training because it was on themes that they hadn’t mastered before—such as acquaintance with the funding sources that exist,” says Mr. Ibouanga. “The trouble is, the procedures for obtaining funding are so complex that the participants wanted a second workshop more tailored to the regional context, where they could actually acquire the techniques and tools to access funding.”

He says that the goal of the Ministries of Planning, Finance and Environment in Gabon is to establish a national adaptation fund with annual budget allocations for adaptation, but that the staff members involved lack the technical expertise to come up with realistic allocations and establish a viable fund. “Our national budgetary meeting takes place between August and October,” he says. “It would be good to organize a second workshop before then to give representatives from these ministries the tools that will enable each one to propose budget items for his particular sector.”

Some AAP countries approached the demanding process of financial readiness strategically. In Mozambique, a budgeting module for programmatic budgeting of activities associated with climate change adaptation was created. In 2012, the government approved the Medium-term Fiscal Scenario 2013-2015, which outlines government activities and includes some adaptation measures. AAP supported the drafting process, including a technical team working in the provinces. In Lesotho, the budget process for 2013-2014 was modified to enable the Ministry of Development Planning to prepare an action plan for the implementation of the National Strategic Development Plan that would take into account the cost of climate change adaptation. The plan will be presented in the National Budget.

In Namibia, the government’s Medium-Term Expenditure Framework (2012-2017) will also provide resources for mitigation and adaptation measures. According to Martha Mwangangi of UNDP Namibia, “Currently, key sectoral partners are busy with the formulation of sectoral or line ministry implementation plans.” The hope is that the key sectors identified in the Namibia Policy on Climate Change, its Strategy and Action Plan will recommend adaptation initiatives and make budgetary allocations to support them. “During the life cycle of the AAP, a number of sectors have implemented small-scale initiatives that demonstrate budgetary allocation,” says Martha. Of the seven AAP demonstration projects largely funded by GEF in Namibia, 29 percent of the total cost was born by the government. Namibia is also working to ensure its eligibility to access funding from the Adaptation Fund of the UNFCCC.

But mastering the many steps involved in securing adaptation funding can be a multi-stage process. In Ghana, the AAP team decided that successful fundraising for adaptation must be built on a firm foundation of public awareness. “We thought that establishing financial mechanisms

Box 5: In Namibia, successful projects attract public and private funding

In the dry and barren landscape of northern Namibia, the soil contains less than 0.1 percent organic matter and is therefore unsuitable for agriculture. On the other hand, container cultivation is providing a rich growing medium that needs far less water than ground cultivation. AAP Namibia’s local partner NGO, Creative Entrepreneurs Solutions (CES), has trained 54 farmers, 198 members of self-help groups, 300 school children and 10 teachers—a total of 562 people—in this simple technology. Using 60-litre, UV-proof polyethylene bags, farmers mix local light, sandy soil with manure, compost or biochar, thus building new soil that holds water and nutrients. Mulching with organic matter adds more nutrients. Over time, the farmers keep adding organic matter to the container soil, thus transforming the original sandy soil into a rich and loamy growing medium that will last six to eight years, the life of the bag.

Box 5: In Namibia, successful projects attract public and private funding (cont'd)



Spinach growing in polyethylene bags

Source: Ministry of Environment, Namibia

AAP supported the installation of 47 micro-drip irrigation systems to provide water for container cultivation—an approach that enables farmers to produce bumper crops despite Namibia’s poor soils. Floodwater, harvested rainwater or river water can be successfully used in drip irrigation tanks, which are equipped with filters that remove large particles. In addition, CES helped 10 schoolteachers secure funding from a Namibian company to invest in 10 drip systems for their schools.

As of June 2012, one of these micro-drip irrigation systems has enabled Ms. Hilaria Iyanga (below) to sell her own fresh spinach and tomatoes at the local market, instead of merely trading in commercial (not-so-fresh) produce as she used to. While most vegetables in northern Namibia are either imported or produced at the large Ministry of Agriculture, Water and Forestry irrigation scheme almost 200 kilometres away, Ms. Iyanga’s produce directly benefits her community. Since June 2012, she and her community group have sold US\$ 113 worth of vegetables to their neighbours, as well as feeding their own families.

