



Is there a role for cash transfers in climate change adaptation?

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Abstract

Due to the threats posed by climate change to the world's poorest, increasing attention has been turned to the need for effective and equitable 'adaptation' to mitigate its effects in developing countries (Adger et al 2007). However, much of the adaptation literature has developed parallel to the social protection field, and there is a need to integrate them (Shepherd 2008, Jones et al 2010, Arnall et al 2010). This paper uses the adaptive capacity framework (Brooks and Adger 2005, Vincent 2007, ACCRA 2010) to assess the potential of cash transfer programmes to contribute to adaptation goals in developing countries, particularly in ones where existing social protection is inadequate. It argues that cash transfers are likely to contribute to adaptive capacity by a) meeting existing basic needs, thereby reducing short-term vulnerability and existing development deficits at the household level, b) helping the poor respond to climate-related shocks, c) reducing the pressure to engage in coping strategies which weaken long-term adaptive capacity, d) helping vulnerable households to better manage risk and therefore consider investment decisions and innovations to increase their adaptive capacity, e) transferring money for investment in long-term livelihood and adaptive capacity improvement, and f) facilitating mobility and livelihood transitions. While the paper acknowledges that cash transfers can only directly contribute to some indicators of adaptive capacity (mainly generic indicators and those relating to households' asset bases) and would therefore need to be complimented with broader policy interventions, cash transfers or other forms of social protection may be a pre-requisite if further effective and equitable adaptation is to occur. When compared to other adaptation options, cash transfers also fare well in that they are supported by a substantial evidence base, are a 'no regret' policy which do not require large amounts of climate-related information, have potential for scaling up and are likely to gain local acceptance.

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Introduction

It is increasingly accepted that the reality of climate change means that adaptation is a practical and ethical necessity, particularly in developing countries (Adger et al 2002, Adger et al 2007). This consensus was institutionalized in the form of the Bali Action Plan (2007) which identified adaptation as 'one of the key building blocks required for a strengthened future response to climate change' (UNFCCC Website, 2010). More recently, at the Copenhagen Conference, developed countries pledged to contribute finance rising to \$100 billion a year to developing countries, although the extent to which this will be genuinely additional to existing development assistance is far from clear (Roberts et al 2010).

However, adapting to the effects of climate change is highly problematic (Smit et al 2001, Adger et al 2007, Ensor and Berger 2009, Nichol and Kaur 2008), and fraught with discussions over what constitutes 'good' adaptation. Moreover, the adaptation field has developed largely without interacting with the parallel field of social protection (Arnall et al 2010), even though existing social policies may have the potential to contribute to adaptation goals in the most vulnerable countries (Jones et al 2010). Bringing these two fields together has been identified as a key development challenge in the following years (Shepherd 2008). This paper refers specifically to cash transfers, which have been shown to have broadly positive impacts on livelihoods in developing countries over the past 15 years (Hanlon et al 2010).

To date, the link between cash transfers and adaptation goals has been made only briefly. Whilst it has been suggested that cash transfers could have a role (see Davies et al 2008, Heltberg et al 2008a, Heltberg et al 2008b, Jones et al 2010), the ways in which they could contribute to adaptation goals, and the ways in which they could interact with other adaptation policies have not been researched in depth. Given that the climate change adaptation field is very much in its infancy, that it must deal with substantial uncertainties (Adger et al 2007, Valverde et al 2006, Ensor and Berger 2009, Meehl et al 2007), and that decisions will have to be made regarding relatively large amounts of money, it is crucial that policymakers are aware of the ways in which particular policies may contribute to certain goals. These may include policies which were not designed for adaptation *per se* (see Jones et al 2010). This is particularly relevant to social protection, because many of the countries most vulnerable to climate change are also those with the most limited social protection coverage (Heltberg et al 2008b).

This paper uses the adaptive capacity framework to examine the contribution of cash transfers towards 'adaptive capacity development' (Brooks and Adger 2005), primarily regarding the generic indicators of adaptive capacity. As such, it contributes to the challenge of bringing the climate change adaptation and social protection literatures closer together (Shepherd 2008). Although there has as yet been no research into the impact of cash transfers on adaptive capacity *per se*, there is an extensive literature on their contributions to various goals in the social policy field. Because there is a strong overlap between these goals and those of adaptive capacity, certain assumptions can be made regarding cash transfers' contributions in this regard. Moreover, the paper also discusses whether cash transfers could facilitate 'autonomous' adaptation.

The paper argues that cash transfers' contributions to adaptive capacity are likely to be significant. While cash transfers alone could never resolve many other challenges of adaptation, they may contribute to them indirectly, whilst increasing the possibility that other policies have a greater chance of achieving positive impacts. Therefore, there is a strong case for arguing that cash transfers should be considered as a key part of the toolkit of policies to address adaptation needs in developing countries.

Furthermore, the experiences of cash transfers could be used to inform adaptation at the local level. The order of the paper is as follows:

- **Section 1** explains the challenges posed by climate change in developing countries, with a particular focus on its interactions with existing causes of vulnerability. It also emphasizes the uncertainties associated with climate change impacts at the local level, and stresses the need for ‘no regrets’ social policies which address immediate needs and respond to multiple causes of vulnerability.
- **Section 2** charts the rise of cash transfers on the social protection agenda and sets out the existing debates surrounding them.
- **Section 3** introduces the concept of adaptive capacity and its links to adaptation, as well as the idea of ‘autonomous’ adaptation, and looks at the ways in which cash transfers contribute to ‘adaptive capacity’.
- **Section 4** recognizes the limits of cash transfers with regards to adaptation, and emphasizes that the ways in which they contribute to adaptation goals will be highly contingent on other policies and developments.
- **Section 5** looks at the desirability of cash transfers in relation to other adaptation policies, and argues that cash transfer schemes have various advantages when compared to other policies.
- **Section 6** highlights areas for future research and existing debates and issues.
- **Section 7 (conclusion)** reiterates the key points made in the paper, whilst affirming the ethical case for devolving adaptation finance to affected households.

