"No-Regrets Approach to Increased Resilience and Climate Change Justice: Toward a *Risk-Adjusted Social Protection Floor*"

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Abstract

Climate change affects many indicators of human well-being, including food security, health and nutrition status, access to water and sanitation, education, housing, physical and psychological security, hopefulness toward the future. But direct and indirect drivers and impacts are complex and not known with certainty (Heltberg, Siegel, Jorgensen, 2009). In general, poor and vulnerable households and communities suffer most from climate change, because of their higher exposure and sensitivity (of assets and livelihoods) to hazards associated with climate change and their lower capacity to manage risks and prevent negative impacts (Mearns and Norton, 2010). As such, those suffering most from negative impacts of climate change are those who contributed least to greenhouse gas emissions (ICHRP, 2008; Burkeman, 2008; Mearns and Norton, editors, 2010). Hence, there are critical issues of injustice and the erosion of human-rights associated with climate change, compounded by a global "veil of ignorance" about the future pattern of climate and climate change around the globe.

To deal with climate change from social justice and rights-based approaches is a global challenge. Whatever the outcome, efficient use of resources is critical for sustainable poverty reducing growth that is equitably distributed across the world. However, part of the global challenge is to move beyond efficiency concerns and get the global debate more oriented to the underlying social justice and human-rights issues (Okereke and Dooley, 2010; Okereke, 2010). Given the problem of potential negative impacts of climate change, and underlying issues related to justice, human-rights and economic efficiency, special approaches, instruments and tools are required to solve the problem. It is proposed that existing instruments and tools (used in innovative ways) from social protection (SP), disaster risk management (DRM) and climate change adaptation (CCA) can be applied to implement global solutions to climate change that are just and fair, anchored in human-rights, economically efficient and socially differentiated among different nations and communities. Because climate change has global impacts, a global agreement is needed to maximize global well-being, but it needs to be implemented locally because of major spatial differences in economic, social and environmental conditions. With increasing evidence of climate change, including increased climate variability and extreme weather events, and because of uncertainties associated with climate change, it seems compelling to adopt a "no-regrets approach"- that is, take actions that are justifiable from economic, social, and environmental perspectives whether climate change takes place or not - that can help increase human resilience to multiple hazards whether caused by weather, economic imbalances, food shortages etc.

This paper introduces the idea of a **globally guaranteed, nationally managed, and locally implemented "risk-adjusted social protection (SP) floor".** This is a forward-looking approach that does not attempt to address or redress past injustices, but focuses on creating resilient economic, social and environmental systems - which are equitable and sustainable for the present and future – and based on the universal provision of human basic needs (including security). The validity of a "risk-adjusted SP Floor" draws upon general concepts of social justice and social contracts presented in Rawls (1971; 1999; 2001), especially the concept of the "original position" and "veil of ignorance", and extensions by Sen (1999. 2009) and by others like Dworkin (2000) and Nussbaum (2006), and specific applications to climate change justice (e.g., Kasperson and Kasperson, 2001; Caney, 2005; Paavola, and Adger, 2006; Page, 2006; ICHRP,

2008; Miller, 2008; Vanderheiden, 2008; Okereke and Dooley, 2010; Okereke, 2010; Posner and Weisbach, 2010).

The "risk-adjusted SP Floor" specifically draws upon key concepts/principles of the UN SP Floor Initiative (ILO and WHO, 2009a; 2009b), and the "no-regrets" approach to climate change (Heltberg, Siegel, Jorgensen, 2009; UNDP, 2009; World Bank, 2009a; UNDP, 2010; Siegel, 2010).[1] The UN's SP Floor Initiative begun as a direct reaction to the global 3-F's crisis. The concepts and operational potential of the "risk-adjusted SP" can be found in existing UN agreements for human rights and basic needs including social security (i.e., Universal Declaration of Human Rights).

Based on principles of social protection embodied in the **social risk management** (SRM) framework (Siegel and Alwang, 1999; Holzmann and Jorgensen, 2000; World Bank, 2001; Holzmann, Sherborne-Benz, Tesliuc, 2003) and the **adaptive social protection** (ASP) framework (IDS, 2008; OECD, 2009; Davies, Oswald, Mitchell; 2009; Davies, et. al., 2009; Jones, et. al., 2010), the "risk-adjusted SP Floor" draws upon established and successful approaches to social protection that provide basic needs and build/protect/maintain assets and livelihoods (Grosh, et. al., 2008; World Bank, 2009b), new rights-based approaches to social protection such as social guarantees (World Bank, 2008; Gacitau-Mario, Norton, and Georgieva, 2009; Jorgensen and Serrano-Berther, 2009), along with existing and new financial and insurance products for disaster risk management that involve risk pooling and transfer and contingency financing (Linnerbooth-Bayer and Melchar, 2006, Linnerbooth-Bayer, Bals, Melchar, 2008; Gupta, 2008; Hellmuth, et. al., 2009; Duus-Otterström and Jagers, 2009; Hill and Torrero, 2009; Linnerbooth, 2010; Warner, et. al.; 2009; 2010; World Bank. 2010), and other insurance products for the poor (e.g., health, life, unemployment, disaster) and micro-finance for savings and credit in addition to insurance (Mahul, 2010). The globally guaranteed, nationally managed and locally implemented "risk-adjusted SP Floor", which can be achieved by applying existing SP approaches and financial and insurance instruments, should generate global welfare solutions that result in social justice and human rights over space and time. This is climate change justice with human-rights.

