

Jobs



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► KEY MESSAGES

- **The labor market is a gateway to solving multi-faceted economic, social, environmental, and political problems.** Climate change is already having negative impacts on jobs in Africa. A vigorous and well-planned adaptation response can reduce these impacts while generating important opportunities for new economic activity, investments, and decent work.
- **These policy interventions will be critical, as Africa's rapidly growing population means that it is projected to have more than a third of the global workforce by 2040.** The substantial share of its population in informal employment and without adequate social protection means that it already has a deficit of decent work and of resilience to the potential effects of climate change on employment, particularly in the agriculture sector.
- **Green jobs— defined by the International Labour Organization (ILO) as employment in the environmental sector that meets the requirements of decent work, — and, in particular, jobs for adaptation and resilience, a sub-category of green jobs, need to be prioritized by African policymakers.** Africa's massive endowment of nature can be harnessed as both an engine for jobs and a pathway for cost-effective adaptation, allowing Africa to embark on a more sustainable development pathway.
- **To build adaptation and resilience, skills are required to transition to green resilient jobs, nature-based solutions, and hybrid 'green-gray' approaches.** Skills development should build on the capabilities of local institutions to ensure they anticipate climate risks and uncertainties, generate solutions, and manage adaptation initiatives over the long term without being dependent on project-based donor funding.
- **With its rapidly increasing labor force and vast natural resources, Africa has the potential to take a growth path focused on labor-intensive modern industries in eco-tourism services, climate-smart agriculture, the ocean economy and green building and infrastructure.** The ILO has led the development of tools and methods to assess the employment impacts of a just transition and will continue this under its Climate Action for Jobs initiative (CA4J).

INTRODUCTION

Job creation and retention in Africa is central to building community resilience in the face of climate change. This is especially true if the jobs created meet the criteria of decent work, defined by the International Labour Organization (ILO) as work that is “productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration” and that offers “freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.”¹

People with decent jobs in climate-smart sectors are likely to have better adaptive capacity and thus to be less impacted by the effects of climate change. Africa’s population is growing quickly, with more than one billion workers projected by 2040—more than a third of the global workforce.² The continent’s relatively young population provides a large and cost-competitive supply of labor. But there is currently a deficit of decent work for Africa’s large and expanding workforce, which has impacts on the resilience of its communities.

While Africa’s labor force participation rate³ of 63 percent is higher than the global average of 61 percent, it is dominated by own-account workers (Figure 1).⁴ Furthermore, Africa also has the world’s highest proportion of workers in informal employment, at around 86 percent.⁵ This combination of high levels of own-account work and informality has resulted in almost 250 million workers in Africa currently living in extreme or moderate poverty.⁶

Climate change is often associated with damage and loss. With the right approaches and coherent policies, however, the considerable resources likely to be invested in adaptation provide an opportunity to drive environmentally sustainable, socially just, and inclusive job-rich development. Good adaptation planning can prevent or minimize the loss of jobs, drive job creation, and support the provision of other employment-related benefits such as social protection and healthcare. Well-planned adaptation measures can help absorb anticipated job losses and protect vulnerable people and communities. To guide this process, the ILO has developed guidelines for a ‘just transition’ for policymakers to ensure that mitigation and adaptation measures are socially and economically sustainable and that no workers are left behind during the transition to a green economy.⁷ Countries such as Chad, Burkina Faso, Burundi, Mali, Niger, and Senegal already consider labor in their development plans or national strategies on climate change. Niger’s National Policy on Climate Change (2012) promotes the creation of ‘green jobs’ and the adoption of tax incentives for employers that create them.⁸ Lesotho’s National Adaptation Programme of Action considers employment creation as one of its six criteria for selecting priority adaptation measures.⁹

Sectors with notable potential—and indeed competitive advantages—for job-rich adaptation-related investments in Africa include climate-smart agriculture and processing (including crops, livestock, agroforestry, aquaculture and inland fisheries), the ocean economy, sustainable ecotourism, resilient

energy systems, and climate-smart construction, housing and transportation systems. Investment in industries in these sectors, many of which are labor-intensive, can drive economic growth, protect, and create jobs, contribute to environmental sustainability, and ensure that Africa is competitive in a climate change constrained world.

Nature-based solutions (NbS) to climate change and greener approaches to building resilience have huge potential to deliver job-rich adaptation. Africa’s vast and diverse landscapes are rich in natural resources, which already provide jobs and other sources of income and livelihood support for many of its people. With a population density of 45 people/km² (lower than the global average of 58), sub-Saharan Africa

also has relatively more available land and natural resources,¹⁰ which can support greener approaches to resilience building. Careful stewardship of natural resources is also needed to ensure that the industries and jobs that depend on these resources are sustainable.

This chapter presents the risks and challenges that climate change poses for jobs, the job creation opportunities that climate adaptation and resilience-building activities provide, and the policy responses needed to reduce the climate risks on jobs and enhance the creation of jobs for adaptation and resilience. For the purposes of this chapter and analysis by ILO and GCA, we will focus on green jobs that support adaptation to the effects of climate change.



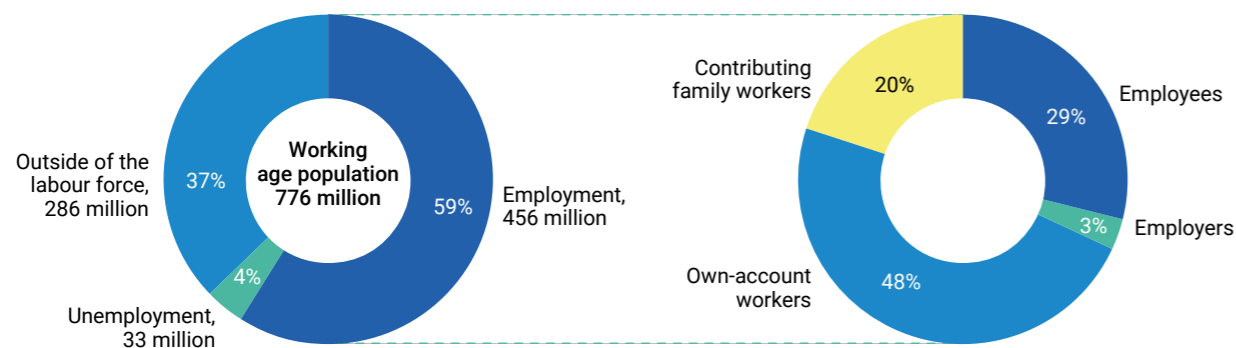
We would like to benefit from competencies transfers, technological transfers, capacity building (...) so that we can mitigate, adapt, and become resilient to climate change.”

H.E. President Azali Assouman of Comoros
Leader’s Dialogue on the Africa Covid-Climate Emergency, April, 2021



Photo: Sunshine Seeds / Shutterstock

Figure 1: Employment status of working age population in Africa



Source: ILO, 2020b

CLIMATE IMPACTS: RISKS AND CHALLENGES FOR JOBS

Between 2000 and 2015, 23 million working-life years were lost annually at the global level because of environment-related disasters caused or exacerbated by human activity.¹¹ This is equivalent to 0.8 percent of a year's work globally.¹² These losses were particularly acute among low-income groups. Africa suffered some of the greatest losses of working-life years, with an annual average of 376 working-life years per 100,000 people of working age lost between 2008 and 2015.¹³

At the same time, globally, some 1.2 billion jobs—particularly those dependent on farming, fishing, and forestry—currently rely directly on the effective management and sustainability of a healthy environment. In Africa, these sectors represent 58 percent of total employment.¹⁴ Without adaptation measures, the combined effects of climate change and poor natural resource management will threaten these jobs, which could lead to devastating social and economic impacts.

