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Social Protection, Climate Change Adaptation and Disaster Risk Reduction

Rapid literature review
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About this report

This rapid literature review provides a synthesis of the literature on the links between social protection, climate change adaptation and disaster risk reduction. It aims to orient policymakers to the key debates and emerging issues. It was prepared for the Australian Department for Foreign Affairs and Trade © Australian Government 2014. The views expressed in this report are those of the author, and do not necessarily reflect the opinions of GSDRC, its partner agencies or the Australian Government.

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1. Overview

This rapid literature review presents and synthesises the conceptual underpinnings and evidence on the relationship between social protection, climate change adaptation and disaster risk reduction. It aims to describe the theoretical links between these areas, and provide case study examples of development programming that has applied these principles.

It is increasingly acknowledged that **climate change will increase hazards, risk, and vulnerability** for poor people (Davies et al., 2009b). Climate change will have severe negative impacts in developing countries, and the poor are likely to be the hardest hit due to their relative lack of adaptive capacity and resilience (Kuriakose et al., 2012). Many people will experience climate change as an increase in natural disasters and weather-related shocks. Social protection is one approach that can help reduce exposure to both current and future climate shocks (Davies et al., 2009b). Social protection focuses on poverty reduction, which is also a fundamental factor shaping vulnerability to disasters (Peacock & Prater, 2012).

This paper first presents the available **conceptual models** which link social protection to climate change adaptation (CCA) and disaster risk reduction (DRR). The most well-known and often-used model is Adaptive Social Protection (ASP), produced by IDS. This is an integrated, long-term, and preventative approach, which addresses both social and environmental factors. 'Adaptive capacity' is strongly linked to this approach, and suggests ways to improve people's ability to adjust and adapt to changing circumstances. Other models include the World Bank's climate-responsive social protection, and social risk management.

This report summarises the **evidence** on whether social protection interventions have built resilience and adaptive capacity. These concepts suffer from difficulties in measuring and demonstrating impact. The chain of causality from social protection to increased (climate) resilience is reasonably well conceptualised but lacking in evidence (Davies et al., 2013). It is assumed that social protection may indirectly contribute to climate change adaptation or disaster risk reduction through improving livelihoods (expert comments). However, there is hardly any evidence on how and why social protection programmes contribute to resilience against climate shocks. The best evidence comes from weather-indexed insurance programmes and public works programmes.

The evidence on impacts is mainly drawn from **case studies**. This report presents a selection of case studies that have used social protection instruments to address climate, weather and disaster shocks. The report attempted to focus on Asia-Pacific but found few examples from this region, so other countries are also included. In general, the literature on this topic mainly looks at sub-Saharan Africa and South Asia, and at rural rather than urban livelihoods. This is not a comprehensive survey of all programmes, but an illustrative selection to demonstrate a range of successful examples.

The strongest evidence comes from weather-indexed insurance schemes in India, Philippines, Mongolia, and Ethiopia, which have successfully insured farmers against droughts, floods and livestock loss. The second most prevalent type of programme is public works programmes (India, Ethiopia, Bangladesh). These have strong potential to be a win-win approach as they provide both income and livelihoods diversification for participants, and can also be used to invest in environmental assets such as reforestation and water conservation.

The report concludes with a **list of donors and organisations** that are investing in this area.

This paper does not look at the provision of cash after emergencies or disasters. Although this is an important role for social protection, it is reactive rather than preventative. It is more akin to humanitarian aid than to long-term reduction of vulnerabilities.

2. Why should social protection be integrated with CCA and DRR?

“Social protection describes all initiatives that transfer income or assets to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalised. Its overall objectives are to extend the benefits of economic growth and reduce the economic or social vulnerability of poor, vulnerable and marginalised people...

Disaster Risk Reduction (DRR) describes the development and application of policies, strategies and practices that minimise vulnerabilities, hazards and unfolding disaster impacts throughout a society in the broad context of sustainable development.

Climate Change Adaptation (CCA) is about reducing the risks posed by climate change to people’s lives and livelihoods.” (Davies et al., 2009b: 206).

The expected impacts of climate change are that it will **increase hazards, risk, and vulnerability** for poor people (Davies et al., 2009b). Climate change will have severe negative impacts in developing countries, and the poor are likely to be the hardest hit due to their relative lack of adaptive capacity and resilience (Kuriakose et al., 2012). Climate change is likely to increase the frequency and magnitude of shocks, which can be countered to some extent with social protection and disaster risk reduction interventions (Davies et al., 2009b).

There is a shared understanding between donors and clients that **climate change and disasters pose challenges for social policy and social protection** (Kuriakose et al., 2013). The literature suggests that climate change will make social protection goals harder to achieve, and will change the types of risks that poor people face (Kuriakose et al., 2012). Social protection must therefore at least take note of climate vulnerabilities, or gains will be lost. Social protection can play a role in the wider integrated adaptation response to climate change, alongside reducing carbon emissions and improving infrastructure.