[1] The "no-regrets" approach refers to seeking social/economic/environmental policies and investments that promote growth and broad-based poverty-reducing sustainable development whether or not climate change is manifested.

"No-Regrets Approach to Increased Resilience and Climate Change Justice: Toward a 'Risk-Adjusted Social Protection Floor'"

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1. Introduction

There is mounting scientific evidence of climate changes and its impacts on the environment and well-being of human beings (Stern, 2007; UNDP, 2008; UNISDR, 2009a; World Bank, 2009a; b). In general, poor and vulnerable households and communities (and nations) are expected to suffer the most from climate change, because of their higher exposure and sensitivity of assets and livelihoods to hazards/risks associated with climate change, and their lower capacity to manage the hazards/risks and prevent negative impacts on well-being.[2] Climate variability and change affects many tangible and intangible indicators of human well-being such as as food security, health and nutrition status, access to water and sanitation, education, and housing, physical and psychological security, hopefulness toward the future, etc. But the direct and indirect drivers and impacts of climate change are complex and not completely known or understood. "There will be changes in the mean and variance of rainfall and temperature, extreme weather events, food and agriculture production and prices, water availability and access, nutrition and health status. The most adverse impacts are predicted in the developing world because of geographic exposure, reliance on climate sensitive sectors, low incomes, and weak adaptive capacity. Socio-economic impacts, though generally not well understood, are likely to be profound and will impact humans through a variety of direct and indirect pathways (Heltberg, Siegel, Jorgensen, 2009)."

Those suffering most from negative impacts of climate change are those who have tended to contribute the least to greenhouse gas emissions (ICHRP, 2008; Burkeman, 2008). That is, households and countries that are materially "poorer" and have lower production and consumption (and smaller asset and livelihood portfolios) are those that are suffering the most. Some of this is a function of individual/household characteristics and others are a function of geographic location. There are thus concerns that there are poor and vulnerable households and communities (and nations) are at a distinct disadvantage in terms of dealing with past causes and present/future manifestations of climate change (and impacts on people/places in future generations). Hence, there are critical issues of social justice (or injustice) and the protection (or erosion) of human-rights in relation to climate change. Issues of climate change justice and human rights include the concept of *common but differential responsibility* for past, present and future pollution/damages and "clean-up" costs (i.e., mitigation activities) and costs for adaptation activities.

This paper introduces the idea of a globally guaranteed, nationally managed and locally implemented risk-adjusted social protection floor ("risk-adjusted SP Floor"). This draws on concepts of social justice and human rights, recent advances in social protection, and innovative

[2] Poor and vulnerable households in wealthier communities and nations are also expected to suffer more than others in their respective communities and nations.

finance and insurance instruments, and the United Nations' (UN) Social Protection (SP) Floor Initiative. The "risk-adjusted SP Floor" also draws upon the *social risk management* (SRM) framework and *adaptive social protection* (ASP) framework, and the "no-regrets" approach to climate change by focusing on decreasing vulnerability and increasing resilience The "risk adjusted SP Floor" responds to the challenge identified by the World Development Report (WDR) 2010 (World Bank, 2009b), which highlights the need to "act now", but also the need to "act together", and "act differently" to achieve "an equitable and effective global climate deal" that recognizes the varying needs and constraints of developing countries.

The paper will first set the stage by discussing ongoing global food, fuel, financial, crises and manifestations of climate variability and natural disasters, and the increasing global concerns about uncertainty and insecurity. The 2nd second section sets the stage for the paper with some key definitions and brief overview of issues related to the ongoing global 3F's crisis (food, fuel, and finance), and the increasing evidence of natural disasters and climate change, and heightened perceptions of insecurity. Section 3 presents basic principles and debates related to sustainable development and climate that form the intellectual underpinnings of the "risk adjusted SP-Floor". In Section 4 the paper presents the guiding principles from social justice and human rights and Section 5 links social justice and human rights with climate change, drawing specifically on the thinking of egalitarian-liberals such as Rawls and Sen, and others. Section 6 moves the discussion in the direction of solutions that are socially just, meet human rights criteria and are carried out in the context of social protection (SP) drawing upon the social risk management (SRM) and adaptive social protection (ASP) frameworks. Overlaps between SP, disaster risk management (DRM) and climate change adaptation (CCA) – in terms of managing a range of hazards/risks with a focus on lowering vulnerability and increasing resilience – are highlighted. Section 6 also presents new approaches to social protection, with a focus on new SP programs that support "basic-needs" and rights-based approaches such as conditional cash transfers (CCTs) and social guarantees. Section 7 examines some recent innovations in finance and insurance that are relevant to a "risk-adjusted" SP Floor. are discussed. Section 8 then introduces the UN SP Floor Initiative and the concept of a "risk-adjusted SP Floor". The paper ends with Section 9 by highlighting some practical implementation challenges of a "risk adjusted SP Floor".

