

C7 Social protection and decent rural employment for CSA



C7 - Overview

C7 - 3 Social dimensions of climate change

C7 - 4 Promoting CSA for the most vulnerable through social protection

C7 - 5 Decent Rural Employment and CSA: the Green Jobs approach

C7 - 6 Conclusions

C7 - Acknowledgements

C7 - Acronyms

C7 - References

Overview

There is enormous potential to make the agricultural sectors more sustainable and increase the environmental and socio-economic benefits they deliver. Sustainable agricultural development could generate considerable opportunities for job creation in environmental protection and sustainable land management, natural resource management and preservation, sustainable agritourism, organic farming and local food systems.

These opportunities can be realized through the promotion of decent, green jobs, which can be done through skills training and capacity development programmes, with a special focus on youth, and social protection. Social protection contributes to food security and builds the resilience of the rural poor to the impacts of climate change. It allows vulnerable rural household to avoid adopting negative coping strategies that harm the environment, and gives them a measure of protection against the impact of climate-related shocks. By promoting sustainable agricultural practices, social protection initiatives can also support climate change mitigation.

This module provides theoretical approaches related to social protection and decent rural employment. It showcases practical examples of country-level interventions that have proven successful and have the potential to be replicated in other contexts. [Chapter C7-3](#) presents the social dimensions of climate change and considers the relationships that connect agriculture, climate change and poverty. [Chapter C7-4](#) presents how social protection, through its protective, preventive, promotive and transformative functions, can support climate-smart agriculture, strengthen household risk management and open up opportunities for households to engage in a greater range of productive activities. [Chapter C7-5](#) focuses on the relationship between climate-smart agriculture and decent rural employment and green jobs, and looks at the link between employment and climate change. It provides a definition of the terms 'decent rural employment' and 'green jobs' and outlines why green jobs are climate-smart. The chapter concludes with some concrete examples of FAO work in this area.

Key messages

- Climate change, agriculture, and poverty are closely intertwined. Promoting climate-smart agriculture in conjunction with policies and programmes on social protection and decent rural employment can address the issues of climate vulnerability, rural poverty and the degradation of agricultural assets.
- Climate-smart social protection systems that can respond to shocks can enhance the resilience and decrease the vulnerability of the rural poor. They can reduce the need for recurrent and continued humanitarian aid, facilitate an effective response to crisis situations, and ensure that climate change adaptation and mitigation are embedded into rural poverty reduction strategies.
- Collaboration between government ministries (e.g. agriculture, social protection, finance, and environment) play a key role in ensuring that interventions related to emergency response, sustainable development and climate change adaptation and mitigation are carried out in a coherent manner. Greater cross-sectoral collaboration can establish mutually supporting relationships between humanitarian actions and long-term development programmes, which can build the productive capacity of impoverished communities and at the same time promote the adoption of climate-smart agricultural practices.
- By ensuring that no one is left behind, social protection can provide tools to protect the most impoverished communities against the impact of climate-related shocks. Over time, social protection initiatives can build the capacity of households and communities to withstand and overcome threats and crises, and support their access to broader range of services designed to promote sustainable production and economic growth.
- Along with significantly reducing environmental risks and addressing ecological scarcities, a shift to a green economy can improve overall well-being and promote greater social equity. Such a shift could create up to 60 million additional jobs, with net gains in employment higher in developing countries.
- To harness the potential of the green economy to create employment, especially for youth, there is a need for a package of integrated mechanisms that include innovative, appropriate, and affordable technologies; skills development and training; and policy support.

Social protection dimensions of climate change

Important progress has been made in reducing poverty around the world. Nevertheless, as the [2030 Agenda for Sustainable Development](#) has explicitly recognized, eradicating poverty remains a major challenge. In 2016, 767 million people were considered extremely poor, living on less than USD 1.90 a day (World Bank, 2016), and 795 million were undernourished (FAO, 2015a). Gains made in reducing poverty have not been even across the globe. Some regions still lag behind. Close to 85 percent of the world's poorest people are concentrated in sub-Saharan Africa and South Asia (World Bank, 2016). Poverty is overwhelmingly a rural phenomenon. In 2017, 70 percent of the world's extremely poor live in rural areas; 64 percent work in agriculture; and most of them rely on subsistence farming as their main source of income. For many poor households, their labour is their only asset. Globally, poverty ratios are three times higher in rural areas than in urban areas, and agricultural workers are four times more likely to be poor than workers in other sectors (World Bank, 2016). Agricultural production relies heavily on these small-scale, often poor farmers. In developing countries, these farmers produce most of the food. In Asia and Africa, for example, 80 percent of food production comes from small-scale farms (IAASTD, 2016).

Agriculture, climate change and poverty are strongly connected. The impacts of climate change on agriculture disproportionately affect the poor, and impoverished communities are more exposed to hazards. Over 90 percent of the world's poor live in risk-prone contexts (Global Humanitarian Assistance, 2015). These communities have less capacity to manage risk and cope with crises, and as a result, their assets and livelihoods, and their entire socio-economic environment, are more heavily affected by climate shocks (Rentschler, 2013; Hallegatte *et al.*, 2016). In the aftermath of a disaster, smallholder farmers may be forced to resort to what are known as negative coping strategies. To meet urgent needs, they may, for example, adopt unsustainable, environmentally harmful agricultural

practices that deplete their long-term assets. A recent simulation study has looked at the potential impacts of climate change and their relationship with pro-poor policies. The study found that in the absence of pro-poor policies, by 2030, an additional 35 to 122 million people could be in poverty because of climate change. When factoring in pro-poor policies, the impacts of climate change would 'only' push 3 to 16 million people into poverty (Hallegatte, *et al.*, 2016).

Given the strong links between climate change, agriculture and poverty, the promotion of climate-smart agriculture should be integrated within national and sectoral policies and plans for relieving poverty and addressing some of its root causes. This is treated in greater detail in [module C3](#) on policies and programmes. Investing in strategies to build resilience, including social protection, could save about USD 100 billion a year globally (Hallegatte *et al.*, 2017).

FAO has been working to develop a comprehensive approach to reducing poverty and building resilience. Social protection is a crucial element of this approach, and a key aspect of FAO corporate strategy. The Organization recognizes the contribution social protection makes to livelihoods and rural development strategies and resilience. Social protection serves to break the vicious cycle of social and economic deprivation, increased vulnerability to poverty and exclusion, and heightened exposure to threats and crises. Promoting decent employment in rural areas is also crucial for generating incomes and reducing rural poverty. FAO supports countries in the development of policies, strategies and programmes that foster the creation of decent employment opportunities in rural areas, especially for youth and women. See also [module C6](#) on the integration of gender equality issues in the conceptualization, design and implementation of climate-smart agriculture interventions.

Promoting climate-smart agriculture for the most vulnerable through social protection

C7 - 4.1. What is social protection?

