Principles and considerations for mainstreaming climate change risk into national social protection frameworks in developing countries

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ABSTRACT
Climate extremes and slow onset events undermine the efforts of developing countries to eradicate poverty and promote social equity. Social protection presents an opportunity to develop inclusive comprehensive risk management strategies to address loss and damage from climate change. However, research and policy on climate change and social protection remain limited in scope. This paper aims to address this gap by presenting a number of conceptual arguments that can provide a basis for a wider discussion on what principles and considerations should be embedded in the design of national climate-responsive SP strategies and plans. It is argued that future efforts should be geared to develop climate-responsive social protection policies that consider a broad range of issues including urbanization and migration, impact of green policies on the poor, access to essential health care and risks to socially marginalized groups. The article concludes with a discussion on implications for policy and future research.

1. Introduction
Social protection (SP) plays a central role in the 2030 Agenda for Sustainable Development, and it has been widely used as a support mechanism for disaster-affected people (e.g. Béné, Cannon, Davies, Newsham, & Tanner, 2014; Johnson, Bansha, Dulal, Prowse, Krishnamurthy, & Mitchell, 2013; O’Brien et al., 2018). Yet, according to the latest estimates of the International Labour Organisation (ILO), 55% of the global population (around four billion people) remains without any SP benefits, whereas the SP coverage gap is the highest in Africa (82.2%) and Asia and the Pacific (61%) (ILO, 2017). Meanwhile, the adverse effects of slow onset climate events like increasing temperatures, land degradation, and sea level rise, coupled with the rising frequency and magnitude of climate extremes will have a far-reaching impact on human development. Vulnerable developing countries are already confronted with loss and damage from climate change particularly due to their high exposure and low adaptive capacity (UNFCCC, 2012), where the economic and non-economic losses are the highest for the poor and socially marginalized groups. Moreover, climate change is continuously aggravating existing socio-economic vulnerabilities (IPCC, 2014) and intimidating SP interventions such as poverty reduction efforts (Béné, 2011).

SP has been increasingly considered by scientists as an essential strategic tool to address dangerous climate (Béné et al., 2014; Coirolo, Commins, Haque, & Pierce, 2013; Davies et al., 2013; Davies, Guenther, Leavy, Mitchell, & Tanner, 2008; Dulal & Shah, 2014; Hellberg, Siegel, & Jorgensen, 2009; Kurikose et al., 2013; Schwan & Yu, 2018; Ulrichs, Slater, & Costella, 2019; Wood, 2011). At a policy level, core international frameworks for sustainable development affirm the essential role of SP in responding to extreme events. In 2016, the participants in the World Humanitarian Summit made a commitment to strengthen SP systems for emergency response. The Sendai Framework for Disaster Risk Reduction 2015–2030 promotes the development of SP policies as a tool for building resilience to disasters, and emphasizes the importance of safety net mechanisms for integrating disaster risk reduction (DRR) with measures to reduce poverty, enhance livelihood, and improve access to health care and basic services (United Nations, 2015). The new Strategic Framework 2018–2030 of the United Nations Convention to Combat Desertification reflects the priority of Parties to develop safety nets within their drought risk management strategies (UNCCD, 2017). For the past few years, the topic has been gaining momentum in the evolving global climate change policy landscape as well.

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To date, little attention has been paid to examining what principles and considerations should be embedded in the design of national climate-responsive SP measures (one such example is Kuriakose et al., 2013). Although scientists and practitioners acknowledge that SP can potentially reduce vulnerability and increase resilience to the impacts of climate change in developing countries, it remains unclear how to frame the notion and objectives of SP policies in relation to CCA and DRR. A review of development programmes in Asia reveals that these three disciplines are still widely applied in isolation from one another (Davies et al., 2013). Moreover, SP and climate change dispute has not been explicitly linked to the Loss and Damage policy agenda, particularly to the topic of residual impacts, which refer to loss and damage from climate change that materialize despite risk reduction interventions and traditional adaptation.

This review article presents a number of conceptual arguments that can provide a basis for a wider discussion on how developing countries can best integrate climate risk into state SP frameworks. Methodologically, this paper is based on a review of interdisciplinary theoretical and empirical literature. The conceptual reasoning strongly draws on knowledge from DRR and CCA research, policy and practice. The ambition of the study is to highlight emerging issues raised by scholars from different disciplines, in order to advance the understanding on the linkages between SP and comprehensive climate risk management (including CCA, DRR, and measures to address residual impact). The following section provides a brief overview of the recent debates on SP and climate change. Section 3 builds upon previous studies on SP, CCA, and DRR and derives recommendations on what should be considered by national policy-makers as they integrate climate risk into state SP frameworks. A discussion on implications for policy and research is provided in the conclusion part.