Section 1 The Climate Change Challenge for Social Protection

The most recent report by the Intergovernmental Panel on Climate Change (IPCC) made foreboding reading for developing countries. Increasing levels of greenhouse gas emissions are likely to bring about more unpredictable weather patterns and more intensive climate-related events (IPCC 2007). Not only that, the poorest countries will invariably be the most vulnerable, not just for their geographical locations, but also for their greater dependency on climate-sensitive sectors, their more limited resources to adapt, and their existing social, infrastructural and economic deficits which could all be accentuated by climate change (IPCC 2007). Similarly, within countries, the poor will be the most strongly affected by climate change. There are various reasons for this: they often live in areas of greater exposure to climate related phenomena; they are invariably involved in activities which are more climate-sensitive, and they have less resources with which to respond to shocks (Ensor and Berger 2009).

Climate-related phenomena affect the poor in a variety of ways. Some of these are obvious:- droughts can cause starvation, floods lead to the destruction of houses and infrastructure, etc. Dramatic events like these can have also further impacts which are less obvious, but significant and longer lasting. One study by Alderman, Hoddinott and Kinsey (2006) showed that children who were under the age of 2 when a famine hit in Zimbabwe generally suffered throughout their lives from lower school achievement, inferior health, and lower earnings as a result.

Moreover, the effects of climate change could also have significant indirect effects by forcing the poor into coping strategies which undermine their ability to improve their livelihoods in the long-term. Climate-related shocks can force people to engage in risk-averse, low return activities, or worse still, asset depleting actions such as pulling children out of school, taking out high-interest loans, limiting food

consumption, selling off productive assets, or begging (see Heltberg et al 2008a, 2008b). Under such stress, responding to vulnerability in one area can have knock-on effects in others. In the words of Satterthwaite and Moser (2008); 'The adaptation of one asset often affects other assets that are highly interrelated; similarly, insecurity and erosion in one can also affect other assets.' Due to their lack of resources, it is invariably the poorest who struggle the most in the aftermath of such events, with Carter et al (2007) showing how the drought in the late 1990's in Ethiopia and Hurricane Mitch in Honduras exacerbated inequalities as the poorest lost a greater proportion of their assets, and struggled to rebuild afterwards. In such scenarios, 'environmental shocks can decapitalize the poor, and trap them in impoverished position from which they cannot escape. When this happens, a humanitarian problem of disaster relief becomes a long-term development problem.' (Carter et al 2007: 852).

Perhaps the biggest challenge for adaptation, though, is the need to get to grips with the issue of uncertainty. In its 2007 report, the Intergovernmental Panel on Climate Change (IPCC) reaffirmed the assessment from the 2001 report that "*Current knowledge of adaptation and adaptive capacity is insufficient for reliable prediction of adaptations; it also is insufficient for rigorous evaluation of planned adaptation options, measures, and policies of governments*" (Smit et al 2001, cited in Yohe et al 2007: 815). This uncertainty exists largely because of the uncertainties and complexities inherent in the climate system, and the difficulties in modeling these. Even the World Climate Research Programme's Modeling Panel has recognized that regional projections are 'sufficiently uncertain to compromise (the) goal of providing society with reliable predictions of regional climate change' (cited in Ensor and Berger 2009: 10). Not only is there uncertainty due to the complexity of the climate system and challenges in modeling it, impacts will depend heavily on their interactions with highly complex ecological and socio-economic systems. In the case of smallholder farmers, for example, the impacts of climate change will be extremely hard to predict, due to the 'intrinsic characteristics of these systems, particularly their complexity, their location-specificity, and their integration of agricultural and nonagricultural livelihood strategies' (Morton 2007: 19680).

This level of complexity and uncertainty leads naturally to another challenge for adaptation:- the fact that whilst those people most affected by climate change often perceive changes in the local climate, such phenomena are rarely deemed to be the main threat to their livelihoods and wellbeing. For example, Warrick notes that inhabitants of Vanuatu have always lived with a variable climate, and therefore do not perceive climate change as being a significant threat, even though there is strong evidence to the contrary (Warrick 2009). Smallholders, whose livelihoods may already have been undermined by climate-related phenomena, often state that these are not the only or even greatest challenges that they face (Eakin 2005, Eakin, Tucker, and Castellanos 2010, Koelle and Oettle 2008). Adaptation efforts often struggle to convey the abstract concepts underpinning climate change, and have problems maintaining an appropriate balance between divulging information which can be easily understood and appropriated, and conveying the lack of clarity that often exists (See the case studies in Ensor and Berger 2009).

It would be simplistic to put this down to a simple lack of awareness among the poor:- The reality is that those most vulnerable to climate change are invariably threatened by a whole range of threats, and more immediate ones such as concerns about hunger, disease, conflict or fluctuating prices invariably overshadow considerations about the longer term issues of adaptation (Adger et al 2007). Even in the absence of shocks, the poor often suffer from deficits in basic needs relating to nutrition, health, access to services, infrastructure and income opportunities, and these need to be addressed if subsequent adaptation is to be successful and valued. Such a 'development deficit' and 'adaptation deficit' (where

aspects of the development deficit contribute to climate change vulnerability) have already been recognized at the national level for developing countries (Parry et al 2009). However, similar deficits also need to be considered at the household level. If they are not, there is a risk that an increasing focus on adaptation at the expense of immediate needs will lead the issue to be viewed at the local level as a 'donor priority', rather than a crucial response to the lived experiences of people on the ground. Warrick (2009) even worries about local communities learning to skew their problems towards climate change in order to gain access to projects and funding. Moreover, the apparent tendency of the poor to focus on more immediate issues is mirrored at the government level, where policymakers naturally focus on measures which promote poverty reduction, economic growth and development, often leaving climate change adaptation relegated to ministries of environment. Therefore, even competent governments are only likely to genuinely engage with adaptation if it is seen as compatible with wider development goals (Satterthwaite and Moser 2008).

For all these reasons, any response to climate change has to address multiple causes of vulnerability, and meet immediate needs whilst simultaneously contributing to long-term adaptation goals. Because there is so much uncertainty over climate change's local impacts, moreover, there is a strong case for 'no regrets' policies (Ensor and Berger 2009, Heltberg et al 2008b), defined as ones with 'high payoff under the current climate as well as in a future with a different and more volatile climate' (Heltberg et al 2008b: 4). Policies will need to be flexible enough to incorporate the uncertainty inherent in climate-related phenomena, capable of addressing a broad range of causes of vulnerability, and be attractive to those most at risk from climate change. By addressing multiple causes of vulnerability, social protection clearly has a major role to play here.