Success like this has a way of attracting more funding. One self-help group is using the drip system to produce vegetables for a food programme for orphaned and vulnerable children in an urban setting. Thanks to a grant from their regional council, they now have 1,600 containers producing vegetables.

The micro-drip irrigation systems also reached 10 additional schools after the philanthropic arm of a private company—Pupkewitz—approached CES to inquire about the system they had seen in AAP-supported schools. “The Foundation agreed to supply micro-drip irrigation to 10 more schools,” says Marie Johansson of CES, “because they believe the many benefits of this system can help persuade the Ministry of Education to take it up for all the schools in the country. It’s a very good example of PPP.”

Pupkewitz is also supplying fuel-efficient stoves developed by CES to 110 households at a subsidized price in preparation for developing a large-scale carbon offset project. The EzyStove was developed, and the micro drip systems were piloted, through UNDP’s GEF-SGP Community-based Adaptation to Climate Change pilot programme implemented parallel with AAP. CES sought co-funding from Pupkewitz for the stove pilot to match that of the Namibian government. “An NGO can serve as a ‘connector’ between the public and private sectors,” says Marie Johansson. “The Pupkewitz Foundation is now in direct contact with Namibia’s Environmental Investment Fund. They said they see themselves playing a role in the scaling up of the stove through subsidies to 200,000 households.”



Mrs. Iyanga offers her fresh spinach for sale.

Source: Ministry of Environment, Namibia

was too ambitious to be achieved within the short period of the AAP project's lifetime. Establishing functional financial mechanisms requires a number of processes, and training should focus on first creating awareness of the climate finance gap and developing methodologies, strategies and recommendations as to how to address this gap before tackling the task of establishing functional financial mechanisms.”

In Ethiopia, it has not yet been worked out whether the 2 percent of regional budgets committed to adaptation will be managed at the national or regional levels, or through the recently established CRGE Facility. One of the first things the money needs to accomplish is to complete the implementation of six unfinished green technology demonstration projects launched by AAP (out of a total of 15). “The government is committed to finishing what AAP has started in these pilot projects,” says Ababu Anage of UNDP Ethiopia. “These projects are being implemented by organizing communities, and many people have high hopes for the outcome of the projects. It will create a certain discomfort if the government cannot continue and show people the results of what they have started.”

“It will create a certain discomfort if the government cannot continue and show people the results of what they have started.”
Ababu Anage,
UNDP Ethiopia

He also points out that the national policies resulting from AAP that include adaptation to climate change are likely to appeal to donors. The country’s Growth and Transformation Plan (GTP) (2011-2015) clearly indicates that Ethiopia will follow a Green Path of Economic Development. The Climate Resilient Green Economy Strategy which the country developed and the CRGE Facility—the mechanism for funding adaptation activities—are also in line with the GTP. “These measures put Ethiopia in an excellent position to attract global climate finance,” says Ababu.

As AAP drew to a close, 11 programme countries were working on, or had submitted new funding proposals, some of which have already borne fruit. In total, 35 proposals were prepared and/or submitted to donors either by AAP or with technical support from AAP.

Support to climate adaptation finance at the regional level

In addition, AAP supported two regional workshops focused on innovative climate finance. The first, in Ghana on Leveraging Climate Finance for Resilient Development, was attended by more than 30 representatives from 11 countries. The second, in Mauritius, was attended by representatives

Table 3 Funding proposals for climate adaptation submitted by AAP countries

Country	Proposal Description	Donor	Funded requested	Status
Burkina Faso	AAP-related adaptation fund	Canada Adaptation Fund	Not submitted	
	Reducing vulnerability of natural resource dependent livelihoods in sites at risk of climate change	GEF	7.000.000 USD	Approved
	Strengthening climate information and EWS for climate resilient development & adaptation to climate change	GEF	4.000.000 USD	Approved
	Generating global environmental benefits from improved local planning and decision-making systems	GEF	970.000 USD	Approved
Ghana	Expansion/continuation of various aspects of AAP	CDKN	800.000 USD	Rejected
	Two projects on climate change adaptation & mitigation	International Climate Initiative	3.000.000 USD	Approval pending