2. Current discourse on SP and climate change

The ILO defines SP as a mix of policies and programmes that aim to reduce poverty, vulnerability and inequality throughout the life cycle (ILO, 2017). The concept of SP as a development assistance instrument emerged with the introduction of safety nets in the late 1980s and early 1990s and has progressed ever since to a multi-dimensional framework to respond to shocks and reduce social vulnerability (Devereux & Sabates-Wheeler, 2004). Today, it has evolved to a call for adapting SP systems to global change challenges like migration, climate change and environmental degradation (ILO, 2017).

The existing SP instruments can generally be categorized into: (i) social safety nets (or social assistance) including public works programmes, cash transfers (conditional and unconditional), and in-kind transfers (e.g. school feeding and fee waivers to support access to basic services such as education, housing and health) (World Bank, 2015); (ii) social insurance and microinsurance schemes; (iii) social health protection; and (iv) labour market interventions. In recent years, social assistance programmes in the developing world have been increasingly combined with livelihood development measures such as income diversification, support to entrepreneurship, improved access to financing, promotion of index-based insurance schemes and agricultural extension services. There is also an increasing trend in the number of programmes that combine DRR or CCA objectives with SP interventions (Davies et al., 2013). For instance, humanitarian assistance actors are designing shock-responsive SP programmes to respond to covariate shocks – crises that affect large numbers of individuals – by building state-led SP systems and facilitating collaboration between the SP, DRR, and humanitarian sectors (OPM, 2017).

The interconnectedness between SP and climate change has been viewed from different perspectives. Scholars highlight that climate change can undermine SP interventions, and therefore policy-makers and practitioners should climate-proof their action plans and programming (Béné, 2011). Lead international development organizations have already incorporated climate risk into their SP strategies. For instance, the role of SP in responding not only to climate extremes but also to the gradual impacts of climate change is gaining an increasing consideration in the work of the ILO (2016, 2017). The World Bank Social Protection and Labour (SPL) Strategy 2012–2022 foresees actions to protect vulnerable people against climate shocks, and to enhance their adaptive capacity including through insurance and livelihoods diversification, among others (World Bank, 2012). The Food and Agriculture Organization (FAO) Social Protection Framework (2017) emphasizes the importance of strengthening the environmental dimension of SP programmes and policies (FAO, 2017).

There is now a growing body of scientific literature that looks into the nexus of climate change and SP. Conceptually, there is a strong consensus that climate-responsive SP can function as ex-ante prevention against shocks (e.g. social insurance and risk diversification programmes), ex-post protection against disasters and climate variability (e.g. social assistance and services, and public works programmes), and promotion of long-term adaptive capacity (e.g. through livelihood promotion and diversification) (Davies et al., 2013; Kuriakose et al., 2013). In some cases, one SP instrument may have a dual risk management effect, e.g. public works provide income after experienced shock in a short-term (ex-post measure) and also promote livelihood in a long-term by improving community infrastructure (promotive measure) (Davies et al., 2013). Ulrichs et al. (2019) view the potential of SP to build resilience to climate risks by exploring the effect of cash transfers on the absorptive (ability to absorb and cope with shock and stress), anticipatory (ability to prepare for disasters) and adaptive (ability to adapt to multiple risks in a long-term) capacities at the individual, household and systems levels. Costella et al. (2017) suggest that SP should be anticipatory and foster ‘early action and preparedness’, and hence, an instrument to address avoidable loss. Importantly, many argue that there is a need for transformative5 and broadened view on SP in the face of mounting global risks and uncertainties. Devereux and Sabates-Wheeler (2004) reason that transformative measures such as the promotion of minority rights are fundamental to achieve social equity and hence protect people against social risks. Acknowledging this, Davies et al. (2008) developed the Adaptive Social Protection (ASP) framework that has a strong emphasis on transformative interventions to address underlying social and political factors of vulnerability. Specifically, the authors build upon the concept of vulnerability and highlight opportunities for linking SP, CCA and DRR in
the agriculture and rural development sectors. More recently, Siegel and Jorgensen (2013) suggested ‘a globally guaranteed, nationally designed and managed, and locally implemented risk-adjusted social floor’ – a stream of thought that integrates the principles of social justice and human rights applied to the climate change and SP policy sphere.

Altogether, these are important advancements to link SP with climate change action. However, to develop policies that can reduce poverty and vulnerability under climate change, research and policy agendas should have a stronger emphasis on two major issues. The first is to explore the challenges and opportunities for mainstreaming climate risk into existing SP policies and mechanisms. To date, the topic of mainstreaming climate change into national SP frameworks somehow lacks consideration in published literature. Perhaps the first attempt in this direction is the Climate-Responsive Social Protection framework proposed by Kuriakose et al. (2013), which outlines key principles, design features and system functions to guide the climate-proofing of SP policies and programmes.

