



# **Climate Change Adaptation, Disaster Risk Reduction and Social Protection: Complementary Roles in Agriculture and Rural Growth?**

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## Executive Summary

Global processes and crises are changing and deepening the risks already faced by poor and vulnerable people in rural areas, particularly those involved in agriculture and other ecosystem-dependent livelihoods. Reliance on subsistence agriculture means the impact of stresses and shocks (such as droughts or floods) are felt keenly by rural poor people, who depend directly on food system outcomes for their survival. This has profound implications for the security of their livelihoods and for their welfare. However, such stresses and shocks will not necessarily lead to negative impacts, as risks and uncertainties, often associated with seasonality, are embedded in the practice of agriculture and there is considerable experience of coping and risk management strategies among people working in this sector. With climate change, the magnitude and frequency of stresses and shocks is changing and approaches such as social protection, disaster risk reduction (DRR) and climate change adaptation will be needed to bolster local resilience and supplement people's experience.

This study examines the opportunities for linking social protection, adaptation and DRR in the context of agriculture and rural growth, exploring whether linking these three approaches together will help enhance resilience to shocks and stresses in agriculture-dependent rural communities. The study does this by (i) reviewing conceptual and policy-related similarities and differences between the three disciplines, by (ii) collecting evidence from case studies where climate change-resilient social protection approaches have been trialled and by (iii) developing an *adaptive social protection* framework that highlight opportunities better co-ordination.

### ***Social Protection, Adaptation and DRR: Similarities and Differences***

Social protection, adaptation and DRR have much in common, but have developed as separate disciplines over the last two decades (see table below). They all seek to mitigate risks faced by poor people, they tackle the impact of and seek to build resilience against shocks and stresses on livelihoods and they are all in relatively formative stages of development and testing, rather than established components of development and poverty reduction. However, to date, despite ongoing efforts to link disasters and climate change communities (Sperling and Szekely, 2005; DFID, 2007), there has been little cross-fertilisation with social protection policies and practices.

*Key Characteristics of social protection, adaptation and DRR*

|   | <b>Social protection</b>                  | <b>Adaptation</b>   | <b>DRR</b>  |
|---|---|---|---|
| <i>Core disciplinary grounding</i>        | Development and welfare economics         | Social development and physical sciences  | Physical sciences   |
| <i>Dominant focus</i>                     | Implementation of measures to manage risk | Enabling processes of adaptation  | Prevention of disaster events   |
| <i>Main shocks and stresses addressed</i> | Multiple                                  | Climate-related   | All natural hazard-related, including climate                                       |
| <i>International coordination</i>         | Informal, OECD task group                 | UNFCCC – Nairobi Work Programme   | UN-ISDR Hyogo Framework for Action  |
| <i>Main Funding</i>                       | Ad hoc multilateral and bilateral         | Coordinated international funds: Global Environment Facility, UNFCCC/Kyoto Protocol funds. Ad hoc bilateral | Coordinated international funding: ISDR, GFDRR Ad hoc civil sponsored and bilateral |

Adapting to the impacts of climate change has grown from a minor environmental concern to a major challenge for human development and a crucial element in eradicating poverty and achieving the MDGs. Similarly, the disasters community has responded to the growing impacts of natural hazards by refocusing its attention away from humanitarian relief and rehabilitation toward

preventing and reducing disaster risk. Social protection has also rapidly moved up the development policy agenda and growing experience, together with improved evidence, suggests that it can effectively contribute to poverty reduction and move people into productive livelihoods. While social protection aims to build resilience to some climate-related disasters, insufficient attention has been played in the social protection sphere to the long-term risks posed by climate change. However, social protection approaches could inform DRR and climate change adaptation based on established implementation frameworks for vulnerability reduction.

***Implications of Climate Change for Social Protection: The Evidence Base***

Within the agricultural sector, social protection measures that could both build resilience to climate change and benefit from integrating climate change adaptation include: weather-indexed crop insurance, asset restocking (including direct livestock provision), and cash transfers. Assessing evidence from country’s experiences of these measures indicates ways in which social protection measures could better integrate DRR and climate change adaptation (see table below).

*Lessons from Linking Social Protection, DRR and Adaptation in Practice*

| <b>Social protection measure</b> | <b>Benefits for adaptation and DRR</b>  | <b>Challenges</b>   |
|----------------------------------|---|---|
| Weather-based crop insurance     | <ul style="list-style-type: none"> <li>- Rapid payouts possible</li> <li>- Guards against the adverse selection and moral hazard</li> <li>- Frees up assets for investment in adaptive capacity</li> <li>- Easily linked to trends and projections for climate change</li> <li>- Supports adaptive flexibility and risk taking</li> </ul>                                 | <ul style="list-style-type: none"> <li>- Targeting marginal farmers</li> <li>- Tackling differentiated gender impacts</li> <li>- Affordable premiums for poor</li> <li>- Subsidising capital costs</li> <li>- Integrating climate change projections into financial risk assessment</li> <li>- Guarantee mechanisms for re-insurance</li> </ul> |
| Seed transfer                    | <ul style="list-style-type: none"> <li>- Boost agricultural production and household food security</li> <li>- Post disaster response tool</li> <li>- Seed varieties can be tailored to changing local environmental conditions</li> <li>- Cost effectiveness of seed voucher and fair projects</li> <li>- Fairs promote crop diversity and information sharing</li> </ul> | <ul style="list-style-type: none"> <li>- Ensuring locally appropriate seed and fertiliser varieties</li> <li>- Protection of crop diversity</li> <li>- Reduce distortion of local markets</li> <li>- Focus on access rather than only availability</li> <li>- Inclusive approach that draws in marginal farmers</li> </ul>                      |
| Asset transfer                   | <ul style="list-style-type: none"> <li>- Ability to target most vulnerable people</li> <li>- Easily integrated in livelihoods programmes</li> </ul>   | <ul style="list-style-type: none"> <li>- Ensuring local appropriateness of assets</li> <li>- Integrating changing nature environmental stresses in asset selection</li> </ul>   |
| Cash transfers                   | <ul style="list-style-type: none"> <li>- Targeting of most vulnerable to climate shocks</li> <li>- Smoothing consumption allowing adaptive risk-taking and investment</li> <li>- Flexibility enhanced to cope with climate shocks</li> </ul>  | <ul style="list-style-type: none"> <li>- Ensuring adequate size and predictability of transfers</li> <li>- Long term focus to reduce risk over extended timeframes</li> <li>- Demonstrating economic case for cash transfers related to climate shocks</li> <li>- Use of socio-ecological vulnerability indices for targeting</li> </ul>        |

***Adaptive Social Protection***

The evidence presented in this paper suggests social protection and DRR measures designed to limit damages from shocks and stresses may simply not be sufficient in the longer term. For social protection to be resilient to climate change impacts, it will therefore need to consider how reducing dependence on climate sensitive livelihood activities can be part of adaptive strategies. Similarly, adaptation and DRR cannot effectively address the root causes of poverty and vulnerability without taking a differentiated view of poverty, something that further integration with social protection can

help with. To offer a way forward, the study concludes by suggesting follow-up work and by establishing the concept of *adaptive social protection*, which features:

- An emphasis on transforming productive livelihoods as well 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.
- Incorporation of rights-based rationale for action, stressing equity and justice dimensions of chronic poverty and climate change adaptation in addition to instrumentalist rationale based primarily on 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 in the context of the burden of both geophysical hazards and changing climate-related hazards.
- A longer-term perspective for social protection policies that takes into account the changing nature of shocks and stresses.

## **1. Introduction and Rationale**

1. Social protection, climate change adaptation and disaster risk reduction (DRR) have developed as three separate fields over the last two decades, all rising prominently in recent years. As the impacts of climate change have become better understood, climate change adaptation has grown from a minor environmental concern to a major challenge for human development and a crucial element in eradicating poverty and achieving the MDGs.
2. Over a similar period, the disasters community has focused beyond humanitarian relief and rehabilitation activities towards preventing and reducing the risk of disasters. Major disaster events such as the Iran (2003) and Pakistan (2005) earthquakes and the South Asian tsunami (2004) have added impetus to this paradigm shift.
3. Social protection has witnessed a similarly rapid rise up the development policy agenda and experience, together with improved evidence, suggests that it can effectively contribute to poverty reduction and move people into productive livelihoods. Many of the policy instruments associated with social protection have targeted and contributed to reducing vulnerability related to the variations and extremes in climate and their impact on rural livelihoods.
4. This study explores the potential policy linkages and complementarities of the three fields in the context of agricultural growth. To date, despite ongoing efforts to link disasters and climate change communities, there has been little cross-fertilisation with social protection policies and practices. The study introduces the background to the three fields and outlines existing linkages in discourse, policy and practice. It assesses good practice that might effectively contribute to agricultural growth, before recommending practical ways forward and options for further work.

## **2. Policy Context for Linkages in Agriculture**

5. This section briefly introduces the context of agriculture and rural growth to explore social protection, adaptation and DRR themes and related DFID policies. It then briefly highlights key similarities and differences between the three fields.

### **2.1 Agriculture and rural growth**

6. The majority of the world's poorest people live and work in rural areas. Their livelihoods and survival depend heavily on agriculture and other rural sectors strongly reliant on natural resources. As well as being central to the lives of poor people in developing countries, agriculture sectoral growth has strong links to growth in other sectors of the economy.
7. Weather-related shocks and stresses are crucial to agricultural production, with impacts on both small-scale producers and also those working in larger-scale agriculture and non-agricultural enterprises in rural areas. Shocks can be covariate (affecting everyone at the same time such as drought) and/or idiosyncratic (affecting only a particular household or individual, such as flooding). However, shocks will not necessarily lead to detrimental impacts and there is a considerable literature and experience on coping and risk management strategies (UNFCCC, 2007).

8. Effects of shocks and seasonality can threaten food security. In many rural areas markets for food are non-existent, weak or fragmented and characterised by seasonal price hikes, so most households will produce at the very least for their own food needs. High reliance on subsistence agriculture means the impact of stresses and shocks (such as droughts or floods) are felt directly by rural poor people who depend directly on food system outcomes for their survival and are less able to substitute losses by buying food in the market (FAO 2005).
9. DFID's Agricultural Policy (DFID, 2005b) focuses on increasing agricultural productivity as a crucial step in achieving economic growth and poverty reduction, recognising that agriculture's importance to poverty reduction reaches far beyond its direct impact on farmers' incomes. In the poorest countries in the earliest stages of development, increasing agricultural productivity encourages economic development outside agriculture where growth and job creation are faster and wages higher, and is a critical pathway to more diversified and faster economic growth.
10. To maximise impact on poverty, the policy paper identifies six guiding principles for policy and public spending decisions. Policies should:
  - Reflect the stage of a country's development;
  - Give priority to agricultural development in places where significant productivity gains are possible and the potential links to the wider economy are strongest;
  - Give priority to strategies designed to overcome the most significant obstacles to increased productivity and employment;
  - Focus on demand and market opportunities;
  - Make social protection complementary to agricultural growth;
  - Ensure the sustainable use of the main productive resources.