Kenya	Integrating conservation of plant genetic resources into national climate change adaptation planning	FAO/BSF	400.000 USD	Approved
	Climate adaptation through knowledge-sharing	Kenya Ministry of Finance	NIP ⁶	Pending
	Low-emissions capacity-building project, focus on CC mitigation	EU through UNDP	NIP	Under preparation
Malawi	Additional demonstration adaptation projects (as a result of the successful demonstration projects by AAP)	Flemish International Cooperation Agency	165.000 EUR	Approved
	Funding of National CC Investment Plan 2012-2017	Prospective donors under discussion	98.000.000 USD	Pending
	Support to the National CC Investment Plan	GEF	8.000.000 USD	Approved
Morocco	Purification & reuse of waste water in the oasis of Fezna	Directorate for Territorial Planning and General Directorate for Local Communities	1.454.545 USD	Implemented
	Purification & reuse of waste water in Asrir	South Agency National Office for Drinking Water, General Directorate for Local Communities, Department of Environment	3.313.609,47 USD	Approved
	Perimeter of oasis of Asrir to receive purified waters of water station in Guelmin	Ministry of Agriculture	946 745,56 USD	Approved
	Works on the refill of groundwater table in Fezna	Hydrological basin Agency Ziz Guir Ghériss	1.279.881.66	Implemented
	CC agricultural resilience project Project on adaptation in coastal areas	National Environment Fund; World Bank, GIZ	767.273 USD	Implemented
	Two PPP Fezna Renewable Energy Projects	Private Sector Rural Community of Fezna	749.112.43 USD	376.331.43 USD Implemented 372.781.00 USD Approved
	Climate Change agriculture resilience project	Regional Office for Agricultural Promotion in Tafilalet	348.258.34 USD	Submitted
Namibia	Programme to replicate & upscale CBA/CCA initiatives	SCCF	NIP	NIP
	Enabling activities & reporting obligations for UNFCCC (3rd National Communication)	NIP	400.000 USD	NIP

6 No information provided: the country has not provided the IRTSC with the relevant information.

Laying the Foundations for Climate Resilient Development

Niger	One year extension of NAPA-Resilient as from 2013	CIDA	2.1999.364 USD	Pending
	Scaling-up CBA in Niger	GEF	3.750.000 USD	Under preparation
	Community Action Project for Climate Resilience 2012-2013	World Bank	63.000 USD (35.000: grant; 28.000: loan)	Approved
	Adaptation Learning Programme	CARE	2.5000.000 USD	Approved
	110 micro-projects in Niger's 8 regions	GEF/SGP	3.418.000 USD	Approved
Rwanda	Building resilience of communities living in degraded forests, savannahs and wetlands of Rwanda through an ecosystem management approach	GEF	NIP	Pending
São Tome & Príncipe	Proposal for allocating micro-credits to the beneficiaries of the Praia das Conchas community	NIP	NIP	Under preparation
	Biodiversity conservation in national parks	GEF	NIP	Under preparation
	Climate data management to set up EWS	GEF	NIP	Under preparation
	Adaptation in rural communities country-wide	GEF	NIP	Under preparation
	Renewable energy and land degradation	GEF	NIP	Under preparation
	Expansion/continuation of various aspects of AAP in Príncipe	EU	NIP	Under preparation
Senegal	Expansion/continuation of various aspects of AAP	Gov. Japan/UNDP	4.000.000 USD	Pending
Tunisia	Adaptation vulnerable communities to climate change	Adaptation Fund	NIP	Rejected (lack of funds by donor)

from 12 countries. AAP invited experts from New York and from Africa who presented a framework for understanding climate financial readiness.

AAP offered participants a toolkit based on low-emission climate resilient development strategies, which highlights innovative financing mechanisms and a UNDP document in climate finance. Key topics of the workshops included the importance of putting in place a financial coordination mechanism within each country, private sector participation and how countries can access international finance with the help of UNDP.