The second is to examine pathways for integrating SP with national climate change policy frameworks. This issue underscores the need to advance the understanding of SP as an instrument to build resilience to the adverse impacts of climate change in a long-term, including to an increased frequency and severity of climate extremes and also to slow onset processes that unfold over a long period of time (Johnson et al., 2013; Schwan & Yu, 2018). Most research to date has focused on examining the role of SP in DRR and CCA (e.g. Béné et al., 2014; Davies et al., 2008; Davies et al., 2013; Dural & Shah, 2014; O’Brien et al., 2018; Wood, 2011). Yet, significant knowledge gaps remain in terms of understanding the potential of SP to build long-term resilience to climate change (Johnson et al., 2013; Ulrichs et al., 2019). In addition, the possible role of SP in addressing residual loss and damage from slow onset events such as loss of land or biodiversity has not been studied so far. Noticeable, most studies concern the case of the agriculture and rural development sectors. Only a small number of articles provide different perspectives like on migration and urban vulnerabilities (e.g. Dercon, 2014; Johnson & Krishnamurthy, 2010; Schwan & Yu, 2018). Furthermore, significantly less is known about SP as a tool to address a wider range of climate change risks including impact of green policies on the poor, access to essential health care and impact on socially marginalized groups like vulnerable women and children, and people with disabilities.

3. Principles and considerations for mainstreaming climate risk into national SP frameworks

Mainstreaming climate risk onto development refers to the process of integrating climate concerns into existing policy and institutional frameworks and decision-making mechanisms (Ayres, Huq, Wright, Faisal, & Hussain, 2014; Olhoff & Schaar, 2010). In the context of CCA, mainstreaming is a multi-level process (Lebel, Li, & Krittasudthacheewa, 2012), which necessitates a holistic and integrated approach oriented towards reducing the underlying factors of vulnerability along with climate-proofing projects and programmes (Ayers et al., 2014; Klein, 2010). Drawing upon this conceptualization, a number of design principles and considerations for mainstreaming climate change risk into national SP frameworks in developing countries are proposed in this section.

3.1. Assess and acknowledge climate-related risks and uncertainties to create a long-term strategic outlook

Climate-aware SP planning entails incorporating climate risk and uncertainty into decision-making (Kuriakose et al., 2013). SP can result in maladaptation when the long-term impacts of climate change like sea level rise and land degradation are not considered in the design and planning phases. For instance, while SP measures targeting people living in disaster-prone areas like cash transfers and crop insurance can reduce communities’ short-term vulnerability to climate variability and extremes, in some cases they create an incentive to stay and invest in locations threatened by a long-term environmental degradation, whereas other adaptation options could be more appropriate (Béné et al., 2014; Johnson et al., 2013). Therefore, it is imperative for SP strategies to address not only the impact of discrete climate events but also the risks related with a long-term change like slow onset climate events.

The latter are generally characterized with a greater uncertainty compared to rapid onset hazards since they are generated over lengthy time periods signifying more complex interaction between various layers of exposure and vulnerability at different spatial and temporal scales (IPCC, 2012; Zaidi, 2018). Consequently, it must be assumed that climate change will continue to alter the conditions under which SP systems operate. In this respect, existing approaches to decision-making under uncertainty applied in the CCA and DRR fields could be used in SP planning such as adaptive management, portfolio diversification, scenario-based planning, and robust decision-making.

Moreover, important points for consideration in climate-aware planning are that rapid and slow onset events are interlinked (UNFCCC, 2012), and that there are limits to adaptation (Klein et al., 2014) and consequently, avoided, unavioded and unavoidable losses and damages from climate change (initially classified by Verheyen and Roderick (2008) and further developed by Mechler et al. (2019)). For instance, an increased frequency and/or intensity of recurring events like floods and droughts amplifies the risk of irreversible impacts like loss of productive land and biodiversity. It is therefore essential to design SP policies and measures that are an integral part of CRM approaches. By way of framed by Roberts and Pelling (2018), this entails a diverse portfolio of tools to avoid, minimize and address residual impacts. Preventive and promotive SP measures like livelihood diversification and improved access to financing can help avoid and minimize the impacts of climate change on the poor. Protective interventions like safety nets programmes will be necessary to respond to residual losses and damages such as loss of productive assets.

Finally, improved risk assessment and hydro-meteorological forecasting systems can enable the implementation of innovative SP measures such as micro- and meso-level index-based insurance and forecast-based financing. For example, Costella et al. (2017) propose a framework for integrating forecast-based financing mechanisms with SP systems – a novel approach to risk mitigation, which has the potential to advance...
the effectiveness of traditional early warning systems and post-disaster humanitarian responses. Anticipatory SP actions like public works to strengthen critical infrastructure or unconditional cash transfers to support evacuation of people prior to a forecasted climate extreme event, can be an effective strategy to avoid losses (Costella et al., 2017).