## 2.2 Social protection

11. Social protection for the most vulnerable people has become a key policy response to risk and vulnerability in the agriculture sector (Sabates-Wheeler et al, 2007a; Farrington *et al* 2004a; 2004b). Agricultural policies can help people improve their livelihoods and security; the right social protection can help rural people not only to expand their assets, but to use them efficiently and adopt higher return activities.
12. Social protection is a field of enormous scope. For the purposes of this study 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. (IDS 2006; Devereux and Sabates-Wheeler 2004).
13. This definition is useful because it allows the distinction between four categories of objectives: *provision measures*, which provide relief from deprivation; *preventive measures*, designed to prevent deprivation; *promotive measures*, aimed at enhancing income and capabilities; and *transformative measures*, which seek to address concerns of social justice and exclusion (Devereux and Sabates-Wheeler, 2004).

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.

14. The DFID Social Transfer Practice Paper identifies social transfers as an important option in addressing inequality, emphasising use of national social protection policy processes where possible (DFID, 2005). DFID’s White Paper III classifies social protection as one of the four essential public services. The 2005 Agriculture Policy Paper discusses how social protection can complement agricultural growth. It states that well-targeted and timed social protection programmes can support agricultural growth prospects by promoting risk-taking activities and allowing households to cope with unexpected shocks and stresses.

### 2.3 Disaster risk reduction (DRR)

15. Disasters can have a huge impact on livelihood opportunities and on people’s ability to cope with further stresses. Impacts such as loss of assets can lead to increased vulnerability of poor people and a “downward spiral of deepening poverty and increasing risk” (PLOW, 2007). DRR aims to make livelihoods more resilient to the impacts of disasters, hazards and shocks before the event.

16. In agriculture, DRR programmes have been used to lessen the effects of persistent food shortages and prevent widespread famines. Programmes include early warning systems, infrastructure investment, social protection measures, risk awareness and assessment, education and training, and environmental management.

“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”

17. DFID’s White Paper III reiterates the linkage between DRR and climate change, describing DRR as a crucial part of adaptation. The policy paper *Reducing the Risk of Disasters* (DFID 2006a) recognises that about two-thirds of disasters are caused by climatic hazards, including drought, floods and typhoons, and that absolute levels of disaster risk are increasing due to various pressures including climate change. DFID’s DRR approach supports improved international institutions that focus on reducing risk in the most disaster prone areas; on mainstreaming DRR into DFID’s own programming and country-offices; and on supporting civil society and private sector engagement with vulnerable communities. International commitments to DRR have been strengthened through the Hyogo Framework for Action (HFA). One of its five priorities for action is to reduce underlying risk factors, including by integrating DRR strategies with climate change adaptation.

### 2.4 Climate change adaptation

18. The human impacts of climate change are not evenly distributed. Both IPCC and the Stern Review identify poorer developing countries as being especially vulnerable to climate change because of their geographic exposure, low incomes and greater reliance on climate sensitive sectors, particularly agriculture. This in turn poses multiple threats to economic growth, poverty reduction, and the achievement of the Millennium Development Goals in developing countries (ADB *et al* 2003; Stern 2006; IPCC, 2007).

19. In the face of these challenges, a growing body of theory and practice has developed around adaptation to prepare for and respond to climate change. Adaptation is ‘*the ability to respond and adjust to actual or potential impacts of changing climate*

Adaptation is about reducing the risks posed by climate change to people’s lives and livelihoods.



*conditions in ways that moderate harm or take advantage of any positive opportunities that the climate may afford* (ADB *et al* 2003). Put simply by White Paper III, *'Adaptation is about reducing the risks posed by climate change to people's lives and livelihoods'* (DFID, 2006b). Adaptation shares much in common with DRR in preventing harmful impact from extreme events. Climate change adds additional challenges to existing historic weather-related shocks, including more severe drought impacts, heat-waves, and accelerated glacier retreat, hurricane intensity, and sea level rise (Adger *et al* 2007).

20. While climate-related risks have always been intrinsic to natural resource-based livelihoods, global processes and crises are changing and deepening risks faced by poor, vulnerable people in rural areas, particularly those involved in agriculture. Changes in temperature, increasing rainfall variability, increases in frequency and intensity of extreme weather events associated with climate change, are likely to change food production potential in many parts of the world. There is also potential for knock-on effects to disrupt food distribution systems and change purchasing power of all those who are hit hardest.
21. As a sector with significant sensitivity to changes in climate-related shocks, agriculture has been heavily engaged in adaptation efforts, both through scientific approaches based on impacts modelling, and vulnerability approaches grounded in meeting immediate needs and resilience building (Tanner and Mitchell 2007). There is still considerable uncertainty around the impacts on agriculture, and implications for food accessibility and food supply stability (FAO, 2005). One study suggests that the distributional effects overall will be negative for developing countries. Extreme events, such as increased frequency and intensity of droughts "will have much more serious consequences for chronic and transitory food insecurity than will shifts in the patterns of average temperature and precipitation". (FAO, 2005: 2).

### 3. Conceptual Linkages: Parallels and Differences

#### 3.1 Why the limited links to date?

22. Social Protection, DRR and Climate Adaptation seemingly have mutual measures and broad objectives. They all seek to mitigate risks faced by poor people. They tackle the impact of, and seek to build resilience against, shocks and stresses on livelihoods. They are also all in relatively formative stages of development and testing, rather than established components of development and poverty reduction.
23. While there are increasing efforts to link DRR and CCA approaches in the field and across international frameworks (Sperling and Szekely, 2005; DFID, 2007), links between either DRR or CCA and social protection have been more limited, possibly because:
  - Social protection is relatively new as a conceptual framework and discourse, even though many measures such as safety nets and starter packs have considerable history.
  - Voices in the richer nations have dominated the adaptation debate, traditionally tending to emphasise climate extremes, disaster prevention and early warning systems, rather than a livelihoods approach to vulnerability (Richards 2003).
  - The adaptation, DRR and social protection literatures have their origins in different academic traditions stemming from environment, humanitarian, and the social development/food security/livelihoods traditions. This has affected the creation of

different concepts, terminology, institutional setting, objectives and instruments (see Annex 1 for a summary).

- Capacity concerns, particularly among policy makers, lead to perceptions that linking social protection to DRR and adaptation is beyond the capability of the current system.

24. Table 1 highlights key features of these three policy areas. Despite the limited cross-fertilisation to date, it is possible to identify a set of linkages in the debates and conceptual frameworks that address a number of gaps evident when they are examined in isolation. Following an outlined of these linkages below, section 4 explores how they play out in practice in the context of agriculture.

*Table 1: Key Characteristics of social protection, adaptation and DRR*

|   | <b>Social protection</b>   | <b>Adaptation</b>   | <b>DRR</b>  |
|---|--|---|---|
| <i>Core disciplinary grounding</i>        | Development and welfare economics                                | Social development and physical sciences  | Physical sciences and social development  |
| <i>Dominant focus</i>                     | Implementation of measures to manage risk                        | Enabling processes of adaptation  | Prevention of disaster events and preparedness to respond   |
| <i>Main shocks and stresses addressed</i> | Multiple – idiosyncratic and covariant                           | Climate-related   | All natural hazard-related, including climate <b>and geophysical</b>                                  |
| <i>International coordination</i>         | Informal, OECD task group  | UNFCCC – Nairobi Work Programme   | UN-ISDR Hyogo Framework for Action  |
| <i>Main Funding</i>                       | Ad hoc multilateral and bilateral, NGOs, national, CBOs and FBOs | Coordinated international funds: Global Environment Facility, UNFCCC/Kyoto Protocol funds. Ad hoc bilateral | Coordinated international funding: ISDR, GFDRR, UNDP, Red Cross, ad hoc civil sponsored and bilateral |

### 3.2 Towards transformative and adaptive approaches through social protection

25. The dominant safety net policy agenda developed during the 1980s and 1990s focused on addressing protection measures for transitory, shock-induced poverty. Two important elements remain prominent: a focus on the poorest sections of society, typically children, the disabled and the elderly, and in some cases the bottom 10 per cent of the population, and the transfer of resources (especially cash) to households to smooth consumption or support income.
26. Similarly, in the disasters field, the bulk of efforts and resources have been within relief and recovery designed to smooth the social impact of shocks. Despite renewed momentum and commitments, far less emphasis has been placed on preventative approaches associated with DRR that tackle disasters from a holistic perspective. In the adaptation field, attention to building on existing coping practices is also focused on smoothing shocks as a first step. However, without tackling structural factors permitting adaptive shifts in livelihood strategies that reduce vulnerability to future climate shocks and stresses, this could act to entrench current conditions.
27. Joining these related agendas in the agriculture context therefore means looking beyond simply protecting the most vulnerable to the impact of shocks and stresses, and towards prevention and promotion to address structural constraints around poverty. Table 2 highlights potential adaptation benefits of different strands of social protection. Social

protection has much to offer in helping the poorest reduce their exposure to current (DRR) and future (adaptation) climate shocks.

*Table 2: Promoting adaptation through social protection*

| <b>SP category</b>                                    | <b>SP instruments</b>  | <b>Adaptation and DRR benefits</b>  |
|---|--|---|
| <i>Provision</i><br>(coping strategies)               | -social service provision<br>-basic social transfers (food/cash)<br>-pension schemes<br>-public works programmes   | -protection of those most vulnerable to climate risks, with low levels of adaptive capacity   |
| <i>Preventive</i><br>(coping strategies)              | -social transfers<br>-livelihood diversification<br>-weather-indexed crop insurance  | -prevents damaging coping strategies as a result of risks to weather-dependent livelihoods  |
| <i>Promotive</i><br>(building adaptive capacity)      | -social transfers<br>-access to credit<br>-asset transfers/protection<br>-starter packs (drought/flood-resistant)<br>-access to common property resources<br>- public works programmes | - promotes resilience through livelihood diversification and security to withstand climate related shocks<br>- promotes opportunities arising from climate change |
| <i>Transformative</i><br>(building adaptive capacity) | -promotion of minority rights<br>-anti-discrimination campaigns<br>-social funds   | -transforms social relations to combat discrimination underlying social and political vulnerability   |

### 3.3 Timeframe and limits: Driving longer term perspectives on social protection

28. Many social protection interventions are planned over relatively short time frames. More recent social protection policies and programmes refer to the need for *'long-term'* interventions. Nevertheless, how this will be achieved, and analysis of how long-term they need to be to achieve stated objectives, is rarely fully considered. Considering adaptation and DRR in the context of social protection provides a strong incentive for developing longer term perspectives.
29. Climate change highlights the importance of considering how prevailing and future trends in weather and climate might affect the effectiveness of social protection measures, as well as how they might contribute to reducing vulnerability to shocks and stresses caused by today's climate. Linking with agendas on DRR and adaptation exposes social protection to fundamental issues around the ability of agricultural practice to support productive livelihoods in a changing climate (Dinar 2007).
30. Social protection and DRR measures designed to limit damages from shocks and stresses may simply not be sufficient in the longer term. For social protection to be resilient to climate change impacts, it needs to consider reducing dependence on climate sensitive livelihood activities. This raises questions of structural change, particularly centring on the existence and identification of 'limits to adaptation', beyond which in situ efforts will not reduce risk to acceptable levels.
31. While difficult to define with precision, the 'limits to adaptation' debate prompts social protection to refocus on more transformative approaches in areas where climate stresses are already, or are projected to become, severe constraints to supporting productive agriculture-based livelihoods (for example in severely drought-prone areas or river deltas). There undoubtedly remains a need for significant additional investment in agriculture to enhance resilience, promote growth and seize opportunities from more favourable climatic

conditions and climate change-related revenue streams. However, addressing rural poverty reduction in the context of climate change is also likely to include promotion of off-farm rural enterprise and industry, urban services investment, assisted migration and improved remittance schemes.