In addition to threatening the natural resource base, climate change exacerbates the stresses on jobs in several other ways. Negative impacts on employment

include job losses through impacts on business assets and business interruptions, disruptions in transportation of market and essential goods, impacts on working conditions and occupational safety and health affecting labor productivity, forced migration and reduced demand due to economic shocks and instability. Business assets and transport and industrial infrastructure, as well as the workforce, are increasingly concentrated in cities in Africa, all of which are at risk when disaster events hit urban areas.¹⁵

Agriculture accounts for a high percentage of employment and a key source of livelihoods in many African countries. As discussed in the Agriculture and Food Systems chapter, the sector is particularly vulnerable to water scarcity. In 2019, more than 232 million workers in the region were employed in agriculture, accounting for over 50 percent of the continent's total employment.¹⁶ Many of Africa's farmers depend on rainfed agriculture, which will be particularly at risk. In North Africa, for example, small-scale farmers in rainfed mixed farming systems are likely to be severely impacted by climate change.¹⁷ Desertification, land degradation and disaster events such as floods, heavy precipitation, heatwaves and insect outbreaks also reduce productivity and

destroy rural jobs in the agriculture sector. For example, the income of seven million people was put at risk in 2003 when severe droughts hit Ethiopia's primarily rainfed agricultural sector.¹⁸ In Uganda, predicted temperature increases could devastate the coffee industry—on which over 12 million casual and permanent jobs depend—leading to massive loss of jobs in this sector.¹⁹

Increasing water scarcity also threatens employment and productivity in other sectors. For example, water shortages affect jobs in the hydropower sector, and, more importantly, jobs with enterprises that depend on energy from hydropower, as discussed in the Transport and Energy chapter.

Heat stress affects productivity and leads to negative occupational health effects and workplace injuries, especially in low-skilled labor-intensive sectors. Increasing temperatures mean that workers must spend more working hours resting and cooling down their bodies to keep core body temperatures below 38°C and avoid heat stroke. Africa is particularly vulnerable to heat stress because of its high heat exposure and low adaptive capacity. Temperatures in many parts of Africa are projected to rise faster than the global average during the 21st century. People working in factories and offices with poor cooling systems and those working outdoors—for example in agriculture, construction and forestry—will be particularly affected. While this will vary regionally, of the ten most affected countries in terms of percentage loss of GDP, eight are found in western Africa.²⁰

Assuming a global temperature rise of 1.5°C by the end of the century, estimates suggest that by 2030 Chad, Burkina Faso and Togo will all lose more than 7 percent of working hours due to heat stress. In Western Africa, 4.6 percent of working hours are predicted to be lost under this warming scenario, which equates to around nine million fulltime jobs.²¹ In terms of sectors, agriculture is expected to account for more than 90 percent of the working hours lost in central and eastern Africa in 2030 owing to heat stress.²² More than 60 percent of all working women in sub-Saharan Africa are employed in agriculture, and these women will suffer disproportionately from heat stress as global temperatures rise.²³

The impact of climate change-related extreme weather events and disasters on infrastructure will negatively impact overall productivity and employment. Disruptions and delays due to breakdowns in energy and transport infrastructure may have devastating impacts, in particular, on industries that produce perishable goods. Damages and climate risks may also increase the price of transport, reducing the competitiveness of industries on the continent. The Transport and Energy chapter presents further details. Furthermore, the costs of reconstructing housing and public and private infrastructure damaged due to an increase in the frequency and intensity of disasters could further crowd out other investment.

Coastal land is increasingly being lost and damaged due to sea level rise, erosion and extreme weather events such as hurricanes. This is destroying jobs in tourism, fishing and other sectors that rely on healthy coastal ecosystems. For example, a 50 percent decline in fisheries-related jobs is predicted for West Africa by the 2050s under a conservative warming scenario.²⁴ Ocean acidification resulting from increasing CO₂ absorption is also affecting ocean ecosystems and the jobs that rely on them.

Increases in labor migration are likely because of climate change and other factors. One 2007 study in Namibia concluded that even under the best-case climate change scenario at the time, a quarter of the population would need to leave vulnerable sectors such as agriculture, fisheries and tourism and find new livelihoods by 2050. The study predicted that displaced rural populations moving to cities would cause incomes for unskilled labor to fall by 12 to 24 percent to absorb the new workers.²⁵

The impacts of climate change on jobs will be felt unequally, depending on socioeconomic status and location. Differences in social and economic roles and responsibilities exacerbate the vulnerability of women, migrants, youth, indigenous and tribal people, people in poverty and people with disabilities. These groups tend to have less access to resources for climate change adaptation, including land, credit, agricultural inputs, the support of decision-making bodies, technology, social insurance and training. Poor people also live and work in more vulnerable locations. For vulnerable individuals working in the informal economy and in small enterprises, it is especially difficult to recover from the effects of environmental disasters.²⁶



Photo: rvdw images/Shutterstock

JOB CREATION OPPORTUNITIES FROM RESILIENCE BUILDING ACTIVITIES

Even if Paris Agreement targets are met and global warming does not exceed 1.5°C, the implementation of a wide array of adaptation measures—from enhanced social protection programs to hillside reforestation to protect water sources and combat erosion—will be critical to help avoid climate change

related damages and losses, create jobs and build resilience. In this ILO and GCA analysis, we review the opportunities that climate adaptation and resilience programs in key African economic sectors can have in terms of new decent jobs. For example, resilient infrastructure, climate-smart natural resources management and NbS, new adaptation technologies and climate information services can be key in the development of resilient economies and “green jobs for adaptation and resilience” (Box 1).

Box 1. Green jobs for Adaptation and Resilience



Green jobs are decent jobs that contribute to preserving or restoring the environment. They are often associated with emerging green sectors, such as renewable energy and energy efficiency, but can also be in traditional sectors such as agriculture and construction.

Green jobs help:

- Improve energy and raw materials efficiency
- Limit greenhouse gas emissions
- Minimize waste and pollution
- Support adaptation to the effects of climate change
- Protect and restore ecosystems

Green jobs that support the last two bullet items can be considered “green jobs for adaptation and resilience”. Green jobs related to adaptation can be found across different sectors. At the project or enterprise level, these jobs produce goods or provide services that are adaptation-related; for example, better-cooled buildings or more resilient roads.

However, they can also relate to adopting new production practices: for example, adapting agricultural techniques to changes in climate.

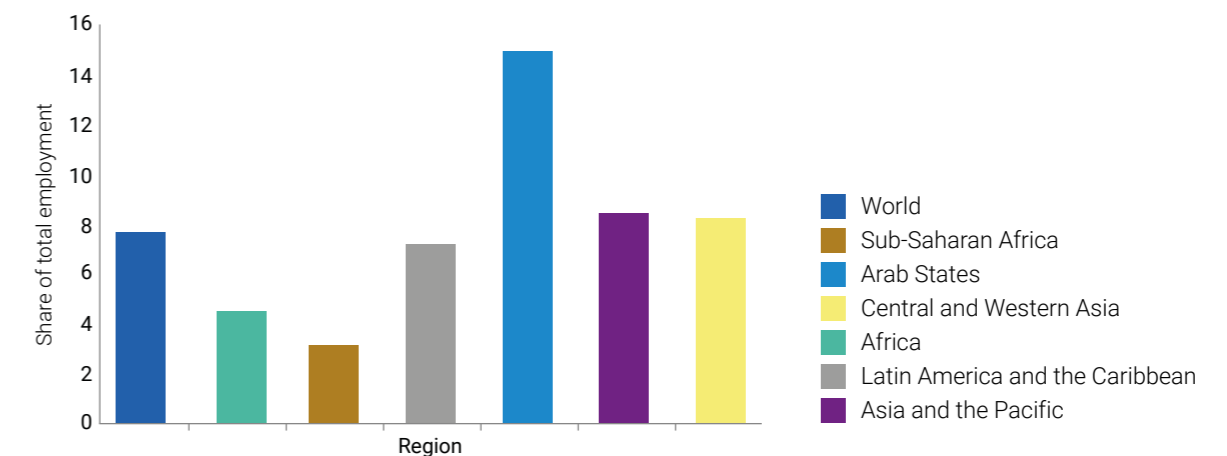
Many of the green jobs which help to protect and restore ecosystems are found in or are created through investments by the public sector, since in many countries ecosystems and the protection of nature are considered public goods and the responsibility of the state. Many of these jobs supported by public investment are created through what the ILO refers to as Green Works, defined as “the employment intensive development, restoration and maintenance of public infrastructure, community assets, natural areas and landscapes to contribute to environmental goals such as adaptation to climate change and natural disasters, environmental rehabilitation, ecosystem restoration and nature conservation.” However, increasingly communities and enterprises whose livelihoods and productivity are influenced by the productivity of ecosystems are also investing in ecosystem restoration and protection.