3.2. Establish SP systems that facilitate both incremental and transformational adaptation

Most SP activities could be linked to incremental adaptation as they aim to maintain a certain level of protection and prevention against climate change and extremes, and to build adaptive capacity. But would this be enough in a long-term? In some locations, for example, climate change will likely lead to a fundamental change in the state of the affected socio-economic and environmental systems. Under this scenario, when the limits of incremental adaptation are reached, responses must shift from supporting those at risk towards building ‘less risky futures’ (Roberts & Pelling, 2018). In other words, SP policy and practice should seek to advance the traditional CCA that aims to prevent climate impacts from occurring and create approaches that address residual loss and damage. Consequently, on the one hand, SP strategies should be integrated with transformational adaptation, i.e. initiatives ‘that change the fundamental attributes of a system in response to climate and its effects’ (IPCC, 2014). In some cases, such initiatives could mean adopting measures at a larger scale or greater intensity than before, or introducing novel adaptations, while in other situations this could mean fundamental transformation like relocation (Kates, Travis, & Wilbanks, 2012). In this setting, SP policies can be instrumental, e.g. social assistance and support programmes would be a crucial element of the design of planned relocation measures.

On the other hand, the concept of transformative SP, which to date has been premised on promoting social equity, should be viewed from a broader perspective. For instance, livelihood development initiatives might require transformative solutions that go beyond the promotion of minority rights, towards major shifts in livelihood strategies, behaviour and institutional change. For example, evidence shows that conditional cash transfers offer a promising approach to encourage health preventive behaviour (e.g. Lagarde, Haines, & Palmer, 2009) that can have a long-term positive effect on households’ resilience to the impacts of climate change on human health. Also, people who experience loss of traditional livelihood activities and lifestyle because of fundamentally altered environment or forced relocation will need social support to learn new skills, establish new social relations and find new economic opportunities. Institutional transformation and new governance models that bring together diverse actors might be needed to deliver SP, DRR and CCA objectives. SP policies therefore need to be adapted, or ultimately, innovative paths need to be explored. Early efforts in this direction include, for example, the World Bank ASP pilot programme, which is currently being tested in the Sahel region. Key programme components are establishing safety nets and labour market interventions, knowledge and capacity-building activities, and testing new approaches such as forecast-based financing, among others (World Bank, 2017). Lessons learned to date indicate that promoting transformative SP requires strong policy dialogue and consultations at a national level and could be challenged by the limited technical capacities and resources in the target countries (Béné, Cornelius, & Howland, 2018).

3.3. Recognize the greater need for climate-responsive SP among socially marginalized groups

To date, the SP-climate change discourse has been principally concentrated on poverty and economic risks, and on the poor per se. Research and policy on developing climate-responsive SP for socially marginalized people in developing countries such as ethnic minorities, people with disabilities, and vulnerable women and children remain largely neglected. Yet, these social groups are exposed to a lager risk of poverty, food and water insecurity, and losses and damages from climate change (Banks et al., 2017; IPCC, 2014; Palmer, 2013; Rao, Lawson, Raditloaneng, Solomon, & Angula, 2019). Despite that social assistance programmes target mostly women and families with children, women in many low and lower middle-income countries are still more likely to have lesser access to SP due to various social and cultural factors (e.g. Kukrety & Mohanty, 2011). SP strategies, therefore, should have a greater focus on empowering marginalized people to become active agents in building resilience to climate change. In the field of CCA, scholars have already emphasized the importance of the inclusion of vulnerable groups in decision-making (Görgens & Ziervogel, 2019; Hughes, 2013; Rao et al., 2019).

Furthermore, to achieve social inclusion, more research on the vulnerability to climate change of socially marginalized people is needed. For example, devoted attention to understanding and responding to the specific vulnerabilities of people with disabilities in the context of climate change is missing. Today, about 15% of the world’s population, including 95 million children, is estimated to have some level of disability and this number is growing (WHO, 2011). The impacts of climate change and related disasters will likely lead to an increasing number of people with disabilities and inevitably drag more families into poverty especially in developing countries (United Nations, 2018). Worldwide, the most common national SP programmes for persons with disabilities include ‘cash transfer programmes, non-contributory health insurance programmes, community-based rehabilitation, vocational training and education programmes’ (Palmer, 2013). Cash transfers can have a positive effect on the economic and social status of persons with disabilities and their access to services (Palmer, 2013). However, these benefits are typically limited to providing basic living minimum rather than supporting long-term livelihood development (Banks et al., 2017). Furthermore, existing SP schemes are rarely climate-proofed and linked to a broader CCA and DRR policy frameworks. These facts indicate that current SP approaches are insufficient to strengthen the capacities of people with disabilities to respond to climate shocks and the effects of slow onset changes. Palmer (2013) emphasizes that to create an enabling environment for people with disabilities, countries should establish a comprehensive set of SP policies and measures that span across different sectors including build environment, education, health and...
employment. From a climate risk management point of view, SP interventions should be better integrated with disaster preparedness, relief and reconstruction programmes, e.g. not only through cash transfer schemes, but also through public work programmes on post-disaster reconstruction that aim at improved accessibility of people with disabilities to basic services and evacuation routes. In addition, risks emerging from slow onset events like land degradation, water scarcity and sea level rise should also be considered. People with disabilities have lower ability to migrate to less-risky locations and more limited income-generating opportunities compared to healthy people. In this regard, SP systems should be designed to promote inclusiveness in implementing incremental and transformational CCA.