Social protection can help **reduce exposure** to both current and future climate shocks (Davies et al., 2009b). Social protection focuses on poverty reduction, which is also a fundamental factor shaping vulnerability to disasters (Peacock & Prater, 2012). Poor people and structurally disadvantaged minorities are much less able to respond effectively to disasters (Peacock & Prater, 2012). Social protection interventions which address poverty and vulnerability can easily be conceptualised as adaptive interventions (Jones et al., 2010).

Using the 3Ps + T social protection framework, some of the potential benefits of social protection for CCA and DRR are:

Table 8. Promoting adaptation through social protection

SP category	SP instruments	Adaptation and DRR benefits
<i>Protective</i> (coping strategies)	<ul style="list-style-type: none"> - social service provision - social transfers (food/cash), including safety nets - social pension schemes - public works programmes 	<ul style="list-style-type: none"> - protection of those most vulnerable to climate risks, with low levels of adaptive capacity
<i>Preventive</i> (coping strategies)	<ul style="list-style-type: none"> - social transfers - livelihood diversification - weather-indexed crop insurance - social insurance 	<ul style="list-style-type: none"> - prevents damaging coping strategies as a result of risks to weather-dependent livelihoods
<i>Promotive</i> (building adaptive capacity)	<ul style="list-style-type: none"> - social transfers - access to credit - asset transfers or protection - starter packs (drought/flood-resistant) - access to common property resources - public works programmes 	<ul style="list-style-type: none"> - promotes resilience through livelihood diversification and security to withstand climate related shocks - promotes opportunities arising from climate change
<i>Transformative</i> (building adaptive capacity)	<ul style="list-style-type: none"> - promotion of minority rights - anti-discrimination campaigns - social funds - proactively challenging discriminatory behaviour 	<ul style="list-style-type: none"> - transforms social relations to combat discrimination underlying social and political vulnerability

Source: Davies et al., 2009b: 205.

Protective measures which provide coping mechanisms and immediate relief are useful medium-term interventions to address climate impacts (Kuriakose et al., 2012). Preventive measures can help reduce vulnerability and increase coping options, which can decrease the impacts of risks (Kuriakose et al., 2012). Promotive measures contribute to climate change adaptation by building skills, enhancing incomes and assets, thereby building capacity for response and addressing some underlying vulnerabilities (Kuriakose et al., 2012).

Social protection instruments, as illustrated above, have been shown to be **effective mechanisms for coping with shocks** (Kuriakose et al., 2012). The recent growth of social protection systems has shown that having systems in place before a shock hits can produce an effective response (Kuriakose et al., 2012). Social protection is thus well-aligned with the goals of addressing the impacts of climate change (Kuriakose et al., 2012). However, it may also be possible for social protection to contribute to longer-term adaptation.

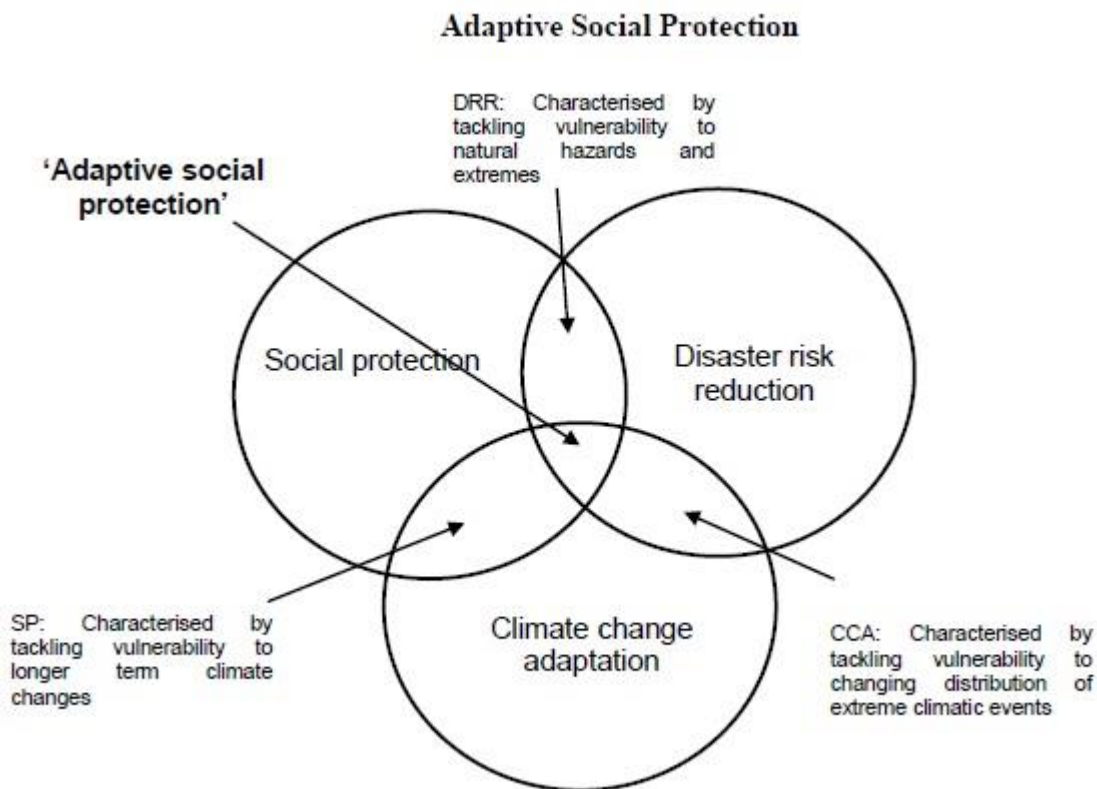
All three disciplines of CCA, DRR and social protection attempt to address vulnerability. The **adaptive social protection framework** (see below) argues that interventions must be integrated in order to successfully mitigate vulnerability to climate shock. CCA and DRR have traditionally drawn on the physical sciences disciplines. Including social protection as a concept adds a social and human understanding of vulnerability (Davies et al, 2009a). CCA and DRR cannot address root causes of