II. Setting the Stage: Crises, Vulnerability and Insecurity

In this section we set the stage for the paper by presenting some key definitions and then by highlighting the increasing attention that is being devoted globally to issues related to crises, vulnerability to multiple hazards/risks and perceptions of insecurity.

II.1 Key Definitions

The risk-vulnerability chain conceptualizes the relationship between risk, hazard, vulnerability, risk management capacity, and resilience (see Annex 1, including Figure 1). We also delineate the difference between "risk" and "uncertainty".

Risk = Hazard x Vulnerability – Risk Management Capacity

Hazard is a potentially damaging event, *vulnerability* summarizes the conditions determined by physical, social, economic, and environmental factors or processes, which affect exposure and sensitivity (i.e., *susceptibility)* of households or a community to hazards, *risk management capacity* is the ability to lower vulnerability, and *risk* includes the potential negative impacts from a hazard event (for a given vulnerability and capacity). *Resilience* is the ability of a system to adjust to changing conditions, by lowering vulnerability and increasing capacity, and /or preventing the hazard from occurring. See Annex 1 (including Figure 1 for more details).

The term **resilience** has been increasingly used in the development community to indicate a proactive asset/livelihood approach to disaster risk management (DRM), climate change adaptation (CCA) and social protection (SP) that specifically targets poor and at-risk individuals, households and communities (Siegel, 2010). While DRM/CCA/SP (see Annex 2 for definitions) have a lot in common, they have historically been dealt with by different disciplines and communities of practice, operating in different institutions and using different conceptual and analytical frameworks and terminologies. All three agendas attempt to manage hazards/risks by transforming, strengthening and protecting assets and livelihoods, including efforts to improve institutional capacities, and to decrease vulnerability and build resilience and thereby promote poverty-reducing sustainable growth. However, each has a different focus in terms of timing, purpose and target groups. On the other hand, there is considerable overlap in instruments actually used.

It is important to note that some authors differentiate between ***risk*** (variability with known distribution) and ***uncertainty*** (variability with unknown distribution), while others claim these terms are interchangeable. In this paper we will try to differentiate between the terms risk and uncertainty, and highlight the fact that one of the major global social transformations taking place is the increased focus by households, communities and nations on "uncertainty" (i.e., *the unknown*) and the fact that probabilities for different hazard events are changing.[3] In the context of climate change, Gardiner (2004) notes: "So to say that there is uncertainty surrounding global climate change is to claim that humans do not know, and can't accurately estimate the probability climate change will occur and where, if or how it will be yes/no manifested, and the potential impacts on people and places. This perception of "uncertainty" with respect to climate (and other environmental factors) and economic, social, political factors, has elevated the concept of "***security***" (and the absence of insecurity) to a major determinant of human well-being (Siegel, 2005; Thomson, 2007; Adger, 2010).

II.2. The Global 3F's Crisis (food, fuel, and finance), Natural Disasters and Climate Change

There are rising concerns about the increasing frequency and severity of natural disasters (i.e., "extreme weather events"), and climate variability and change around the world[4] (UNISDR,

[3] Rawls (1971) assumes that decision made in the "original position" and the "veil of ignorance" are based on underlying conditions of uncertainty.

[4] **Weather** is the day-to-day state of the atmosphere, and its short-term (minutes to weeks) variation. Popularly, weather is thought of as the combination of temperature, humidity, precipitation, cloudiness, visibility, and wind. **Climate** is defined as statistical weather information that describes the variation of weather at a given place for a specified interval. In popular usage, it represents the synthesis of weather; more formally it is the weather of a

2009a; World Bank, 2009b), and how this will exacerbate the vulnerability of poor households, communities and nations (UNDP, 2008; Heltberg, Jorgensen, Siegel, 2009; Mearns and Norton, 2010; Ribot 2010). The ongoing "Global 3 Fs Crisis**" (**food, fuel, and finance), that began in 2008, has compounded global concerns about risk and uncertainty and further challenged the capacity of existing formal and informal social institutions and policies (at local, national and international levels) to manage a range of risks and uncertainties (G-8, 2009).

Box 1: "L'Aquila" Joint Statement on Global Food Security from July 2009

The urgency to deal globally with the multiple risks and uncertainties can be observed in the "L'Aquila" Joint Statement on Global Food Security from July 2009. The L'Aquila Food Security Initiative (AFSI) declares: "*There is an urgent need for decisive action to free humankind from hunger and poverty. Food security, nutrition and sustainable agriculture must remain a priority issue on the political agenda, to be addressed through a cross-cutting and inclusive approach, involving all relevant stakeholders, at global, regional and national level. Effective food security actions must be coupled with adaptation and mitigation measures in relation to climate change, sustainable management of water, land, soil and other natural resources, including the protection of biodiversity* (G-8, 2009)."