3.4. Identify rural- and urban-specific measures, including strategies to address migration

Despite that in many countries national SP programmes are extended to both urban and rural areas, social safety nets in low-income states tend to cover mostly rural communities (Coirolo et al., 2013; World Bank, 2015). Likewise, existing research on SP and climate change seems to have limited urban focus. However, rural and urban populations face different climate-related risks as their exposure and vulnerability are conditioned by fundamentally different factors. With their livelihood depending almost entirely on natural resources and climate-sensitive economic sectors, millions of people living in rural areas are vulnerable to the impacts of climate change (Dasgupta et al., 2014). Still, more than half of the global population lives in cities, the urban population is growing fast and poverty is rapidly urbanizing – a trend that is more sizeable in the developing countries (World Bank, 2015). In the meantime, cities are becoming increasingly exposed to slow onset events and climate extremes such as sea level rise, heat waves, water scarcity and floods, whereas the risks are higher for those living in informal settlements and in areas without access to basic infrastructure and services (Revi et al., 2014). Direct and indirect impacts of climate change on the urban poor relate to a health decline (e.g. due to a higher exposure to heat stress, air pollution, water and vector-borne diseases), loss of income (e.g. less labour demand due to extreme weather), and food and water insecurity, among others (Revi et al., 2014). In low and lower-middle-income states, the urban SP activities are dominated by social safety net programmes (such as unconditional cash transfers, targeted food- and energy-based subsidies), as well as slum upgrading and labour market interventions (World Bank, 2015). Arguably, SP programmes aimed at improved access of the poor and vulnerable people to safe housing and basic services have important implications for CCA and DRR in both rural and urban settings. However, the high concentration of poor and vulnerable groups in settlements located in disaster-prone zones is a major problem particularly in urban centres. It is important to note that many migrants who live in poverty do not have formal residency and employment status and hence access to formal SP including health coverage. Moreover, new urban dwellers, especially informal residents, are often excluded from community-based networks and support mechanisms (Gentilini, 2015). It is therefore vital to consider how to integrate SP programmes with urban CCA and DRR strategies and plans, and what approaches can be used to reach those most in need. In this regard, scholars underline that effective urban adaptation necessitates a multilevel urban risk governance (Revi et al., 2014) and local leadership (Archer et al., 2014). Urban authorities have a major role in social protection as they are often responsible for ensuring that citizens have adequate access to basic services, public health and safety facilities, and early warning information (Dodman & Satterthwaite, 2008), while engagement with communities can permit more effective CCA actions (Archer et al., 2014).

Health coverage is another critical point for consideration when designing climate-responsive rural and urban SP interventions. Worldwide, 56% of the rural population is without legal health coverage as compared to 22% in urban regions (ILO, 2017). Climate change will likely undermine the efforts to extend health protection coverage and improve access to essential health care in both rural and urban areas in developing countries. For example, in some locations, climate change events such as more frequent and severe seasonal floods and sea level rise will reduce the physical access of rural communities to health care facilities. In addition, as the number of people living in urban slums is growing, the inequalities in access to health care in cities will likely deepen. Furthermore, climate change aggravates the risk of impoverishing and unaffordability of health services, for instance due to an increase in households’ out-of-pocket health expenditures coupled with a permanent or temporary inability to work (e.g. the effect of catastrophic health expenditure on poverty levels is examined by Scheil-Adlung, 2014). It is therefore of utmost importance for developing countries to strengthen and climate-proof their SP policies in the health domain by accounting for the differential climate change-related risks in rural and urban areas.