3. Conceptual models

Adaptive Social Protection (ASP)

The overlap between social protection, climate change adaptation and disaster risk reduction lends itself to an integrated approach. Researchers at IDS have developed an integrated conceptual approach which is long-term, preventative, and addresses both social and environmental factors. This is called Adaptive Social Protection.

Social protection and DRR may not be sufficient to address livelihoods resilience in the longer term if they do not address dependence on climate sensitive livelihoods (Davies et al., 2009a). Climate change adaptation and DRR do not usually include a focus on the root or social causes of vulnerability, which social protection can add. For these reasons, Davies et al. (2009a) suggest that CCA, DRR and social protection be integrated, as each complements gaps in the other disciplines. The model assumes that combining these three disciplines will make interventions more efficient, increase positive impacts, counter underlying causes of vulnerability, and promote adaptive capacity (Davies et al., 2013). This agenda moves beyond simply mitigating shocks, by taking vulnerability as its starting point and moving towards addressing structural poverty and long-term shifts in livelihoods.



Source: Davies et al., 2009b: 212.

The core strands of adaptive social protection are (Davies et al., 2009a):

- An emphasis on **transforming productive livelihoods** as well as protecting, and adapting to changing climate conditions rather than simply reinforcing coping mechanisms.
- Grounding in an understanding of the **structural root causes of poverty** in a particular region or sector, permitting more effective targeting of vulnerability to multiple shocks and stresses.
- **Rights-based rationale**, stressing equity and justice dimensions of chronic poverty and climate change adaptation in addition to instrumentalist rationale of economic efficiency.
- An enhanced **role for research** from both the natural and social sciences to inform the development and targeting of social protection policies and measures.
- A **longer-term perspective** for social protection policies that takes into account the changing nature of shocks and stresses.

Davies et al. (2013) provide an analysis of 124 livelihoods resilience programmes in South Asia, assessing them for their integration of CCA, DRR and social protection. Of all the programmes, 97 (78 per cent) contain a significant social protection element, 72 (58 per cent) a DRR component, and 43 (35 per cent) a CCA component. In total, 58 per cent of the programmes integrate at least two disciplines and 16 per cent integrate all three, while the remaining 42 per cent involve just one discipline. Projects with initial CCA objectives appear to combine the three disciplines the most. Social protection programmes are the least integrated, with 49 per cent having no integration at all. However, social protection and DRR is the most common combination of disciplines. 28 programmes used social protection to promote disaster resilience, but this is often focused narrowly on the consequences of a disaster and returning to 'normalcy'. There are a few examples of programmes aimed more at prevention. In this review, Bangladesh and India have the highest percentage of projects combining all three disciplines, while Afghanistan, Nepal and Pakistan have almost none.

ASP as an approach contains the most potential for including a **gender perspective**, as it opens a space for empowering the voices of the poor, rather than a technical or environmental solution to climate change (Bee et al., 2013). ASP attempts to transform the unequal social relations which cause vulnerabilities, lending itself to a gender transformation approach (Bee et al., 2013). Bee et al. (2013) provides three reasons why ASP is relevant for gender justice:

- Its focus on dynamic and multi-dimensional vulnerabilities.
- Its incorporation of a rights-based framework that stresses equity and justice.
- Its attention to transformation as a means of tackling the underlying structural causes of vulnerability.

The literature has increasingly recognised the need for greater integration of CCA, DRR and social protection, and this model is beginning to be taken up. Davies et al. (2013) suggest that more work has been done to link social protection and DRR than social protection and CCA.

Adaptive capacity development

Adaptive capacity is:

“the ability to design and implement effective adaptation strategies, or to react to evolving hazards and stresses so as to reduce the likelihood of the occurrence and/or the magnitude of harmful outcomes resulting from climate-related hazards” (Brooks & Adger 2005: 168).