Much of the early work on social protection was developed with the intention of protecting the poor from shocks, and reducing the need for coping strategies which increase long-term poverty and vulnerability (Holzmann and Jørgensen 2000). At the same time, this approach to social protection has been critiqued on the grounds that it limits vulnerability to immediate impacts, focuses mainly on alleviating the damage done by shocks rather than the causes of chronic poverty, and fails to challenge structural causes of poverty such as inequitable power structures or political exclusion (Sabates-Wheeler and Devereux 2006). Given that issues of social exclusion and political marginalization can increase vulnerability to climate change (Satterthwaite 2007, ACCRA 2010), the latter transformative approach may be desirable for pro-poor adaptation. With regards to the immediate future, though, it is worth emphasizing that in many of the countries most exposed to climate change, particularly in Sub Saharan Africa, coverage of programmes providing even minimal social protection is highly limited (Heltberg et al 2008b). Therefore, climate change presents social policy with a dual challenge: building and extending safety nets in areas which currently lack them and where climate change is likely to increase stresses, whilst simultaneously promoting transformative interventions which reduce the marginalization of the most vulnerable and increase their long term adaptive capacity.

Section 2: Cash Transfers

It must be emphasized that cash is not the only medium for transferring resources to the poor:- food, livestock, or agricultural inputs have all been used, and at times successfully. Indeed, there may still be cases when distributing resources in kind may be better to using cash (for example, if there is high food prices inflation), or where hybrid approaches are appropriate (See Ellis et al 2009 for a review). Finally, schemes which guarantee rural employment (the most famous example being the National Rural Employment Guarantee Act (NREGA) in India) aim to achieve many of the goals that cash transfers do

(e.g. transfer of money, provision of a safety net), whilst using the manual labour provided by participants to leave behind further durable assets. Even so, this paper will focus on cash transfers because of the large amount of attention they have received and the increasing consensus that they are often the most desirable means of distributing resources to the poor (Hanlon et al 2010).

In the last decade, cash transfers have reached unprecedented levels of popularity in many developing countries. Well-known schemes such as *Oportunidades* (Mexico) and *Bolsa Familia* (Brazil) have been maintained and scaled up, with advocates arguing that they contribute to a number of goals (Barrientos 2005, Barrientos and Niño-Zarazúa 2010, Levy 2006, Hailu and Soares 2009, Hoddinott and Skoufias 2003, Handa and Davis 2006, Neufeld et al 2005, Carrera 2008, Hanlon et al 2010). At a minimum, cash transfers have been shown to have significant positive effects on the consumption of recipients, leading to better nutrition and health (Hoddinott and Skoufias 2003, Handa and Davis 2006, Neufeld et al 2005, Barrientos and Niño Zarazúa 2010, Maluccio and Flores 2005, Neves et al 2009). They act as a form of insurance against risk, thereby allowing the space to innovate in the form of looking for a better job, investing in micro-business, or even migrating (Martinez 2004, Sabates-Wheeler et al 2008, Gilligan et al 2008, Gertler et al 2005, Schuring 2009, Chiwele 2010, Levy 2006, Tembo and Freeland 2009). Because the poor spend money locally, cash transfers can have positive multiplier effects, stimulating local economies and encouraging pro-poor growth (Hailu and Soares 2009, Davies, 2007, Barrientos and Sabates-Wheeler 2006). For their supporters, the effects of cash transfers are unambiguous:

‘these programs are affordable, recipients use the money well and do not waste it, cash grants are an efficient way to directly reduce current poverty, and they have the potential to prevent future poverty by facilitating economic growth and promoting human development’ (Hanlon et al 2010: 2).

It is important to emphasize that cash transfer programmes vary in scale, objectives and implementation. Some schemes simply aim to provide a minimum level of social protection, alleviating the poverty and smoothing the consumption of the absolute poorest. For example, pilot cash transfer programmes in Lesotho, Zambia and Mozambique aim solely to provide relief to the most disadvantaged, rather than actively contributing to pro-poor growth or investment (Devereux et al 2005). Other programmes to be more transformative, by distributing larger amounts of money to more people and/or combining the transfer with a broader package aimed at livelihood promotion. Large-scale cash transfers are obviously far more costly, but there is stronger evidence that they reduce poverty, rather than simply alleviating it. For example, Barrientos (2005) and Levine et al (2009) claim that the large non-contributory pensions and child grants in Brazil, South Africa and Namibia have had a significant role in poverty reduction, whilst Hailu and Soares (2009) argue that *Bolsa Familia* has contributed to reduced income inequality in Brazil. That said, the extent to which cash transfers contribute to poverty reduction or livelihood transformation is often highly dependent on the wider context:- for example, the availability of services, jobs or profitable investment opportunities in the smallholder or urban informal sectors.

Whilst there has been a growing consensus of the desirability of distributing assets in the form of cash, there are also significant unresolved debates amongst cash transfer proponents. The two main ones are on the need/value of imposing conditions (such as ensuring recipients send children to school, or get regular health-checks) and targeting (who should receive money). Supporters of conditions argue that it is necessary to link cash transfers to particular ‘positive’ behaviours in order to maximize long-term outcomes (Fizbein and Schady 2009), whilst opponents claim they are largely unnecessary, excessively paternalistic, and inappropriate for low-income countries in any case (see Schubert and Slater 2006 and

Hanlon et al 2010 p125-137 for a discussion). Meanwhile, targeting is often proposed as a means of guaranteeing that limited funds reach the people who most need them (Devereux 2009), while critics say that it can be socially divisive, stigmatizing, carry hidden administrative costs, and encourages perverse incentives and corruption (see Mkandawire 2005, and Ellis 2008).

These debates continue to be highly relevant from an adaptation perspective. However, as the link between cash transfers and adaptation has rarely been discussed before, this paper will limit itself to looking at the effects of the cash transfer on adaptive capacity and broader adaptation goals, without making an assessment regarding targeting or conditionality.