Finally, climate-induced migration is a major policy aspect of the rural-urban nexus. By 2050, the slow onset impacts of climate change in Sub-Saharan Africa, South Asia, and Latin America will likely force over 143 million people to migrate within their national borders (Rigaud et al., 2018). This will have major implications for SP systems and therefore national SP strategies should be designed to anticipate and address climate-induced internal mobility. An important consideration is that the poorest and most vulnerable people either migrate to survive though they often move to live in worse conditions or remain ‘trapped’ as they are unable to relocate (Afifi et al., 2016; Hummel, 2016; Warner & Afifi, 2014). Nevertheless, migration can be a successful adaptation strategy (Afifi et al., 2016) even for the poor when social support mechanisms are in place. For instance, evidence shows that SP interventions like cash and asset transfer programmes can influence households’ decision to migrate (Johnson & Krishnamurthy, 2010; Schwan & Yu, 2018). When climate-proofed, public works programmes can reduce distress migration and erosive coping strategies while also supporting CCA and DRR by improving public infrastructure and services in both places of origin and destination areas (Schwan & Yu, 2018).
3.5. Facilitate a just transition to a green economy

Green growth development pathways address environmental degradation and climate change and promote intergenerational sustainability and equity. Green policies could create new economic and employment opportunities that can benefit the poor in a long term if SP programmes such as skills development are climate-proofed. Still, environmental policies can have a negative social impact, particularly on people whose livelihoods are dependent on carbon-intensive sectors (ILO, 2017). However, in low-income countries where the employment is largely informal, food security is a major concern, and households have low access to basic services, macro-scale interventions might be challenging and could deepen social exclusion. Furthermore, labour is often the main asset of the poor, and therefore labour intensity is a critical factor for reducing current poverty while transitioning to a green economy (Derccon, 2014).

SP has been increasingly seen as an instrument to support a just transition to a green growth by protecting vulnerable groups and combating poverty and social inequality. Some emerging markets like China and Brazil have already realized the need of integrating their pro-climate reforms with SP in the form of unemployment benefits, social transfer programmes and trainings for people affected by environmental regulations imposed on the forestry, agriculture and energy sectors (ILO, 2017). However, in low-income countries where the employment is largely informal, food security is a major concern, and households have low access to basic services, macro-scale interventions might be challenging and could deepen social exclusion. Furthermore, labour is often the main asset of the poor, and therefore labour intensity is a critical factor for reducing current poverty while transitioning to a green economy (Derccon, 2014).

In the African context, for example, promoting green livelihoods and jobs in cities can be achieved through local, asset-based, people-centred programmes such as household-scale renewable energy generation, urban agriculture, and organic waste management (Acey & Culhane, 2013). In this context, state SP policies can be designed to support vulnerable groups through: (i) small-scale green development initiatives aimed at creating employment and business opportunities, and improving livelihood; and (ii) social support and assistance programmes designed to address the risks emerging from new environmental policies and regulations, e.g. by climate-proofing targeting mechanisms and developing suitable instruments.

3.6. Establish a comprehensive set of public and private mechanisms to build climate-resilient SP systems

To ensure effective coverage of people at risk, SP strategies by design must seek to create a comprehensive set of public and private measures incorporating also informal and traditional safeguard mechanisms (Derccon, 2011; Devereux & Sabates-Wheeler, 2004; Elliesie, 2017). Most developing countries face significant constraints to establishing SP systems ranging from underdeveloped credit and insurance markets, and resource limitations for state social support, to high levels of informal and irregular employment, migration and limited access to remote rural regions. Climate change will further challenge national SP efforts since factors conditioning poverty, human health, mobility and access to basic services will be directly or indirectly affected by its impacts in future (IPCC, 2018). In view of that, the possibilities for designing integrated public and private mechanisms for SP need to be explored. Opportunities for engagement of private sector actors in the implementation of SP measures span from developing tailored insurance and financial products for the poor and vulnerable groups, to vocational training and employment programmes, climate services delivery, and livelihood promotion.

However, the challenge lies in defining these interventions that can effectively deliver CCA and DRR benefits and address residual impacts. There is a robust evidence that public and private SP instruments like cash transfers, social assistance programmes and insurance can be effective in providing short-term relief, but much less is known about how SP can strengthen CCA and build long-term, intergenerational resilience (Davies et al., 2013; Johnson et al., 2013; Ulrichs et al., 2019). For instance, microinsurance programmes have been increasingly seen as a plausible option for extending the coverage of formal social and conventional insurance schemes to the poor and for providing social safeguards in the informal sector. As well, weather-indexed insurance for small-scale farmers seems to be one of the most innovative approaches that integrate CCA with SP and DRR in practice (Davies et al., 2013), while evidence indicates that microinsurance can help poor households affected by climate extremes to preserve their productive assets and livelihood (e.g. Janzen & Carter, 2013). Still, compared to social insurance, microinsurance is the second-best option (e.g. as an alternative in the lack of formal social insurance or as a supplement covering additional risks), as it has limited applicability in protecting the extremely poor and in providing robust long-term insurance against health and life cycle risks (Loewe, 2010). Moreover, traditional risk insurance products are insufficient to address slow onset events and non-economic loss and damage such as loss of ecosystems or territory (Gewirtzman et al., 2018). Ultimately, risk retention approaches like social safety nets have a higher potential to build resilience to slow onset processes, than risk transfer instruments (Roberts & Pelling, 2018). It must be highlighted as well that while social funds, livelihood diversification and microfinance instruments can support pro-poor community adaptation (Heltberg et al., 2009), these can also result in maladaptation. Weldegebriel and Prowse (2013), for example, highlight that receiving transfers for livelihood diversification from SP programmes like the Productive Safety Net Programme in
Ethiopia, might significantly increase the natural resource extraction for off-farm income generation.