### 3.4 People-centred and social aspects

32. The social protection agenda based on a dominant safety net-based risk management approach has tended to focus on economic aspects of protection, in part a legacy of the World Bank's risk management framework. There is a consequent danger that by focusing on economic mechanisms rather than development objectives, social protection interventions have not fully addressed issues of social vulnerability including marginalisation and exclusion. In addition, many social protection policies and programmes have minimal dialogue with intended beneficiaries. This hinders development of programmes and policies that are based on the realities of the poor, considering both the constraints and opportunities they face. Voice is critical in the process of identifying needs and priorities and translating this into policy and resources commitments.
33. Social aspects of vulnerability, disaster risk reduction and adaptation have similarly challenged the dominance of physical science disciplines that have not engaged extensively with social development agendas. Within adaptation, this dominance is reflected in the definition and conceptualisation of vulnerability as the residual effect of a given climate impact after any adaptation activities are undertaken, rather than the dynamic set of initial conditions that help determine the impact of a given shock or stress (O'Brien *et al* 2004). The former conceptualisation has tended to favour technical issues in analysis and development of adaptation solutions, such as weather forecasting, flood protection infrastructure, new crop varieties, and irrigation in the agriculture sector (Klein *et al* 2007).
34. Nevertheless, recent disasters and adaptation discourse and practice have started to take a more people-centred approach. This is evident in the greater attention being paid to social and institutional aspects in adaptive capacity, in the growing focus on community-based adaptation, and in the development of tools and methods to assess human vulnerability (Adger, 2003; Wisner *et al* 2004; Huq, 2007; IFRC 1999, Chiwaka 2005).

### 3.5 Institutional capacity and coordination

35. The three fields also share a need to link policy and actions with wider aspects of human development and economic growth. If social protection is to produce positive social and economic outcomes, synergies need to be made with other disciplines that address the multiple dimensions of poverty. This differentiation is played out at multiple levels, including in development cooperation agencies such as the World Bank and DFID. At country level, social protection policies are often implemented in isolation, not within poverty reduction frameworks or growth strategies.
36. Ministries responsible for implementation (e.g. Ministries of social welfare) are commonly poorly resourced and marginalised and are poorly placed to provide the necessary links. Adaptation has suffered similar marginalisation in policy processes due to the common location of climate change focal points across the world in meteorological and environment ministries (Mitchell *et al* 2006). Equally DRR is often found in response or disaster management agencies, rather than as part of development or mainstream politics. This has frustrated the cross-sectoral links necessary for work in key areas such as agriculture as

these focal point ministries tend to be poorly resourced and relatively weak within the government system.

### 3.6 Instrumentalism vs. rights based approaches

37. Social protection has been crudely divided into two approaches (Devereux and Sabates-Wheeler 2007). The first is underpinned by *instrumentalist* arguments for social protection to efficient delivery of the MDGs. Social protection thereby puts in place risk management mechanisms where they are temporarily missing due to poverty and the absence of private institutions.
38. Within adaptation and development fields a similar rationale can be identified in risk management based approaches, particularly in the context of development cooperation (Burton and Van Aalst 2003; Tanner *et al* 2007). These stress fiduciary risks management to ensure that development finance is effective in meeting poverty reduction targets. DRR has witnessed a parallel growth in economic evaluation (DFID/ERM, 2006). Risk reduction and adaptation are therefore a means to an end, and economic analysis builds the evidence base to advocate for DRR and adaptation as cost-effective means of preventing future negative impacts on development investments (Stern, 2006).
39. The *activist* arguments underpinning social protection as an inviolable right to combat social injustice and inequality also have parallels with climate change debates. Social protection rationale is informed by the ideal of a guaranteed ‘universal social minimum’ based on citizenship rather than philanthropy or self-interest (Devereux and Sabates-Wheeler 2007). Approaches to adaptation reflect these arguments. Here, adaptation in poor communities is regarded as a necessary response to a problem caused by richer people globally but with impacts felt most severely by poorer citizens who have contributed least to the problem (Paavola and Adger 2006). These equity and justice debates have formed the backbone of adaptation as an advocacy and campaigns issue, particularly among international NGOs (Simms and Reid 2004; Christian Aid 2006).
40. A key implication for designing and implementing social protection in the context extreme events and climate change is therefore likely to be an enhanced engagement with rights and equity based arguments around climate change injustice. How these arguments play out with prevailing instrumentalist approaches in the major donors, and particularly the World Bank, is likely to be crucial in defining the role of social protection in reducing disaster and climate risks.

## 4. Linkages in Practice: Investigating the Evidence Base

41. Increased variability in weather-related shocks and stresses, resulting from climate change, increases the risk of production failure for farmers particularly those engaged in rain-fed agriculture (IPCC 2007a). This section reviews lessons from four different social protection measures aimed at the agriculture sector in the context of climate change adaptation and DRR. The instruments explored include: weather-indexed crop insurance, asset transfers, input distribution and seed fairs, and cash transfers. While not an exhaustive list, these instruments represent areas where social protection instruments related to adaptation and disasters are more developed. Country experiences from Bangladesh, Ethiopia, India, Kenya and Malawi reveal how these measures can enhance the resilience of vulnerable communities and point to ways in which social protection measures could be more resilient to current and future climate related shocks.

42. Further detail for each of these practical examples is shown in Annex 2.

#### 4.1 Weather-indexed crop insurance

43. Crop insurance is widespread throughout the developed world and commonly insures farmers against losses in crop yields resulting from weather-related stresses. As climate impacts become increasingly critical to agriculture production in developing countries due to climate change, insurance is likely to play a greater role in absorbing shocks and spreading risk. Transferring the model of loss-based insurance has been problematic however due to high transactions costs to verify losses, moral hazard that inhibits risk taking, and adverse selection of crops due to an expectation of payout in bad years (Murdoch, forthcoming; Hellmuth *et al* 2007; Hess and Syroka 2004).
44. As a consequence, there has been a shift away from insuring against poor crop yields toward insuring against adverse weather. Weather-indexed crop insurance develops a contract written against a weather index, ideally based on historical records of the relationship between drought and crop failure. Farmers collect immediate insurance compensation if the index reaches a certain point or “trigger”, regardless of actual losses.
45. The pilot project undertaken by the Government of Malawi, the World Bank, International Research Institute for Climate and Society (IRI) and the National Smallholder Farmers Association of Malawi (NASFAM) provides empirical evidence of the use of weather-indexed crop insurance for groundnut production in a climate change context. Through the scheme, farmers entered into a loan agreement with an interest rate that includes a weather insurance premium. The loan enabled households to access an input package which included improved groundnut seed. In the event of a severe drought (as measured by the rainfall index), the borrower would pay only a fraction of the loan due, while the rest is paid by the insurer directly to the lender. The insurance guarantee against the loan allows high-risk and low-income farmers to obtain credit to invest in seeds and other inputs for higher yielding crops (Helmuth, *et al* 2007).
46. In India, a local micro-finance institution, BASIX, and an insurance company, ICICI Lombard along with the Commodity Risk Management Group and the World Bank have pioneered a rainfall insurance scheme in Andhra Pradesh. Similar to the Malawian scheme, the contracts ensured a prompt payout when rain falls below a crop-specific rainfall index. ICICI Lombard underwrote the insurance policies and reinsured the risks with an international reinsurance company. Individual farmers and self-help groups articulated product satisfaction in all of the pilot areas. Prompt settlement of claims in 2004 won the appreciation of the farmers who expressed their willingness in becoming repeat customers in 2005 (Manuamorn 2005).
47. The weather indexed approach guards against problems of adverse selection and moral hazard because regardless of whether the insurance is paid out or not, farmers still have an incentive to make productive management decisions (Hellmuth *et al* 2007; Hess and Syroka 2005). The timeliness of payouts means that farmers are not forced to adopt costly coping strategies, such as the sale of productive assets, and are able to smooth their consumption by providing liquidity following crop losses (Murdoch, forthcoming). Where well designed, they may also permit farmers to enhance adaptive capacity through greater risk taking experimentation in agriculture practices that was not possible in crop-insurance schemes. As insured households and farms are more creditworthy, insurance can also

promote investments in productive assets and higher-risk/higher-yield crops (Mechler *et al* 2006).

48. Despite these advances, key challenges facing the expansion of weather-indexed insurance in light of climate change include (Mechler *et al* 2006; Hellmuth *et al* 2007; Holmes *et al* 2007):
- Difficulties in targeting those most vulnerable to drought and food insecurity, engaged in non-commercial marginal agriculture;
  - Failure to tackle differentiated gender impacts;
  - High premiums may preclude involvement of very poor groups, who often live in areas of high climate risk;
  - Capital costs such as the construction of weather stations must be funded by either the public or private sector to ensure broad coverage;
  - Climate change presents significant uncertainty in predicting long-term weather patterns making it difficult to accurately assess financial risk;
  - Increased climatic variability and occurrence of extreme events may result in larger and/or more frequent insurance payouts resulting in the possible insolvency of the insurance provider or higher premiums from re-insurers which may be inaccessible to the poor.
49. Climate change impacts provide an imperative to such schemes to integrate flexible and inclusive measures designed to consider differentiated nature of agriculture production among different groups of farmers, including poorer and more marginal farmers.

#### 4.2 Asset restocking

50. The sale of productive assets is a common coping strategy among the rural poor during times of climatic stress or shock, placing the poor at risk of poverty and food insecurity (Sen 1981). Asset-building is therefore gaining prominence as a means of reducing risk and vulnerability, and smoothing the impact of shocks, including those related to the climate. This is a broad area of social protection measures that can include unconditional and conditional cash transfers, micro-credit, and the direct provision of goods, services, or animals. It is often characterised by direct subsidy to the asset building strategy.
51. Three examples of asset transfer programmes from Bangladesh demonstrate vulnerability reduction of poor people. The Bangladesh Rural Advancement Committee's (BRAC) 'Challenging the Frontiers of Poverty Reduction: Targeting the Ultra Poor' (CFPR/TUP) programme provides households productive assets suitable for income-generating activities, a 'subsistence allowance' for 18 months, access to health and legal services, as well as social linkages with village elites. The Chars Livelihood Programme (CLP), another DFID supported project involves asset transfers to target extreme poverty in the Brahmaputra Chars area in northern Bangladesh. This has included more climate-resilient activities that facilitate mobility.
52. CLP demonstrates considerable success in average returns on assets and contributing to income diversification, but also problems in ensuring that assets transferred were well suited to local conditions (Marks 2007; Devereux and Coll-Black 2007). In order to ensure that such programmes help to diversify income and buffer households from climatic risk, guidelines for Asset Transfer Implementation Guidelines for the CLP will need to ensure appropriate asset selection in the context of climate change (Tanner *et al* 2007).