As indicated by the data in Table 3 above, it is safe to say that the funding landscape for climate change in Africa has changed significantly during—and often as a result of—AAP. Progress has been made in the key areas of planning, accessing, delivering and monitoring funding for climate change adaptation. The groundwork has been laid for Africa to benefit from continued streams of funding. As with all aspects of AAP's work, this is only the beginning.

OUTCOME 5. Knowledge on adjusting national development processes to fully incorporate climate change risks and opportunities is being generated and shared across all levels.

Knowledge is the engine that will drive effective adaptation to climate change in Africa, and knowledge and information-sharing are central to every objective of AAP. The programme's first component on data and information builds the capacities to collect, interpret and apply information that promotes the identification of evidenced-based climate adaptation measures. The second component, on institutional and leadership capacity, builds government capacities at the national and local levels and helps institutions share knowledge. The third outcome depends on the application of knowledge. The fourth outcome, funding adaptation to climate change, involves understanding what needs to be funded and how to access sources of funding. And AAP's fifth outcome, knowledge management, is explicitly about building knowledge, raising awareness and sharing information about successful approaches to adapting to climate change. This awareness-raising involves education, not only of decision-makers, but ultimately of entire populations. And, although traditional knowledge in Africa is rich and plentiful, it too needs to be more widely shared.

During the course of AAP, the programme produced and disseminated a number of publications to support knowledge of climate adaptation, including four issues of the *Baobab Coalition Journal* in English and French editions—a newsletter that chronicled AAP activities at the country level and gave a voice to many participants in the programme, enabling them to share their experiences and establish a sense of community with their peers in other countries. In addition, AAP produced a series of brochures manuals that explore key focal areas of the programme:

- From Risk to Resilience
- Data and Information Management: Supporting Decision Making
- Institutions and Leadership: People and Change
- Knowledge Management
- Capitalising on the Power of Knowledge and
- Media Capacity: Informing the Public.

Climate Action Intelligence

CAI is an institutional mapping tool; a “directory” introduced to enhance decision-making and cohesion by documenting climate adaptation activities and making them assessable to climate change stakeholders in the 20 AAP countries. It enables people working on adaptation in these countries to find answers to the basic questions of who is doing what, where and when, thereby promoting exchanges of information among AAP countries. CAI was introduced in five countries in 2011—Kenya, Congo, Ethiopia, Malawi and Senegal, and in Lesotho in 2012.

In Kenya, CAI experts extracted a wide array of documents from which information was culled and sorted. A training workshop for seven staff members of AAP Kenya was held, during which

the information collected was analysed and organized into visual representations. Finally, a hand-over of the CAI process to the AAP Kenya team was to be initiated in June 2011. But due to a lack of initial clarity on the scope that the AAP team in Kenya wanted to give to CAI the hand-over was not finalized. However, the training received and the documentation collected remain to support and strengthen future adaptation activities.

Two multi-country CAI workshops were held, one in Malawi in English for representatives from Ethiopia, Kenya and Malawi; another in Senegal in French for representatives from Congo and Senegal. The workshops introduced country teams to CAI, presenting tools and processes to help people understand the complex climate change landscape. After the workshops, the participating countries were invited to continue the CAI process to meet their individual information needs by working directly with the CAI experts who had facilitated the workshops. The variety of applications the CAI tool can be used for is illustrated by the range of uses that were priorities for the five participating countries.

In Congo, for example, CAI was used to map the areas of overlapping or duplicated adaptation efforts in order to enhance the effectiveness of cross-sectoral projects in priority fields and involve academic institutions in the climate change issue. Four students at Marien Ngouabi University worked as the core research team under the guidance of AAP. In December 2011 a national training workshop brought together 45 participants, including ministerial climate change focal points, and launched the process of collection, organization and visualization of data in six priority sectors: agriculture, forestry, fisheries, transportation, water and energy. "CAI has provided us with information that helps in decision-making," says Marcel Mpounza of UNDP Congo. "Its positive impact will outlast AAP."

In Ethiopia, CAI was seen as a way to engage all key stakeholders, in particular in the context of implementing the priorities of the Climate Resilient Green Economy (CRGE) strategy. The national introductory workshop on CAI in February 2012 focused on introducing the method, the visual analytic tools and techniques.