The ongoing global 3-F's crisis has elevated concerns about hazards/risks and uncertainty and the capacity of existing formal and informal social and political institutions at community, local, national and international levels to manage a wide range of linked hazards/risks. Furthermore, although linkages between natural hazards, climate change, and local/national/international food/fuel/finance markets are evident, they are not well understood.[5] The ongoing impacts of the global 3-F's crisis, and the numerous natural disasters[6] have contributed to an increasing perception of *human vulnerability* to multiple hazards that can negatively impact assets and livelihoods among many people in many places in the world. As a result, there is increasing interest in *how to build resilience* to multiple hazards/risks at individual, household, community, local, national and international levels. In fact, there has been a major paradigm shift in the development community to increasing focus attention on causes and cures of human vulnerability and on building resilience (Siegel, 2010). Similarly, WDR 2010 (World Bank, 2009b) concludes that: "Robust economic and social strategies will be those that take into account increased uncertainty and that enhance adaptation to a variety of climate futures …" and that there is a need for a global climate deal that is "equitable and effective".

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locality averaged over some period (usually 30 years) plus statistics of weather extremes. **Climate variability** includes fluctuations in weather patterns around a trend line (and should possibly be referred to as "weather variability"). C**limate change** describes changes in weather/climate patterns over years, decades or even centuries.

[5] For example, the ongoing debate about impact of bio-fuels on food, fuel and financial markets. See http://www.ethanolrfa.org/news/entry/world-bank-impact-of-biofuels-on-commodity-prices-not-as-large-as-originall/

[6] The year 2010 may go down in history as the "Year of Natural Disasters and Climate Change", with major headline-grabbing events in Haiti (earthquake), Mexico (floods), Chile (earthquake), Turkey (earthquake), Iceland (volcano), China (earthquake, floods), Pakistan (floods), Russia (forest fires), USA (various record storms), Indonesia (earthquake, volcano, tsunami), New Zealand (earthquake), Guatemala (mudslide).

According to Kanbur (2010, p.2): "For developing countries, crises are likely to be the *new normal*, with multiple origins ranging from climatic to global financial. Indeed, it can be argued that such crises have been "the normal" for developing countries, and the 2008 financial crisis gave developed countries a taste of this normality." Kanbur (2010, p.4) adds that: "Beyond the uncertainty about the origin of the crisis and its specific impact on the poor, the uncertainty of *crisis type*, there is the uncertainty of *crisis timing*. The timing of crises is not known ex ante. We might be confident that one of the main sources of crises will kick in some time during the next few years, say, but when exactly it will happen is not known. Crises can come suddenly, and when they do come we will not know quite how quickly they will recede. The uncertainty of timing is perhaps most apparent in the case of natural disasters, where it has been argued that climate change can have effects on the trends as well as the variability of weather patterns, increasing the latter."

Adger (2010) claims that climate change will affect the security of individuals and populations as well as the security of states. To date, however, "climate security" has mostly been framed in such a manner that climate change impacts are a threat to nation states, as opposed to framing the climate security threat in terms of threats to the well-being of individuals. Adger suggests a more **individualistic approach whereby climate security focuses on the idea of freedom from harm and fear of individuals and communities, and their capacity to adapt to potential climate-related threats**. Thus, from a human security perspective, the central issues of the climate change "debate" become those of *vulnerability, resilience, adaptation, and justice.* Gardiner (2010) notes that: "There is something special about climate change that makes it raise fundamental questions about conventional social and political practices – **something to do with security**." Barnett and Adger (2005) warn that climate change (and other directly/indirectly linked factors) may undermine human security, and that increased human insecurity may increase the risk of violent conflicts within and among nations, and also affect the role and effectiveness of nations individually and internationally in their attempts to promote human security and peace building. Increasing concerns about insecurity and uncertainty have been observed: "Social and economic policies are not keeping up with the realities of vulnerability, risk and inequality as they impact the poorest. Human lives globally are increasingly characterized by insecurity and uncertainty. The fear and risk is magnified by poverty (Thomson, 2007, p.56)."

The concept of **human security** offers a new approach to the challenges of climate change, and also offers an opportunity to look for new approaches to responses that can lead to a more equitable and sustainable future (O'Brien, St. Clair, Kristoffersen, 2010). As mentioned before, there are new approaches and paradigms to dealing with climate change, including an increased focus on building resilience of households and communities to multiple hazards, including those that are directly and indirectly related to climate. However, a major challenge to pursuing global approaches to climate change justice and human rights is the lack of global social and political structures (i.e., governance), that have resulted in "global failure" (Gardiner, 2010).