Section 3 Cash Transfers and Adaptation Goals

Adaptation to climate change has been described by the IPCC as ‘adjustments in ecological, social and economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change’ (Smit et al 2001: 879). Clearly, this is a description which could encompass a broad range of policy interventions, the effectiveness of which can be measured in different ways. In order to make an objective, effective assessment of cash transfers’ contribution to adaptation goals, this paper narrows the focus to adaptive capacity, and to a lesser extent, autonomous adaptation. A focus on adaptive capacity allows for an approach which addresses multiple causes of vulnerability, immediate needs and the ‘development deficit’ faced by resource poor households. This does not mean that further adaptation policies are not necessary, but that ‘adaptive capacity’ should be the natural focus for social protection policies aimed at the poor.

3.1 Adaptive Capacity and Autonomous Adaptation

Adaptive capacity is the “vector of resources and assets that represents the asset base from which adaptation actions and investments can be made” (Vincent 2007: 13). In practical terms, Brooks and Adger describe adaptive capacity as ‘the ability to design and implement effective adaptation strategies, or to react to evolving hazards and stresses so as to reduce the likelihood of the occurrence and/or the magnitude of harmful outcomes resulting from climate-related hazards (Brooks and Adger 2005: 168).’ Therefore, adaptive capacity is a pre-requisite to successful adaptation, although it is important to emphasize that it does not guarantee it (Brooks and Adger 2005, Vincent 2007).

There have been some efforts to quantify and categorize the most important indicators of adaptive capacity at a national level, although as Eakin (2005) cautions, the importance of such indicators could vary significantly in different contexts. Even so, the relevant point for this paper is that there is a consensus that many of the indicators of adaptive capacity are generic, such as health, education and income (Adger et al 2007), meaning that there are significant overlaps with existing social policy goals. On the other hand, non generic factors which are specific to climate-related impacts, such as particular institutions, technology and knowledge are less likely to be enhanced directly by social protection measures. More recently, the Africa Climate Change Resilience (ACCRA) coalition has developed on the concept of adaptive capacity, identifying five characteristics: the asset base (including a broad variety of assets), institutions and entitlements, knowledge and information, innovation and flexible forward-thinking decision making and governance (ACCRA 2010).

The process of enhancing adaptive capacity is termed 'capacity development' (Brooks and Adger 2005). In their words; 'The role of capacity development is to expand the coping range and strengthen the coping capacity of a priority system with respect to certain climate hazards, and thus to build the capacity of the system to adapt to climate change, including variability' (p168). Adaptive capacity development is often viewed as a central goal of adaptation strategies, particularly for the most vulnerable nations and socioeconomic groups (Smit et al 2001, Adger et al 2002, Brooks and Adger 2005, IPCC 2007).

While the main focus of the paper is on adaptive capacity, it is also important to consider the concept of 'autonomous' adaptation, whereby individuals, households and societies adapt to climatic variability in an unplanned way, without the intervention of a public agency or the awareness of climate change itself (Smit et al 2001). Autonomous adaptation differs from planned adaptation, which usually involves deliberate policy decisions 'based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state' (IPCC 2007: 869). Perhaps unsurprisingly, autonomous adaptation is overlooked by much of the adaptation literature, but it can be highly significant. As Brooks and Adger (2005: 172) emphasize, 'in past societies, adaptation to environmental variability and change has largely emerged in an unplanned manner as individuals responded in a variety of ways to change as it happened.' After all, it is intuitive that the vast disparities that exist globally and within countries with regards to vulnerability to climate change have very little to do with conscious 'adaptation' policies.

This is not to say that there is a perfect correlation between development and adaptation, or that autonomous adaptation negates the need for planned interventions, but it does at least suggest that households and societies have a tendency to reduce their vulnerability to climate change 'autonomously' if given the chance. This includes groups generally assumed to be 'vulnerable' such as pastoralists and smallholders, who have substantial experience in managing their environments in order to manage risk and adapt to changing climates (Ensor and Berger 2009). Thus far, much of the adaptation literature's approach to autonomous adaptation has been to acknowledge it, but at the same time to highlight its limitations, thereby justifying a prioritization of planned interventions (e.g. Smit et al 2001). What has not been looked at, though, is the way in which interventions could actively facilitate autonomous adaptation, and this could be one of the key goals for social protection.

3.2 How do Cash Transfers Support Adaptive Capacity Goals?

Based on the available literature on cash transfers, it seems reasonable to assume that they contribute towards adaptive capacity in the following ways. At the same time, it is important to emphasize that adaptive capacity is only one component of the wider field of adaptation.

a) Meeting existing needs and reducing the impacts of climate-related events and other stresses.

At the most basic level, cash transfers meet existing needs. In particular, their role in bringing about better nutritional outcomes which in turn allow for better long-term educational, health and labour productivity is confirmed by significant evidence (See (Hoddinott and Skoufias 2003, Handa and Davis 2006, Neufeld et al 2005, Barrientos and Niño Zarazúa 2010, Maluccio and Flores 2005, Neves et al 2009). Given that nutrition and education are key generic determinants of adaptive capacity (Adger et al 2007), this represents a significant contribution. Meeting basic needs can also be seen as a means of addressing existing development and/or adaptation deficits in poor households. These deficits are often

extremely acute in communities targeted by 'pro-poor' adaptation interventions. Prior to one adaptation project in Kenya, for example, 70% of residents were spending 50-98% of their income on food, and over 54% simply did not have enough to eat (Awuor 2009: 104). The existence of these needs understandably reduces peoples' desire to consider longer-term issues. In a project in Bangladesh, for example, a project manager noted that 'building communities' knowledge of climate change in order to facilitate and motivate adaptation comes up against the practical problem of engaging communities with issues that may not have immediate relevance to their wellbeing' (Rahman 2009: 53). Therefore, such acute and immediate needs must be addressed comprehensively before any long-term pro-poor adaptation can be effective, or even desirable.

b) Helping the poor to respond to shocks

Shocks can increase pressures on livelihoods which are already under strain, and access to income can be vital in these situations. Eriksen et al (2005), for example, found a strong statistical relationship between the ability of people able to draw on an extra source of income (via remittances or formal wages) to withstand droughts in Kenya and Tanzania, and those who were not. As Adger and Vincent (2004) emphasize, not only are the resources to deal with exposure key indicators of adaptive capacity, distribution of those resources across landscapes and populations is also crucial. Therefore, redistributing these resources (globally or nationally) is a basic pre-requisite to providing the poor with the means to withstand shocks. Cash transfers represent one mechanism for achieving this. Importantly, given that the poor often face threats from a variety of climate and non-climate related threats, cash transfers can be used to respond to shocks regardless of whether they are caused by climate change or not.