In Malawi, CAI was used to help the government understand the complex network of actors engaged in climate adaptation and the activities, projects and programmes they have initiated. Consultants were engaged by the government to support the implementation of the initiative, and a number of activities took place through interaction between the consultants and the national team: an initial training and data entry workshop; data collection; an in-country data analysis working session; field survey work, the production of an implementation manual and analysis and process reports.

In Senegal, CAI was launched in October 2011 with a national-level training workshop on data collection, organization and interpretation methods, as well as on the use of digital tools for information visualization. A second workshop was organized in July 2012 to develop the skills to analyse, synthesize and communicate the data collected by the CAI national team so that it could be translated into information that can be used to influence decision-makers. The results, which are expected to contribute to coordination among stakeholders, include a database listing actors, actions and artifacts organized by place and time, as well as visualization databases.

Yet despite these successes and the promise CAI holds for focusing, organizing and energizing the adaptation process, the potential of the tool was not fulfilled during the life span of AAP for a number of reasons. These include conflicting priorities for AAP teams, lengthy procurement processes and a scarcity of regional funding to support in-country visits by CAI experts. In recognition of the potential resource challenge, the CAI consultants offered three options for sustaining some form of CAI activity:

1. Establish permanent national Climate Intelligence Units

2. Normalize CAI data collection and data maintenance activities within an existing national entity as a continuous activity
3. Update the CAI dataset annually or bi-annually while ensuring that it is hosted by an entity that has the technical capacity to maintain it.

AAP countries spread the word about climate adaptation

As a result of AAP, at least 12 countries have fully-fledged climate change communication strategies, including many information materials. AAP Rwanda printed 5,000 copies of a module on climate change in the local language, Kinyarwanda, for training of trainers at the district level. AAP Rwanda also developed Web-based databank software called RENVIS, the “Rwanda; Environmental and Climate Change Information System” as well as GIS-based software for monitoring and evaluation. Two films produced in Rwanda, one on drought prevention and the other on improving soil quality, were screened for some 500,000 viewers, 200,000 in rural areas. And 416 Rwandan senior citizens over 60 years old shared their knowledge of traditional adaptation practices in five consultative workshops, one in each province.

Ethiopia produced two beautiful, detailed and highly accessible colour brochures, *Ethiopia’s Climate-resilient Green Economy Strategy* (1,000 copies distributed, 500 in Amharic, 500 in English) and *Green Technologies* (200 copies distributed in English). The latter is a compendium of simple, practical adaptation measures, which frankly describes the “importance for Ethiopia to undertake adaptation actions for its survival.” It has been distributed to government officials, NGOs, academics and the private sector. “The preparation of our communication strategy is purely the legacy of AAP,” says Berhanu Solomon of Ethiopia’s Environment Protection Authority.

In Tanzania, AAP supported the government in developing a comprehensive national communication strategy that covers knowledge on climate change, adaptation, mitigation, climate change research, gender-specific climate issues and financing, including a list of climate change funding options. The strategy also provides a framework for generating and delivering key climate change messages to targeted audiences at all levels of society.

In Mozambique, political speeches have recently been calling attention to climate change. The Ministry of Environment has launched a full-fledged public education campaign to raise awareness among different target groups, from youth to academia to the private sector. “There is institutional commitment to educating the public about climate change, and it is mirrored in the awareness-raising activities of NGOs,” says AAP Chief Technical Advisor Clara Landeiro. “Government-wide, information about climate change is being shared every day. If you talk about climate change, people listen.”

AAP Ghana produced a series of publications called the Policy Advisory Series designed to inform policy-makers about what climate change is, its impacts, how it affects the economy and other key sectors and the opportunities that climate change presents. The series covers 19 themes reflecting different sectors—such as forestry, capacity-building, public finance for climate adaptation and the relevance of indigenous knowledge to disaster risk reduction. The key target groups were ministers of state, directors of public institutions, academics, heads of private enterprises, development partners and directors of civil society organizations. The series was also disseminated to mid-level public and private professionals and students. So far, over 400 individuals have used at least one of the publications and copies are still being disseminated. The series has also been used in developing Ghana’s climate change policy document.