Climate-resilient infrastructure

Investment in climate-proofing existing infrastructure and building new climate-resilient infrastructure can address Africa’s infrastructure deficit, build societal resilience and create jobs in construction and related sectors. Infrastructure in Africa—including roads, ports, airports, railroads, water and sanitation, electricity and communications infrastructure—is already insufficient to enable it to achieve the Sustainable Development Goals (SDGs), and levels of investments remain below what is required. One indication of this is that employment in the construction sector—particularly in sub-Saharan Africa—is far lower than in other regions of the world and lower than the global average (Figure 2).

Our assessment is that bringing Africa up to par with other regions could easily double the number of people working in the sector. The construction sector already has a high employment multiplier in Africa, and resilient natural and built infrastructure, if designed properly, has the potential to generate employment opportunities far beyond the sector.²⁷ For example, increasing the resilience of transport infrastructure by raising road embankments and improving drainage can provide direct employment opportunities through construction work and indirect and induced employment opportunities in industries that supply the materials and equipment. Such investments would also protect the jobs and industries that rely on transport infrastructure.

Figure 2: Construction sector employment as a share of total employment (%) in 2019



Source: Compiled from ILO labor statistics database (ILOStat)



Investments in resilient infrastructure and housing are critical and can cost less than reconstruction and rehabilitation following disasters. Industries may need to be relocated, and projects related to irrigation, flood control, soil and water conservation and land management may be required. For Africa to reap the full job-related benefits of these investments, policymakers should consider adopting a sustainable infrastructure approach,²⁸ including local resource-based approaches (Box 2). These are based on the understanding that local participation in

planning with the utilization of locally available skills, appropriate technology, materials and work methods has proven to be an effective and economically viable approach to infrastructure works and job creation in many countries.²⁹ Investments must also develop local skills and capabilities, maximize the use of local enterprises, value traditional knowledge and adopt gender-responsive approaches. Technology choices need careful consideration, with labor-intensive and environmentally friendly construction methods selected where possible.

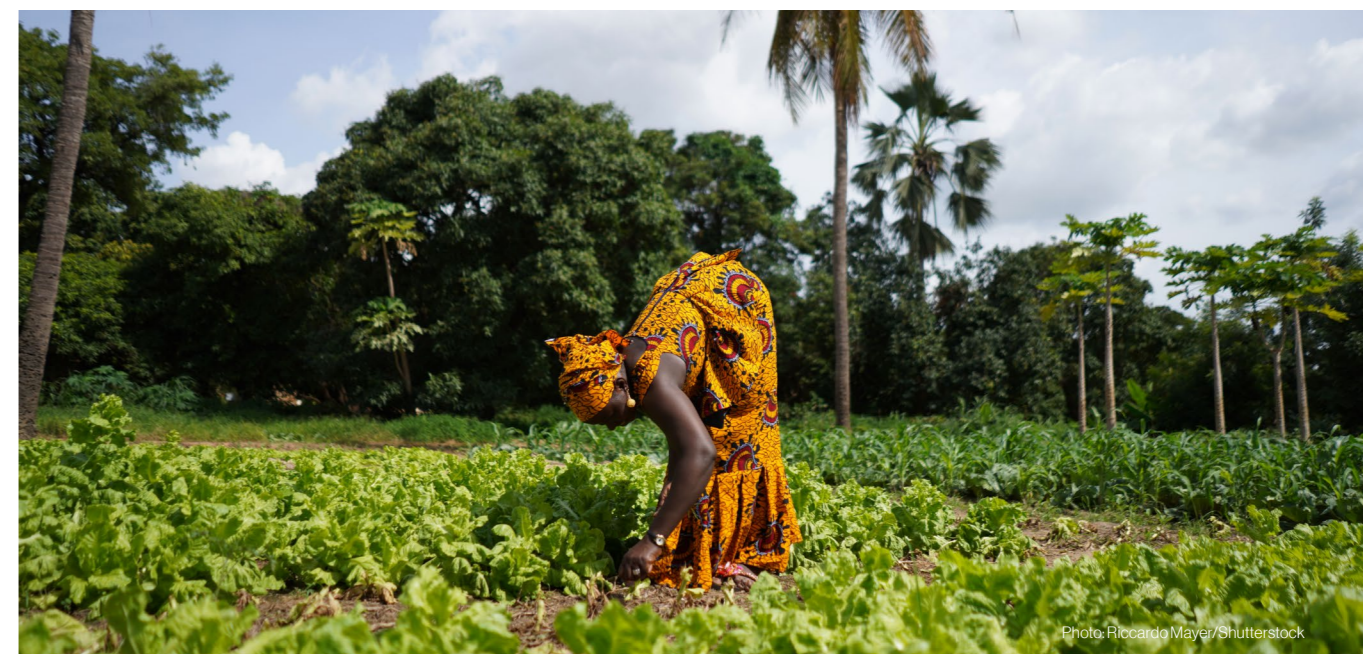
Box 2: ILO's Local Resource-Based approaches and community contracting



In developing and maintaining community infrastructure, such as rural roads, footbridges, and irrigation canals, and in the implementation of Green Works, the ILO's Employment-Intensive Investment Programme (EIIP) promotes the use of Local Resource-Based (LRB) approaches. These approaches aim to optimize the use of local resources throughout the project cycle. Local resources include human resources, local enterprises, local materials (e.g., construction materials and tools) procured through local suppliers, as well as local knowledge and technologies, with the objective of generating incomes that circulate in the local economy and building local ownership and capacity to maintain these assets. Additionally, the LRB approach

encourages the participation of women, youth, people with disabilities, indigenous and tribal people in the planning, implementation, monitoring and evaluation of the interventions, so that they actively participate in the development process.

The EIIP has extensive experience in adopting LRB approaches, including on projects promoting adaptation and resilience to climate change in Africa. In the Sahel countries of Mali and Niger, for example, the ILO is supporting programs against desertification by promoting the adoption of local knowledge and technology in areas around watershed and forest management, with planning, design and construction activities mostly implemented by local farmers.



Improved natural resource management and Nature-based Solutions

Nature-based solutions (NbS)³⁰ to societal problems such as climate change adaptation or disaster risk reduction offer significant potential for local employment creation and can provide cost-efficient ways to adapt or reduce disaster risk using local means, knowledge and practices.³¹ The benefits can, however, take time to materialize.³² Examples include reforestation and afforestation to regulate water flows and protect against landslides, large-scale watershed restoration to improve water quality and availability for entire regions, or coastal mangrove restoration to protect against storms, erosion and sea-level rise. ILO's Rebuilding the Forests project in Mali, for example, contributed to the preservation of forest resources and eliminated illegal land clearing. Through labor contracts between the forestry department and local villagers, it "returned the forest to the poor," thus strengthening local livelihoods and adaptive capacity.³³

Nature-based solutions to climate change adaptation are effective and typically provide a multitude of co-benefits.³⁴ These include improvements in water security, human health, livelihoods, disaster risk reduction and climate change mitigation. The resulting increase in resilience and productivity in key sectors such as agriculture, fisheries, forestry and tourism create jobs, generates income and supports livelihoods, particularly for vulnerable groups. Indeed,

the Global Commission on Adaptation promotes harnessing NbS as one of its key 'action tracks' for tackling both climate change adaptation and mitigation,³⁵ and many African nations countries already integrate NbS into their national climate strategies.³⁶ The Africa Adaptation Acceleration Program (AAP) of the African Development Bank and GCA gives a key role to NbS mainstreaming in resilient infrastructure.