The key idea in this approach is the *capacity* to adjust and adapt to changing circumstances (Jones et al., 2010). Developing adaptive capacity is seen as **expanding the coping range of a system** (Godfrey Wood, 2011). This is usually the main intervention strategy and goal of development partners.

Many of the indicators of adaptive capacity are generic, such as levels of education and income (Godfrey Wood, 2011). The more specific features of a community’s adaptive capacity may be economic resources, infrastructure, information and skills, institutions and equity (Jones et al., 2010).

This model suggests that social protection will contribute to adaptive capacity in the following ways (Godfrey Wood, 2011):

- Meeting existing basic needs, e.g. health and nutrition, thereby reducing short-term vulnerability and providing space for longer-term considerations.
- Helping the poor respond to (climate-related) shocks.
- Reducing the pressure to engage in damaging coping strategies which weaken long-term adaptive capacity.
- Helping vulnerable households to better manage risk and therefore consider investment decisions and innovations to increase their adaptive capacity.
- Providing cash for investment in long-term livelihood and adaptive capacity improvement.
- Facilitating mobility and livelihood transitions.

Godfrey Wood (2011) suggests that social protection can, in part, support autonomous adaptation as well as planned adaptation. By meeting existing needs, this may create space for households to independently develop longer-term coping and adaptation strategies, outside of what can be engineered by development partners. There is currently little rigorous evidence on these specific objectives and outcomes, although cash transfers are generally well-evidenced.

The Africa Climate Change Resilience Alliance (ACCRA)² is putting this model into practice. It is a consortium consisting of Oxfam, Save the Children, World Vision, CARE, with a research arm led by ODI, looking at how development interventions including social protection can contribute to adaptive capacity. ACCRA and ODI identify five characteristics of adaptive capacity (Ibrahim & Ward, 2012):

1. **The asset base:** availability of key assets that allow the system to respond to evolving circumstances.
2. **Institutions and entitlements:** existence of an appropriate and evolving institutional environment that allows fair access and entitlement to key assets.

² <http://community.eldis.org/.59d669a8/research.html>

3. **A focus on building adaptive capacity at all levels:** climate change is a covariate risk, so strategies must include community and national level plans, including local empowerment.

It follows with four design features:

1. **Scalable and flexible programmes:** programmes must be able to scale up in the event of a shock, and a variety of funding instruments and streams which can respond to different types of shocks.
2. **Climate-smart targeting:** targeting households based on their climate vulnerability and potential losses after a shock, potentially through geographic or livelihood type targeting.
3. **Investments that build resilience and adaptive capacity:** strengthening community social and physical infrastructure, possibly through public works programmes, and supporting sustainable livelihoods.
4. **Promotion of institutional capacity for climate risk management:** public, civic and private institutions which channel interventions and responses.

The final part of the framework presents potential social protection instruments which can deliver CRSP. These include safety nets and social assistance, social funds, skills development, microfinance/insurance, and assisted migration/resettlement.

Social risk management (SRM)

SRM usually refers to the older social protection framework used primarily by the World Bank 2001-2012. It has been replaced by their Social Protection and Labour Strategy. However, SRM has been re-applied to climate risks, to look at how social protection can reduce these (Heltberg et al., 2009).

SRM repositioned social protection instruments within a framework of risk. It has three strategies to deal with risk (prevention, mitigation and coping), and three levels of formality of risk management (informal, market-based, public) (Peacock & Prater, 2012). It includes natural hazards as a factor in risk and vulnerability. It discusses several social protection mechanisms for addressing natural disasters.

The updated SRM framework draws on asset-based and livelihoods approaches as a starting point. Household wellbeing is directly linked to assets and livelihood strategies, as part of a multi-dimensional concept of wellbeing (Heltberg et al., 2009). Livelihoods depend on the interface between risks, assets and the institutional context. When climate change is added to the SRM framework, it brings about new forms of risk and vulnerability. These include:

- Direct and indirect risks
- Increased frequency of weather events
- Increased covariate risks
- Uncertainty and complexity
- Irreversible damage
- Climatic variation from historic rates
- Slowness of onset
- Interactions between different types of risk

4. Evidence on building resilience and adaptive capacity

The concept of resilience has increased in importance in the donor discourse over the last decade (Béné et al., 2012b). DFID, the World Bank, the World Food Programme and the Australian Government are all endorsing the concept (Béné et al., 2012b). Definitions of ‘resilience’ vary, but many recognise it as an **ability to deal with shocks and changes** (Béné et al., 2012b). This differs from older definitions which regarded resilience more as an outcome (Béné et al., 2012b). There is a tension between ‘the ability to withstand shocks’, and ‘the ability to absorb and adapt’ to them. Resilience is commonly understood to operate at multiple scales: individual, household, community, national, etc. Resilient systems are (Béné et al., 2012b: 19):

“... ones which promote or encourage diversity, flexibility, inclusion and participation; which recognise social values, accept uncertainty and change (at multi-scale); and which foster learning”

A significant limitation of resilience as a concept is its inability to provide analysis of power relations and social systems (Béné et al., 2012b).