AAP Ghana also produced an *Atlas on Indigenous Knowledge*, based on research in six districts of the country. It describes traditional indicators—including the behaviour of amphibians, insects and

trees and variations in wind, clouds, thunder, lightning and rainbows that enable people to predict and prepare for weather events and changes in their environment, adjust their livelihoods to ensure that they are not adversely impacted by negative changes and take advantage of positive changes. Fact Sheets on climate change and Achievement Sheets on adaptation initiatives were also prepared and distributed.

Eight countries—Cameroon, Congo, Ethiopia, Morocco, Mozambique, Niger, Nigeria and Senegal—have shown enormous commitment by including climate change adaptation and environmental studies in school curricula. The results of this commitment to nurture environmental awareness in coming generations can only be imagined. Perhaps the most comprehensive of these school curriculum programmes is in Nigeria where, with support from UNICEF, the new primary and secondary school curricula now include concepts of climate and climate change and the effects of climate change on agriculture and health; the impact of climate change on women, children, housing and the environment; climate change adaptation and strategies; disaster risk reduction practices such as early warning systems and disaster management including drought and erosion control; safety measures against hazards, the causes of fire, fire prevention and management, First Aid, response to civil unrest and response to epidemics. Nigeria also produced and distributed an in-depth Newsletter on the activities of AAP in the country.

Other knowledge-sharing activities from across the 20 AAP countries include:

- The establishment of climate resource centres in Congo, Lesotho, Malawi, Mauritius, Mozambique and Rwanda
- The documentation and dissemination of Best Practices in climate adaptation in Ethiopia, Malawi, Mauritius, Morocco, Nigeria, Sao Tomé e Príncipe and Senegal
- Knowledge Fairs and exhibits in Ghana, Kenya, Namibia, Sao Tomé e Príncipe and Senegal, a Climate Awareness Week in Mauritius and a Youth for Climate Change Music Festival in Namibia
- Interactive Climate Knowledge platforms such as databases and websites and interactive climate change forums in Ethiopia, Kenya, Malawi, Mauritius, Namibia, Nigeria, Rwanda and Sao Tomé e Príncipe
- Youth programmes in Ethiopia, Lesotho, Namibia and Nigeria; and
- An Information Tool-kit on climate adaptation that was published and translated in local languages for use at the community level in Namibia.

AAP's Media Capacity Building Project (MCBP)

A total of 448 journalists from all 20 AAP countries were trained during a series of workshops in how to cover climate change and environmental issues accurately, objectively and persuasively. Topics covered in the training included: Techniques in pitching stories about climate change; Actors in the field of climate change, Digital media and climate change; The science of climate change; Resources for reporting on climate change and Gender: the impacts of climate change on women. As a result, Africa's print media, airwaves and television broadcasts have been flooded with features and news stories about climate adaptation. Since the journalism training ended, each of the trained journalists has produced more than four print articles and/or TV and radio broadcasts on climate change. Eight of them have joined networks focused on climate adaptation; Nigeria established its own National Climate Change Media Network. One of the journalists trained noted: "The workshops I attended helped me a lot in terms of my understanding of climate change."

Another graduate of the programme in Cameroon said, “Using the skills I acquired from MCBP, I have organised more than eight climate change workshops in and out of Cameroon.”

Highlights of the impact of the journalism training include:

- A total of 31 newspaper articles, 23 radio reports, 14 online video posts, and 17 blogs were generated by nine journalists on the occasion of COP-17, the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC).
- Nigerian MCBP participant Ugochi Anyaka was awarded the UNEP Young Environmental Journalist of the Year Award in 2011.
- Audrey Wabwire, a Kenyan journalist sponsored by MCBP to travel to and report from COP-17 in Durban, South Africa, won second place for radio entries in the Young People, Farming and Food Conference competition, which received over 40 entries. Audrey's story focused on how young urbanites in Kenya have taken up farming alongside their day jobs.
- Tunde Akingabe, a Nigerian participant in MCBP, was nominated African Journalist of the year by CNN. His story exposed the negative impacts that a planned district of Lagos is having on the local environment.
- MCBP trainer of trainers Emmanuel Muwamba produced a 27-page insert on climate change for the Malawian newspaper *The Nation*, which decided to run climate adaptation features as a monthly feature.
- Two Nigerian national workshop participants, Armsfree Ajanaku and Ugochi Anyaka were awarded fellowships to attend Rio+20 by Internews Earth Journalism Network Damian Daga, Nigerian workshop participant, launched an environment section in the newspaper *The Voice* based in Makurdi, the capital of Benue State (pop. 501,000).
- An article by a Cameroonian participant was published in the German magazine, *Africa Positive*
- MCBP Ghana Team Leader held an Editors' Dialogue following a national workshop in Ghana and helped organize a World Press Freedom Day event.
- The Cameroonian MCBP Team Leader held several events on climate change sponsored by Friedrich Ebert Stiftung and UNESCO.
- To ensure commitment and dedication to climate change journalism, a media group known as “The Forum for Environmental Communicators-Ghana” (FEC-Ghana) has been formed. Preparations are underway to register it legally as a media NGO.
- Following a climate change journalism workshop in Sao Tomé, the participants formed an association that meets regularly to discuss climate change-related issues. Under the leadership of Maximino Carlos, Director of the national radio, they creating a club called Friends of the Environment.
- One of the most widely read reports by an MCBP participant covered the devastation to agriculture and settlements caused by floods in Kisumu, Kenya. The story was given the whole of page three in the country's leading newspaper, The Daily Nation.

Youth as agents of change

Young people were seen as key advocates for climate adaptation awareness-raising in a number of AAP countries. They proved to be teachable, passionate, inventive and energetic in spreading the word about climate change and demonstrating practical adaptation solutions.

In Lesotho, AAP launched an innovative campaign called Youth Climate Change Ambassadors to bring the message of climate adaptation to communities and local governments through drama, poetry and song. The troop devised a series of powerful and informative vignettes telling stories about the effects of climate change that their audiences could relate to and engage with. These have now been performed in almost every district in the country as part of an awareness-raising road show.

With a focus on energy use and health—two areas identified by AAP as pivotal to boosting the resilience of rural communities in Lesotho—the road show shared information on renewable and alternative energy sources accessible to the communities and on the need for hygienic household water storage systems given the expected increase in water-borne diseases. It also explained the aims and activities of AAP. In each town the road show visited brochures detailing the mandate of AAP Lesotho and its objectives, activities and achievements were distributed and AAP promotional materials such as caps, T-shirts and pens were given to participants during the show’s question and answer sessions. The performance also involved tree planting to highlight the vital role of trees in environmental protection. One woman, who was interviewed by Lesotho’s national TV news after a performance, said she could relate to the topics presented. “We’ve seen that the climate has changed, but we didn’t understand how to adjust our actions to live within the changing environment,” she said. “We are thankful that this campaign talks about issues that affect us.”

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Audience-member at a Youth Climate Change Ambassadors Road Show performance, Lesotho

Also in Lesotho, a partnership was established between AAP and LESELI (“The Light”)—a youth/sports organization that is helping to promote climate adaptation awareness throughout the country.

In Namibia, AAP helped establish a Climate Change Adaptation Youth Action Programme that prepares young people to be future decision-makers and development agents, as well as present-day disseminators of information in their communities. Youth were made aware of the effects of climate change so that they can employ adaptive measures that at the same time reduce poverty. The youth programme, which collaborates closely with the Ministry of Education, was built on Environmental Education models that use schools as information hubs for rural development. As part of the programme, some 300 youths (55 percent of them female) attended a Climate Change Adaptation Youth Conference where they were encouraged to participate in discussions and share their ideas about climate adaptation. Forty students who were members of the Environmental Society at the University of Namibia were trained to spread climate adaptation awareness messages. AAP provided financial support to 10 high school environmental clubs in six regions. And young people were targeted to participate in projects focused on rainwater harvesting and on fuel-efficient stoves—both for profit and non-profit.