The Inter-Agency Social Protection Assessment (ISPA) notes that social protection encompasses all: sets of policies and programs aimed at preventing or protecting all people against poverty, vulnerability, and social exclusion throughout their lifecycles, with a particular emphasis towards vulnerable groups. (ISPA, 2016, p.1)

FAO, which places particular focus on rural populations, defines social protection as a set of policies and programmes that addresses economic, environmental and social vulnerabilities to food insecurity and poverty by protecting and promoting livelihoods (FAO, 2017).

Social protection programmes, supported by appropriate policies and institutional frameworks, and managed by common or coordinated tools, should seek to address risks throughout the life cycle in a coordinated and harmonized manner (Rawlings, Murthy, and Winder, 2013). A systematic approach is particularly important when considering the contribution of social protection to climate-smart agriculture.

Traditionally, social protection has been understood as encompassing:

1. **Social assistance**, which refers to non-contributory transfer programmes targeted in some manner to the poor, excluded or vulnerable. These are cash and/or in-kind transfer programmes that seek to reduce poverty by redistributing wealth and/or protecting households against income shocks. Social assistance programmes

are intended to ensure a minimum level of well-being and a minimum level of nutrition, or help households manage risk (FAO, 2003). These programmes vary from cash or near cash (vouchers) to in-kind transfers. Examples of social assistance schemes include: school feeding or mother/child supplemental feeding programmes; conditional or unconditional cash transfers; food vouchers; food and fuel price subsidies when targeted to the poor; labour-intensive public works schemes, and fee waivers for essential services (Grosh *et al.*, 2008). Some of these instruments are detailed in section 6.2 of this module.

2. **Social Insurance**, which includes all contributory programmes from employees, employers or the state. The objective of these programmes is to protecting individuals or households against the harmful impact of shocks resulting from personal circumstances, life-cycle or livelihood risks. Examples include publicly provided or mandated insurance schemes against old age, disability, death of the main household provider; maternity and sick leave; and social health insurance. Agricultural insurance schemes, which cover policy holders against the loss of agricultural production due to natural hazards, are another example of social insurance. In all these cases, beneficiaries receive benefits or services in recognition of their contributions to an insurance scheme (Grosh *et al.*, 2008) (FAO, 2015b).
3. **Labour market policies and interventions**, which provide unemployment benefits, build skills and ensure better access to the workforce (FAO, 2015b). They are classified into active and passive labour market policy measures. Active measures refer to mechanisms, such as employment incentives, entrepreneurial support and microcredit for small enterprises. Passive measures are policy or programme that aim to establish minimum standards for employment and ensure decent and inclusive work. (FAO, 2015b). [Chapter C7-5](#) describes the contribution of labour market policies and programmes to climate-smart agriculture.

Research on the impact of social protection has demonstrated their positive impact on various dimensions of poverty. Beyond simply addressing financial deprivation, social protection can nurture social development and support livelihoods. The four functions traditionally attributed to social protection are: protection, prevention, promotion and transformation (Devereux and Sabates-Wheeler, 2004). As described by the 2015 State of Food and Agriculture (SOFA):

*"social protection can play a **protective** role in providing means (cash or in-kind) to access food and mitigate the impact of shocks. It can have a **preventive** function in averting deeper deprivation by strengthening resilience against shocks (and stresses) and preventing loss of incomes and assets. It can support the accumulation of resources to sustain livelihoods (e.g. through asset transfers and public works). Social protection can also play a **promotive** function by directly supporting investments in human resources (nutrition, health, education and skills development) and by reducing liquidity constraints and income insecurity to induce investments in farm and non-farm activities. It can also have a **transformative** function in the lives of the poor through reorienting their focus beyond day-to-day survival towards investments in the future, by shifting power relations within households (as social protection can empower women) and by strengthening the capabilities and capacities of those living in poverty to empower themselves."* (FAO, 2015, p.15).

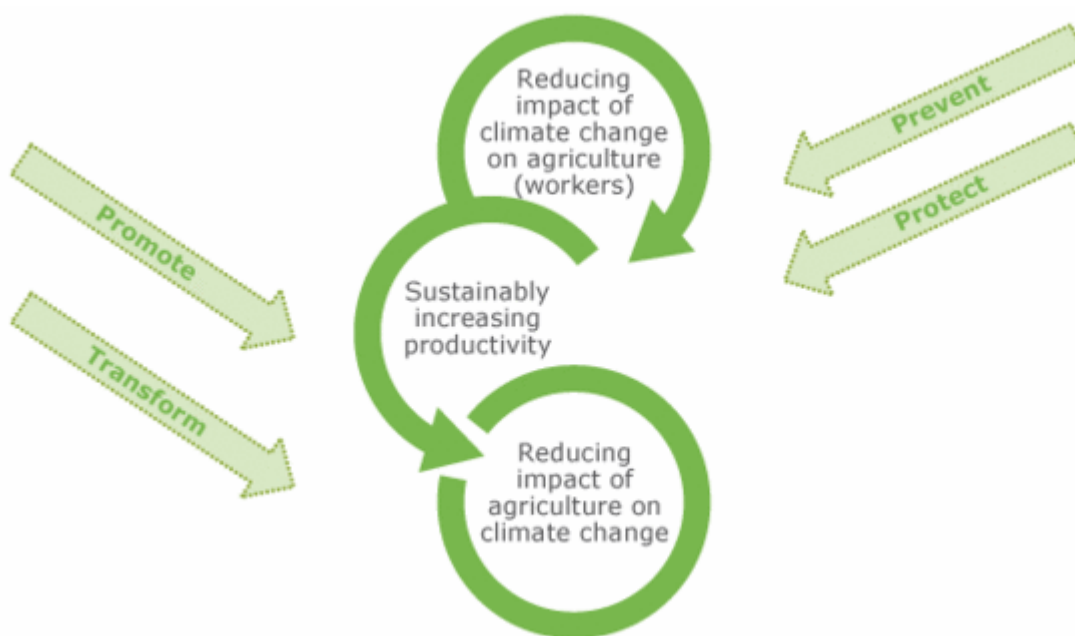
These functions of social protection in relation to climate-smart agriculture are further developed in chapter C7-4.2.

C7 - 4.2. Key functions of social protection in climate-smart agriculture

Climate-smart agriculture is not a component of social protection. However, social protection has the potential to contribute to the objectives of climate-smart agriculture, which are: i) sustainably increasing productivity, ii) reducing the impact of climate change on agriculture [social protection can be instrumental in protecting in particular vulnerable farmers and agricultural workers] and iii) reducing agriculture's impact on climate change. This chapter examines how social protection can support the transition to climate-smart agriculture, mainly through its role in climate change adaptation and, indirectly, in climate change mitigation, and through its capacity to

enhance the productive capacity of vulnerable farmers, through the four functions represented in Figure C7.1. The chapter's first section looks at social protection as a risk management tool for climate change adaptation. The second section considers the potential contribution social protection can make to production and climate change mitigation.

Figure C7.1. The contribution of social protection to climate-smart agriculture through its four functions



Social protection as a risk management tool

Adaptation is an adjustment process carried out in response to the impacts of climate change. This adaptation process must also address the impacts and potential damages of climate-related hazards. At the programmatic level, disaster risk reduction and climate change adaptation overlap (UNISDR, 2009). It is in these overlapping areas where social protection can make an important contribution.