Although resilience is emerging as a new paradigm for development, it is unclear what it means, and whether and how it can be measured. There is **no agreement on how to measure resilience**, which means there is a scarcity of evidence on the impact of programmes which aim to ‘strengthen resilience’³. There is hardly any evidence on how and why social protection programmes contribute to resilience against climate shocks.

The chain of causality from social protection to increased (climate) resilience is reasonably well conceptualised but **lacking evidence** (Davies et al., 2013). It is assumed that social protection may indirectly contribute to climate change adaptation or disaster risk reduction through improving livelihoods (expert comments). There is significant evidence on social protection programmes’ ability to improve savings, livelihood diversification, and assets. This is assumed to provide some protection against climate shocks, but this link is not well evidenced (Macours et al., 2012). There are many efforts underway which integrate social protection with CCA, DRR or resilience. However, these are not all written up into published literature, making the knowledge base difficult to access (Béné & Newsham, 2011).

The most-evidenced area of social protection addressing climate vulnerability is in weather-indexed insurance (Macours et al., 2012). Most of the evidence remains piecemeal and from isolated case studies, described in section 5.

Cash transfers (CTs)

The link between cash transfers and climate change adaptation has **not been made clear and is not well-evidenced** (Godfrey Wood, 2011). DFID’s literature review on cash transfers suggests there is little evidence that CTs can reduce and mitigate the impact of environmental shocks, although this link is made conceptually (Arnold, 2011). The best evidence comes from Ethiopia’s PSNP, which suggests that beneficiaries avoided having to sell off household assets, and projects in Pakistan and India which

³ Christophe Béné, 2013, <http://vulnerabilityandpoverty.blogspot.co.uk/2013/10/can-we-actually-measure-resilience.html>

combine DRR and cash transfers (Arnold, 2011). CTs' impact on climate change effects is poorly understood, and there is a strong need for further empirical analysis of this specific pathway (Béné et al., 2013).

In 2011, there was no research into the impacts of cash transfers on CCA and adaptive capacity, but since there is strong evidence on both sectors separately and overlap between their goals, it is possible to draw some links (Godfrey Wood, 2011). CTs should be able to contribute significantly, albeit indirectly, to the goals of adaptation, and can help ensure other policies have greater chance of success (Godfrey Wood, 2011). There is strong evidence on the positive impacts of CTs on some development indicators, such as nutrition and education, but little evidence on how these contribute to CCA and adaptive capacity (Godfrey Wood, 2011).

CTs are now a common instrument for **emergency relief** following a disaster, and there is plenty of rigorous evidence on their effectiveness (Davies et al., 2013). They can reduce vulnerability to climate shocks by increasing liquidity and alternative income sources during times of stress (Davies et al., 2013). There is a considerable literature on this use of cash, but this is not covered in this report as this use of CTs is reactive rather than preventative.

Pensions, a form of CT targeted by age, should have similar impacts as detailed above. However, there is no specific evidence on pensions' impact on mitigating climate change shocks (Béné et al., 2013).

The limitations of this model include (Godfrey Wood, 2011):

- Decisions taken by individuals do not automatically lead to adaptive capacity. CTs may facilitate increased vulnerability.
- CTs do not engage with structural issues.
- CTs do not inherently encourage innovation.
- CTs do not disseminate knowledge or information about climate change.
- CTs do not necessarily empower people, increase inclusion or provide political voice.

Cash transfers are therefore unable to address all aspects of adaptation.

Indexed insurance

This form of insurance insures farmers against losses by linking the insurance to an index such as rainfall, temperature, humidity or crop yields (Hellmuth et al., 2009). If the weather index reaches a trigger level, farmers receive immediate compensation. This means that insurance companies do not need to track individual losses, which reduces costs (Hellmuth et al., 2009).

Indexed insurance has been **triallyed successfully** in several countries, including Malawi and India (Davies et al., 2009a). The receipt of immediate payouts prevents farmers from turning to harmful coping strategies such as the sale of productive assets, and helps smooth income and consumption (Davies et al., 2009a). It may also help farmers take greater risks and make bigger investments (Davies et al., 2009a), as well as reducing the perverse incentives of traditional insurance, which may encourage a failure in order to receive the payout (Hellmuth et al., 2009).

The major critique of indexed insurance is **basis risk**, which is the possibility that payouts do not match actual losses (Hellmuth et al., 2009). This can be mitigated against by careful selection of the index and good weather data collection (Hellmuth et al., 2009).

There is a considerable literature on indexed insurance schemes, and a clear assumption that these can play a strong role in supporting climate-resistant livelihoods (Davies et al., 2013). They are increasingly advocated for by governments and development agencies as a means to address market shocks (Davies et al., 2013). Insurance appears to reduce risk for farmers, improve livelihoods and resilience, and schemes are financially viable for governments. The evidence base on indexed insurance is drawn mainly from case studies, without clearly generalisable conclusions. As yet, none of the existing index-based schemes have experienced a wide-ranging catastrophic event, and most schemes are in a pilot stage (Béné et al., 2013).