The traditional notion of what resilient infrastructure looks like may need widening to include 'green-gray' options, green/ecological infrastructure and 'building with nature' approaches.³⁷ For example, restored mangroves can protect coastal assets and communities, and in some circumstances replace or complement built sea walls or breakwaters. Similarly, riverbank re-greening provides an alternative to river training in the context of reducing disaster and downstream flood risks. Such adaptation and disaster risk reduction measures, if implemented well, can be effective and generate significant employment for local communities. Hybrid 'green-gray' approaches combine green (nature-based) with standard gray (engineered) solutions such as dams, water treatment plants and coastal defense structures.³⁸ Such hybrid approaches can be adopted in situations in which it is not practical to replace engineered approaches with NbS. These approaches, too, are associated with the accrual of multiple co-benefits. For example, local communities

in Haiti continued to plant vetiver and benefit from associated commercial use, water retention services and a reduction in disaster risk, even after an ILO job creation project following Hurricane Jeanne in 2004 had ended.³⁹

Implementing NbS and hybrid approaches can be labor-intensive and thus a first step towards creating decent jobs (Table 1). Significant job opportunities arise when such approaches are integrated into large-scale initiatives such as public employment schemes and regional interventions. The Great Green Wall for the Sahel and Sahara Initiative, an initiative of the African Union, has been cited as having the potential to create ten million environmentally-oriented jobs.⁴⁰ France, the World Bank and others have committed

over \$14 billion to this initiative, and this funding could fast-track efforts to restore degraded land, save biological diversity and build the resilience of the Sahelian people.⁴¹ The insert on the Great Green Wall presents further details on this initiative.

Furthermore, labor-intensive approaches prioritizing local priorities, knowledge, skills and materials can strengthen local resilience when building climate-resilient infrastructure and implementing NbS (Box 2).

Incubating adaptation technologies and enterprises

In many contexts, effective adaptation will require appropriate new technologies adapted to the African context, the use and scaling up of existing local

technologies, or a combination of both, particularly in agriculture and irrigation, infrastructure and construction, and eco-tourism, but also in other sectors. Existing local technologies can be cost-effective in this context. Local technologies can be developed by local workers and enterprises and by national research institutions and professionals such as soil scientists, plant breeders, irrigation specialists and livestock specialists. In Niger, for example, local people have developed soil and water conservation practices to ensure productivity in the face of climate change impacts and extend agricultural activities by growing vegetables outside the rainy season.⁴²

Micro, small and medium-sized enterprises (MSMEs) are the main engines of job creation in most countries and are important partners for building resilience, because they are well placed to develop locally relevant effective adaptation solutions.⁴³ For example, increased investment in adaptation will allow business opportunities to emerge for engineers designing and developing hybrid 'green-gray' infrastructure or new irrigation technologies, contractors who can adapt housing, and manufacturers of agriculture equipment. Opportunities also exist in the finance and insurance services industry.

The ILO Zambia Green Jobs Programme aimed to demonstrate the key role played by MSMEs by creating at least 5,000 green jobs, particularly for young people, and improving the quality of at least 2,000 further jobs in MSMEs in Zambia's

building construction sector. A mid-term program assessment in 2015 argued that it demonstrated a viable private sector development model delivering inclusive green growth, green job creation and climate change adaptation benefits.⁴⁴ The construction and infrastructure sector offers notable opportunities for job creation when compared to other sectors such as renewable energy. Support for the formation of cooperatives can also bring substantial benefits to many producers though increases in access to knowhow, inputs, finance and markets at fair prices. The Oromia Coffee Growers in Ethiopia and the cocoa farmer cooperative Kuapa Kokoo in Ghana are two examples of this.⁴⁵

Climate information services

Climate information services providing information relevant to governments, employers and workers in the African context have been identified as a priority by the Africa Adaptation Initiative (AAI). Sub-Saharan Africa currently ranks last among all regions in terms of land-based observation networks, meeting only about one-eighth of the minimum requirements, as discussed in the Present and Projected Climates in Africa.⁴⁶ The design and development of these services will not only improve the ability of enterprises and workers to adapt, but should provide direct and indirect opportunities for new enterprises and a limited number of skilled jobs, for example, in innovative microinsurance product enterprises.

Table 1: Employment returns and labor input of NbS, primarily in developing countries

Activities integral to NbS implementation	Employment returns: Total direct jobs (Full Time Equivalent/US\$ million)	Labor inputs: Full Time Equivalent/hectare
Afforestation, reforestation, and desertification control	275 to 625	0.40 to 1.1
Watershed improvement	166 to 500	1 to 3
Indigenous forest management	200 to 400	0.25 to 0.5
Agroforestry including conversion of land	500 to 750	0.25 to 0.375
Fire management	200 to 250	0.1 to 0.125
Creation and management of urban green spaces	24 to 250	1 to 5
Removal and management of invasive alien species	unknown	0.05 to 0.14 FTE/ha for clearing of heavily infested areas. 0.002 to 0.014 for lightly infested areas
Management and conservation of protected areas and buffer zones	unknown	0.004 to 0.0002
Forest conservation	285 to 428	0.10 to 0.15
Coastal habitat protection	17	unknown
Vegetation planting to protect roads (including nursery work and plant maintenance)	unknown	1 to 2 (based on 250 to 500 workdays per hectare)

Source: Lieuw-Kie-Song and Pérez-Cirera 2020; ILO 2011; Payen and Lieuw-Kie-Song 2020



To attract private sector investment we need to firstly have good projects, ... develop modules for private-public partnerships, and encourage all stakeholders to mainstream adaptation. Secondly, ... we must create a benchmark for green bonds for climate resilience.”

Odile Renaud-Basso, President, European Bank for Reconstruction and Development

High-Level Dialogue "An adaptation acceleration imperative for COP26", September, 2021



Photo: Jean Francois/Stock



Photo: Pinar Alver/Shutterstock

POLICY RESPONSES FOR JOB-RICH ADAPTATION AND RESILIENCE AND TO REDUCE RISKS IN THE WORLD OF WORK

National climate change policies and programs must protect jobs and sectors that are critical for job creation and create opportunities for new decent jobs. This will, in turn, require considerable efforts in ensuring policy coherence and coordination. Nationally Determined Contributions and National Adaptation Plans will need to factor in employment, while sectoral policies—such as those relating to agriculture, forests, biodiversity, fisheries, marine issues, water regulation, tourism, energy and transport—must also provide opportunities for integrating job-rich adaptation strategies.