In the face of climate-related disasters, vulnerable people are at an increased risk of death, the loss of many, if not all, of their assets, and the end of their livelihoods. As mentioned previously, those affected by disasters may be forced to resort to negative coping strategies, which can have long-term consequences on human development and agricultural production. Those affected may, for example, sell off whatever productive assets they have left; consume less food or eat cheaper, less nutritious foods; withdraw their children from school; or exploit the natural resources they have access to in unsustainable ways. Social protection programs stabilize income and hence avoid resorting to these harmful negative coping strategies. Furthermore, social protection policies and programmes can play a more systematic role in climate change adaptation when designed in a risk-informed manner to help prevent poor and vulnerable households from falling deeper into poverty, reduce their overall risk exposure, and contribute to long-term adaptation to climate change (Kuriakose, *et al.*, 2012). The interactions between social protection, disaster risk reduction and climate change adaptation are illustrated in Figure C7.1 and further detailed in figure C7.2.

Figure C7.2. The contribution of social protection to disaster risk reduction through its four functions.



Source: Authors (see acknowledgements)

The role of social protection in disaster risk reduction has been recognized at the highest levels. The Sendai Framework for Disaster Risk Reduction 2015-2030, adopted at the Third United Nations World Conference on Disaster Risk Reduction, highlighted the need to promote and support the development of social safety nets and social protection as disaster risk reduction measures linked to, and integrated with, livelihood enhancement programmes (FAO, 2017). At the 2016 World Humanitarian Summit, the Social Protection Inter-agency Cooperation Board issued a statement recognizing the key role of social protection, and in particular its linkages with humanitarian action to bridge the gap between humanitarian responses and sustainable development. Reducing the exposure of vulnerable farmers to shocks, limiting the impact of these shocks and supporting adaptation measures is critical for climate-smart agriculture.

Before a climate-related shock even happens, social protection can play a key role in addressing the root causes the economic, social and environmental vulnerability to these shocks. Through its protective, preventive and promotive functions, social protection can also prevent losses of assets during an emergency. Access to social protection enhances the economic capacity of the poor. It allows them to accumulate assets, providing a cushion against shocks, which enables them to maintain levels of consumption and effectively manage risks (FAO, 2017). Specific prevention measures, such as social insurance, weather-based insurance, social transfers, and other instruments may help reduce vulnerability and decrease the impact of a probable risk by increasing the availability of coping strategies in the face of disasters (FAO, 2017). Agricultural insurance schemes, which may, for example, pay benefits based on a variety of indices, such as rainfall, average yields per area and satellite-monitored vegetation conditions, support the management of climate-related risks for farmers (FAO, 2015). For vulnerable small-scale farmers, however, taking advantage of these schemes can be difficult owing to a variety of factors, such as the cost of premiums, illiteracy and access to information, and a lack of trust in insurance providers.

Social protection systems have proven useful in delivering post-disaster relief and recovery assistance. In these situations, they can meet the increased need of regular beneficiaries and expand their programs to protect a wider group of vulnerable people against the impact of a specific threat (FAO, 2017). In the risk preparedness process, responding to a shock is made easier when the existing social protection programmes include specific disaster response mechanisms, such as administrative systems and coordination mechanisms. An example is a national early-warning system that triggers built-in early action plans based on agreed standard operating procedures. These disaster response mechanisms scale up assistance beyond the core target group (usually the chronically poor) to include people who are particularly affected by the disaster. Achieving this will require the mobilization of resources and efforts, before and after disasters, to inform, register and enroll new beneficiaries, and deliver benefits quickly. Successful experiences in scaling up existing social protection schemes are detailed in Box C7.1.

Box C7.1 Examples of social protection interventions supporting responses to climate-related disasters

Philippines - an example of 'piggybacking'

In the Philippines, to provide emergency relief following typhoon Haiyan, the government and humanitarian groups worked together to provide food and cash assistance through the *Pantawid Pamilyang Pilipino* Programme. This social protection programme reached people in need faster by utilizing existing targeting, registration and delivery systems. It was the first time the Programme had been used for this purpose, which was not part of the original mandate. This is an example of 'piggybacking'; building on a social protection programme's administrative system to deliver transfers in response to disaster (Bowen, 2015).

Kenya - example of horizontal expansion

The [Hunger Safety Nets Programme](#) in Kenya focuses on improving food security and addressing hardships caused by crop losses resulting from unpredictable weather conditions. The Programme, which provides regular cash transfers and includes a scalable emergency cash transfer system in response to face droughts, is linked to the National Drought Management Authority Early Warning System. The national early warning system assesses the drought phase classification down to the county level, and uses the Vegetation Condition Index to determine which areas require scaled-up interventions. This information is used by the Hunger Safety Nets Programme as a trigger for raising coverage during severe and extremely severe drought. In 2016, stronger-than-expected droughts led to a significant increase in food insecurity. In response, the Hunger Safety Nets Programme continued to provide cash transfers to the households targeted in the counties where it operates, and scaled up its activities to provide emergency relief to around 79 000 additional households (WFP Kenya, 2017).

Social Protection's promotive and transformative functions

Social protection systems, through their promotive and transformative functions, can strengthen the adaptive capacities of all relevant stakeholders beyond the short term. They can directly or indirectly foster agricultural production and contribute to climate change adaptation and mitigation in the longer term. Social protection programmes that include capacity development (see [module C1](#)) can be important entry points for promoting climate-smart practices. For instance, cash-for-work initiatives or productive safety nets can be designed in such a way as to engage communities in sustainable natural resources management and generate 'green jobs' (see [chapter C7-5](#)) in areas, such as waste management, watershed management, reforestation and soil erosion prevention (FAO, 2017). Social protection also helps enable beneficiaries to invest their time and energy, and potentially their

financial resources in adopting effective and innovative natural resource management practices.

One of the programmes that pioneered the integration of disaster risk management and social protection is the Ethiopia Productive Safety Net Programme. Launched in 2005, the Programme targets food insecure households in the most vulnerable areas of Ethiopia. It provides them with a package of services depending on their profile. Labour-constrained households receive food or cash assistance. Other households participate in labour-intensive public works, at times farm work is not an option, to improve community assets. Public works include small-scale irrigation, soil and water conservation, road building, and the construction of schools and clinics. The Ethiopia Productive Safety Net Programme is complemented by the Household Asset Building Programme, which was launched in 2010 to promote the diversification of household incomes and building of productive assets by providing training and supporting access to financing (World Bank, 2013). An evaluation of the third phase of the Ethiopia Productive Safety Net Programme has found that the programme has had positive impact in climate change mitigation and adaptation. It has helped households smooth consumption and kept them from having to deplete their assets when faced with shocks. The public works have reduced erosion, improved filtration in water tables and enabled the introduction of small-scale irrigation systems, which have strengthened household resilience (DFID, 2015). Based on the third phase evaluation, the fourth phase of implementation seeks to amplify the Programme's capacity to build household resilience to the impacts of climate change, particularly climate-related shocks. It will work to increase coverage to the chronically poor, expand contingency plans, and improve the planning of public works and the provision of livelihood support. This experience in Ethiopia has demonstrated the potential of an integrated approach that links social protection, disaster risk reduction, and the promotion of climate-smart agriculture. This has been achieved partly through the rehabilitation or construction of community structures that are conducive to climate-smart agriculture.