Indeed, there is already an increasing consensus that cash transfers are a cost effective means of rapidly distributing resources to people affected by natural disasters, as they allow recipients a degree of flexibility of deciding how to use it and stimulating local economies (Oxfam GB and Concern, 2007, Harvey 2007). But simply using cash transfers for relief is insufficient. Many of the effects of climate change will not be immediate or dramatic enough to catch the attention of relief agencies. For example, gradual changes in temperatures or in precipitation patterns might slowly undermine livelihoods without being considered as disasters worthy of relief. Furthermore, there is increasing evidence that the greatest benefits of cash transfers with regards to nutrition, educational attainment, and labour productivity accrue to those who are able to participate for sustained amounts of time (See Barrientos and Niño-Zarazua on Mexico, 2010). In a changing and unpredictable climate, therefore, there is a strong case for social policy measures to be made available over an extended time frame and in place before disasters occur (Tanner and Mitchell 2008 Alderman and Haque 2006, de Janvry *et al* 2006). Indeed, the aid community is already shifting its focus towards the idea of 'predictable funding for predictable needs', partly on the basis that providing predictable, long-term cash transfers could reduce the need for emergency interventions except in extreme scenarios (Ellis et al 2009).

c) Reducing pressure to engage in damaging coping strategies

As was highlighted in section 1, both climate and non-climate related shocks can force households to engage in asset-depleting coping strategies. Because such coping strategies negatively affect indicators of adaptive capacity (health is affected if the poor are forced to eat less, education if children are pulled out of school, and income if households are forced into debt), they can be argued to reduce long term adaptive capacity. Cash transfers have strong impacts in reducing the pressure for such strategies (see

Devereux et al 2006 on Malawi, Devereux and Mhlanga 2008 on begging in Lesotho, or Slater *et al* 2006 on selling productive assets, taking out loans for consumption and distress migration in Ethiopia, Chiwele on begging Zambia 2010, ILO 2008 on child labour in Latin America).

Of course, not all coping strategies are damaging. Households may depend heavily on informal or customary safety nets built around reciprocity, and participation in such social networks is also considered a vital element of adaptive capacity (Adger 2003). There might be some concerns that extending formal safety nets is at best unnecessary, and at worst, might erode informal systems and community relations. However, evidence shows that these concerns are often unwarranted. In many cases, pressure on such informal safety nets is increasing, and in this context, extending cash transfer schemes may relieve pressure, with positive community effects (See Chiwele on Zambia 2010). For example, in a pilot scheme in Zambia, cash transfers did partially substitute for informal support to beneficiaries, but this was widely seen as a good thing because it reduced pressure on people to give food and cash to the destitute (Nabugwere and MacAskill, 2005, cited in Devereux et al, 2005). In such cases, more money is available for those people (themselves also poor) who previously made sacrifices to look after the vulnerable relatives or friends, thereby leading to wider benefits (Devereux et al 2005). Secondly, there is some qualitative evidence from South Africa that social grant recipients actually increase their engagement with informal social networks, or use the money to increase non-tangible but crucial activities such as care for the elderly and children (Neves et al 2009).

d) Reducing pressure to engage in risk averse coping strategies

Even if the poor are not forced into the type of extreme coping strategies mentioned in c), an increased threat of shocks can force them into coping strategies which are low risk, yet provide low returns. Difficulty in managing risk has itself been identified as a cause of long-term poverty (Holzmann and Jorgensen 2000, Dercon 2005), and can inhibit the ability of the poor to build up their adaptive capacity over time. Moreover, it also restricts their capacity to innovate in ways to improve their livelihoods and reduce vulnerability, something identified as a key characteristic of adaptive capacity by ACCRA (2010). One example of risk-averse behaviour is by increasing the diversity of their assets and activities to spread risk at the expense of focusing on the most profitable (Ensor and Berger 2009). Such forms of diversification may reduce the exposure of households to short-term risk, but can also reduce their long-term ability to build up their assets and overall adaptive capacity (Ensor and Berger 2009). In some cases, as noted by Eriksen *et al* in Kenya and Tanzania (2005), those households engaged in diverse agricultural activities can be the most vulnerable to droughts as they have not been able to build up their asset based. In others, though, income diversification can be profitable, as well as reducing risk (See Nairobi Work Programme 2009 for examples), particularly if it combines agricultural work with off-farm activities.

Clearly, effective adaptation at the household level requires striking a balance between diversification and asset building, and the extent to which each approach will be the most appropriate is likely to vary significantly across contexts. Cash transfers could give households the financial space to make those decisions and innovate (Levy 2006), rather than being forced into either diversification or intensification by circumstances. This financial space to innovate is one cause of the increased productive investments by cash transfer recipients described in e). Finally, whilst the adaptation community is partly responding to the need to increase security for the poor with a focus on insurance schemes, this focus risks missing the obvious point that a basic lack of cash can exclude the poorest from participating (Adger et al 2007).

e) *Giving the poor money to invest and increase their asset base*

Not only do cash transfers protect whatever adaptive capacity the poor already have by providing them with the resources to withstand shocks, they also have a long-term impact by transferring resources to the poor which can be invested productively, allowing for sustained improvements of generic adaptive capacity indicators. Cash transfers have been shown to encourage a diverse array of profitable investments which have allowed households to increase their asset base, one of the five characteristics of adaptive capacity under the ACCRA framework (2010). These include investments in high-yielding seed varieties in Ethiopia and India¹ (Sabates-Wheeler et al 2008, Gilligan et al 2008, both cited in Hanlon et al 2010), in micro-enterprise activities (Gertler et al 2005, Neves et al 2009), livestock (Schuring 2009, Chiwele 2010) and general agricultural investment (Martinez 2004, Soares et al 2008). This may also include investments in human capital via education. As mentioned in section 2, many cash transfer schemes in Latin America have the explicit objective of increasing school enrollment, although there is evidence that this can occur in the absence of conditions (see Neves et al 2009). For example, recipients of social pensions often use the money to finance the education of their grandchildren (Neves et al 2009, Ellis et al 2009). Cash transfers may lead to higher rates of savings and the opening of bank accounts, according to evidence from South Africa (Delany et al 2008, Neves et al 2009). Of course, micro-credit has often been proposed as a means of giving the poor the possibility of investing in small-scale activities, but it does not overcome the fact that the initial barrier is often a basic lack of cash (Hanlon et al 2010).