Climate change and the ongoing "Global Crisis of 3 Fs**"** have led to some general *stylized facts*:

a) There are important (yet not always well-understood) linkages and reinforcing feedback mechanisms between climate change and food, fuel, and finance (3-F's) markets and natural disasters,

b) Climate change and the global 3-Fs crisis have had wide-ranging direct and indirect impacts on many tangible and intangible indicators of human well-being. These impacts are difficult to analyze and manage separately, because of the linkages and feedback loops,

c) Risk and uncertainty are increasing with the increased frequency and severity of natural disasters and extreme weather events, and concerns about climate change,

d) The risks and uncertainties (and potential impacts) are unequally distributed among people over sectors, people over space, and people over time,

e) Although the crisis is global, there are wide differences in impacts among and within nations. Thus, there is a need for global approaches that are tailored to national and local conditions, needs and capacities (i.e., differentiated responsibility),

f) Social protection at community, local, national and global levels is needed to help individuals and households manage these compounded risks (and uncertainties) to avoid irreversible damage to human well-being, and to facilitate poverty-reducing growth.

III. Guiding Principles from Sustainable Development and Climate Change

In this section we examine some guiding principles from past debates about ***sustainable development.*** These concerns, which surfaced in the mid-1980s were based on general concerns about environmental degradation. Concerns about climate change as a cause and effect of environmental degradation is a more recent manifestation of concerns about the relationships between the natural environment and human development (i.e., growth and poverty reduction).

III.1 The Brundtland Commission: "Our Common Future" and Sustainable Development

Climate change is often called the greatest challenge facing humanity, with its complex environmental, economic and social impacts. The concern with addressing risk and vulnerability has risen with the recent crises, but this concern has strong roots in sustainable development thinking. This section will set the stage by highlighted some key concepts and principles of **sustainable development**, which have set the stage for thinking about appropriate responses to the types of global challenges that were highlighted in the introduction.

A major "benchmark for international thinking about the environment is the report **Our Common Future (**often referred to as the report of "The Brundtland Commission"). This report was prepared for the UN-sponsored World Commission on Environment and Development in 1987. Box 1 is a *mosaic* of excerpts from "Our Common Future". These excerpts set the stage for how to consider the issue of global climate change in terms of social justice and human-rights. The messages -- which acknowledge the strong links between human activity and the environment -- are globally-oriented (i.e., "universalistic"), human-centric, anchored in an individualistic needs-based approach to human well-being, and focused on the well-being of poor and vulnerable households and communities in the present and future.

Box 2: "Our Common Future": The Concepts of Sustainable Development

An edited *mosaic* drawn from the Brundtland Commission's report called "Our Common Future" (World Commission on Environment and Development (1987) highlights the concepts of sustainable development:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts:

a) *the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and*
b) *the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.*

Thus the goals of economic and social development must be defined in terms of sustainability in all countries - developed or developing, market-oriented or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic framework for achieving it ... [Sustainable development] implies ***a concern for social equity between generations, a concern that must logically be extended to equity within each generation.***

The satisfaction of human needs and aspirations is the major objective of development. The essential needs of vast numbers of people in developing countries for food, clothing, shelter, jobs - are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life.

The linked basic needs of housing, water supply, sanitation, and health care are also environmentally important. Deficiencies in these areas are often visible manifestations of environmental stress. Planners must find ways of relying more on supporting community initiatives and self-help efforts and on effectively using low-cost technologies.

Economic development is unsustainable if it increases vulnerability to crises. But vulnerability can be reduced by using technologies that lower production risks, by choosing institutional options that reduce market fluctuations, and by building up reserves, especially of food and foreign exchange. A development path that combines growth with reduced vulnerability is more sustainable than one that does not.

The best vulnerability and risk analysis has not been applied consistently across technologies or systems. There is thus a need for new techniques and technologies - as well as legal and institutional mechanisms - for safety design and control, accident prevention, contingency planning, damage mitigation, and provision of relief. "... our inability to promote the common interest in sustainable development is often a product of the relative neglect of economic and social justice within and amongst nations.

These are the key principles that we draw from the Brundtland Commission:

1) human-centric approach: nature is a resource that provides for human wants and needs
2) global society approach: sustainable development is forward-looking and requires a global ("universalistic") perspective that respects individual rights and needs
3) development is process that helps global society meet needs for individuals
4) the needs of both present and future generations must be considered
5) innovative technologies, social organizations and institutional arrangements can overcome economic and environmental constraints to achieving human needs in the present and future.
6) priority should be given to covering "basic needs" of the world's poor and vulnerable
7) there are strong links between human well-being, poverty and vulnerability, environmental quality, and sustainable development
8) "essential" (or "basic") human needs are universal within generations, but vary spatially because of differences in history, culture, ecology, etc., and they also vary across generations and space
9) climate change justice and human rights are linked to economic and social justice and human rights within and amongst nations and generations
10) population growth and environmental degradation are threats to providing "basic needs" for the world's population, and a concern for dealing with poverty and vulnerability in a sustainable manner.