53. Another project, Reducing Vulnerability to Climate Change (RVCC) included alternative livelihoods promotion and asset transfer such as promoting livestock and birds that are more suited to the changing environmental conditions, particularly those that consume a low amount of fresh water and are capable of absorbing heat and temperature. Other examples include ‘nucleus herds’ for Masai pastoralists in northern Kenya supported by Practical Action in the face of increasing incidents of drought. The most healthy and resilient females, and one or two males, were selected for “seed stock” which were then isolated and provided with veterinary services and access to water and fodder. These nucleus herds have allowed households to rebuild assets stocks following the prolonged drought.
54. These examples demonstrate that asset transfer can contribute to reducing vulnerability to climate shocks, buffering climate related shocks at the household level by providing liquidity and alternative sources of income. Evidence suggests that they can operate simply and effectively as part of ongoing livelihood strengthening programmes. They may also be more suitable to target the very poorest and most vulnerable groups. Limited engagement of livelihoods programmes to date suggests there may be greater potential for integration of climate shocks and future climate change such that the selection of such assets considers the changing environmental context to ensure that such schemes enhance rather than undermine resilience.

### 4.3 Starter packs and seed fairs

55. In response to calls to develop and distribute crop varieties that are drought and saline resistant, programmes for distribution of free inputs or inputs-for-work have become increasingly popular, especially across Africa. Input distribution has been a common response amongst development agencies in response to production failure resulting from drought and enhancing access to seeds and fertiliser. The distribution of fertiliser and seeds for free is intended to enhance food security by boosting food production among farmers who are unable to obtain such inputs. Malawi has had numerous manifestations of free input and input-for-work programmes, which have been strongly supported by DFID (Devereux *et al* 2006a). Recent evaluation of starter pack programmes reveal success in boosting food production at the national level and household level food security (Devereux and Coll-Black 2007).
56. While popular among donors, critics argue that inputs sourced through commercial seed and fertiliser companies are often inappropriate to local cropping patterns and agro-ecological conditions, can potentially distort local seed markets, and reduce crop diversity. Other critics of input distribution argue that such measures misdiagnose the *inaccessibility* of inputs with *unavailability*, and fail to assist in keeping seeds stocks year on year (Barahona and Cromwell 2005; Orindi and Ochieng 2005; Thompson, *et al* 2007; Devereux and Coll-Black 2007).
57. As an alternative to traditional input distribution programmes, DFID supported the Catholic Relief Services, the Food and Agriculture Organisation (FAO) and other local partners to implement a seed voucher and fair programme in Kenya’s semi-arid region in response to prolonged drought. Farmers were encouraged to bring their surplus seeds to fair sites where voucher holders were able to select seeds of their choice. On completion of the seed fair, seed retailers redeemed their vouchers for cash.



58. In contrast to the package of inputs approach which risks undermining biological diversity and leads to mono-cropping, seed vouchers and fairs have encouraged farmers to maintain crop diversity on their farms, contributing socio-ecological resilience. SV&Fs programmes have been found to be substantially more cost-effective than traditional input distribution approaches, as well as providing an opportunity for greater information sharing among farmers (Orindi and Ochieng 2005).
59. Other examples include a Practical Action supported pilot in post-tsunami areas of Sri Lanka to trial 10 traditional saline-resistant varieties which had been present before the introduction of higher yielding varieties. These help increase resilience in light of sea-level rises in low lying areas. The RVCC programme in Bangladesh has similarly encouraged the planting of saline tolerant non-rice crops such as maize and grass during season when rice cannot be grown, increasing soil nutrient levels and providing fodder for cattle.
60. Traditional input transfer programmes may be a tempting method to distribute crop drought- or saline-tolerant crop varieties; however, such programmes can undercut local seed markets and ignore indigenous knowledge. Furthermore, such free input distribution may in fact increase vulnerability to climate change by ignoring particular agro-ecological contexts and undermining crop diversity. On the other hand, seed voucher and fair projects present a cost-effective way to assist post-disaster recovery and enhance resilience by promoting crop diversity and information sharing between farmers.

#### 4.4 Cash transfers

61. Cash transfer programmes are gaining momentum both in humanitarian relief efforts (Harvey 2005) and as an overall poverty reduction strategy (see Barrientos 2006). DFID is currently supporting a number of cash transfer programmes or pilots in Bangladesh, Ethiopia, Kenya, Malawi, Pakistan and Zambia (Sabates-Wheeler *et al* 2007b). Redistributive cash transfers help raise incomes and smooth the consumption of the poor, allowing them to engage in moderate risk-taking, and to protect rather than erode their asset holdings when confronted by livelihood shocks (Devereux and Sabates-Wheeler 2004). Furthermore, cash transfer programmes may contribute to asset-building as well as the generation of economic multiplier effects, through the generation of local employment (GTZ 2005; Mattinen and Ogden 2006; Slater *et al* 2006; DFID 2004; Devereux 2006).
62. Climate change is projected to increase stress on livelihoods (ADB *et al* 2003). Predictable cash transfers could therefore play an important role in mitigating the vulnerability of the chronic poor who will increasingly be exposed to climate related shocks and stresses. Preliminary lessons from Ethiopia's Productive Safety Net Programme (PSNP) reveal a positive effects on household food consumption as well as the protection of household assets (Devereux *et al* 2006; Slater *et al* 2006; Vaitla 2006). The PSNP contributed to a reduction in 'distress selling' of assets, provided an opportunity for households to create assets, and contributed positive impacts on human capital through increased school enrolment and access to health services (Slater *et al* 2006).
63. However, evaluation reports also indicate that due to variations in food prices, the purchasing power of the PSNP transfer varied by more than 100 percent across regions and seasons in 2005/06 (Devereux *et al* 2006b). In general, the cash transferred was found to be too small and too unpredictable to protect poor households against hunger and food rationing in 2005, which has led to a shift in preference away from cash toward food (Pelham and Assegid 2007). Delays in implementation also mean that the PSNP was poorly

timed and did not coincide with the peak hunger season. These problems were further compounded by late and erratic payment of cash and food transfers and budget constraints, which resulted in smaller transfers per beneficiary (Devereux and Coll-Black 2007).

64. Proactive safety nets in the form of cash transfers present a viable alternative to traditional post-disaster relief responses. Tanner and Mitchell (2007) argue that in a changing climate, cash transfers and other social protection measures must reduce risk over *extended* timeframes, particularly in ecological and social environments subjected to high states of flux. Repeated transfers at predictable and regular intervals allow recipients to spread risk and to plan spending and investment behaviour over longer timeframes. Larger and continuous cash provisions are more likely to lead to the asset accumulation and poverty reduction (and therefore risk reduction) than occasional or erratic transfers (Devereux and Coll-Black 2007; Marcus 2007). Access to contingency funds or savings may be an effective way to spread risk over time (Tanner and Mitchell 2007; Frankenberger 2007). With regard to the PSNP, emerging evidence also suggests that cash transfers may contribute to the formation of informal savings groups.
65. Cash transfers conditional on public works may also contribute to adaptation and DRR through the construction of community assets that enhance resilience. Examples in Ethiopia of roads, water catchments and soil conservation activities have increased access to local markets, health facilities and water as well as greater soil fertility and flood mitigation (Guenther 2007).
66. Common critiques of such programmes include overstated economic benefits and rapid deterioration of assets following completion of the scheme (McCord 2005; Devereux 2002). Moreover, conditional cash transfers work against the principle that social protection should be viewed as a basic right (DFID 2004; Devereux and Coll-Black 2007). Limited information exists within existing programmes to assess the full cost-effectiveness of social transfers (Devereux *et al* 2005; Devereux and Coll-Black 2007), although evidence does suggest that concerns about unaffordability are overstated, with predictable social transfers shown to be more cost-effective than food aid (Devereux and Coll-Black 2007; Harvey 2005). Similarly, there is little empirical evidence assessing the effectiveness of cash transfers that relates analysis to the changing frequency of climate-related hazards.

#### 4.5 Summary of lessons from case studies

Key messages and lessons from case studies are synthesised in Table 3 below.

*Table 3: Benefits and challenges of social protection for adaptation and DRR*

| Social protection measure    | Benefits for adaptation and DRR   | Challenges  |
|------------------------------|---|---|
| Weather-based crop insurance | <ul style="list-style-type: none"> <li>- Rapid payouts possible</li> <li>- Guards against the adverse selection and moral hazard</li> <li>- Frees up assets for investment in adaptive capacity</li> <li>- Easily linked to trends and projections for climate change</li> <li>- Supports adaptive flexibility and risk taking</li> </ul> | <ul style="list-style-type: none"> <li>- Targeting marginal farmers</li> <li>- Tackling differentiated gender impacts</li> <li>- Affordable premiums for poor</li> <li>- Subsidising capital costs</li> <li>- Integrating climate change projections into financial risk assessment</li> <li>- Guarantee mechanisms for re-insurance</li> </ul> |
| Seed transfer                | <ul style="list-style-type: none"> <li>- Boost agricultural production and household food security</li> </ul>   | <ul style="list-style-type: none"> <li>- Ensuring locally appropriate seed and fertiliser varieties</li> </ul>  |

|                |  |  |
|----------------|--|--|
|                | <ul style="list-style-type: none"> <li>- Post disaster response tool</li> <li>- Seed varieties can be tailored to changing local environmental conditions</li> <li>- Cost effectiveness of seed voucher and fair projects</li> <li>- Fairs promote crop diversity and information sharing</li> </ul> | <ul style="list-style-type: none"> <li>- Protection of crop diversity</li> <li>- Reduce distortion of local markets</li> <li>- Focus on access rather than only availability</li> <li>- Inclusive approach that draws in marginal farmers</li> </ul>   |
| Asset transfer | <ul style="list-style-type: none"> <li>- Ability to target most vulnerable people</li> <li>- Easily integrated in livelihoods programmes</li> </ul>  | <ul style="list-style-type: none"> <li>- Ensuring local appropriateness of assets</li> <li>- Integrating changing nature environmental stresses in asset selection</li> </ul>  |
| Cash transfers | <ul style="list-style-type: none"> <li>- Targeting of most vulnerable to climate shocks</li> <li>- Smoothing consumption allowing adaptive risk-taking and investment</li> <li>- Flexibility enhanced to cope with climate shocks</li> </ul>   | <ul style="list-style-type: none"> <li>- Ensuring adequate size and predictability of transfers</li> <li>- Long term focus to reduce risk over extended timeframes</li> <li>- Demonstrating economic case for cash transfers related to climate shocks</li> <li>- Use of socio-ecological vulnerability indices for targeting</li> </ul> |