Therefore, even though the majority of cash transfers are usually used to meet immediate needs, the net income benefits often go beyond the sum of the transfer itself in the long-run (see Hanlon et al 2010: p69-73 for a review). In a study of the investment effects of Oportunidades in Mexico, for example, beneficiaries had achieved a permanent increase in consumption after five years (Gertler et al 2005). These net gains may be due to the actual extra money invested, or because of the behavioural change brought about by the greater security mentioned in d). The extent of this effect is contingent on the quantity of the transfer, as in programmes where the transfer is very small, the amount used for investment is minimal. Moreover, successful investment is also contingent on the local economy and opportunities for productive investment. Even so, it seems clear that cash transfers have increased the livelihood options available to the poor, and the poor have generally taken advantage of these options in ways that improve their general wellbeing. From an adaptation perspective, this should be taken as a good thing:- more options, investment opportunities and incomes are likely to lead to greater long term improvements in the generic indicators of adaptive capacity. It may even be possible that they lead to 'autonomous adaptation, although this will be heavily dependent on other contextual factors, as will be discussed in section 4.

f) *Facilitating mobility and livelihood transitions*

Climate change could gradually make livelihoods less viable. One response to this could be temporary or permanent migration, and there is already evidence that mobility is a crucial strategy to reduce vulnerability to a wide range of climate and non-climate related risks (Tacoli 2009). Ability to migrate is not identified in discussions of adaptive capacity, but there is significant evidence that it is an important

¹ Although these schemes were employment guarantee schemes rather than cash transfers *per se*, they still involve a net transfer of money to beneficiaries.

household strategy in bringing about long-term livelihood improvement (Deshingkar 2006, Deshingkar et al 2008). Although outcomes from migration are by no means uniformly positive, there is strong evidence that migrant households generally show better levels of child nutrition, and have more ability to cope with food price shocks (Zezza et al 2011). Moreover, not only do migrants often fare better than those who stay in rural areas in, the remittances they send back can bolster rural livelihoods (Tacoli 2009). Clearly, migration can represent one means of building long-term adaptive capacity. Moreover, although climate-related phenomena are rarely the sole factor in causing migration, migrating may constitute adaptation in its own right in some cases (Tacoli 2009).

There is evidence that cash transfers, by reducing the transaction costs of migration, and providing a degree of insurance to both migrants and their dependents, could facilitate such mobility and smooth necessary changes or desired livelihood transitions. Available evidence suggests they may have encouraged economic migration in Mexico and South Africa (Angelucci 2004, Azuara 2009, Ardlington et al 2007, Posell et al 2006,). To the author's knowledge, no studies have been done on the impacts of cash transfers on mobility in the context of climate related shocks and stresses, although one study in Colombia suggests that cash transfers can help poor families to leave areas suffering from high levels of political violence (Mesnard 2009). The argument here is not that cash transfers should be used with a view to increase migration, but they can increase the options available to the poor to improve their long-term adaptive capacity and respond to stresses, and migration is one means of doing this.

On the other hand, conditionality may constrain this mobility if recipients have to stay in the same area to continue receiving the grant (See Stecklov et al 2005 on Mexico). In particular, social programmes such as Ethiopia's Productive Safety Net Programme (PSNP), which combine cash transfers with employment guarantee and focus heavily on smallholder livelihoods may run the risk of keeping people in rainfed agriculture, thereby encouraging long-term vulnerability (Cipryk 2009). The point is not that smallholder livelihoods or rural development should not be encouraged, merely that social protection should not be used as a lever to reduce migration. From an adaptation perspective, the priority of social protection should be to maximize the resources and options available to citizens without constraining their mobility or favouring one livelihood over another.

Section 4: The limits of cash transfers

This paper has argued that although no in-depth research has been done, there is a strong case for claiming that cash transfers contribute to adaptation objectives, mainly by bolstering adaptive capacity. However, they do not directly address the non-generic indicators of adaptive capacity (such as institutions, knowledge, innovation or forward thinking decision making) identified as key components of adaptive capacity (Adger et al 2007, ACCRA 2010). Furthermore, adaptive capacity alone is not a guarantor of effective adaptation. As Vincent stresses; 'whether or not such adaptive capacity is drawn upon to bring about adaptation will be dependent upon a range of uncertain variables' (Vincent 2007: 13).

In section 3, this paper suggested that social protection could look at ways of facilitating 'autonomous adaptation.' However, the extent to which the improvements facilitated by cash transfers, (particularly with regards to new investment opportunities and livelihood options) actually constitute 'autonomous adaptation' is unclear, and almost certainly contingent on a host of other variables. As Adger and Vincent point out (2005), decisions taken by individuals can either increase or reduce vulnerability. It is not uncommon for livelihood improvements by the poor to improve their adaptive capacity in terms of

generic indicators such as income and educational opportunities, but also increase their vulnerability in other ways. This may include increasing their exposure to flooding or landslides (as is shown in a study by Eakin *et al* (2010) in Mexico). In other cases, people may clear natural vegetation for agriculture, thereby undermining the integrity of ecosystems and increasing long-term vulnerability. The real issue though is not that there is a risk that cash transfers *per se* will lead to decisions which increase vulnerability to climate change:- rather it is the need to recognize the limits of cash transfers in removing broader structural and institutional barriers to pro-poor adaptation.² As Vincent points out (2007), “individual adaptation decisions do not take place in a policy vacuum, instead they take place within an institutional context that can facilitate or constrain adaptation.” Conceptually, cash transfers are neutral regarding what this institutional context should be:- they simply increase the adaptive capacity and options of the poor within it.