Policies are needed to promote investment in climate-resilient infrastructure, the development of adaptation technologies, climate information

services and related enterprises, and improved natural resource management and NbS. A recent analysis of 16 countries in sub-Saharan Africa shows that legislation linking labor and the environment has been increasingly adopted since the early 2000s.⁴⁷ However, governments in Africa need to extend this further.⁴⁸ Investments need to be reallocated from sectors that deplete natural resources and damage the environment to more resource-efficient and environmentally sustainable sectors.⁴⁹ Green jobs for adaptation and resilience (Box 1) on land and in aquatic environments need to be prioritized Morocco, for example, launched its Plan Maroc Vert (PMV) in 2008. By helping smallholder farmers tackle drought by adopting efficient irrigation technologies and transitioning to drought-tolerant crops, the plan aimed to create 1.5 million jobs by 2020.⁵⁰ The PMV goals may not have been fully realized, but by the end of 2020, 350,000 jobs had been created for the

kingdom's youth.⁵¹ Madagascar has prioritized the blue economy, and investment in tourism on the island of Nosy Be has generated a diverse range of jobs.⁵²

Skills development

Skills development policies and programs will be critical for meeting Africa's adaptation requirements and should anticipate likely climate change impacts and include adaptation-related skills and occupations. The Youth pillar of the Africa Adaptation Acceleration Program of the AfDB and GCA is designed to support such adaptation skills and jobs. The need for new skills is likely to increase in the agriculture, forestry, fisheries, construction, urban planning, manufacturing and transport sectors, among others.⁵³ Furthermore, new occupations in, for example, disaster risk reduction, coastal management and soil and water management will also require new skills. Education and training, including an emphasis on basic portable skills, will help workers adapt to changes in labor markets and move more easily into new jobs in other sectors, thus forming a key adaptation strategy.

To build resilience, skills are required to transition to green jobs, NbS and 'green-gray' approaches and to integrate these approaches into adaptation responses, policies and programs. Such skills development could address the lack of local and national government capacity to support NbS to climate change adaptation identified in Africa.⁵⁴ Agricultural extension workers, for example, could be trained in farming techniques such as soil and water conservation measures. In its analysis of skills for green jobs, the ILO has identified the need for informed, coherent and coordinated policies to support skills development. Central to this are strategic leadership and management skills,



Preparedness reaps dividends: For every one dollar you spend on resilience, you see four dollars in benefits."

Axel van Trotsenburg, Managing Director, World Bank
High-Level Dialogue "An adaptation acceleration imperative for COP26",
September, 2021

environmental awareness as an integral part of education and training at all levels, labor market information for anticipating and monitoring skill needs, effective coordination among line ministries and social partners, and decentralized approaches at sectoral and local levels.⁵⁵

Countries such as Mali have committed to environmental sustainability but have a notable absence of institutional mechanisms to develop the skills required to achieve environmental policy goals. Agricultural enterprises involved in export and the domestic market in Mali lack training in sustainable agriculture and organic farming. In Uganda and Mauritius, by contrast, farmers have benefited from training in bio-farming and organic farming. Uganda now has the largest farm area under organic management in all of Africa, with employment estimates ranging from 200,000 to 400,000 farmers.⁵⁶

Skills development should build on the capabilities of local institutions to ensure they anticipate climate risks and uncertainties, generate solutions and manage adaptation initiatives over the long term without being dependent on project-based donor funding.⁵⁷ Training can target disadvantaged and vulnerable groups, which will help address the inequity in who suffers most from climate change. In particular, the poor, illiterate and low-skilled, as well as those living in rural areas, women and the disabled are likely to require specific targeting efforts if they are going to participate in skills development to the level required for effective adaptation.⁵⁸

Workplace risk reduction

Reducing risk in the world of work is a priority for Africa. Workplaces may need physical modification as well as new occupational safety and health procedures to address climate change-related heat stress and stresses related to other extreme weather events, such as floods and hurricanes. The risk of deteriorating safety and conditions of work is especially significant in sectors vulnerable to climate change, such as agriculture, fisheries and tourism, not least because these sectors are already struggling to implement minimum standards and conditions of work.⁵⁹ Wider adoption of international labor standards, along with the development of appropriate national legislation can play a key role here, as can increased access to insurance covering these risks.

Social protection

The ILO considers access to social protection⁶⁰ to be not only a human right but also one of the four pillars of decent work (along with employment creation, rights at work and social dialogue).⁶¹ It provides a strong opportunity to address both the causes and the effects of climate change, as discussed in greater detail in the Climate-adapted Social Protection insert. Indeed, through risk-pooling and redistribution mechanisms (including solidarity between those most impacted by climate change and those who are more insulated from its effects) social protection systems have the potential to guarantee protection for all members of society throughout their lives and

to support people during shocks, displacements and transitions, including towards a greener economy.

If social protection represents a central lever of adaptation to climate change, it is also necessary to acknowledge its current limits. Despite recent progress in Africa, 83 percent of the population is currently excluded from any form of social protection (Figure 2),⁶² which corresponds to a financing gap to achieve universal coverage estimated by the ILO (including the impact of COVID-19) of \$136.9 billion for 2020.⁶³ Collaborative approaches at the national, regional and international level to increase fiscal space for both social protection and climate policies are therefore necessary to fill this gap.

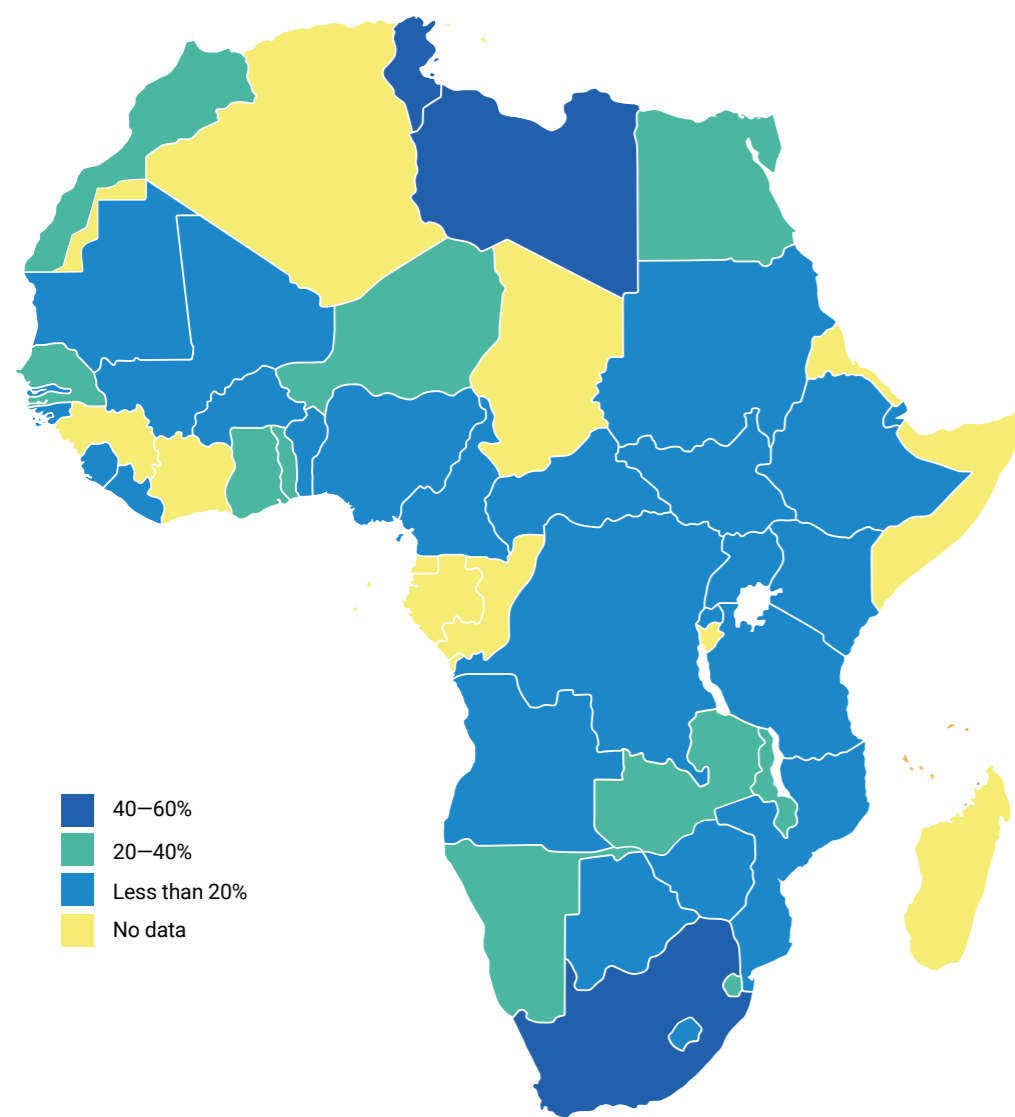
Another priority area that requires such effort in policy coordination, either within a country between provinces or between countries, is the issue of human migration, including people displaced by climate change. To enable migrants to enjoy the full scope of the social protection rights, it is essential that countries facilitate the portability of their rights within and across national borders.⁶⁴

The coordination and integration by governments and social partners in disaster risk reduction, climate adaptation and social protection strategies is an essential step towards greater cross-sectoral coherence to approach climate change.⁶⁵ This is necessary not only to better manage disaster risks, but also to foster innovative practices based on evidence and lessons learned, while taking into account specific vulnerabilities to leave no one behind (e.g. workers in the informal economy, displaced persons and persons with disabilities).