3.7. Promote policy coherence, institutional coordination and participation

Integrating climate risk into national and local development planning in a systematic, coordinated and coherent manner is essential. In the SP sector, the establishment of comprehensive SP systems, including SP floors, can enable coordinated response to climate risks within and across relevant sectors. Schell-Adlung (2013), for instance, emphasizes that SP floors can address underlying factors of social vulnerability by supporting sustainable progress towards universal health coverage and other SP objectives like poverty reduction. Furthermore, SP strategies should be well synchronized with the priorities and actions defined in the national climate change and DRR strategic policy frameworks. Despite that the technical and institutional integration of these three disciplines remains a challenge (Davies et al., 2013), climate-responsive SP objectives should be mainstreamed into the NDCs and National Adaptation Plans (NAPs) processes as these facilitate a harmonized national level action on climate change, including planning, implementation, monitoring, and evaluation. In relation to this, climate risk-related interventions within the SP sphere should be evaluative to ensure accountability, systematically track progress and catalyse knowledge in alignment with the NDCs, NAPs, Sustainable Development Goals (SDGs) and Sendai Framework for DRR.

Effective integration of climate risk into SP frameworks also requires a strong institutional coordination across relevant development sectors (Béné et al., 2018) and establishment of mechanisms that connect SP systems with climate services such as early warning (Kuriakose et al., 2013). Strengthening the linkages between CCA, DRR and SP across levels of governance including at the local level is also critical. Some authors raise concerns for the need of better integration of the voices of beneficiaries in the SP policy and practice (Johnson et al., 2013). Similarly, CCA literature provides a robust evidence that integrating local and indigenous knowledge into CCA is a key principle for sustainable adaptation (Eriksen et al., 2011), whereby community-based approaches can ensure that top-down planning is informed by local specifics, particularly where mechanisms for community participation are in place (Archer et al., 2014). Participatory approaches to climate change management are more effective when local governments and decision-makers are supported by the state (IPCC, 2018). In many developing countries formal and informal rural organizations like farmer, forest and agriculture-based groups play a major role in fostering CCA and mitigation action, and in providing mutual assistance to their members (Tirivayi, Nennen, Tesfaye, & Ma, 2018). In this setting, state support to community-based organizations in the form of capacity-building and awareness raising initiatives, including such on climate risk management, can be an important strategy for reaching vulnerable people in the absence of formal SP schemes. However, scholars have cautioned that community-based adaptation should either challenge and transform existing internal power structures or be well-integrated with them, since ignoring political inequalities within/between communities can deepen the vulnerability of the poor and marginalized groups (Archer et al., 2014; Eriksen, Nightingale, & Eakin, 2015; Mikulewicz, 2018). Applying the reflections of Mikulewicz (2018) on democratizing CCA to the SP sector, the planning and implementation of climate-responsive SP measures at a community level should be based upon the principles of robust understanding of the internal power structures (‘political roots of vulnerability’), inclusion of disadvantaged groups such as women, and working with communities as partners rather than beneficiaries.

4. Conclusion

This article converges to the call for reshaping current SP frameworks by taking into consideration risks and opportunities within much broader socio-economic and environmental contexts and time scales. It is argued that in the face of mounting social and environmental risks, countries should build comprehensive, climate-responsive SP strategies, which support DRR and CCA efforts and address residual loss and damage. Integrating climate risk into the national SP frameworks is an important element for building capacity of developing countries to protect vulnerable populations from the adverse impacts of climate change. By viewing SP as a component of broader adaptation strategies, the SP community can seek adaptation financing (Kuriakose et al., 2013). To this end, the paper outlines a number of key issues that can guide this process.

First, it is essential to understand and integrate climate-related risks and uncertainties into SP decision-making. In this regard, the article emphasizes the importance of taking into consideration not only the risk of climate extremes, but also the potential impact of slow onset climate events. To date, little is known about how climate risk assessments can inform SP policy and planning (Johnson et al., 2013), and what information and capacities are required to enable state actors take informed decisions. Additionally, climate risk assessments should provide a robust understanding of the root causes of vulnerability so that interventions are targeted and designed to serve the needs of the most vulnerable including remote communities, women, people with disabilities and the poor. Here, emerging is the question of what methods and approaches can be used to effectively include marginalized groups into risk assessment processes (UNFCCC, 2018).