Cash transfers have little to offer on structural issues, particularly those relating to public goods such as infrastructure or sanitation services. For example, in urban settlements, most loss and damage related to extreme weather is invariably the result of inadequate infrastructure and building quality (Moser and Satterthwaite 2008). Cash transfers could, at most, have a modest impact by giving dwellers more money with which to invest in their own houses, but they do not contribute in any significant way to the wider issues of governance, planning, and infrastructure. Moreover, cash transfers do not, by themselves, bring about the type of innovation identified as a key indicator for adaptive capacity (ACCRA 2010) (such as alternative crop breeds or floating gardens), and neither do they contribute to the dissemination of knowledge about climate change or ways to adapt to it. Finally, whilst cash transfers may improve the wellbeing of the poor, they do not necessarily reduce their marginalization from political decisions or ‘empower’ them to have a greater voice in policymaking.

The key response to these limitations is simple: In the same way that cash transfers are not a silver bullet for poverty reduction (Devereux *et al* 2005), they cannot address all the issues relating to adaptation, and should not be expected to. However, even though cash transfers do not contribute directly to other indicators of adaptive capacity, such as empowerment and political participation, they certainly do not inhibit them. Financial constraints can be barriers to a variety of adaptation policies/innovations, from relatively inexpensive health measures (see Adger *et al* 2007) to more expensive innovations like irrigation, systems and new crops varieties (Smit and Skinner 2002, cited in Adger *et al* 2007). By offering a degree of capital and livelihood security, cash transfers could contribute to creating the enabling environment within which more ‘transformative’ changes could occur, be it by allowing households and communities the financial space to innovate, or take on a stronger role in politics and organization.

Section 5: How do cash transfers fit into the adaptation policy toolkit?

It has been argued in this paper that cash transfer schemes need to be seriously considered as policy options worthy of early funding. However, given that cash transfers can address some, but by no means all, issues relating to adaptive capacity and adaptation, and that available funding is likely to be limited, it is crucial to consider how they are likely to compare with other adaptation approaches in terms of

² In the case identified by Eakin *et al*, for example, the main cause of the problems with flooding was a lack of municipal capacity and poor infrastructure.

likely benefits. When compared to other potential alternative adaptation interventions, cash transfers fare well in three further aspects.

An evidence-based policy in the face of uncertainty

In a field which is shrouded by uncertainty (see section 1), cash transfers represent a policy which can be virtually guaranteed to increase the adaptive capacity of those most vulnerable to climate change. At the most basic level this could simply mean better levels of nutrition and health, and reduced pressure for damaging coping strategies. At best, it could also give the poor the financial space to make decisions and investments which could improve their adaptive capacity in the long-term. Assuming these positive outcomes is perfectly reasonable, based on the substantial literature that has accumulated on cash transfers. Moreover, contributions to such outcomes are likely to be significant regardless of climate trends, and thus no extensive knowledge or modeling of future climate-related phenomena is necessary for effective implementation. These relative certainties have to be weighed against other adaptation options which have more uncertain outcomes. With current levels of available information about the effects of climate change at the local level, many potential adaptation policies (such as irrigation and dam building, for example) are highly risk-prone, based on inadequate information and subject to 'lumpy' investment (Nicol and Kaur 2008). Nicol and Kaur go as far as stating that poorly implemented 'adaptation' policies could even induce negative impacts. Therefore, if the idea is for adaptation finance is to be used for policies supported by a high evidence base, cash transfers should be high up on the list.

Likelihood of gaining local acceptance

Because they can be used to address both existing needs and multiple causes of vulnerability, cash transfers face a high chance of achieving acceptance at the local level. Unlike many approaches to climate change adaptation, they do not require beneficiaries to fundamentally change their outlooks, or de-prioritize existing concerns in favour of more abstract and long-term ones. On the contrary, they bolster existing livelihood strategies and increase the options of the poor to improve their welfare, working on the reasonable assumption that this will contribute positively to adaptive capacity.

With regards to governments, the picture is more mixed. Cash transfers have already achieved wide political acceptance across the political spectrum in Latin America and in some Southern African countries. South Africa is well known as a country which guarantees relatively extensive social transfers in its constitution, whilst neighbouring countries such as Namibia and Lesotho have also implemented social protection systems without the need for donor contributions. Meanwhile, in other parts of Africa, pilot cash transfer programmes have been implemented, although many of these have not been embraced by their countries' Ministries of Finance and therefore remain heavily donor-reliant (Devereux and White 2010, Devereux et al 2010). Whilst there is official support for cash transfer programmes, as can be seen from the Social Policy Framework agreed on in Namibia in 2008 (See Devereux and White 2010), many governments still see social transfers as unaffordable or encouraging a 'culture of dependency.' This is in spite of strong evidence to the contrary (Shepherd et al 2011). Moreover, despite their successes, cash transfers are by no means the 'only game in town' when it comes to social policy, and some governments have opted for schemes which transfer assets via employment guarantee or subsidized inputs. Indeed, these policies have been highly successful (see Dorward and Chirwa 2011 on Malawi's import subsidy programme).

Much of the mistrust of cash transfer programmes in some lesser developed countries is due to the very real fiscal constraints to scaling up cash transfers, and the fear of becoming locked into programmes with escalating costs (McCord 2009). Based on current budget availability, the challenge of meeting the level of expenditure required to meet minimum basic social protection objectives is in competition with other key development objectives (Hagen-Zanker et al 2010). A paper by Barrientos and Holmes (2009) found that whilst a universal child benefit in Congo, Mali and Senegal would have significant impacts on poverty reduction, the finances available to achieve this are a limiting factor. As a result, many programmes either have a very short-term horizon (such as Ethiopia's PSNP), or are limited and targeted at the small sub-sections of the poor (e.g. Malawi and Zambia, McCord 2009). Clearly, this level of targeting places limits on the number of people who can actually benefit, excluding many who also have extreme needs, and this can also have negative effects for community relations (see Ellis, 2008, Miller et al 2008, , and Chiwele 2010). Moreover, as De Janvry *et al* (2006) point out, targeting only the poorest still fails to protect the vulnerable non poor from falling into poverty, something that could happen from climate and non-climate related shocks. Therefore while there is clearly a need and in some cases, demand for cash transfers in Sub Saharan Africa, there is also an important role for the international community in helping to meet this demand. However, due to the realities of politics and the need for Governments to have ownership of social protection programmes, the way in which this should be done is less clear (see Section 6).