A growing body of evidence indicates that social protection interventions can also have a productive impact. By improving nutrition and health, and increasing educational attainment, social protection interventions can develop human capital and enhance labour productivity and employability, but can also have a more direct impact on production. For example, the evidence generated through the Protection to Production Project (see Box C7.2) shows that social protection interventions, in particular cash transfers, can influence the productive capacities of beneficiary households (Davis *et al.*, 2016). Poor households have limited resources and lack the financial means and security to engage in productive activities. Poor farmers who are exposed to a number of natural risks, tend to opt for lower risk activities that may shield them from the negative impacts of potential shocks, but generate lower returns, which traps them in poverty (Rosenzweig and Binswanger, 1993). By providing regular, predictable cash transfers, social protection helps beneficiaries overcome these liquidity constraints and provides an insurance mechanism that covers them should potentially risky ventures fail. This allows vulnerable farmers to engage in higher-risk, higher-return agricultural practices. A recent study carried out in Zambia, analysed the effects of an unconditional cash transfer on risk taking and found that, not only did the transfer reduce the farmers' risk aversion, but it also encouraged them to invest in modern inputs (Prifti *et al.*, 2017). Through its promotive functions, social protection provides the complementary support that vulnerable farmers need to build the skills, acquire knowledge and gain access to the assets they require to engage in climate-smart agricultural practices (see [module C1](#) on human and institutional capacity development for climate-smart agriculture). Evaluations of seven cash transfers programmes in sub-Saharan Africa found that the transfers enhanced agricultural activities among beneficiary households through the increased use of agricultural inputs and built up livestock holdings. Beneficiaries also gained greater flexibility in how they were able to allocate labour, which led to a reduction in agricultural wage labour (Box C7.2).

Box C7.2 From Protection to Production: Contributing to building the economic case for social protection

FAO, in partnership with the United Nations Children's Fund (UNICEF), national research institutions and the national governments of seven countries (Ethiopia, Ghana, Kenya, Lesotho, Malawi, Zambia and

Zimbabwe) has generated evidence on the economic and productive impact of national cash transfer programmes in the region. The development of rigorous impact assessments was carried out in close coordination with government counterparts and imbedded in national policy processes and platforms. This collaboration strengthened the case that social protection should be seen as an investment, not simply an expenditure. It also addressed public misperceptions around dependency and labour disincentives, and provided solid findings that show how cash transfers can help poor and marginalized families to build assets, empower themselves and engage in economically productive activities.

Evidence coming from national impact assessments and learning activities has increased the awareness among policy makers that social protection is an effective measure to combat hunger, reduce poverty and foster rural development. This has led to concrete changes in policy and operational mechanisms in terms of programme design, adjustments and improvements in transfer size. It has also strengthened community development, by targeting and increasing access and links to other complementary activities. More importantly, by building the economic case for social protection, FAO supports national policy discussions and actions on the expansion of coverage of social protection and the development of social protection systems. This is one of the targets of Sustainable Development Goal (SDG)1, which focuses on ending poverty in all its forms. This work has also contributed to increased allocations of domestic investment for social protection in Ghana, Kenya, Lesotho and Zambia and other countries.

The evaluations found that cash transfer programmes had a variety of impacts on agricultural activities. In Zambia, the Child Grant model of the Social Cash Transfer programme led to a 36 percent increase in the area under cultivation and an increase in the use of agricultural inputs, including seeds, fertilizer and hired labour. This resulted in an approximately 37-percent increase in the value of overall production. This additional production was primarily sold in markets rather than consumed. The cash transfers were an income multiplier at the household level, with the increase in the per capita consumption induced by the programme being 25 percent greater than the transfer itself. Overall, the grants in Zambia initiated a transformative process that permitted beneficiary households to make more investments in capital for agricultural production and new economic activities.

In Lesotho, the Child Grants Programme led to an increase in the use of crop inputs and expenditures. For example, the share of households using pesticides rose by eight percent. As in Zambia, the increase in the use of inputs resulted in an increase in maize production. For households that had labour constraints, sorghum production increased. These households also obtained more harvests from their garden plots. In Zimbabwe, the Harmonized Social Cash Transfer led to an increase in expenditures on fertilizer and in the percentage of households producing groundnuts. In Malawi, the Social Cash Transfer Programme facilitated an increase in both maize and groundnut production. Cash transfer programmes led to an increase in expenditure on seeds in Ghana, but a decrease on such expenditures in Kenya. In these two countries, evidence did not indicate that transfers led to growth in agricultural production. In both Kenya and Malawi, however, cash transfers did increase family food consumption obtained from domestic production.

In many of the programmes that were assessed, the cash transfers contributed to a higher proportion of beneficiary households accumulating livestock. In Kenya and Zimbabwe, beneficiaries tended to concentrate on small ruminants; in Lesotho on pigs; in Malawi and Zambia on a more diverse range of animals. In Ghana, the cash transfers had no effect on livestock ownership, and a disinvestment out of livestock production was observed in Ethiopia. In Ethiopia, Malawi, Zambia and Zimbabwe the ownership of agricultural tools increased.

For more information consult: [FAO's From Protection to Production](#)

Source: (FAO, 2017)

The impact of social protection programmes on sustainable agricultural production can be further reinforced by a taking a pro-active approach that builds on social protection's promotive and transformative functions. Such an approach can boost livelihoods and productive capacities of beneficiary households by providing them with a combination of social cash transfers, productive assets, agricultural inputs and/or technical training and extension services. FAO refers to this approach as 'cash+' interventionsⁱⁱⁱ. The cash transfer component addresses basic household needs and protects the beneficiaries assets from being depleted or lost, while the component that provides productive assets, technical training and extension services, can help kick-start a virtuous cycle of income generation that leads to economic empowerment, which is the key to increasing asset ownership, food security and dietary diversity.

Including a selection of nutrient-rich and adapted species and varieties (as addressed in detail in [module B1](#) on crop production) as inputs will make cash+ approaches more nutrition-sensitive. These approaches should also ensure that women farmers are not overlooked in terms of the opportunities they provide and the benefits they deliver.

A cash+ approach has recently been implemented in Burkina Faso, Lesotho, Niger, Mali, Mauritania and Somalia. Evidence shows its potential to improve household incomes, assets, productivity, dietary diversity and food security. Social protection interventions that follow such an approach also reduce the pressures these household face to adopt negative coping strategies, which makes them less vulnerable to future shocks related to climate or other factors (FAO, 2016a). In Burkina Faso, Initial impact assessments conducted one and two years after the end of the transfers show positive trends in terms of increased adaptive capacity of households to respond to climate-related shocks because the beneficiaries were better able to avoid negative coping strategies, increase their income and improve their diet (Sawadogo *et al.*, 2017). Whenever possible, this cash+ approach should be supported by governments through multisectoral policy and operational dialogue that brings together line ministries dealing with social protection, agriculture and livestock. As with other social protection systems, the implementation of social protection schemes that augment financial transfers with other inputs and services require support from appropriately designed policies and programmes.