## 5. Consultation and Recommendations for Further Work

### 5.1 Consultation

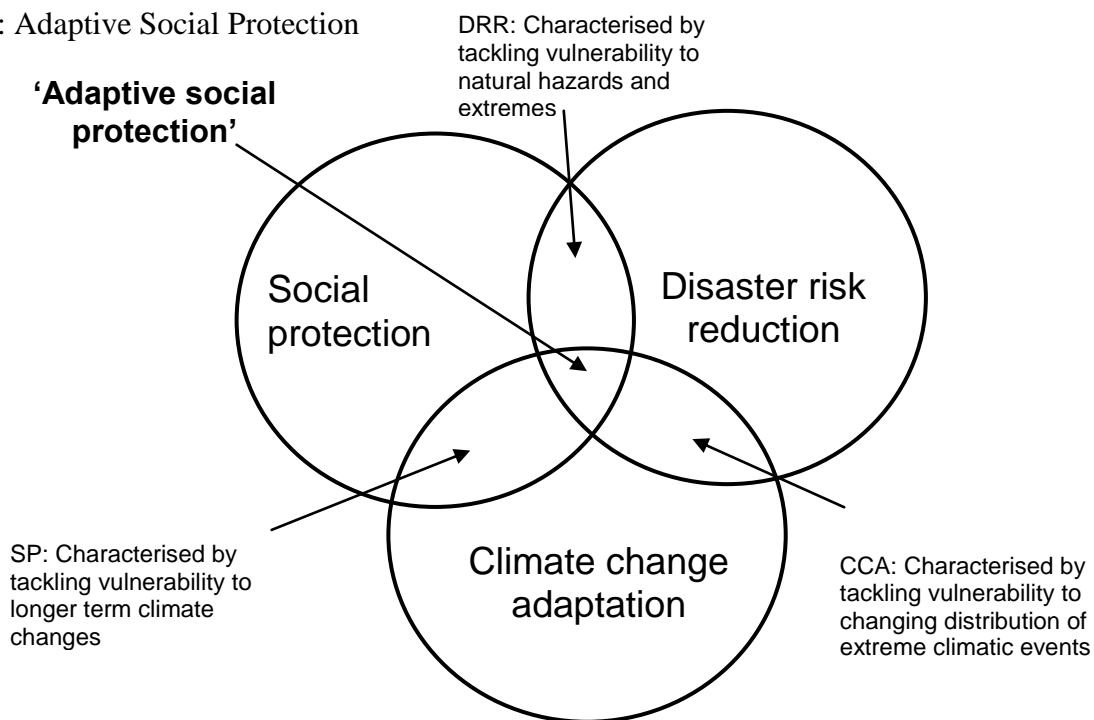
67. Consultations with DFID advisers at country level examined if the review findings: resonate with their experiences; what opportunities arise from linking disciplines; what are the main barriers to implementation that need to be overcome and; what support can be provided in implementing linked and more coherent approaches? We discuss the main findings here; further recommendations are outlined in table 4.
68. Encouragingly, advisers pointed to positive examples where existing programmes and processes link the disciplines. It was felt that natural synergies often exist when disciplines are implemented on the ground. In Ethiopia for example, climate change, social protection and DRR have been combined through the Productive Safety Net Programme (PSNP) in the context of hunger and predictability. Here, it is believed a more insurance based approach to adaptation and climate change ensures funding becomes more predictable. In India, attempts have been made to climate proof social protection by strengthening peoples resilience to drought by expanding the capacity of safety nets to sustain peoples livelihoods over a longer period (for example through links with employment generation schemes).
69. In the context of national political ownership, opportunities can be provided by building on existing political acceptance and ownership. In Ethiopia, for example, strong political ownership around the humanitarian reform agenda and the future of social protection provides opportunities to develop a coherent agenda among the disciplines. The strong political interest around growth in the context of risk management provides possibly the greatest opportunities for lasting political ownership and commitment. Helping policy makers to identify commonalities between the disciplines, strengthens this opportunity yet further.
70. Some respondents felt that linkages had not been explored fully as yet, and there was, therefore, potential to look at existing programmes in more detail. In particular, positive opportunities provided through climate change warrant further analysis including the

promotion of livelihoods through adapting new cropping systems or developing new income streams.

## 5.2 Developing ‘Adaptive Social Protection’

71. This paper illustrates the links between social protection, climate change adaptation and DRR in the context of agriculture. We showed how current experiences of social protection have much to offer in protecting the poor to current (DRR) and future (adaptation) weather extremes. We also suggest ways in which social protection programmes themselves can be made more robust in the face of current and future shocks. This includes:
- a) *Climate proofing social protection* through a long-term vision in the context of more reliable and accurate predictions and consideration of vulnerability.
  - b) *Policy and programmatic options* for climate change adaptation
  - c) *A preventative and holistic poverty approach* for DRR
  - d) *An improved growth focus* for agriculture
72. These opportunities are suggested in bringing together the objectives of three distinctive areas of work within the context of agricultural growth (see Figure 1). This places social protection in the context of the influence of natural phenomena, and particularly climate, on agricultural productivity and related livelihoods. It aims to provide a framework for understanding how social protection measures may be tailored to become more resilient to risks from current disaster hazards and future climate-related impacts, including conditions that have not been experienced before.

Figure 1: Adaptive Social Protection



73. By placing social protection in the context of the impacts of natural phenomena, particularly climate, on agricultural productivity and related livelihoods we establish a framework for social protection measures that are resilient to disaster risks, and that acknowledge the changing nature of climate-related impacts including the future existence of conditions that have not been experienced before. This *adaptive social protection* is characterised by a number of features that include:
- 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.
  - Incorporation of rights-based rationale for action that addresses social exclusion, stressing equity and justice dimensions of poverty and climate change adaptation in addition to instrumentalist rationale based primarily on 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 in the context of the burden of both geophysical hazards and changing climate-related hazards.
  - A longer term perspective for social protection policies that takes into account the changing nature of shocks and stresses.
74. This is not to suggest that all DRR, adaptation and social protection work will, or indeed should, necessarily meet all of these characteristics. There are likely to still be roles for specific policies and instruments within each of the fields. However, this analysis does permit the identification of a number of potential areas for future work that links these related fields together.

### 5.3 Recommendations for further areas of work

75. There are likely to still be roles for specific policies and instruments within each of the fields. However, our analysis does permit the identification of a number of potential areas for future work that links these related fields together, and a number of ways to address the challenges of developing adaptive social protection in the broader context where agriculture is a part but not the only consideration. These opportunities and options are outlined in table 4.

Table 4 Opportunities and further requirements

| Title                       | Issue   | Notes  |
|-----------------------------|---|--|
| Collaboration Mechanisms    | <ul style="list-style-type: none"> <li>a. <i>DFID Events</i> <ul style="list-style-type: none"> <li>• Use of DFID events to discuss lessons, options and challenges in developing adaptive social protection e.g. DFID advisors retreats, Palace Street seminars</li> <li>• Country offices to host discussion/seminars</li> </ul> </li> <li>b. <i>External Events</i> <ul style="list-style-type: none"> <li>• Included discussion on linkages in major international conferences. E.g. in the four meetings of the UNFCCC climate change negotiations held during 2008 including March 2008 Nairobi UNFCCC work programme on the socioeconomics of adaptation.</li> </ul> </li> <li>c. <i>Donor collaboration</i> <ul style="list-style-type: none"> <li>• DFID –World Bank collaboration on social dimensions of climate change</li> <li>• Link to the National Adaptation Programme of Action</li> <li>• DAC Povnet discussion on social protection and climate change</li> <li>• EU interest in linkages between social protection and climate change</li> </ul> </li> </ul> |  |
| Improving the evidence base | <p>An evidence based body of examining how combining measures can mitigate vulnerability. This could include:</p> <ul style="list-style-type: none"> <li>• Capturing further lessons from existing case studies to support learning in other countries*</li> <li>• Development of an index and categories</li> <li>• How linkages support economic growth including evidence on the economic costs and benefits of social protection measures</li> <li>• Evidence of cost effectiveness of social protection measures relative to the alternative impacts.</li> <li>• Combining the study of poverty impacts of climate shocks on households or regions with trends and projections for future climate hazards.</li> </ul>  | *Existing programmes identified through consultation include: India Poorest Area civil Society Programme; Ethiopia PSNP                              |
| Tools/resources             | <ul style="list-style-type: none"> <li>• Climate Risk Assessments (CRA) are developed for use in conjunction with proposed social protection programmes.</li> <li>• How to link information screening and risk assessment processes. Can climate screening be part of the risk assessment process to ensure that a range of social protection options are part of the recommendation following the risk assessment</li> <li>• Development of practical guides on the considerations necessary when making the linkages between disciplines</li> </ul>   | Climate risk assessment processes being developed as part of DFID strategy and programme cycle management  |
| Capacity building           | <ul style="list-style-type: none"> <li>• Reading weeks and training programmes on linking disciplines.</li> </ul>   | Link to adaptation reading week  |
| Funding                     | <ul style="list-style-type: none"> <li>• Review existing adaptation funding guidelines and criteria and identify how well social protection interventions are integrated into them</li> <li>• Following the review, dialogue with existing adaptation funders on potential to develop adaptive social protection further</li> </ul>   |  |
| Dialogue among Disciplines  | <ul style="list-style-type: none"> <li>• Examine how climate science evidence can be used as an advocacy tool for change.</li> <li>a. GCOS looks at the impact of climate change on agriculture – GECAFS project</li> <li>b. Discuss the findings of the ILRI-led report on climate change vulnerability in Africa with social protection and food security specialists and examine implications for their work.</li> <li>• Incorporate dialogue into major agricultural forums and debates               <ul style="list-style-type: none"> <li>a. The Green Revolution and Millennium Project dialogue</li> <li>b. Rockefeller Foundation programme – advocating for linkages between</li> </ul> </li> </ul>  | <p>Analyse scientific outputs in context of shocks to poor people.</p> <p>Linking social protection to other major DRR and adaptation programmes</p> |

|  |  |  |
|--|--|--|
|  | <p>their climate change and agriculture programmes</p> <ul style="list-style-type: none"> <li>c. EC Global Climate Change Alliance as it develops <ul style="list-style-type: none"> <li>• DRR</li> </ul> </li> <li>a. Improved seasonal forecasts and links with social protection enabling social protection as a preventative measure around seasonal forecasting</li> <li>b. Develop an inventory of social protection measures for DRR</li> </ul> |  |
|--|--|--|

## 6. Selected Further Reading

### Agriculture and Pro Poor Growth

- PLOW Professional Development for Livelihoods: Agriculture and Pro Poor Growth theme page. Available at: <http://www.passlivelihoods.org.uk/plow/default.asp?id=198>

### Social Protection:

- IDS ‘In Focus’: *Looking at Social Protection through a livelihoods lens* Available at: <http://www.ids.ac.uk/go/publications/ids-series-publications/in-focus/in-focus-issue-1/ids-publications-in-focus-issue-1>
- IDS Bulletin : Debating Social Protection. Volume 38 number 3 May 2007.