In dealing with climate change adaptation (CCA), many development practitioners have identified a close link between the underlying problems and solutions related to *climate-related hazards/risks, vulnerability, poverty, resilience and adaptation.* As Munasinghe and Swart (2005, p.149-150) point out: "*Sustainable development and adaptation are interlinked. The great majority of sustainable development strategies are not related to climate change, but they could make adaptation more successful. Similarly, many climate change adaptation policies will help to make development more sustainable. … Successful strategies need advances in technology, management and law, finance and economics, public education, training and research, and institutional changes. Notably, the ability to incorporate climate change concerns into development plans can help ensure that new investments in infrastructures reflect likely future conditions. Although the crafting of adaptation policies is complicated by uncertainty, many adaptation policies will help promote sustainable development (e.g., improving natural resource management, or better social conditions), and as a result make sense to be implemented [with or without climate change]." Furthermore: "Environmentally related measures to help poor people might seek to reduce their vulnerability to disasters and extreme weather events, crop failures, loss of employment, sickness, economic shocks, etc. Thus, an important objective of poverty alleviation is to provide poor people with assets (e.g., enhanced physical, human, and financial resources) that will reduce their vulnerability. Such assets increase the capacity for both coping (i.e., making short-run changes) and adapting (i.e., making permanent adjustments) to external shocks. These ideas converge with the sustainable livelihoods and asset based approaches, which focus on the portfolios of assets, the capacity to withstand shocks, gainful employment, and social processes for households and communities* (Munasinghe and Swart, 2005, p.114)."

III.2 The Precautionary Principle: A Precursor to the "No-Regrets" Approach

It should be noted that a major way that uncertainty has been incorporated into thinking about sustainable development is through the "**precautionary principle**". The United Nations Framework on Climate Change (UNFCC) from 1992 claims that: "The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors." The "precautionary principle" is a precursor to the "no-regrets" approach to climate change.

III.3 Climate Change and "Common but Differentiated Responsibilities"

The United Nations Framework Convention on Climate Change (UNFCCC)[7] is an international environmental treaty produced at the UN Conference on Environment and Development (UNCED), informally known as the "Earth Summit", held in Rio de Janeiro in June 1992. The objective of the treaty was to stabilize greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous human-induced (i.e., anthropogenic) interference with the climate system.[8] The parties agreed that they would recognize **"common but differentiated responsibilities,"** with greater responsibility for reducing greenhouse gas emissions in the near term on the part of developed/industrialized countries (i.e., "*Annex 1* countries"). However, the treaty sets no mandatory limits on GHG emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides for updates (called "protocols") that would set mandatory emission limits. As of 2010, the UNFCCC had 192 signatories.

Thus, the UNFCC explicitly recognizes of the unequal causes and impacts of global climate change, however it has only resulted in non-binding (and/or non-enforced) agreements on emissions reductions, that have not be ratified by all UNFCC parties (e.g., USA). However, there is a lack of a legal recognition of how "common but differentiated responsibilities" can be translated into a human rights framework. The ongoing debates through from Rio (1992) through the Kyoto Protocol (1997) and the Cancun Convention in late 2010[9] indicate the difficulty in arrived at a legal rights-based global framework to deal directly with the causes and impacts of climate change. On the other hand, it provides an entry point for dealing with climate change issues indirectly through a "***common rights but differentiated responsibilities***" approach.

[7] http://unfccc.int/2860.php

[8] A key aspect of the UNFCCC treaty is that it formally acknowledges the possibility of harmful climate change that is linked to human activities.

[9] http://unfccc.int/2860.php

III.4 Stern Commission: Climate Change as a Global Market Failure

The Stern Review of Climate Change (Stern, 2007) was a major turning point because it combines *science-based* climate models with *science-based* economic models. Stern (2007) declares that: "**Climate change is a result of the greatest market failure the world has seen."** The evidence on the seriousness of the risks from inaction or delayed action is now overwhelming. We risk damages on a scale larger than the two world wars of the last century. **The problem is global and the response must be a collaboration on a global scale.**"

Acknowledging the principle of "common but differentiated responsibility", Stern (2007) proclaims, "**Climate change is global in its causes and consequences, and international collective action will be critical in driving an effective, efficient and equitable response on the scale required",** and concludes that there are four essential elements for global climate change frameworks.

> a) *Emissions trading:* to support the transition to low-carbon development paths,
> b) *Technology cooperation: to* support for the deployment of new low-carbon technologies,
> c) *Action to reduce deforestation:* as a way to reduce emissions, and
> d) *Adaptation:* The poorest countries are most vulnerable to climate change. It is essential that climate change be fully integrated into development policy, and that rich countries honor their pledges to increase support through overseas development assistance.[10]

We can observe that Stern (2007) advocates "collaboration on a global scale" and "global collective action", to produce an effective, efficient, and equitable response. In fact, a), b) and c), above, relate more to mitigation and effectiveness/efficiency, whereas only d) relates to some aspects of equity and justice, and the need to mainstream adaptation into development and focus attention on the poorest and most vulnerable people and places. In fact, to date, most of the attention (and funding) for global climate change has focused on mitigation and market-based mechanisms to reduce emissions and improve energy efficiency. On the other hand, less attention and funding has been devoted to adaptation, which is critical for the survival of poor and vulnerable people and places. In general, there is a need for more attention to equity, especially in the context of climate change justice and human rights.