Cash+ packages to stimulate the productive impact of social protection may be carried out by embedding the development of human capital and access to productive activities in the programme design. In Latin America, there has been a trend to make cash transfers conditional on school enrolment and health check-ups. Where services are lacking or of suboptimal quality, such conditions may not be a valid option. Recent evidence from Sub-Saharan Africa has also demonstrated that unconditional cash transfers have a similar impact on human capital outcomes. There may be options for developing schemes with conditions related to the adoption of sustainable practices. However, the complexities involved in implementing these schemes and the evidence of the relative effect of these conditions need to be taken into account.

C7 - 4.3. Social protection and CSA linkages in practice: opportunities and challenges

Social protection has the potential to contribute to climate-smart agriculture by enhancing risk management and supporting climate change adaptation and, indirectly, climate change mitigation. This contribution can be further reinforced if social protection programmes are explicitly designed with these functions in mind, and are supported by appropriate tools, which are partly described in this chapter.

One challenge regarding social protection programmes is coverage in rural areas. More than 70 percent of the world's population lacks adequate coverage by social protection, with inadequate coverage especially pronounced in rural areas (ILO, 2015a). Even as programmes and investments expand towards universal coverage, their coverage often remains limited in fragile contexts. Governments need to adopt proactive measures to extend the

coverage of social assistance and social insurance to those who are currently excluded from social protection. This will involve providing packages of programmes and services that are suited to rural areas and affordable and appealing to rural people.

Targeting is a method to select beneficiaries according to a program's objectives while at the same time ensuring fiscal affordability of social assistance schemes. Most countries have established a targeting system based on a mix of geographic considerations, and proxy means testing and/or community participation that involves screening or validation. However, targeting also involves administrative, financial, social and political costs. Additionally, the methodology used for targeting is critical for determining whether the rural poor are included in the programme or not. Increasing criticism of proxy means testing (e.g. Brown, Ravallion, and Van De Walle, 2016; Kidd, Gelders, and Bailey-Athias, 2016) has paved the way for new tools that better encompass the multidimensional nature of rural vulnerability. To ensure that the social protection system is responsive to climate-related shocks, a targeting system may need to be set up that is capable of differentiating chronically vulnerable beneficiaries from people who are temporally vulnerable after a climate-related disaster (Oxford Policy Management, 2016).

To effectively manage shocks social protection programmes should be risk-informed. Experience has shown that the faster support reaches people affected by a disaster, the less likely they are to resort to negative coping strategies (Asfaw and Davis, 2017). Governments need to have social protection tools available to be deployed swiftly in face of a disaster. A rapid response is facilitated when existing social protection programmes include specific disaster response mechanisms. A national warning system that triggers a built-in disaster response is an example of such a mechanism. Disaster response mechanisms should scale up assistance beyond the core target group (usually the chronically poor) to include people who are temporarily impoverished as a consequence of the shock. This requires sufficient capacity on the ground to conduct assessments, inform, register and enrol new beneficiaries, and deliver benefits quickly.

FAO supports the development of national capacities to design and implement shock-responsive and risk-informed social protection systems. For example, in partnership with the Red Cross Red Crescent Climate Centre, FAO has developed an interactive learning tool (Figure C7.3. Risk-Informed and shock-responsive social protection systems interactive learning game) to raise awareness about the linkages between policies on social protection, climate change and resilience, and build operational capacity in this area at the local and national level (FAO, 2016b).

Figure C7.3. Risk-Informed and shock-responsive social protection systems interactive learning game



It is conceived as a peer-to-peer and bottom-up learning tool that can provide hands-on experience on how shock-responsive social protection works. FAO also supports the gathering of evidence and the preparation of guidelines to strengthen the linkages between social protection and climate change adaptation and mitigation. By fostering global, regional and country engagement on these issues, FAO works to expand the development and strengthening of shock-responsive and risk-informed social protection.

Decent Rural Employment and Climate-smart Agriculture: the Green Jobs approach

C7 - 5.1. State of the problem and its connection to climate change

Agriculture continues to be the largest employer in the world. Nevertheless, in rural areas, unemployment and underemployment are high. There is a prevalence of informal and casual work. Earnings are low and insecure. There is limited coverage and enforcement of labour laws and unclear employment relationships. All of these factors perpetuate vulnerability, poverty and low productivity in rural areas. The International Labour Organization (ILO) identifies agriculture as one of the most hazardous sectors in the world, with agricultural workers being twice as likely to suffer fatal accidents than workers in other sectors. Child labour in agriculture, which accounts for 60 percent of child labour, perpetuates a cycle of poverty for the children, their families and communities. Rural employment is also marked by gender inequalities. Women are less likely than men to engage in wage employment and, even when they do, they are more likely to hold part-time, seasonal and/or low-paying jobs in the informal economy (FAO, 2012). Despite considerable increases in productivity in agriculture, similar progress has not been made in increasing social equity. Agricultural work continues to be linked with poverty, hazardous labour

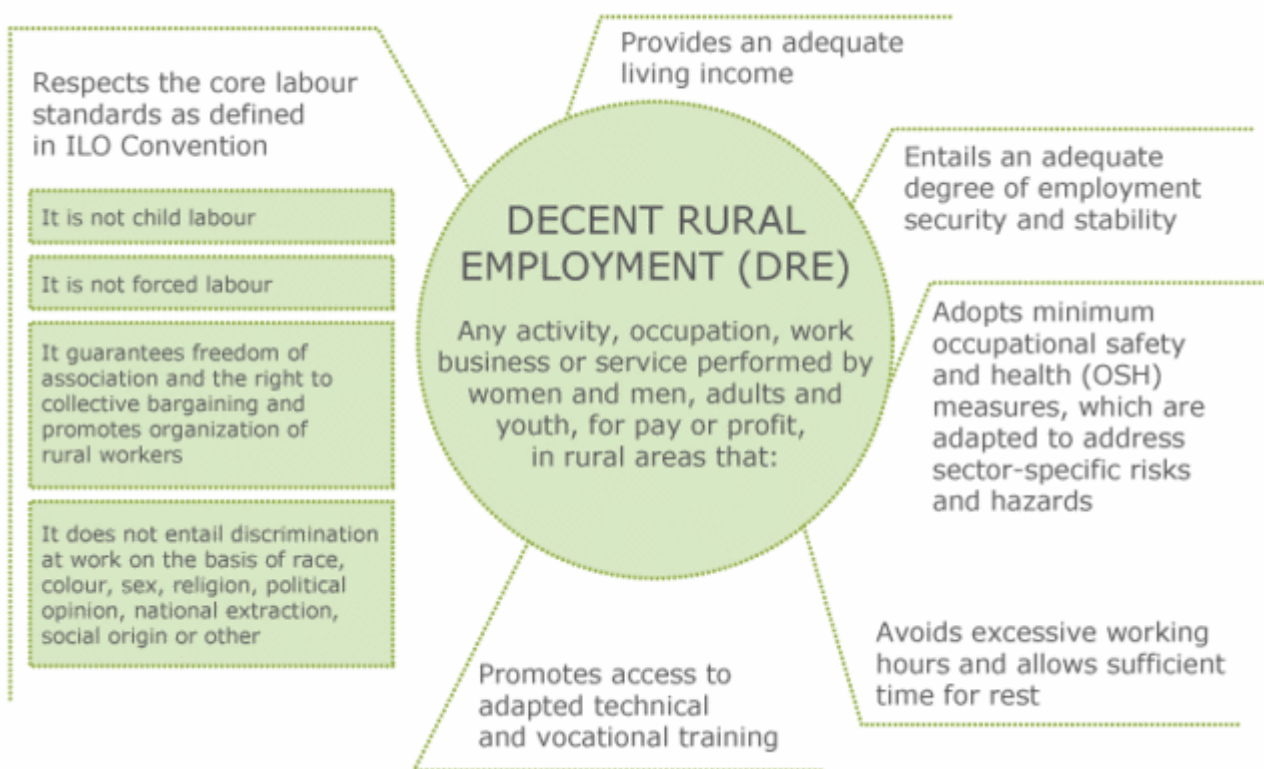
conditions and insecurity.