A permanent platform for knowledge-sharing among AAP countries

Examples of reluctance to share information can be found throughout the world, but because of poor cross-border infrastructure, language and cultural barriers as well as a tradition of reticence and sometimes distrust among different communities, the benefits of open communication have not been fully enjoyed in Africa. This is why AAP has made it a priority to promote communication, knowledge-sharing and the interchange of experiences, expertise and ideas among African countries. As a result, the AAP website www.undp-aap.org/ will be active through 2013. And UNDP’s interactive website Teamworks—AAP’s knowledge platform of excellence—is now, and

will continue to be, available as a means of communication for all participants in the programme, enabling them to share their experiences in climate change adaptation, learn from one another and experience a sense of African solidarity and mutual support. “Since Teamworks is owned and maintained by UNDP, the sustainability of the platform is ensured. The AAP spaces will therefore last after the AAP project has ended and be part of a sustainable culture of knowledge-sharing within the climate change adaptation community of practitioners,” says Annelies Hickendorff, AAP’s Knowledge Management Officer.

Tunisia is one country that identified the need to overcome reluctance to share information as a major lesson learned during its AAP programme. “We have been talking about this problem since 2011,” says Jihène Touil, Knowledge Management Focal Point at AAP Tunisia. “During discussions of the AAP Steering Committee, members realized that there is a cultural problem regarding the sharing of information that affects everyone. Some people started using Teamworks to share information and they saw that they benefitted from it because they received useful information. I think the attitudes of the members of the Steering Committee changed when they saw the benefits of Teamworks. They’re much more engaged now. Every time a study is produced, they share it and when people come to them for information, they’re much more open. They’ve seen that there’s a lot of interest in climate adaptation and they see that they also benefit from sharing information because they stand to learn too.”

To date, 17 AAP countries have exchanged good adaptation practices on Teamworks. For example, AAP Ethiopia, Kenya and Malawi collaborated in the launch of the Climate Action Intelligence initiative (see below). And under the coordination of the IRTSC, the Regional Knowledge Management Workshop: Capitalisation of Experiences on Climate Change Adaptation, brought 17 AAP countries together. To date, 17 national training sessions on Teamworks have led to the creation of 21 Teamworks AAP spaces, counting 800 members who have shared over 1,000 posts. The AAP website received 4,000 visits in the last quarter of 2012 alone, representing nearly 3,000 unique visitors.

Through both Teamworks and the AAP website, AAP publications and e-resources can be accessed by all AAP countries. Among the knowledge products being accessed are country periodical newsletters, activity reports, strategic documents and guidelines, terms of reference and photos.

Support for knowledge management at the regional level

AAP provided programme countries with support in knowledge management through regional-level conferences and workshops. AAP results, lessons and good practices were distributed at local, national and regional levels to a wide array of stakeholders through awareness-raising packages. All 20 countries participated in regional forums, conferences and workshops that enabled them to share best practices and lessons learned. Region-wide knowledge and learning mechanisms such as UNDP’s interactive website Teamworks and CAI were established to raise awareness, engage stakeholders, inform decision-makers and promote exchange and cooperation among countries.

In collaboration with AAP Mozambique, the IRTSC organised a regional knowledge management workshop in Maputo in May 2012 on The Capitalisation of Experiences in Climate Change Adaptation. The workshop brought together some 50 participants, mainly knowledge management and communications staff, from 17 AAP countries to learn and develop techniques for improved knowledge-sharing. It provided practical tools to national programmes to ensure that their AAP experiences serve as a foundation for ongoing adaptation activities.

In addition to AAP regional gatherings, programme countries showcased their results at the UNFCCC Conference of Parties, COP17 and COP18.

LOOKING TO THE FUTURE

Because of the foresight and generosity of the Japanese Government, AAP has been able to help set 20 African countries that are vulnerable to climate change on a course to effective climate adaptation. All that these countries have learned in the process will strengthen their capacities for good governance and equitable development, as well as preparing them to meet the challenges of climate change. But much more remains to be done to complete the transformation from vulnerable states focused, of necessity, on fending off crises, to strong and resilient nations that are equipped, prepared and capable of adapting to climate change and reaping the benefits of development opportunities. AAP has set the stage for this process of transformation. Now the work of adapting to climate change needs to be fully incorporated within Africa's core planning structures. All are invited to take part.



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