III.6 Climate Change: Toward Equity with Efficiency

Attempts for greater equity in reducing emissions (i.e., mitigation) and using economic efficiency as the primary means of getting there, has generated a narrow view of equity (and justice).[11] There are different approaches to equity and efficiency concerns regarding intragenerational and intergenerational mitigation and adaptation to climate change, and for

[10] Stern (2007) also notes that international funding should also support improved regional information on climate change impacts, and research into new crop varieties that will be more resilient to drought and flood.

[11] Many writers use the terms equity and justice interchangeably. Equity, however, is usually viewed more as an objective perspective of the distribution of wealth or political power. On the other hand, justice is a more subjective perspective of whether the distribution of wealth or political power is "fair". In this paper the focus is on justice (and equity) as "fairness" (see later discussions of Rawls and other egalitarian-liberals).

allocating the costs associated with increases of extreme weather events (Kasperson and Kasperson, 2001). However, it often seems that most of the global debates on climate change have focused on efficiency, rather than equity, per se. As such, there tends to be a divide between the policies and decision-making for maximizing GNP, and policies and decision-making regarding redistribution, social protection, and provision of various goods to meet basic needs (Munasinghe and Swart, 2005).

According to Kasperson and Kasperson (2001), an effective climate regime over the longer term needs to be rooted in social justice principles that can be supported by developed and developing countries alike. Principles that seem to be useful in fashioning an ethical base are:

a) Historical responsibility: those who have created the existing environmental problem have the primary responsibility to reduce further emissions and to ameliorate harm that past emissions may have already caused and will cause for current and future generations, wherever they may live;
b) Capacity to take actions: those with the greatest capacity to reduce future emissions and to avert potential climate-related harm have the primary responsibility to undertake mitigative action and to assist those with fewer capabilities; and,
c) Focus on the poorest, most vulnerable: those who are most vulnerable to climate change and who will bear the greatest harm deserve special consideration and protective assistance by those who will be less affected.

Historical responsibility and capacity to take action are explicitly included in the principle of *common but differentiated responsibility*, whereas c), "focus on the poorest, most vulnerable" is an added dimension. However, since the Kyoto Protocol, most emphasis in international negotiations has been on emission reductions and economically efficient ways of achieving them. As a risk-management strategy for combating global warming and climate change, emissions reductions are insufficient in themselves. The stressors and environmental perturbations are only one part of the risk problem. Differential vulnerability and strategies aimed at creating greater resilience are the other part. Such efforts at increased adaptation and resilience have received much less attention and shown fewer signs of progress. To achieve a comprehensive and equitable risk-management approach, one that works on all major components of the climate-change problem and is based on principles of justice, new global efforts are in order (Kasperson and Kasperson, 2001; VARG, 2006).

III.7 No-Regrets and Co-Benefits: Uncertainty and Externalities

Traditional economic models, such as cost-benefit models, do not consider uncertainty and externalities. Therefore, alternative approaches are needed. "No-regrets" actions are actions by households, communities, and local/national/international institutions that can be justified from economic, and social, and environmental perspectives whether natural hazard events or climate change (or other hazards) take place or not. "No-regrets" actions increase resilience, which is the ability of a "system" to deal with different types of hazards in a timely, efficient, and equitable manner. Increasing resilience is the basis for sustainable growth in a world of multiple hazards (see Heltberg, Siegel, Jorgensen, 2009; UNDP, 2010; Siegel, 2010).

The "no-regrets" approach to climate change was introduced about 10 years ago by Adler and others (2000, p.12) who claimed that: "Unforeseen events, natural and human-induced, will occur. For these reasons, the best insurance policy is one that improves society's generalized ability to cope with disasters, environmental and otherwise, not simply to mitigate one potential disaster scenario that may or may not occur" Almost 10 years later, World Bank (2009a) claims that: *The focus is on improving knowledge and capacity—including learning by doing—through actions whose benefits to developing countries are robust under significant uncertainties about future climate policies and impacts; that is, actions that have "no regrets."* Because of the pessimism with respect to achieving international agreements on climate change policies (especially emissions reductions), the "no-regrets" has been getting more attention (see Tomich, 2010) as a pro-active means to reduce present and future risks.