Public employment programs (PEPs)

Public employment programs (PEPs) provide an important opportunity to combine economic, social, environmental and adaptation objectives. They can be used to implement adaptation actions on a large scale and also to target the rural poor and others most vulnerable to climate change, thus enhancing the income security and resilience of groups who are often difficult to reach with other measures.⁶⁶ Program activities can include afforestation and reforestation, improved soil and water management measures, raising road embankments, building dikes, climate-proofing buildings and upgrading low-income settlements, all of which can assist with adaptation and promote climate resilience through flood control and erosion reduction measures.⁶⁷ These programs are mostly public-sector driven and financed but can also provide opportunities to boost private-sector development. Such programs already support more than 100 million people in low and middle-income countries.⁶⁸ They provide significant potential for financing job-intensive environmental approaches such as green works,⁶⁹ NbS and 'green-gray' infrastructure implementation.⁷⁰ At the regional level, Africa had the highest incidence of programs with environmental components as of 2018, with 23 out of 36 including mitigation or adaptation activities.⁷¹

Figure 2: Social protection in Africa: effective coverage (%)



Source: ILO World social protection data dashboard, <https://www.social-protection.org/gimi/WSPDB.action?id=32>



Flagship programs like the environmental sector of the Expanded Public Works Programme (EPWP) in South Africa and Ethiopia’s Productive Safety Net Programme (PSNP) annually mobilize over a million person-years of labor to work on natural resource management activities. They have both been operating for at least 15 years (Table 2).⁷² South Africa’s Working for Water Programme supports more than 20,000 jobs by providing short-term contracts to local people to remove invasive species. It specifically targets vulnerable groups by seeking to employ 60 percent women, 20 percent youth and 5 percent persons with disabilities.⁷³ PSNP is Africa’s largest climate resilience program by number of beneficiaries working on adaptation-enhancing activities.⁷⁴

These programs combine environmental, employment and social protection objectives, which can make them challenging as the timeframes for these objectives are not always aligned. Improving income for vulnerable households may be an urgent need, but ecosystem restoration requires a longer-term perspective. It is therefore critical that a programmatic approach that includes ongoing investments and activities in landscape management is adopted, in turn creating sustained demand for labor. Different approaches may then allocate this

labor demand to workers, depending on local needs and contexts. For example, ongoing part-time work may be more suitable in some cases, while rotating opportunities among community members may be preferred in other contexts.

Regional coordination and partnerships

Regional or continent-wide coordination on many of the above policy areas and approaches will be crucial going forward, particularly around sharing climate- and adaptation-related information technologies, collaborating on the restoration of shared ecosystems and disaster risk reduction and preparedness. Initiatives such as the Lake Chad Basin rehabilitation and the Great Green Wall for the Sahel and Sahara cross national boundaries underscore the need for strong regional coordination in planning for job-rich resilience-building.

Strong local, regional, national and international partnerships bringing together governments and their agencies, research organizations, the private sector, non-government organizations and local communities will be needed to help facilitate links between adaptation policies and decent job creation for successful outcomes. The AAI, Agenda 2063, and the African Union’s Programme on Infrastructure Development in Africa—with its 279 stakeholders—provide good examples of these.⁷⁵

Table 2: Public works programs and associated annual employment and natural resource management activities

Program	Annual employment	Natural resource management activities
Expanded Public Works Programme (Environmental Sector) South Africa	150,000 work opportunities	Invasive plant species removal, wetland rehabilitation, prevention and combatting of wildfires, restoration and cleaning of coastal areas, forest management, land restoration.
Productive Safety Net Programme (Ethiopia)	1.2 million working beneficiaries	Land rehabilitation through enclosure, soil embankment construction, stone embankment construction, seedling production and planting, development of nursery sites, pond construction or rehabilitation, water spring development, hand-dug wells, small-scale irrigation.

Source: Payen and Lieuw-Kie-Song, 2020



Photo: SamDCruz/Shutterstock



POLICY RECOMMENDATIONS

While the links between climate change and employment are becoming increasingly apparent, important knowledge and evidence gaps remain.⁷⁶ These include a better understanding of how climate change adaptation measures impact both the quality and quantity of employment.⁷⁷ For example, a better understanding of the employment returns of improved natural resource/landscape management and the use of NbS in Africa is needed to be able to assess the full socioeconomic benefits of such adaptation measures and support its much broader adoption. The ILO has led the development of tools and methods to assess the employment impacts of a just transition and will continue this under its Climate Action for Jobs initiative (CA4J).⁷⁸ The Africa Adaptation Acceleration Program of the AfDB and GCA will support the creation and growth of green jobs for adaptation and resilience. Resulting assessments are encouraging and show that net gains in employment following a transition to a green economy are possible but depend on the right policies and on the capability of the institutions implementing them.⁷⁹

But this work has focused more on climate change mitigation measures, and further research is needed to better understand which adaptation measures can support better employment outcomes and vice versa.

The analysis reveals that there is also uncertainty about the changes in the trajectory of agricultural policies and practices that may occur and the resulting labor implications. This issue is highly relevant for Africa, given its dependence on agriculture for jobs and livelihoods. A development path with increased mechanization and industrialization of agriculture following the precedent set by high-income countries will have very different employment effects compared to one that includes more resilient practices such as regenerative farming and agroforestry practices, which tend to be more labor-intensive.⁸⁰ This presents an important choice for African policymakers and will require additional research into shifts in agricultural practices and how this will impact employment and in particular rural labor markets.⁸¹

Other areas for further research related to the world of work relate to skills for green jobs so that training systems and institutions can better plan and prepare the workforce to adopt more resilient practices across economic sectors.

While climate change is already having negative impacts on jobs in Africa, adaptation responses can reduce these impacts by protecting existing jobs, minimizing job losses and providing opportunities for new economic activity, investments and decent work. For this to occur, adaptation policies must be coordinated and coherent, human-centered and address key risks to workers, enterprises and vulnerable sectors. They must also support a just transition to a resilient and greener development path and be equitable and socially inclusive, taking the concerns of women, youth, indigenous people and other minorities into account.

There is also an urgent need for increasing adaptation finance to support and scale up interventions that increase resilience and generate income and employment. A stimulus in climate-resilient

infrastructure is already necessary if Africa is to meet the SDGs and will have to be a critical element of Africa's adaptation strategy. This will not only help protect and secure existing jobs but will also present an immense opportunity for direct and indirect job creation. Working more closely with nature through NbS and improved natural resources management also provides a key opportunity for Africa in this context. Its massive endowment of nature can be harnessed as both an engine for jobs and a pathway for cost-effective adaptation, allowing Africa to embark on a more sustainable development pathway.⁸²

Effective adaptation will also require the redesign and expansion of social protection systems in Africa to protect workers against the increased and new climate-related risks they will face. Finally, social dialogue and community participation in the design and implementation of adaptation policies and measures will be important to ensure more inclusive adaptation measures that support local development and employment creation.⁸³

With its rapidly increasing labor force and vast available resources, Africa has the potential to take a growth path focused on labor-intensive modern industries in eco-tourism services, climate-smart agriculture, ocean economy and green building and infrastructure. The world of work is a gateway to solving multi-faceted economic, social, environmental and political problems. However, for this growth and development path to be climate-resilient, effective adaptation of the world of work is required. This will, in turn, require coherence and coordination of climate, environmental, employment, macroeconomic and social policies.