### Climate Change Adaptation:

- DFID Key Sheets on Climate Change and Poverty. Available at: <http://www.DFID.gov.uk/pubs/files/climatechange/keysheetsindex.asp>
- IDS 2007. ‘In Focus: *Embedding Climate Change Adaptation in Development Processes*’. Available at: [www.ids.ac.uk/climatechangeadaptation](http://www.ids.ac.uk/climatechangeadaptation)
- PLOW Professional Development for Livelihoods: Climate Change theme page. Available at: <http://www.passlivelihoods.org.uk/plow/default.asp?id=287>

### Disaster Risk Reduction:

- PLOW Professional Development for Livelihoods: DRR theme page. Available at: <http://www.passlivelihoods.org.uk/plow/default.asp?id=264>

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## Annex 1: Dimensions of Social Protection, Disaster Risk Reduction and Climate Change Adaptation

The matrix lays out the key definitions, concepts, objectives and policy instruments under Social Protection, Disaster Risk Reduction and Climate Change Adaptation approaches respectively, in the context of livelihoods, risk and vulnerability.

Table A1: Dimensions of Social protection, DRR and Climate Change Adaptation Policies and Approaches

|                    | SP   | DRR   | CCA  |
|--------------------|--|---|--|
| <b>Definition</b>  | 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 (Devereux and Sabates-Wheeler, 2004) | The systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development (UNDP, 2004)  | The ability to respond and adjust to actual or potential impacts of changing climate conditions in ways that moderate harm or take advantage of any positive opportunities that the climate may afford. (ADB <i>et al</i> , 2003)  |
| <b>Concepts:</b>   |  |   |  |
| <b>Risk</b>        | Risk inherent in livelihoods activities/ domestic life of poorest people   | The probability of harmful consequences, or expected loss of lives, people injured, property, livelihoods, economic activity disrupted (or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions. Risk = Hazard x Vulnerability (UNDP, 2004)<br><br>Tackling the underlying elements of risk from natural and technological hazards. (DFID) | Function of probability and magnitude of different impacts (IPCC, 2001)  |
| <b>Shocks</b>      | Focus on both shocks and stresses  | Focus on shocks   | Focus on shocks and stresses   |
| <b>Livelihoods</b> | Assets determine how people can respond to shocks and stresses   | The means by which an individual or household obtains assets for survival and self development. Livelihood assets are the tools (skills, objects, rights, knowledge, social capital) applied to enacting the livelihood (UNDP, 2004)  | ..   |
| <b>Vuln'blity</b>  | Seen as a starting point? Multidimensional and embedded within economic, social and political systems.   | A human condition or process resulting from physical, social, economic and environmental factors, which determine the likelihood and scale of damage from the impact of a given hazard (UNDP, 2004)   | 'The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.' (IPCC, 2001) |
| <b>Resilience</b>  | Ability of individual/ household/ community/   | The capacity of a system, community or society to resist or to change in order that   | Amount of change a system can undergo without  |

|                                  | SP  | DRR   | CCA  |
|----------------------------------|---|---|--|
|                                  | system to withstand change / capacity to restore following external shock.  | it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organising itself, and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster (UNDP, 2004).  | changing state. (IPCC, 2001)<br><br>Again, this natural science perspective has been critiqued by social perspective that instead highlight resilience as the conditions that enable social or ecological system to bounce back after a shock (Thompkins <i>et al</i> , 2005). |
| <b>Coping/ adaptive capacity</b> |   | The manner in which people and organisations use existing resources to achieve various beneficial ends during unusual, abnormal and adverse conditions of a disaster phenomenon or process (UNDP, 2004).  | Adaptation capacity is the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.(IPCC, 2001)                                      |
| <b>Objectives:</b>               |   |   |  |
|                                  | Reactive and proactive resilience-building  | Tackle underlying elements of risk from natural and technological hazards. Reduce <i>vulnerability</i> of individuals, communities and societies, and to build their <i>resilience</i> or <i>capacity</i> to prepare for and withstand the impacts of disasters. integrate disaster preparedness and hazard mitigation into longer-term development. improve the capacity of agencies mandated with responding to disaster events. ' <i>disaster-proof</i> ' development processes - ensure development assistance takes adequate account of disaster risk, recognising that reducing all risk is in practical terms unattainable (DFID PLOW) | Enable individuals and communities to adapt over the long term to the impact of current and future climate extremes and surprises caused by climate change.  |
| <b>Instruments:</b>              |   |   |  |
| <b>Policy</b>                    | Cash transfers<br>Crop insurance<br>Price hedging<br>Some emergency responses eg resettlement<br>Stocking/ Restocking?<br>Input subsidy<br>Microfinance<br>Employment schemes<br>Food for work<br>School feeding<br>Pension schemes | Early warning systems<br>Investment in sectoral programmes<br>Donations<br>Relocation   | Insurance: Weather-indexed, Fishery, climate.<br>Stocking/ Restocking. education, training and awareness of climate change<br>drought-resistant seeds<br>better coastal protection   |

|                       | SP                           | DRR   | CCA   |
|-----------------------|------------------------------|---|---|
| <b>Implementation</b> | National<br>Localised pilots | Applied both <i>vertically</i> (from local level, community-based actions to improving national legislation) and <i>horizontally</i> by addressing risk across all major developmental sectors and by improving the coordination and communication between government, private sector and civil society (DFID PLOW) | <i>Vertically</i> through integration in mainstream development policies and <i>horizontally</i> through increasing adaptive capacity in key sectors, such as agriculture and health. |



## Annex 2: Case Study Detail in Key Social Protection Areas

1. Increased weather variability resulting from climate change increases the risk of production failure for farmers engaged in rain-fed agriculture (IPCC 2007a). This section reviews the role of four different social protection measures aimed at the agriculture sector in the context of climate change adaptation and DRR. The social protection instruments explored include: weather-indexed crop insurance, free input distribution and seed fairs, asset transfers and cash transfers. Country experiences from Bangladesh, Ethiopia, India, Kenya and Malawi reveal how these measures can enhance the resilience of vulnerable communities and point to ways in which social protection measures could better integrate DRR and climate change adaptation.

### B.1 Weather-indexed crop insurance

2. Crop insurance, which is widespread throughout the developed world, commonly insures farmers against losses in crop yields resulting from weather-related stresses. However, there are a number of problems that result from insuring directly against crop losses including high transactions costs, moral hazard, and adverse selection (Murdoch, forthcoming; Hellmuth *et al* 2007; Hess and Syroka 2004). In the specific case of India, past government and private sector crop insurance schemes resulted in long delays mainly because of the need to settle claims on a case-by-case basis. This delayed payout, which in some cases could take up to a year, undermined the ability of affected households to cope with weather-related shocks. Furthermore, repeated attempts at crop insurance schemes were economically unviable for insurers and inaccessible and unresponsive to the needs of clients (IISD 2006).
3. Recently, there has been a shift away from insuring against poor crop yields toward insuring directly against bad weather. This new weather-indexed approach develops a contract written against an index that establishes relationship between lack of rainfall and crop failure, ideally verified by long historical records of both rainfall and yields. Farmers collect insurance compensation if the index reaches a certain measure or “trigger,” regardless of actual losses. When rainfall levels fall below this trigger point, the farmer receives an immediate payout. This indexing approach guards against the adverse selection and moral hazard problems because regardless of whether the insurance is paid out or not, farmers still have an incentive to make productive management decisions (Hellmuth *et al* 2007; Hess and Syroka 2005).
4. Indexed-based weather insurance plays both a protective and productive function. Payments can be disbursed rapidly as individual crop loss assessments are not required. As a consequence, farmers are not forced to adopt costly coping strategies, such as the sale of productive assets, and are able to smooth their consumption by providing liquidity following crop losses (Murdoch, forthcoming). Furthermore, as insured households and farms are more creditworthy, insurance can also promote investments in productive assets and higher- risk/higher-yield crops (Mechler *et al* 2006).
5. The World Bank is providing the impetus and technical assistance for implementation of innovative weather-based insurance schemes, making institutional linkages with microfinance organisations to promote and distribute the product in developing countries. World Bank pilots are currently underway in Argentina, Mexico, Morocco, India, Malawi, Nicaragua, Ukraine and Peru. The World Food Programme is also piloting a weather-

indexed scheme in Ethiopia in partnership with the government. Below, the cases of Malawi and India are briefly presented.

6. Malawi is dominated by rain-fed agriculture and smallholder farmers who lack access to credit and inputs. Southern Africa is among the most drought-vulnerable regions in the world where inter- and intra-annual rainfall variability strongly determines the success of rain-fed agriculture (Leichenko and O'Brien 2002). The recent IPCC (2007a) report on climate change impacts, adaptation and vulnerability concludes that southern Africa will experience longer dry seasons and uncertain rainfall. This is consistent with Hulme *et al* (2001) who predict a reduction in precipitation in southern Africa for the next 100 years by a range of 5-20 per cent. At the same time, this decrease in rainfall will be coupled with a rise in temperature from 0.2-0.5°C. Overall, the net effects of climate change on southern Africa are expected to be seasonal drying. These climate change effects already appear to be a reality in Malawi with rainfall variability increasing since the early 1990s (Devereux *et al* 2007).
7. In 2005/2006, the Government of Malawi, the World Bank, International Research Institute for Climate and Society (IRI) and the National Smallholder Farmers Association of Malawi (NASFAM) completed a pilot project on weather-indexed crop insurance. The insurance product was sold in a few districts to approximately 900 smallholder farmers and involved only one crop, groundnuts. Through the scheme, farmers entered into a loan agreement with an interest rate that includes a weather insurance premium. The loan enabled households to access an input package which included improved groundnut seed. In the event of a severe drought (as measured by the rainfall index), the borrower would pay only a fraction of the loan due, while the rest is paid by the insurer directly to the lender. Because the insurance functions as a guarantee against the loan, high-risk and low-income farmers are able to obtain the credit they need to invest in seeds and other inputs necessary for higher yielding crops. There is now a growing level of demand for the insurance with farmers hoping the programme will be expanded into other regions and other crop varieties (Helmuth, *et al* 2007).
8. In India, a local micro-finance institution, BASIX, and an insurance company, ICICI Lombard along with the Commodity Risk Management Group, World Bank, have pioneered a rainfall insurance scheme in Andhra Pradesh. The insurance scheme was launched in 2003 involving 230 castor and groundnut farmers in a district that had previously experienced three consecutive droughts. Similar to the Malawian scheme, the contracts ensured a prompt payout when rain falls below a crop-specific rainfall index. ICICI Lombard underwrote the insurance policies and reinsured the risks with an international reinsurance company.
9. The number of rainfall-indexed policies sold by BASIX increased substantially from 230 in two A.P. districts in 2003 to 427 in three A.P. districts in 2004. In 2004 the policies were also redesigned covering groundnut, castor, cotton as well as excessive rainfall. The project has three phase index with each period having its own payout threshold. In 2005, BASIX plans to reach the target of selling 7,000 - 10,000 weather insurance policies across its 50 branches in seven Indian states (Manuamorn 2005).
10. Though evidence is still emerging, some premature conclusions can be made about the BASIX product. Individual farmers and self-help groups articulated product satisfaction in all of the pilot areas. In 2004, farmers in a few villages received claim payouts for the first stage of crop, even before the regular harvest period was complete. Such a prompt

settlement of claims won the appreciation of the farmers who expressed their willingness in becoming repeat customers in 2005 (Manuamorn 2005).