Implementation and Scalability

The ease with which cash transfer programmes can be scaled up depends on various factors, not least political will. Whilst they have been implemented successfully in middle income countries, particularly Latin America, Holmes and Barrientos (2009) show how limited state capacity and financial services are significant challenges to the implementation of cash transfers in West and Central Africa, for example. Just like any other wide ranging policy, cash transfers will inevitably face the challenge of governance, particularly given that most of the countries in regions with the most need are those with low government effectiveness. If fiscal constraints require some form of targeting, this will also be an issue, although not necessarily an insurmountable one, as can be seen by the effectiveness of the Kenyan Government in targeting during the pilot stage of its child grant scheme (Alviar and Pearson 2009). Innovations such as cellphone money transfers (increasingly popular in Kenya) and smartcards may also have a role to play, and pilot programmes in Kenya, Ghana, and Malawi have all used such tools to facilitate the transfer of money (Ellis et al 2009). Moreover, the successful scaling up of cash transfer schemes in middle income countries such as Mexico, Brazil and South Africa offer positive precedents that can serve as a models for poorer countries. By comparison, project-based approaches to adaptation may have the advantages of being able to experiment and innovate in participation with local people, but struggle to ensure that those benefits accrue to the wider population. Put simply, if the intention is to increase the adaptive capacity of as many people in a relatively short amount of time, cash transfers could be an extremely efficient way of achieving this.

Section 6: Future Research

Clearly, there is much work to be done regarding the potential linkages between cash transfer programmes and climate change adaptation. No field research has yet been carried out on the linkages between cash transfer programmes and adaptive capacity or autonomous adaptation. A further issue that might be crucial is the way in which cash transfers interact with other development and adaptation policies. They have already been implemented in a diversity of social, political and economic contexts,

but little work has been done on the linkages with such contexts. In particular, the ways in which cash transfers might influence the ability of the poor to benefit from further adaptation interventions might be a future area of study. Moreover, the extent to which cash transfers can be used in ways that constitute 'autonomous adaptation' is far from clear, partly because it is only really possible to assess the effectiveness of any form of adaptation over a long time-scale. As was mentioned in section 4, this will depend heavily on the broader context, and certainly more research is needed in order to ascertain how social protection could be used to facilitate autonomous adaptation.

As mentioned in section 2, there are pre-existing debates surrounding cash transfers, particularly over issues such as conditionality and targeting. These are likely to be relevant for adaptation as well, particularly regarding those countries which are the most vulnerable to climate change and which suffer from a deficit of social protection (notably in sub-Saharan Africa). Indeed, it has already been argued that the levels of conditionality and targeting applied in Latin America would not be appropriate for many Sub Saharan African countries (Schubert and Slater 2006, Ellis 2008), although these are debates which are likely to continue. At the same time, cash transfers have attracted accusations of creating a culture of dependency or leading to other unintended outcomes, although there is significant evidence to refute this (see Shepherd et al 2011, or Hanlon et al 2010, p73-78 for a reviews of evidence regarding cash transfers' effects on labour participation, or Moultrie and McGrath 2007, Makiwane 2010 and Stecklov et al 2006 for impacts on fertility rates). One possible pitfall may be the risk of inflation when cash transfers are implemented in particularly remote areas where markets are isolated (Harvey 2007, Holmes and Barrientos 2009). This has to be recognized as a concern from an adaptation perspective, particularly as such communities are often among the most vulnerable to climate change.

Finally, it is important to emphasize that simply identifying cash transfers as an effective tool to contribute to adaptation goals does not necessarily answer the question of what to do with this information. As recent papers (Devereux and White 2010, Devereux et al 2010, Gentilini and Omamo 2011) have made clear, identifying an effective policy means little if national governments resist embracing the policies, and pilot projects which do not have broader government support are unlikely to achieve long-term benefits. In cases where input subsidies or employment guarantee have greater acceptance with national governments, there may well be a case for supporting them rather than trying to imposing cash transfers on reluctant governments. Therefore, identifying cash transfers as a tool to contribute to adaptation goals does not fully answer the question of how to convert this into positive policies.

Section 7: Conclusion - Demystifying climate change adaptation

It has been argued that cash transfers are a viable policy option which can make a significant contribution to adaptive capacity in vulnerable countries. There is strong evidence that they contribute to generic indicators of adaptive capacity, they respond to multiple causes of vulnerability, and meet the immediate needs of the poor. Even though they do not respond directly to other adaptation goals, they certainly do not detract from them and may even improve the enabling conditions for subsequent policies to be successful. However, the strongest argument for them to be considered as tools for adaptation is actually an ethical one: that those who have done the least to cause climate change and are the most affected by it have the right to spend the money which is supposed to remedy its effects. This is a crucial argument to make in the context of a field which, in spite of its short existence, has already seen the development of approaches which are based heavily on the pre-existing interests and agendas of different non-poor actors. Many government plans for adaptation involve large-scale

projects which can actually increase the vulnerability of the poor, whilst on the other side of the fence, some NGO's have a bias in favour of certain livelihoods or solutions. Distributing adaptation finance directly to the poor would take some of the subjectivity out of adaptation, and allow those who have to live with the consequences of climate change to have an active role in addressing them.

This may seem counter-intuitive to some, given the fact that knowledge of climate change is heavily concentrated amongst scientists and 'expert' opinions. However, the fact that knowledge of global climate change is assumed to be the preserve of 'experts' does not counter the argument for increased devolution of resources to households. Even when those affected by climate change are unaware of it as a global phenomenon, they possess valuable knowledge regarding changing local climate patterns, and the ways these interact with other stresses as well as with their own livelihoods and aspirations. These are intensely complex issues which are far beyond the capacity of the most advanced computer models, and involve difficult decisions which can only be made accurately by the people directly involved. Much of the adaptation literature already places a strong emphasis on the knowledge and agency of the poor, and cash transfers represent a very concrete way of following through with this.

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