However, in making the shift to climate-smart agriculture, there is enormous potential to improve rural livelihoods. Climate change adaptation and mitigation in agriculture can not only make existing jobs more stable and productive, but can also generate opportunities for new sustainable, decent jobs in rural areas.

What is decent rural employment?

FAO defines decent rural employment (DRE) as decent work in agricultural sectors and rural areas that provides a living income and reasonable working conditions. In line with ILO definition of decent work¹, DRE is an approach and an aim to provide more and better employment opportunities to rural populations. It focuses on the fact that over three quarters of the world's poor lie in rural areas, with many of them depending on agriculture to make a living.

Examples of DRE include a wide range of safe and productive work. DRE can be found in rural enterprises hiring agricultural workers and providing them with adequate health and safety gears, guaranteeing their working rights, and paying decent wages; in youths who are self-employed in innovative small businesses and start-ups that enhance efficiency along the agricultural value chains, etc.



Source: FAO 2015 Understanding Decent Rural Employment: Factsheet. www.fao.org/3/a-bc270e.pdf

What are green jobs?

According to the ILO definition (ILO, 2016), jobs are green when they help reduce environmental degradation, and

ultimately lead to environmentally, economically and socially sustainable enterprises and economies.

Green jobs are decent jobs that:

- reduce consumption of energy and raw materials;
- limit greenhouse gas emissions;
- support adaptation to the effects of climate change;
- minimize waste and pollution; and
- protect and restore ecosystems.

C7 - 5.2. The potential of agriculture for green employment creation

The ILO estimates that the green economy can create up to 60 million additional jobs (ILO, 2012), with net employment gains higher in developing countries. For example, in 2015, 8.1 million jobs were created in the renewable energy sector (IRENA, 2016). To harness the employment potential of the green economy, it will be essential to work on supporting countries in formulating policies, strategies and programmes that increase the opportunities for the rural poor, in particular for young people (aged 15-24) and women to access decent green jobs. These kinds of national and regional interventions, which are examined in [module C3](#), should focus on enhancing, upgrading and developing skills and capabilities in ways that will allow the rural poor to adapt to a greener labour market. In this regard, a system-wide capacity development approach, which is dealt with in [module C1](#), will play a fundamental role. Strategies to achieve sustainable growth and decent work in agriculture should take into account national circumstances and priorities. At the global level, green job creation will simultaneously reinforce several of the Sustainable Development Goals (SDGs), particularly SDG8 on *Promoting Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All*, and SDG13 on *Taking Urgent Action to Combat Climate Change and its Impacts*.

Boosting green job opportunities in the agriculture sectors can respond to the triple challenge of conserving and protecting the environment through better management of natural resources; adapting to climate change through the provision of rural employment; and reducing greenhouse gas emissions through improved land, water, crop, livestock and manure management. Labour markets can undergo various transformations in the transition to a green economy. These transformations can result in the creation of additional jobs; job substitution; the elimination of jobs without replacing them; and the transformation of current jobs as skills and work methods become 'green' (UNEP, 2011).

The green economy has considerable potential to create employment for young women and men if the right skills development and investments are put in place. Currently, there is youth unemployment crisis. One of the consequences of this crisis is the outmigration of young people from rural areas, which is leading to the ageing of agricultural communities. If properly targeted, youth can become catalysts for the transformation that is needed to make agriculture sustainable and improve rural livelihoods in developing countries. For this to happen, age and gender must be taken into consideration when crafting responses and decent work principles need to be integrated into green job interventions at the policy level. A gender-responsive approach for climate-smart agriculture is addressed in [module C6](#). Meeting the demand for youth employment in the green economy requires innovative, appropriate and affordable technologies, skills development and training, and policy support.

Some of the potential areas where green jobs could be created in agriculture include (FAO, 2012):

- [conservation agriculture](#), integrated [pest management](#) and sustainable mechanization, which are knowledge-intensive practices that require an understanding of ecological processes, biodiversity and crop combinations

- and sequencing adapted to local conditions (see [module B1](#) on crop production);
- certification and branding for sustainable produce, which includes the labelling of sustainably and organically produced food;
- improvements in post-harvest storage and handling practices, transport infrastructure, and smallholder farmers' access to local, urban and regional markets;
- ecotourism for financing biodiversity protection;
- climate-smart livestock management (see [module B2](#) on livestock production);
- climate-smart fisheries and aquaculture (see [module B4](#) on fisheries and aquaculture);
- integrated production systems and bioenergy production used for cooking, process heating, and mechanical and electric power generation (see [module B5](#)).

Box C7.3 Zambia Green Jobs Programme 2013 - 2017

The Zambia Green Jobs Programme, is a partnership between the government of Zambia and United Nations agencies, including FAO, the United Nations Environment Programme (UNEP), United Nations Conference on Trade and Development (UNCTAD), the International Trade Centre (ITC) and the ILO, the lead agency. The programme works to promote more and better jobs for inclusive and green growth, and improve livelihoods for rural and urban households. It does this by supporting sustainable micro-, small- and medium- sized enterprises throughout the building construction value chain. It focuses on creating new green jobs and improving the quality of existing jobs by extending social protection and improving access to occupational safety and health services for workers in the construction sector. The Programme has created 2 889 decent and green jobs. Another 2 910 jobs have been upgraded with better working conditions that include higher incomes, written and signed employment contracts, access to social protection and health insurance schemes, provisions for occupational safety and health, freedom of association, increased rights at work and social dialogue. The Programme has reached over 14 000 people with direct messaging advocating for green business practices.