11. While weather insurance may be helpful to many farmers, it is unlikely to help those are the most vulnerable to drought and food insecurity. At present, weather-indexed insurance schemes are most often implemented by crop type and are most relevant to commercial or semi-commercial farmers than to subsistence farmers or farm labourers (Holmes *et al* 2007). Such a scheme will also have differentiated gender impacts depending on whom in the household controls commercial crop production. Furthermore, premiums may be too high for the very poor who live in high risk areas; however this could be offset by cross-subsidies for the poorest by the state or development partners. Overall, weather insurance measures need to be integrated with a larger social protection program to assist the most vulnerable (Hellmuth *et al* 2007).
12. Some of the primary challenges facing the expansion of weather-indexed insurance include:
  - capital costs including the construction of weather stations must be funded by either the public or private sector to ensure broad coverage;
  - climate change presents significant uncertainty in predicting long-term weather patterns making it difficult to accurately assess financial risk;
  - increased climatic variability and occurrence of extreme events may result in larger and/or more frequent insurance payouts resulting in the possible insolvency of the insurance provider or higher premiums from re-insurers which may be inaccessible to the poor (Mechler *et al* 2006).
13. While weather-indexed insurance schemes are in their early stages, they do appear to be a significant improvement from past crop insurance mechanisms. Not only does the indexing approach guard against moral hazard and adverse selection it also reduces transaction costs and ensures a timely payout. The timeliness provides immediate relief from climatic shocks and enhances livelihoods by facilitating access to credit. Where well designed, they may also permit farmers to enhance adaptive capacity through greater risk taking experimentation in agriculture practices that was not possible in crop-insurance schemes. Climate change impacts provide an imperative to such schemes to integrate flexible and inclusive measures to ensure that such measures can tackle the differentiated nature of agriculture production among different groups of farmers, including poorer and more marginal farmers.

## **B.2 Asset restocking**

14. The sale of productive assets is a common coping strategy among the rural poor during times of climatic stress or shock. A lack of such assets or entitlements places the poor at risk of poverty and food insecurity (Sen 1981). Furthermore, the inability to access productive assets traps the poor in a persistent cycle of chronic poverty (Chronic Poverty Research Centre 2004; World Bank 2001). As a result, the chronic poor are amongst the most vulnerable to climate change and disasters as they lack the necessary buffers and/or income diversity provided by such assets (IISD *et al* 2003; Leary *et al* 2007; Wehbe *et al* 2005; Tanner and Mitchell, 2007).
15. Asset-building is central to reducing risk and vulnerability. Households resist and cope with adverse consequences of disasters and other risks through the assets that they are able

to mobilise in the face of shocks. As a result, a sustainable strategy for disaster reduction must focus on activities to help the vulnerable build assets (UN-ISDR 2004; Wisner *et al* 2004; Vasta 2004). At the same time, asset-building activities can also incorporate climate screening in order to ensure that such assets are able to support resilience in a changing climate (Tanner *et al* 2007).

16. Social protection measures that contribute to the accumulation or restocking of assets can therefore decrease the vulnerability of the chronically poor. Measures that can contribute to asset accumulation including unconditional and conditional cash transfers, micro-credit as well as the direct provision of livestock or poultry through asset transfer programmes. The three case studies on Bangladesh below demonstrate the impact of asset accumulation for the purposes of livelihood diversification as well as the need to consider the suitability of such assets in a changing climate.
17. Existing climate simulations for Bangladesh consistently project a general warming across the country in all seasons, moderate increases in monsoon rainfall and moderate decreases in dry season rainfall. As a result, the agriculture sector is susceptible to increases in the frequency and severity of flooding, intense rainfall, windstorms, drought and saline inundation resulting from sea-level rise (Tanner *et al* 2007).
18. Bangladesh has numerous examples of asset transfer programmes which aim to reduce the vulnerability of the poor. The Bangladesh Rural Advancement Committee's (BRAC) 'Challenging the Frontiers of Poverty Reduction: Targeting the Ultra Poor' (CFPR/TUP) programme provide households productive assets suitable for income-generating activities. In addition the programme offers a 'subsistence allowance' for 18 months, access to health and legal services as well as social linkages with village elites. The goal of the programme is to reduce poverty through a combination of transfers and livelihood promoting activities aimed at 85,000 ultra-poor women in Bangladesh.
19. Transferred assets include livestock (a cow, goat or poultry), leased land and tools plus seeds for vegetable gardening or nursery cultivation. These assets were valued at 6,000 Taka (US\$87) and were intended to generate a regular income stream of at least 600 Taka (US\$8.70) per month. The social transfer component amounted to 4,320 Taka (US\$63) over 18 months, and was intended to cover part of the household's subsistence food needs until the asset transfer started to generate regular independent income. The project completion report in 2006 concluded that the asset transfer programme had resulted in rapid and significant improvements in the livelihoods of extremely poor households who were now able to more diverse and stable incomes (Devereux and Coll-Black 2007; DFID Bangladesh 2006).
20. The Chars Livelihood Programme (CLP), another DFID supported project, also involves asset transfers as a part of its comprehensive livelihood programming. The CLP targets extreme poverty in the Brahmaputra Chars area in northern Bangladesh through targeted provision of infrastructure and services, livelihoods activities, and influencing local and national policy and service provision. A recent screening of the CLP programme highlights the climate risks faced by household living in the riverine island (Chars) and riverbank including exposure to riverbank erosion and flooding. Recent climate modelling data indicates that greater monsoon rains will increase erosion and the likelihood of severe flooding (Tanner *et al* 2007).

21. In order to build livelihoods that are more resilient, the asset transfer component involves a cash transfer to be used toward the purchase of productive assets. The programme has encouraged climate-resilient activities such as poultry rearing in order to facilitate mobility. A recent study reveals that cattle in particular have led to an average 30 per cent return on assets, thus contributing to income diversification (Marks 2007). However, an evaluation of the programme also indicates that CLP participants complained that particular assets were ill suited due to the significant risk of illness and death of the animal (Devereux and Coll-Black 2007). The climate risk screening of the programme emphasises the need to ensure diversification and enterprise activities are climate sensitive (Tanner *et al* 2007). While assets such as livestock help to diversify income and buffer households from climatic risk, at present, the existing Asset Transfer Implementation Guidelines for the CLP do not address the need to ensure appropriate asset selection in the context of climate change.
22. Another programme, the Reducing Vulnerability to Climate Change (RVCC) project, has explicitly mainstreamed climate change throughout its design and implementation. The RVCC programme undertook a vulnerability assessment at the beginning of the project in order to identify priority areas of vulnerability and affected areas of well-being in south-western Bangladesh. The project focused on those priority areas directly linked to climate change impacts, including salinity, waterlogging, flood and drought, and attempted to reduce the impact of these disasters on household well-being (Care Bangladesh 2006). One of the adaptation strategies identified by the programme is the need to promote alternative livelihoods.
23. Climate change adaptation has been integrated throughout the RVCC programme, including the asset transfer programme. Households in the RVCC project area became interested in rearing livestock and poultry/birds that consume a low amount of fresh water and are capable of absorbing heat and temperature. Specifically, local people have started to purchase species of ducks that are locally known as *raaj hash* instead of other species of duck known as *pati hash* because the former are capable of living with a small amount of water, are better suited for higher temperatures, and consume a lot of non-aquatic vegetation which are available in the area. Similarly, in order to adapt to increasingly dry and hot weather conditions local households have gradually started to rear sheep, lamp, and buffalo (Ahmed and Chowdhury 2006; Mallik 2005).
24. In addition to the RVCC programme in Bangladesh, other projects have also recognised the need to adapt asset-building programmes in a shifting climate. For example, Practical Action has been supporting ‘nucleus herds’ for Masaai pastoralists in northern Kenya. In the face of increasing incidents of drought, the most healthy and resilient females, and one or two males, were selected for “seed stock” which were then isolated and provided with veterinary services and access to water and fodder. As a result, these nucleus herds, primarily goats and sheep, have allowed households to rebuild stocks of assets following the prolonged drought. The introduction of camels into the area is also seen as a positive development as they are more resilient in the face of increasing aridity (Rice 2006). The UNFCCC local coping strategy database also points to a number of other projects aimed at enhancing the resilience of livestock in the face of drought including milk goat breeding in northeast Uganda, camel breeding in the Sahel and Yak breeding in western Sichuan, China. These examples all point to the importance of appropriate breed selection in order to promote livelihoods and adapt to climate change.
25. The brief case studies of Bangladesh reveal that asset-building schemes can help buffer climate related shocks at the household level by providing liquidity and alternative sources

of income to the chronic poor who are most vulnerable. At the same time, the selection of such assets must consider the changing environmental context to ensure that such schemes enhance rather than undermine resilience.

### B.3 Starter packs and seed fairs

26. In response to projected climate change impacts, a set of National Action Plans for Adaptation (NAPAs) produced in the Least Developed Countries cite the need to develop and distribute crop varieties that are drought and saline resistant. One response has been the distribution of free inputs or inputs-for-work programmes which have been popular across much of Africa. Input distribution has been a common response amongst development agencies in response to production failure resulting from drought and enhancing access to seeds and fertiliser. Recently, such measures have gained increasing prominence in popular development circles advocating a “Green Revolution for Africa” and are one component of the Millennium Village Project. The distribution of fertiliser and seeds for free is intended to enhance food security by boosting food production among farmers who are unable to obtain such inputs.
27. Malawi has had numerous manifestations of free input and input-for-work programmes beginning in 1993 which have been strongly supported by DFID. Programmes have included the Drought Recovery Inputs Programme (‘DRIP’), followed by the Supplementary Inputs Programme (SIP), the Starter Pack Programme, Sustaining Productive Livelihoods through Inputs for Assets (SPLIFA) programme and most recently, the Target Inputs Programme (TIPs) (Devereux *et al* 2006a). Evaluations of the TIPs and other starter pack programmes reveal that the distribution of free inputs has been successful in boosting food production at the national level while also reducing household vulnerability to food security (Devereux and Coll-Black 2007).
28. While free input distribution programmes have been popular among donors and have been successful in boosting agricultural production and household food security, critics argue that the fertiliser and seed distributed are inappropriate to local cropping patterns as tenders are often awarded to commercial seed and fertiliser companies, which do not adequately consider the local context (Barahona and Cromwell 2005). Seeds may also be sourced from neighbouring countries which may be unsuitable to local agro-ecological conditions (Orindi and Ochieng 2005). Other critics of input distribution argue that such measures misdiagnose the *inaccessibility* of inputs with *unavailability* citing examples where farmers have been able to source seeds even in post-drought environments (*ibid*). Similar to international food aid, seed distribution programmes undermine local seed markets.
29. In Malawi, seed distribution sourced from commercial seed companies has also been criticised for contributing to white maize mono-cropping undermining crop diversity and therefore increased vulnerability to drought. This loss of crop diversity of agro-ecological systems and those dependent on them increases vulnerability in such systems to climatic shocks and environmental change. Furthermore, the seeds distributed could not be saved from year-to-year, failing to function as a comprehensive safety net (Devereux and Coll-Black 2007).
30. As an alternative to free seed distribution, Orindi and Ochieng (2005) highlight the experience of Catholic Relief Services (CRS) and their seed voucher and fair (SV&F) schemes in Kenya. Kenya’s semi-arid region was faced with a prolonged drought from 1998-2000 contributing to poor harvests and food shortages. It is projected that climate

change will contribute to further drying and in Kenya's arid and semi-arid regions, affecting food and livestock production. As a result, the need for disaster recovery programmes following drought will likely increase.