As the ILO's Director-General Guy Ryder stated at the opening of 2021 International Labour Conference, progress "depends on combining: the knowledge of the causes, mechanisms and consequences of climate change that comes from the scientific community; the financing of measures of mitigation and adaptation that must come from public and private, and national and international sources; and the labor market engineering required for just transition processes that realize the decent work potential of protection of the planet, and reconcile social and environmental objectives."⁸⁴



Adaptive Social Protection



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Social protection refers to a broad set of policies and programs that aim to prevent, manage, and overcome poverty and vulnerability by diminishing people's exposure to risks, and enhancing their capacity to manage economic and social risks, such as unemployment, exclusion, sickness, disability, and old age.

While some basic forms of social protection have been around for centuries, social protection policies and programs entered the mainstream as key components of poverty reduction strategies in the late 1990s.⁸⁴ Social protection is now one of the targets of Sustainable Development Goal 10 (reduced inequalities).

Adaptive Social Protection (ASP), a more recent concept, integrates the often-disconnected disciplines of social protection, disaster risk management, and climate change adaptation, and

aims to build the resilience of poor and vulnerable households, while strengthening their capacities to prepare for, cope with, and adapt to climate impacts.⁸⁵

Ideally, ASP programs use the full spectrum of social protection programs, which range from social assistance (such as non-contributory cash transfers, public works programs, fee waivers for basic health and education services; and subsidies for food, fuel, etc.); social insurance (contributory schemes providing compensatory support in the event of contingencies such as illness or shocks affecting crops or livestock); and labor market interventions (facilitating employment and an efficient labor market).⁸⁶ Existing social protection programs can be made adaptive and "shock-responsive" to climate change impacts by:

- Focusing on beneficiaries, areas, and households that are more vulnerable to climate shocks and risks.
- Temporarily increasing the value of benefits in the aftermath of climate shocks to support affected households.

- Introducing flexibility in program conditionalities during climate emergencies.
- Aligning humanitarian assistance with existing safety net programs.
- Supporting productive, diverse, and climate-resilient livelihoods that also contribute to community resilience where possible, for instance through landscape management, climate-smart agriculture, nature-based solutions, or mini-irrigation systems.
- Using weather forecasts and early warning systems to trigger early response, particularly for slow-onset climate shocks like droughts.
- Ensuring strong coordination across disaster response agencies through a multi-agency platform that includes the ministry responsible for climate action, and sub-national governments.⁸⁷

Social protection programs have a long history in Africa. The Jobs chapter presents statistics from the ILO database of social protection programs in the region. This GCA analysis looked at eleven ASPs in Africa (see Figure 1). It assessed them against a merged set of two design criteria: Tenzing's typology of social protection,⁸⁸ and the World Bank conceptual framework for adaptive social protection,⁸⁹ as presented in Table 1.

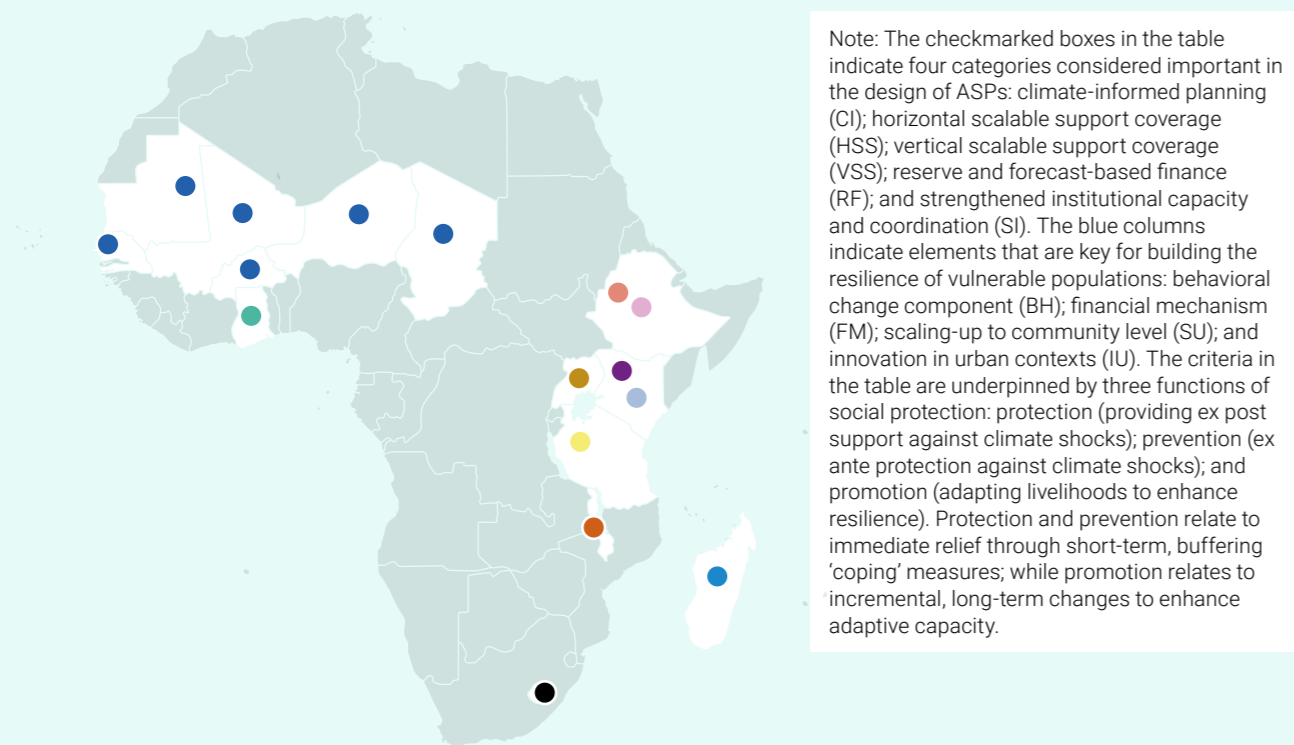
Table 1 – ASP assessment criteria

Tenzing's typology	World Bank criteria
1. Climate-informed planning, triggering action ex-ante	1. Link of ASP with financial mechanisms like financial inclusion (widening access to financial services) and mobile money (payments, finance, and banking provided through use of a mobile device)
2. Scalable and support coverage, scaling vertically (increasing length/level of support) and horizontally (expanding by absorbing non-typical beneficiaries, accounting for new shocks and stresses)	2. Conditionality of cash-transfer schemes (i.e., promoting positive behavioral change)
3. Reserve and forecast based finance: incorporating climate insurance, social safety nets, and contingency funds	3. Coordination of SPT from individual to community level
4. Strengthened institutional capacity and coordination: building on existing SPT infrastructure and enhancing capacity for beneficiaries through the upkeep of social registries	4. Innovations on climate and social protection in urban communities



Photo: Adamjan Frigel/Shutterstock

Figure 1: Select adaptive social protection programs in Africa



Project Name	Elements that might contribute to resilience				Adaptive Social Protection Design				
	BH	FM	SU	IU	CI	HSS	VSS	RF	SI
Hunger Safety Net Programme Country: Kenya Type: Safety-net		✓	✓		✓	✓		✓	✓
Tanzania Social Action Fund Country: Tanzania Type: Safety-net and Labor market interventions	✓	✓					✓		✓
Farm Input Support Programme Country: Malawi Type: Safety-net		✓							
The Sahel Adaptive Social Protection Program Countries: Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal Type: Safety-net and Labor market interventions	✓	✓	✓		✓	✓	✓	✓	✓
Northern Uganda Social Action Fund Country: Uganda Type: Safety-net	✓	✓			✓	✓		✓	✓
Livestock Insurance Programme Country: Kenya Type: Insurance		✓			✓	✓		✓	✓
Adaptation of Agricultural Value Chains to Climate Change Country: Madagascar Type: Safety-net		✓	✓		✓			✓	✓
Child Grant's Programme Country: Lesotho Type: Safety-net	✓					✓	✓		✓
Livelihood Empowerment Against Poverty Country: Ghana Type: Insurance and Safety-net	✓					✓	✓		
Urban Productive Safety Net Project Country: Ethiopia Type: Safety-net and Labor market interventions	✓	✓		✓					✓
Ethiopia's Productive Safety Net Programme Country: Ethiopia Type: Safety-net	✓		✓		✓	✓	✓	✓	✓

Source: Tenzing, J. D. (2020). Integrating social protection and climate change adaptation: A review. *Wiley Interdisciplinary Reviews: Climate Change*, 11(2), e626.