Source: [Zambia Green Jobs Programme](#)

Youth and gender-sensitive green jobs

Unemployed and unskilled rural youth represent a disadvantaged group on the labour market. They will need targeted assistance during the transition to a green economy. The majority of rural youth are employed in the informal economy. They generally contribute to family businesses, work as subsistence farmers, engage in home-based micro-entrepreneurs or labour in unskilled jobs. They typically earn low wages, are employed under casual or seasonal work arrangements and face unsafe, often exploitive working conditions. Their work situation compels many young people to migrate to urban areas. By 2050 the number of young people aged 15 to 24 is expected to increase and will account for almost 14 percent of the projected global population. Most of these young people will live in developing countries in Africa and Asia. In 2013, 286 million young people lived in working poverty (i.e. living below USD 4 per day) (ILO, 2015b). The challenges many of these young women and men face are daunting. Under education and the lack of adequate skills in young people remains a major concern, and represents an important barrier to transformative growth. Young people also face significant obstacles in gaining access to land, credit and markets. They often do not have the resources to acquire or lease land, or may be limited in this area by inheritance laws and customs. Young people's inadequate access to credit, financial services and markets, as well as their limited involvement in social and policy dialogue further hinder their ability to realize their full potential and contribute to economic development.

Young rural people are especially vulnerable to the effects of climate change, since they do not have adaptation and mitigation strategies of their own and have limited access to broader climate-smart programmes. Since young people in rural areas often cannot afford vocational training or tertiary education programmes, they are more likely to be laid off or excluded as society makes the transition to a green economy. Most young people are doubly vulnerable, in that they live in areas where the economy depends on agriculture sectors (and other sectors) that rely on natural resources and where endemic poverty persists (UNDP, 2013). The green economy can provide employment opportunities, but green investments in areas, such as organic farming, agritourism, certification and branding processes for organic and sustainable produce, and farm-to-market food systems, need to be specifically targeted to the youth. It is essential for young people entering the labour market in the green economy to upgrade their skills and knowledge and develop new ones. According to the European Centre for the Development of Vocational Training the transition to a green, low-carbon economy can affect skills in different ways: some skills may become redundant, as the demand for some jobs goes down; some skills will become more widely acquired, as the demand for other jobs increases; and new skills will need to be required, as new jobs are created and existing jobs become 'green' (OECD, 2014).

To give young people the skills they need to participate fully in sustainable economic development, FAO has designed and implemented the Junior Farmer Field and Life Schools (JFFLS) methodology. It is an innovative capacity development approach that trains vulnerable rural youth in the agricultural, entrepreneurial and life skills they need to earn a decent living, and become more productive and active members of their communities. Guided by a facilitator, JFFLS participants learn about agriculture and business in connection with more general life lessons and skills. A climate change module has been integrated into the JFFLS curriculum that deals with sustainable practices in agriculture and green jobs. The module provides JFFLS facilitators with the information they need to stimulate young people's participation in discussions about climate change, particularly its impacts on agriculture and the actions that agricultural producers can undertake to reduce their vulnerability to it (Box C7.4). The role of rural advisory services and farmer field schools are addressed in [module C2](#).

As climate change is expected to magnify existing patterns of gender inequality (UNDP, 2007/2008), the issue of gender will also need to be considered carefully if improvements are to be made in decent working conditions in the agricultural sectors (Box C7.4 describes a green job initiative in Jordan that includes women). Women's capacity to engage in green jobs may be limited by their already restricted access to training, skills development and modern technologies. Women are also discriminated against based on their age and lower socio-economic status. This is particularly true for impoverished rural women.

Box C7.4 FAO project on renewable energy production in Jordan

An example of a project focused on green employment creation, with a gender component is a programme implemented by FAO in Jordan: *Improving rural livelihoods and the environment through the integral utilization of residues of treated wastewater and organic solid waste for the production of renewable energy and compost in Mafraq Governorate* (2016-2018). There has been a large inflow of refugees into Jordan, which has had a significant political, economic and social impact. The FAO-implemented programme aims to enhance the growth potential of the local economy in the Mafraq Governorate and particularly in the Zaatari municipality. The Programme is an innovative intervention that promotes the development of private sector enterprises and stimulates the creation of decent, green jobs in an environmentally sustainable manner. This will be achieved by generating renewable energy through the adoption of labour-intensive processes related to sustainable 'waste-to-energy' (generating electricity or heat through the treatment of wastes) and 'waste to compost' (converting organic materials from waste to agriculturally beneficial composts) activities. This creates a 'triple win' situation, in that it reduces greenhouse gas emissions, lowers the costs of solid and liquid waste disposal in Zaatari municipality and Zaatari refugee camp, and generates opportunities for green jobs. Green jobs are created through the construction and operation of a solid waste segregation unit in Zaatari Municipality. Over a two-year

period, the target is to ensure that 20 percent of the decent jobs created at the solid waste separation site will be filled by women (as per ILO standards). The project will promote female employment, which is currently very low in comparable forms of employment in the Governorate. The projects' final beneficiaries will be the population of the host communities in the Mafraq Governorate, but also Syrian refugees in Zaatari camp. They will benefit from improved livelihoods, the reduction of greenhouse gases emissions and reduced risks of groundwater contamination. Agriculture producers, particularly pastoralists will also benefit through restored and improved fertility of the rangelands.

⁴Work 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, 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. (<http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>)

Conclusions

The challenges associated with climate change are daunting. Everyone will be influenced by its consequences, but it is the poor and vulnerable, particularly in rural areas, who will be the most affected. That is why there is a great need to address the social dimensions of climate change, by establishing effective and resilient social protection systems and generating opportunities for decent employment and green jobs in rural communities.

This module focuses on the human and social aspects behind climate change and describes how social protection and decent rural employment can be crucial in increasing the resilience of vulnerable groups, especially women and young people, in the face of the impacts of climate change.

Social protection can be instrumental in reducing the impacts of climate-related shocks, such as droughts, floods, landslides, tropical storms. Social protection interventions can also have a positive effect on production. There are several policy mechanisms that can be put in place to harness the potential of social protection in rural areas for climate-smart agriculture: increasing the coverage of social protection in rural areas, especially in fragile contexts; ensuring that social protection programmes are risk-informed and responsive to shocks, so that governments have the capacity to react swiftly to natural disasters; and creating linkages between social protection programmes and productive opportunities in the agricultural sector.

Climate change poses particular challenges to labour markets. Jobs will shift, and some will be irrevocably abandoned. However, millions of new green jobs can also be created. By bridging the apparent divide between economic growth and environmental protection green jobs are at the centre of socio-economic-environmental nexus and can provide a climate-smart way of meeting the challenges of food insecurity, environmental degradation and climate change. For economic growth to be greener and sustainable, policy support and capacity development will be essential. This will require that provisions be made so that young people can obtain adequate training to upgrade and develop their skills. It will also involve guaranteeing that green investments are targeted towards young people and that young women and men have equal access to opportunities for decent employment and green jobs. It will be also necessary to promote change at the policy level by ensuring that green jobs in agriculture, together with

youth and gender initiatives, are included in national development plans, strategies and programmes. Such an approach would demonstrate a firm, long-term commitment to making a transition to socially equitable climate-smart development.

Acknowledgements

Coordinating lead authors: Jeongha Kim (FAO), Corina Lefter (Ministry of Foreign Affairs, Romania), Ana Ocampo (FAO), Federico Spano (FAO).