Second, SP policies and measures by design should support both incremental and transformational CCA to overcome the limitations of current climate risk management approaches. Doing so necessitates to explore the implications of socio-economic, environmental, institutional, cultural and infrastructural CCA interventions for SP policy and practice over a long-term. Third, it was argued that SP programmes provide opportunities for reducing poverty and promoting sustainable development and resilience in vulnerable rural regions and rapidly growing cities, whereas migration and access to social health protection are critical cross-cutting factors that should be considered by policy-makers. Looking into these diverse foci, research could be tailored to question if green policies, CCA and DRR interventions reduce or increase the vulnerability of people in
need of SP, and what climate-responsive SP actions can support long-term resilience and sustainability.

Another critical point discussed in this review is that integrating climate risk into national SP frameworks cannot be done from one organization alone and in isolation from other sectors. Designing climate-responsive SP is not a single solution to build resilience to climate change and should be viewed as one of many elements of a CRM strategy. SP can provide DRR and CCA benefits when complemented with additional interventions in other sectors (e.g. Costella et al., 2017; OPM, 2017; Ulrichs et al., 2019) such as infrastructure, agriculture and health. It must also be recognized that mainstreaming climate change risk onto the SP sector is not without challenges. Building comprehensive national SP systems will take time. Inadequate governance mechanisms that exist in many developing countries can undermine the effectiveness of SP programmes (Johnson et al., 2013). Furthermore, incorporating a complex set of objectives for building resilience to climate change into national SP systems will require substantial technical, financial and institutional capacities. This can overburden the SP mechanisms in poor states, which lack these capacities (Ulrichs et al., 2019). For instance, O’Brien et al. (2018) reasons that in some cases designing shock-responsive SP might not be the best option in terms of efficiency or cost effectiveness in comparison to delivering a humanitarian relief. Ulrichs et al. (2019) find that cash transfer programmes have the potential to build resilience to climate risks regardless of whether they are climate-proofed or not. In view of these challenges, more research is needed to explore the investment needs for climate-proofing the sector. Further analytical work may explore what institutional structures are required to enable effective CCA and DRR action in the SP domain. Future research and policy could also be aimed at examining how SP policies can be designed to promote private sector participation and local level action on climate change in order to mobilize resources and strengthen local level capacities.

One more important consideration is that SP should be linked with national development and climate change targets through the state monitoring systems. So far, monitoring and evaluation of climate-responsive SP actions remains a complex and largely under-researched topic. Johnson et al. (2013) underscore the need for developing indicators and methodologies to evaluate SP programmes over longer, even intergenerational periods of time. Additional constraint is posed by the lack of ‘agreed-upon methods, indicators, metrics or frameworks designed for an assessment of progress towards the global goal on adaptation’ (UNEP, 2017). Consequently, future efforts could be geared to developing indicators and methodological frameworks that can be used to evaluate the effectiveness of climate-responsive SP policies. Finally, the topic of SP requires a wider attention in the global climate and development debates and a strong science-policy dialogue.

Notes

1. The term ‘slow onset events’ as used herein was first introduced by the Cancun Agreement (COP16), Decision1/CP.16, Paragraph 25. It refers to: sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification.

2. This paper adopts the classification of losses and damages as discussed by Mechler et al. (2019), p.11, Table 1.1.: avoided – L&SD that can and will be avoided by climate change mitigation and adaptation; unavoidable – avoidable L&SD that is not/will not be addressed due to financial, technical and political constraints; unavoidable – L&SD that cannot be avoided through further mitigation and adaptation measures.

3. Comprehensive risk management is comprised of the following approaches: assessment, reduction, transfer, retention, including social protection instruments and transformational approaches (UNIFCCC, 2014).

4. Social protection floors, as defined by ILO, refer to a nationally determined set of basic social security guarantees, which secure protection aimed at preventing or alleviating poverty, vulnerability and social exclusion, and ensure at a minimum that, over the life cycle, all in need have access to at least essential health care and basic income security. (ILO, 2017)

5. The terms ‘transformational’ and ‘transformative’ are both used in climate change adaptation literature, while the term ‘transformative’ is used most often in social protection-related studies. In this article, the terms ‘transformational adaptation’ and ‘transformative social protection’ have been used to describe interventions/actions that bring transformation.

6. This study adopts the categorization of vulnerable people in need of social protection as proposed by Devereux, Lwanga Ntale, and Sabates-Wheeler (2002): (1) the chronically poor – who require social assistance and social services; (2) the economically vulnerable – who require social insurance and safety nets; (3) the socially marginalised – who require social equity and social rights.

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