Public Works Programmes (PWPs)

There are case study examples of PWPs in India and Ethiopia showing strong promise for climate change mitigation and adaptation (see below). The literature reflects an understanding that PWP community projects have good potential to reduce environmental vulnerability. However, there is no body of evidence on this.

Livelihoods

There is strong evidence that social protection can help build and improve livelihoods. This indirectly contributes to CCA and DRR through reducing vulnerability and increasing livelihoods resilience (expert comments). However, the chain of causality from social protection, through livelihoods, to DRR and CCA is difficult to establish. There is a gap in the evidence about how livelihoods theory links to social protection and climate change theory. Literature on sustainable livelihoods clearly complements this line of analysis, but was not reviewed in depth for this report.

5. Case studies

Asia-Pacific

This report aimed to provide examples from the Asia-Pacific region. However, there is **very little documentation** of social protection projects which include a climate change component.

Social protection in Asia-Pacific has increased over the last decade, but there is still **limited provision**, partly because of the substantial proportion of people employed in the informal sector (ESCAP & UNISDR, 2012). In general, countries in the region are moving towards a universal social protection floor model which aims to improve resilience and coping, rather than reactive measures (ESCAP & UNISDR, 2012). Use of social security mechanisms for climate change adaptation in southeast Asia is a **significant research gap** (Resurreccion & Sajor, 2008).

UN-HABITAT and UNDP (2014) highlight the specific need for programmes in Asia-Pacific to take account of **urban populations** as well as rural ones. Asia-Pacific has rapidly growing cities, and urbanites face different risks from climate change, including unsafe informal settlements which are more prone to landslides and flooding, and informal sector employment resulting in lower access to

social protection programmes (UN-HABITAT & UNDP, 2014). Over the last 30 years in Asia-Pacific, only 6 per cent of natural disaster losses were insured (UN-HABITAT & UNDP, 2014). There are currently few examples or evidence on climate-linked social protection programmes aimed at urban dwellers (UN-HABITAT & UNDP, 2014).

The Pacific Island countries on the whole do not have well-established formal social protection systems (Mohanty, 2011). Governments generally only provide social security to those in formal employment, and to a low level of spending and coverage. **Social protection is largely provided informally** by family, friends and community, and through NGOs. Governments may provide grants or other assistance to NGOs and community organisations to help sustain these traditional support networks. Informal safety nets are likely to be eroded by increasing environmental challenges, and formal systems may be required to counteract these challenges (Mohanty, 2011).

Indonesia

Skoufias et al. (2012) use a regression modelling analysis to look at the impact of rainfall shocks on household welfare. This is a rare example of a robust case study which shows the potential for social protection programmes to mitigate climate-related shocks. The paper considers the effects of a late monsoon onset and/or a low level of rainfall. It models rainfall data against vulnerability indicators for rural rice farming households in Java, drawn from national surveys in 1999 and 2000. The data shows that **climate variability has a strong effect on household welfare**. Some households were participants in social protection schemes, and these are analysed for their effect on mitigating shocks.

These results show the **varying effects of different types of social protection programmes** in response to low rainfall or late monsoon. The research compares the per capita total household expenditure among households which were or were not exposed to the shock, and which did or did not have access to social protection.

- **Inpres Poor Villages Program:** Households with access to credit through this programme had 15.7 per cent higher expenditure than those without the programme. Households running a farm business had even higher expenditure (24.9 per cent). This implies that the credit may have allowed households to borrow to maintain consumption levels.
- **Inpres Program for Under-developed Villages (Inpres Desa Tertinggal, IDT):** This block grants programme showed a similar ratio of household expenditure. This programme perhaps generated public works employment opportunities which mitigated the rainfall shocks.
- **Kampung Improvement Program (Program Perbaikan Kampung):** Produced positive effects of 24.8 per cent for all households, and 19.3 per cent for farm businesses. The programme aims to upgrade housing settlements with basic services and infrastructure through community-based organisations. The authors suggest that improvements in infrastructure may have mitigated the shocks.
- **Padat Karya:** This labour-intensive set of workfare programmes generated only weakly significant positive effects.
- **Infrastructure Development Program for Under-developed Villages (Proyek Peningkatan Pembangunan Desa Tertinggal, P3DT):** This community-based programme showed no statistically significant effects.

- **Program of Regional Empowerment to Overcome the Impact of the Economic Crisis (Program Pemberdayaan Daerah Mengatasi Dampak Krisis Ekonomi, PDM-DKE):** This block grants programme showed no statistically significant effects.

The authors conclude that access to credit and public works programmes were the most effective in this situation.