Social protection programs in Africa

The following social protection programs from across Africa demonstrate good practice for reducing vulnerability and increasing resilience of poor and vulnerable populations.

Kenya's **Hunger Safety Net Programme** (HSNP) is an unconditional cash transfer program implemented by Kenya's National Drought Management Authority, under the Ministry of Devolution and the Arid and Semi-Arid Lands. Currently in its third phase, HSNP delivers regular and emergency cash transfers through bank accounts that beneficiaries can access biometrically at pay agency outlets, by entering a PIN number at an ATM, or over the counter at a local bank branch. The program promotes financial inclusion by developing beneficiary trust in, and capacity for, using financial services; strengthens institutional capacity and coordination among stakeholders; and includes a monitoring and evaluation system that provides continuous feedback to improve the implementation of transfers. During droughts, cash transfers from the program are triggered by a Vegetation Condition Index, enabling households to meet their immediate needs, thus reducing their vulnerability.

Ethiopia's **Productive Safety Net Programme** (PSNP) was specifically designed as an ASP, to enable vulnerable rural households to deal with climate-induced food insecurity. PSNP has three components: safety net transfers for food insecure rural households; enhanced access to complementary livelihood services; and institutional support to strengthen safety net systems. With two main mechanisms for vertical and horizontal scaling, the PSNP has high anticipatory capacity at the systems level. Around 20 percent of the PSPN budget is earmarked for contingency funding through a Risk Financing Mechanism, which includes a suite of financing instruments and financial layering to ensure timely disbursement in the aftermath of a climate shock. Contingency planning relies on early warning information, hazard identification,

response planning (including the targeting of transitory beneficiaries), public works activities and budgeting, operational support planning, and plans that are revised based on updated climate information. The cash payments from PSNP have had a modest positive effect on the absorptive capacity of household beneficiaries, with a reported reduction in the initial impact of drought and speedier recovery afterwards, compared to non-beneficiary households.⁹⁰ The evidence on the success of the PSNP as an ASP mechanism is, however, mixed – it has been linked to maladaptation in some cases, for instance by supporting an increase in non-farm income through the exploitation of natural resources.⁹¹

The **Third Northern Uganda Social Action Fund Project for Uganda** (NUSAF 3) aims to provide income support to build the resilience of vulnerable households in northern Uganda. The first component, labor-intensive public works (LIPW) and disaster risk financing, provides beneficiaries from poor and vulnerable households with a seasonal transfer for multiple years in return for their participation in LIPW; and includes a mechanism for providing ex ante finance in the aftermath of climate shocks. LIPW has supported 11,700 households with grants and 285,500 people through temporary employment wages.⁹² The second component extends livelihood support to poor and vulnerable households to increase their productive assets and incomes. NUSAF 3 is an example of how behavioral components woven into the design of a project can blend with ex ante disaster risk financing and dependable livelihood support, to help build the resilience of vulnerable households in the face of disaster.

Social protection systems have been implemented in rural areas more than in urban settings. The **Urban Productive Safety Net Project** (UPSNP) is one of few urban social protection schemes in Sub-Saharan Africa, the first in Ethiopia. Although the scheme is not an ASP by design, it contains innovative approaches that can enhance the

resilience of vulnerable communities. For instance, UPSNP includes a pilot program focused on youth employment to leverage the potential of young people and increase their income; and provides mobile childcare and early learning facilities in public works, to encourage the participation of women. The project also includes financial inclusion mechanisms, enabling many beneficiaries to open bank accounts for the first time. In the wake of the COVID-19 pandemic, UPSNP adapted its delivery systems to provide monthly cash transfers as a safety net. As of September 2020, UPSNP is reported to have reached over 600,000 beneficiaries, of which 60 percent are women; paid livelihood grants to up to 51,000 beneficiaries to start small businesses; and linked more than 60,000 people to social services.⁹³

The **Sahel Adaptive Social Protection Program (SASPP)** is a multi-donor, US\$ 75 million ASP managed by the World Bank,⁹⁴ which aims to address the high rates of poverty, displacement, and vulnerability to climate change in the Sahel region.⁹⁵ In its first phase (2014-2019), the program supported the inclusion of climate-related features into the design and implementation of existing social safety nets in six countries in the Sahel (Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal). Among other things, adaptation considerations were integrated into public works to build community assets that address disaster risks, ex ante risk financing mechanisms were established, and livelihood support was provided to enhance resilience.⁹⁶ Several innovative tools were piloted – including, for instance, a conditional cash transfer program in Tekavoul, Mauritania, to promote positive behavioral changes that support resilience, related to early childhood development, hygiene, and nutrition; the promotion of ‘mobile money’ in Burkina Faso to increase efficiency and security; and the use of satellite imagery to model food insecurity and improve drought prediction in Mauritania and Niger.

The first phase of SASPP directly supported nearly two million people,⁹⁷ and succeeded in its aim to respond rapidly to climate impacts, and to scale up horizontally to reach those in transitory poverty due to climate shocks.⁹⁸ The second phase (2020-2025) incorporates the lessons learned from the first phase and pilots innovations within the six countries. The SASPP provides an interesting example of how SPP can consider climate change into its design and build

on its experience to further contribute to transforming livelihoods to address the structural causes of vulnerability to climate change, making them Adaptive Social Protection Programs.

Initial lessons learned with ASPs in Africa

The initial lessons of experience with ASP program implementation show that there are enormous benefits to leverage the potential of social protection programs. Some of the adjustments needed for social protection systems to cope with an increase in climate shocks include:

- **Social protection (actors and institutions) must participate in planning and coordination processes relevant to climate change, such as national adaptation plans, NDC plans, just transition plans, national disaster risk reduction plans and any other plans or coordination mechanisms for addressing climate risks.**
- **Coordination of cross-sectoral policies related to climate change must be reflected in the design of climate-sensitive social protection systems (including active labor market policies, DRR, Disaster & Loss, portability of rights, etc.).**
- **Innovative and collaborative approaches based on lessons learned and evidence, as well as cross-sectoral collaborations, are necessary to improve every aspect of social protection systems with regard to their adaptation to the evolving needs of the population in a changing climate, assessing specific vulnerabilities to climate risks along the life-cycle, including persons with disabilities, women and children, indigenous people, etc.**
- **Adjust parameters to build a climate adaptation specificity to deliver pre-specified benefits to workers and their family affected by the occurrence of pre-identified climate risks, including sudden or slow onset disasters, possibly triggered by early warning mechanisms part of climate monitoring systems.**
- **Develop communication with rights-holders on climate risks and the benefits of climate-sensitive social protection schemes including social insurance.**
- **Systematize post disaster assessment to scale up and adapt social protection benefits to meet the specific needs of affected rights-holders.**



Photo: M. Lang/Shutterstock