31. As an alternative to traditional input distribution programmes, DFID supported CRS along with the Food and Agriculture Organisation (FAO) and other local partners who implemented a seed voucher and fair programme to 35,000 households throughout Kenya's semi-arid region in response to prolonged drought. Beneficiaries were targeted through a participatory selection process and given vouchers to purchase seeds at locally organised seed fairs. Farmers, local traders were encouraged to bring their surplus seeds to fair sites where voucher holders were able to select seeds of their choice. On completion of the seed fair, seed retailers redeemed their vouchers for cash.
32. In contrast to the package of inputs approach which undermines biological diversity and leads to mono-cropping (Thompson, *et al* 2007), seed vouchers and fairs have encouraged farmers to maintain crop diversity on their farms, contributing socio-ecological resilience. Orindi and Ochieng (2005, 93) argue, "where ecological and/or socio-economic conditions are risky and diverse, farmers will also have diverse needs that can only be met with a range of crop types". More drought-tolerant local varieties of sorghum and millet distributed through seed vouchers and fairs safeguard against crop failure (*ibid*). Rather than depending on exogenous inputs, as in Green Revolution agriculture, agro-ecological practices should mobilise as much as possible endogenous biological processes and potentials that are located within existing ecological systems and communities (Thompson, *et al* 2007). SV&Fs programmes strengthen local economies through the sale of local seeds and have been found to be substantially more cost-effective than traditional input distribution approaches. Moreover, they have also provided an opportunity for greater information sharing among farmers (Orindi and Ochieng 2005).
33. In addition to the SV&F programme in Kenya, other examples from Sri Lanka and Bangladesh also demonstrate the importance of indigenous knowledge when considering input provisioning in light of climate change. Following the 2004 tsunami many Sri Lankan farmers abandoned their fields following due to increased soil salination. In response, Practical Action supported a pilot where numerous farmers took part in a trial of 10 traditional saline-resistant varieties which had been present before the introduction of higher yielding varieties. Practical Action has since expanded the project to more farmers who have prepared soil for planting which has been barren for years (The Guardian 2006). Due to climate change and the potential of sea-level rise in Sri Lanka, these locally identified seed varieties may provide a way for farmers to continue cultivating their land.
34. Similarly, in southwestern Bangladesh, the RVCC programme has encouraged the planting of saline tolerant non-rice crops such as maize and grass during season when rice cannot be grown. This crop rotation increases rice production by supplying necessary nutrients for the soil when saline levels are too high. Traditionally, land is left fallow when saline levels are high and paddy cultivation is only possible during the monsoon season. Cultivating saline tolerant non-rice crops not only increases soil nutrient levels but also provides fodder for cattle thus encouraging local people to raise livestock. Vulnerability to climate change is therefore reduced due to increased livelihood options and more productive rice production (Hossen and Roy 2005).
35. Traditional input transfer programmes may be a tempting method to distribute crop drought- or saline-tolerant crop varieties; however, such programmes can undercut local

seed markets and ignore indigenous knowledge. Furthermore, such free input distribution may in fact increase vulnerability to climate change by ignoring particular agro-ecological contexts and undermining crop diversity. On the other hand, seed voucher and fair projects present a cost-effective way to assist post-disaster recovery and enhance resilience by promoting crop diversity and information sharing between farmers.

#### B.4 Cash transfers

36. DFID has argued that providing cash transfers enables households to buy other essential non-food needs including investment in healthcare, education and other productive activities. Cash transfer programmes are gaining momentum both in humanitarian relief efforts (Harvey 2005) and as an overall poverty reduction strategy (see Barrientos 2006). DFID is currently supporting a number of cash transfer programmes or pilots in Bangladesh, Ethiopia, Kenya, Malawi, Pakistan and Zambia (Sabates-Wheeler *et al* 2007b).
37. Redistributive transfers can play a crucial role in raising the incomes and smoothing the consumption of the poor, allowing them to engage in moderate risk-taking, and to protect rather than erode their asset holdings when confronted by livelihood shocks (Devereux and Sabates-Wheeler 2004). Furthermore, cash transfer programmes may in fact contribute to asset-building (GTZ 2005; Mattinen and Ogden 2006; Slater *et al* 2006) as well as the generation of economic multiplier effects, through the generation of local employment (DFID 2004; Devereux 2006). Climate change will place increasing stress on livelihoods due to more frequent and intense droughts and flooding. Predictable cash transfers could play an important role in mitigating the vulnerability of the chronic poor who will increasingly be exposed to climate related shocks and stresses.
38. Ethiopia's Productive Safety Net Programme (PSNP) is one such example of a cash (and food) transfer programme aimed at alleviating household vulnerability to seasonal food insecurity. Starting in 2004, the Government of Ethiopia, along with international donors, decided to take a new approach to combating food insecurity by implementing the PSNP. The programme represents a shift in thinking away from emergency food aid toward a more predictable and targeted safety net. This shift from humanitarian relief to social protection recognises that a large proportion of Ethiopians are chronically food insecure and are exposed to predictable seasonal food shortages on an annual basis. The PSNP aims to address this by providing seasonal employment on public works in exchange for cash or food transfers, which are intended to help protect household assets and smooth consumption across the hunger period. The PSNP initially targeted approximately five million chronically food insecure people in 2005, which increased to eight million in 2006.
39. Preliminary reports on the impacts of the PSNP reveals that the programme has had positive effects on household food consumption as well as the protection of household assets (Devereux *et al* 2006; Slater *et al* 2006; Vaitla 2006). Not only has the PSNP contributed to a reduction in 'distress selling' of assets but it has also provided an opportunity for households to create assets (Slater *et al* 2006). During the first year of the programme, approximately a quarter of beneficiaries acquired new household assets; however only 55% of participants attributed this to the PSNP (Devereux *et al* 2006). The programme has also contributed positive impacts on human capital through increased school enrolment and access to health services (*ibid*). The ability of household to increase assets (both physical and human) is crucial to the promotion of resilience in the face of climate change.



40. Despite these positive findings, evaluation reports also indicate that due to variations in food prices, the purchasing power of the PSNP transfer varied by more than 100 percent across regions and seasons in 2005/06 (Devereux *et al* 2006b). In general, the cash transferred was found to be too small and too unpredictable to protect poor households against hunger and food rationing in 2005, which has led to a shift in preference away from cash toward food (Pelham and Assegid 2007). Delays in implementation also mean that the PSNP was poorly timed and did not coincide with the peak hunger season. These problems were further compounded by late and erratic payment of cash and food transfers and budget constraints, which resulted in smaller transfers per beneficiary (Devereux and Coll-Black 2007).
41. At present, the Government of Ethiopia is aiming to graduate all PSNP participants from the programme after five years. It is hope that the PSNP coupled with increased access to various input and asset packages, households will be resilient when confronted with climactic shocks and seasonal stresses. However, Tanner and Mitchell (2007) argue that in a changing climate, social protection measures, such as cash transfers, must reduce risk and reduce poverty proactively over *extended* timeframes, particularly in ecological and social environments subjected to high states of flux. Furthermore, the Chronic Poverty Research Centre (2004) argues that one of the main findings regarding the role of social protection in combating chronic poverty is that it is more effectively achieved with a sustained effort than with short-term interventions. Repeated transfers at predictable and regular intervals allow recipients to spread risk and to plan spending and investment behaviour over longer timeframes. Larger and continuous cash provisions are more likely to lead to the asset accumulation and poverty reduction (and therefore risk reduction) than occasional or erratic transfers (Devereux and Coll-Black 2007; Marcus 2007).
42. Access to contingency funds or savings may be an effective way to spread risk over time (Tanner and Mitchell, 2007). This is consistent with participatory research which found that households living in areas prone to erratic rainfall saw the value of investing in contingency funds in order to manage risk (Frankenberger 2007). With regard to the PSNP, emerging evidence also suggests that cash transfers may contribute to the (re)formation of informal savings groups. In some PSNP communities, cash transfers have been successful in regenerating the *ikub*, a rotating savings club. Through the *ikub* participants contribute part of their monthly cash transfer to the group, which in turn is used toward the purchase of assets or to manage livelihood shocks (Guenther 2007).
43. Cash transfers conditional on public works may also contribute to adaptation and DRR through the construction of community assets that enhance resilience. In the case of Ethiopia, public works participants have constructed roads and water catchments as well as engaged in soil conservation activities that have contributed to increased access to local markets, health facilities and water as well as greater soil fertility and flood mitigation (Guenther 2007). However, one of the common critiques of public works schemes is that the economic benefits from these public works are overstated and that assets created are allowed to deteriorate very rapidly following the completion of the scheme (McCord 2005; Devereux 2002). Moreover, highly conditional cash transfer programmes, such as public works, also go against a strong drift currently towards delivering unconditional cash transfers, which is partly driven by the view that social protection should be viewed as a basic right (DFID 2004; Devereux and Coll-Black 2007).
44. In terms of the cost-effectiveness of cash transfers, there is very little information within existing programmes to assess the full cost-effectiveness of social transfers (Devereux *et al*

2005; Devereux and Coll-Black 2007). However, existing evidence does reveal that concerns about the unaffordability of cash transfers are overstated. Where data is available, predictable social transfers emerge as more cost-effective than food aid (Devereux and Coll-Black 2007; Harvey 2005).

45. Proactive safety nets in the form of cash transfers present a viable alternative to traditional post-disaster relief responses. Preliminary impact assessments from the PSNP show that the programme has been successful in preventing the onset of damaging coping strategy during periods of increased stress. Furthermore, there is also some evidence that cash transfers can in fact build assets or provide households with contingency finance necessary for mitigating climate-related risks. In order to be most effective, cash transfer aimed at reducing the vulnerability of the chronic poor, programmes must be timely and help to spread risk over extended time frames. On their own, however, cash transfers are not enough. They must, therefore, not be implemented in isolation and instead be linked with other, supporting interventions.