Cambodia

Cambodia experiences moderate floods and droughts as the most prevalent form of natural disaster (Vathana et al., 2013). Most rural households depend on rice cultivation for subsistence (Vathana et al., 2013). Cambodia's new national climate change strategic plan 2014-2023 includes **adaptive social protection** as one of its eight strategic objectives (Royal Government of Cambodia, 2013). This is framed as an approach to reducing loss and damage due to climate change. The specific strategies are (Royal Government of Cambodia, 2013: 17):

- Promote micro-financing to improve access to credits by local communities for climate change responses;
- Promote and encourage insurance schemes for reducing climate-risk and disaster burdens on society;
- Integrate gender into climate change response planning;
- Leverage the decentralisation process to strengthen financial and institutional processes for local adaptation;
- Institute public engagement, participation and consultations as primary entry points for adaptation planning, promoting the involvement of multiple stakeholders including NGOs, community-based organisations (CBOs), youths, indigenous communities and the private sector;
- Promote public-private partnerships, including corporate social responsibility

A survey conducted in Cambodia (Vathana et al., 2013) shows that households receiving cash transfers would allocate a transfer of USD 10 or USD 20 for domestic use, particularly after a flood. If the transfer was USD 30, this would more often be used for business purposes. The authors suggest that the poorer households interviewed for this survey did not well understand preventative strategies to reduce the occurrence of risk (Vathana et al., 2013).

Philippines

The Philippines has a high vulnerability to tropical cyclones, floods and droughts (Pineda Ofreneo, 2012). It has a series of climate change policies and development plans, many of which refer to the use of social protection mechanisms to help adjust to and mitigate the impacts of climate change. These are particular to farming and fishing communities and often framed as 'risk transfer' (Climate Change Commission, 2011). The national climate change action plan 2011-2028 uses **adaptive capacity** as a key concept, and aims to increase the adaptive capacity of the poorest and highest risk people.

An ILO project on climate change adaptation used **risk transfer mechanisms** to promote the ability to adapt (ILO, nd). In Agusan del Norte, a province in Northeastern Mindanao, farmers are experiencing increased flooding and droughts. The project, which ran from 2008-2011 through the MDG

achievement fund, helped farmers identify financial risk management strategies such as revolving funds and insurance schemes. It also had a **livelihood diversification** component. The integrated financial package increased access to credit, savings, insurance (including index insurance), and training, financial literacy and market support (Baybay-Villacorta, 2012). The 1000 farmers reached by the project had increased income and savings at the end of the pilot (Baybay-Villacorta, 2012). Index insurance customers had received payouts successfully. The lessons emerging from the programme include (Baybay-Villacorta, 2012):

- Group collateral worked well for increasing access to credit.
- Creating savings was successful.
- Farmer education was critical for changing behaviours and practices.
- Sustainability of the financial package is crucial for long-term change.
- Financial services need to be combined with risk reduction and adaptation strategies.

Bangladesh

Bangladesh is predicted to experience significant rises in temperature due to climate change (Coirolo et al., 2013). Heatwaves, heavy rain, cyclones and flooding are all expected. The Bangladesh government and NGOs offer a series of safety net and social protection programmes, but few of these are evaluated in the context of disasters (Coirolo et al., 2013). Beneficiaries enrolled in any social safety net programme are known to have increased food security, which implies better (food security) protection against any type of shock (Coirolo et al., 2013). However, the national Test Relief (TR), Vulnerable-Group Development (VGD) and Food for Work (FFW) programmes are all considered inadequate in scale and too poorly targeted to respond to disasters (Coirolo et al., 2013). The VGD and FFW are assessed in another paper as providing protective and preventative social protection, which has some disaster risk reduction impacts, but providing no promotive or transformative social protection (Al-Mansur, 2011).

Chars Livelihoods Program (CLP)

The CLP targets people who live on fluvial islands in northwest Bangladesh, which are very susceptible to flooding. Its first phase ran from 2004-2010, and the second phase 2010-2016. It provides public works, asset transfers (cash/in-kind), livelihoods-related training, market development, microcredit, and disaster preparedness training to protect people against shocks and climate variability (World Bank, 2013c). It does not specifically target climate change effects, but is focused on vulnerability and resilience. Its key disaster/climate resilience features include (Barrett et al., 2014; World Bank, 2013c):

- Focusing public works programming on the reduction of flood risks, e.g. raising homesteads above the water line, providing latrines and tube wells.
- Social safety net mechanisms that cushion beneficiaries against disaster impacts; asset transfers, particularly cattle which can swim and are able to be kept on the raised plinths for a long period of time.
- Social development group meetings with hazard and disaster training.
- Post-disaster relief and recovery support to protect and restore the assets/income being built up through the programme.