Contributing authors: Natalia WinderRossi (FAO), Peter Wobst (FAO), Elena Arnal Alcobendas (Ministry of Foreign Affairs and International Development, France), Camila Munoz Jimenez (FAO).

Reviewers: Solomon Asfaw (FAO), Cecilia Costella (Red Cross Red Crescent Climate Center)

Notes: The module is an update of Module 16 *Making Climate-Smart Agriculture a work for the most vulnerable: the role of Safety nets in the Climate-Smart Agriculture Sourcebook* (2013) written by Carlo Scaramella (WFP) and Catherine Zanev (WFP) with contributions from Ugo Gentilini (WFP) and was reviewed by Niels Balzer (WFP), Volli Carucci (WFP), Alexandra Guyetsky (FAO), Nyasha Tirivayi (FAO) and Tamara van't Wout (FAO).

Acronyms

DRE Decent Rural Employment
ILO International Labour Organization
JFFLS Junior Farmer Field and Life Schools

References

Asfaw, S. & Davis, B. 2016. *Can cash transfer programmes promote household resilience? Cross-country evidence from sub-saharian africa.*

Bowen, T. 2015. [*Social Protection and Disaster Risk Management in the Philippines: The Case of Typhoon Yolanda \(Haiyan\)*](#). Policy Research Working Paper 7482. Washington, DC: World Bank.

Davis, B., Handa, S., Hypher, N., Winder Rossi, N., Winters, P., & Yablonski, J. 2016. [*From Evidence to action. The story of cash transfers and impact evaluations in Sub-Saharan Africa*](#). FAO, UNICEF and Oxford University Press.

Devereux, S. & Sabates-Wheeler, R. 2004. *Transformative Social Protection*, IDS Working Paper 232, Brighton: IDS.

Department for International Development (DFID). 2015. [*Ethiopia Profuctive Safety Net Programme Phase 4 \(PSNP 4\)*](#). Retrieved March 15, 2017, from International Climate Fund Case Studies.

FAO. 2003. *Safety Nets and the Right to Food. Intergovernmental Working Group for the Elaboration of a Set of Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security Information Paper.* Rome.

FAO. 2012. [*Decent Rural Employment for food security: A case for action*](#). Rome.

- FAO. 2015a. [*State of Food Insecurity in the World*](#). Rome.
- FAO. 2015b. [*The State of Food and Agriculture. Social protection and agriculture: Breaking the cycle of rural poverty*](#). Rome.
- FAO. 2016a. *Risk-informed and shock-responsive social protection*. FAO engagement in developing capacity on the linkages between Social protection, Resilience and Climate Change policies. Unpublished internal document.
- FAO. 2016b. [*The role of Social Protection in protracted crises. Enhancing the resilience of the most vulnerable*](#). Rome.
- FAO. 2017. [*FAO's Social Protection Framework. Enhancing food security, nutrition and rural development outcomes for all*](#). Rome.
- Global Humanitarian Assistance. 2015. [*Global Humanitarian Assistance Report 2015*](#).
- Grosh, M., del Ninno, C., Tesliuc, E. & Ouerghi, A. 2008. [*For Protection and Promotion. The Design and Implementation of Effective Safety-Nets*](#). Washington, DC: World Bank.
- Hallegatte, S., Bangalore, M., Bonzanigo, L., Fay, M., Kane, T., Narloch, U. & Vogt-Schilb, A. 2016. [*Shock Waves: Managing the Impacts of Climate Change on Poverty*](#). Climate Change and Development Series. Washington, DC: World Bank.
- Hallegatte, S. Vogt-Schilb, A. Bangalore, M. & Rozenberg, J. 2017. [*Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*](#). Climate Change and Development; Washington, DC: World Bank. License: CC BY 3.0 IGO.
- International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). 2016. [*Agriculture at a Crossroads*](#).
- International Labour Organization (ILO). 2012. *Working towards Sustainable Development: Opportunities for decent work and social inclusion in a green economy*. International Labour Office. Geneva.
- ILO. 2015a. [*World Social Protection Report 2014-15*](#).
- ILO. 2015b. [*Global Employment Trends for Youth*](#).
- ILO. 2016. [*What is a green job?*](#)
- International Renewable Energy Agency (IRENA). 2016. [*Renewable Energy and Jobs – Annual Review 2016*](#).
- Interagency Social Protection Assessments (ISPA). 2016. [*ISPA Social Protection Public Works Programs*](#).
- Kuriakose, A. T., Heltberg, R., Wiseman, W., Costella, C., Cipryk, R. & Cornelius, S. 2012. [*Climate-Responsive Social Protection. Discussion Paper no. 1210*](#). Washington, DC: World Bank.
- Organisation for Economic Co-operation and Development (OECD). 2014. [*Greener Skills and Jobs*](#), OECD.
- Oxford Policy Management. 2016. *DFID Shock-Responsive Social Protection Systems research: Literature review*. Oxford: Oxford Policy Management.
- Prifti, E., Daidone, S., Davis, B., Handa, S. & Seidenfeld, D. 2017. *Risk-related effects of cash transfers on modern inputs demand*. Unpublished.

Rawlings, L., Murthy, S., & Winder, N. 2013. *Common Ground: UNICEF and World Bank Approaches to Building Social Protection Systems*. World Bank/UNICEF.

Rentschler, J. 2013. *Why resilience matters. The poverty impact of disasters.*, Policy research paper 6699. World Bank.

Rosenzweig, M. R., & Binswanger, H. P. 1993. [Wealth, Weather Risk and the Composition and Profitability of Agricultural Investments](#). *The Economic Journal*, 103(416), pp. 56-78.

Sawadogo, D., Courcier, R., Kondombo, S., Sawadogo, P., Arnal, P., Traoré, D. & Blanchard, M. 2017. Comparaison de l'impact de l'approche « cash+ » et de la distribution d'intrants en appui à l'élevage par des populations vulnérables au Burkina Faso. *Livestock Research for Rural Development*. Volume 29, Article #89.

United Nations Development Programme (UNDP). 2008. [Human Development Report: Fighting climate change: Human solidarity in a divided world](#)

UNDP. 2013. [Green Jobs - Women and Youth. What Can Local Governments Do?](#)

United Nations Environment Programme (UNEP). 2011. [Towards Green Economy: Pathways to Sustainable Development and Poverty Eradication](#).

United Nations Office for Disaster Risk Reduction (UNISDR). 2009. *Adaptation to Climate Change by Reducing Disaster Risks: Country Practices and Lessons*. Geneva.

World Food Programme (WFP). 2017. [Drought Situation Report #1](#). Retrieved March 16, 2017, from ReliefWeb.

World Bank. 2013. [Coping with change. How Ethiopia's PSNP and HABP are building resilience to climate change](#). Washington DC: World Bank.

World Bank. 2016. [Poverty and Shared Prosperity 2016: Taking on Inequality](#). Washington, DC: World Bank.

World Bank Data. 2016. [Agriculture and Rural Development](#). Washington, DC: World Bank.