Horn of Africa Risk Transfer for Adaptation (HARITA) / R4 Rural Resilience Initiative (R4)

HARITA began in 2007 as an agricultural risk management programme. It provided microcredit, disaster insurance and improved resource management to strengthen food and income security of smallholder farmers (World Bank, 2013b). It was combined with the PSNP in the Tigray region to provide insurance-for-work, whereby PSNP participants receive insurance cover instead of the usual cash or food (World Bank, 2013b). There are options for people to pay for micro-insurance with cash if they choose. Women are more likely to purchase insurance if they can pay in labour instead of cash (WFP/OA, 2013). As in the usual PSNP, the PWP community projects have some climate-resilience objectives. Insurance payouts are triggered if rainfall drops below a certain threshold (World Bank, 2013b). This prevents distress sale of assets to survive and allows investment in next seasons' inputs (World Bank, 2013b). HARITA also provides access to microcredit through a partner institution, which uses the insurance scheme as collateral and credit. Part of the project's strength lies in its strong partnerships with well-known and trusted institutions (Oxfam, Relief Society of Tigray, Swiss Re) (Hellmuth et al., 2009: 45). The project has made an effort to include farmers in the design, which can be difficult due to the technical nature of index insurance (Hellmuth et al., 2009: 45).

Since HARITA started, it has delivered a number of insurance payouts. Its up-take rate is around 23 per cent of eligible farmers, which exceeds previous and other micro-insurance products (World Bank, 2013b). There is no strong evidence yet of impacts on livelihoods, but it appears that farmers who bought insurance also planted more seeds, used higher-yield varieties and used more compost, lost less livestock, and diversified income sources (World Bank, 2013b).

The R4 programme will continue this project, scaling up to expand across Ethiopia and Senegal, Malawi and Zambia. R4 is a partnership between the UN World Food programme (WFP) and Oxfam America (OA). R4 comprises four risk management strategies (WFP/OA, 2013):

- **Risk transfer:** Micro-level weather index insurance.
- **Risk reduction:** PWPs which build community assets against risk.
- **Prudent risk taking:** Insurance increases farmers' collateral and enables them to obtain credit and make riskier investments.
- **Establishment of risk reserves:** Savings, either group or individual.

An internal impact assessment shows that the project has been successful in maintaining livelihoods when rains fail (WFP/OA, 2013). Farmers have more livestock and more savings than uninsured farmers, and there is some evidence of greater investments in production (WFP/OA, 2013). Female farmers have experienced the greatest productivity gains (WFP/OA, 2013). As yet, the programme has not had transformative effects (WFP/OA, 2013).

Nicaragua

Atención a Crisis

From November 2005 until December 2006, the Ministry of the Family in Nicaragua implemented a pilot programme in six municipalities of a drought prone region in the north of the country. A World Bank paper describes the case study (Macours et al., 2012). The programme primarily targeted women, whose agricultural households faced increased weather shocks. It provided a conditional cash

transfer, vocational training and a productive investment grant, aimed at helping to diversify income. One group of beneficiaries received the CCT only, a second group the CCT and training, and a third group the CCT and the grant.

Two years after the intervention ended, the households receiving the CCT and grant, or CCT and training, were protected against drought shocks, measured through food consumption and income. These complementary interventions also increased households' participation in non-agricultural activities. These results were significantly better than households receiving only the CCT.

6. Donors and organisations using these models

African Climate Change Resilience Alliance

- <http://community.eldis.org/accra/>

African Risk Capacity

- <http://www.africanriskcapacity.org/home>

Climate Investment Funds

- Pilot Program for Climate Resilience:
http://www.climateinvestmentfunds.org/cif/Pilot_Program_for_Climate_Resilience

FAO

- <http://www.fao.org/social-protection/en/>

IDS

- Adaptive Social Protection: <http://www.ids.ac.uk/project/adaptive-social-protection>

ODI

- Adaptive capacity: <http://www.odi.org/programmes/climate-environment/adaptation-resilience>
- Social protection and safety nets in risks, shocks and emergencies:
<http://www.odi.org/programmes/social-protection/social-protection-safety-nets-risks-shocks-emergencies>

World Bank

- Social Protection and Labour strategy:
http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/280558-1274453001167/7089867-1279223745454/7253917-1291314603217/SPL_Strategy_2012-22_FINAL.pdf

- Building Resilience to Disaster and Climate Change through Social Protection Toolkit: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALPROTECTION/0,,contentMDK:23441088~pagePK:148956~piPK:216618~theSitePK:282637,00.html>

UNDP

- Climate Resilient Social Protection: <http://undp-alm.org/climate-resilient-social-protection>

World Food Programme

- <http://www.wfp.org/disaster-risk-reduction>
- R4 Rural Resilience Initiative: <http://www.wfp.org/initiatives/r4>

Key websites

- ELDIS – Adaptive Social Protection: <http://www.eldis.org/go/topics/resource-guides/climate-change/key-issues/adaptive-social-protection#.VCKYLfldVqo>
- World Bank Social Resilience & Climate Change: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/0,,contentMDK:22115092~pagePK:210058~piPK:210062~theSitePK:244363,00.html>

Other resources

- GSDRC Topic Guide on Climate Change Adaptation: <http://www.gsdrc.org/go/topic-guides/climate-change-adaptation>
- GSDRC Topic Guide on Disaster Resilience: <http://www.gsdrc.org/go/topic-guides/disaster-resilience>
- GSDRC Topic Guide on Social Protection: <http://www.gsdrc.org/go/topic-guides/social-protection>

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