The "no-regrets" approach also is an important aspect of the UNDP's "climate risk management" perspective (UNDP, 2009). Climate risk management approaches seek to promote sustainable development by reducing the vulnerability associated with climate risks, and thereby increasing resilience. Climate risk management involves proactive "no-regrets" strategies aimed at maximizing positive and minimizing negative outcomes for communities and societies in climate-sensitive areas such as agriculture, food security, water resources, and health (Heltberg, Siegel, Jorgensen; UNDP, 2010). The "no-regrets" aspect of climate risk management means taking climate-related decisions or action that make sense in development terms anyway, whether or not a specific climate threat actually materializes in the future, which is achieved by building resilience to changing economic, social and environmental condition. The "no-regrets" approach is also somewhat similar to the "precautionary principle".

In addition to possible "no-regrets" options, Kasperson and Kasperson (2001) and Munasinghe and Swart (2005) also highlight the existence of potential co-benefits (positive "spillovers" or "externalities") from policies and investments that promote mitigation and/or adaptation, especially those focused on poor and vulnerable people and places.. A recent paper by Perch (2010) highlights the potential co-benefits from pro-poor climate change adaptation, without, however mentioning the concept of "no-regrets", despite the obvious overlap. However, there are definite overlaps in the "no-regrets" and "co-benefits" approaches to pro-poor actions to address climate change justice and human rights, and in this paper we will group together "no-regrets" and "co-benefits" as "no-regrets" unless specified. In this paper, it is claimed that many investments that focus on lowering household and community vulnerability and increasing resilience, especially for the poorest, are "no-regrets" and/or have "co-benefits".

It is important to consider the "no-regrets" and "co-benefits" aspects of dealing with climate change justice and human rights issues, because traditional economic models are not well equipped to account for "no-regrets" and "co-benefits" related to reducing vulnerability and increasing resilience for poor people and places. As emphasized in this paper, there are strong links between sustainable development and poverty reduction. These links need to be considered when designing policies and institutions and investments, and highlight the limitations of traditional economic approaches that are not equipped conceptually and analytically to deal with many issues related to climate change justice and human-rights.

III.8 Discount Rates: Justice and Human Rights with Efficiency

Although this paper argues for focusing attention on justice and human rights issues and not efficiency, per se, it is critical that global climate justice and human rights be achieved in an efficient manner. It is important to examine the robustness and validity of traditional neo-classical economic models for analyzing the very non-traditional and non neo-classical economic "realities" (actually the great "unknowns") of the future in the context of climate change. Clearly, limitations of economic models themselves and assumptions about key parameters can greatly impact the results and subsequent information provided to decision-makers. Thus, it is important to review some key issues of direct concern to climate change justice, and to use forward-looking "no-regrets" approaches to identify priorities for investments. This is similar, in many respects to the "precautionary approach", or "safety-first" approaches that use cost effectiveness as a criteria for designing policies and investments. However, while recognizing the limitations of traditional economic models and approaches, it is critical to identify efficient ways to allocate scarce resources to different investments, especially investments with long-term flows of costs and benefits. To achieve climate change justice and human rights, it is critical to make sound economic decisions about the efficient allocation of scarce global assets/resources (natural and human-made). That is, the bigger the global "asset/resource cake", ceteris paribus, the bigger the potential slices of cake that can potentially be distributed in the name of climate change justice and human rights.

To ensure that proposals for climate change justice and fairness are economically efficient as well as socially just, the question of appropriate discount rates must be addressed. There are two competing schools of thought on this represented by the Stern Review (2007), that argues for a zero discount rate (or small positive discount rate that does not reflect market rates) to insure inter-generational justice; and Nordhaus (2007) who argues that the market discount rate should be used. Not surprisingly these different assumptions lead to very different recommendations in the two studies. Stern Review (2007) concludes that urgent and massive investments and other actions in reducing emissions are needed in the present to *possibly* prevent a catastrophic future. On the other hand, Nordhaus (2007) concludes that a slower roll-out and more modest investments and actions are required, because rapid, massive investments and actions will impose large costs on present generations to the benefit of future generations.

Weisbach and Sunstein (2008) divide the world into "ethicists", who are concerned with distributional justice across generations and support a zero discount rate, and "positivists" who are concerned with efficiency of resource allocations across generations. They then present a third way, which we will call "***ethical-positivists***", who believe that resource allocation decisions should be used using at the market discount rate (adjusted for uncertainty) and then use redistribute the resources in a just and fair manner at any given point in time. Weisbach and Sunstein (2008) also refer to Weitzman (2007) who claims that the discount rate also needs to be adjusted for uncertainty and possible catastrophic risk from climate change. This means they are advocating discounting at the market rate (properly adjusted for uncertainty and catastrophic risks).

Weitzman (2007, p.716) claims: "*The idea behind analyzing climate-change projects by converting future costs and benefits into present discounted values is that society has alternative*

investment opportunities, whose proxy rate of return is the discount rate, representing alternative capital-accumulation [i.e., asset-accumulation] *opportunities throughout the rest of the economy that would compensate us for the economic losses suffered from climate change.* ***Human-capital investments in education or public health have consistently been found to have high rates of return arguably far greater than 10 percent for less developed countries and regions***."

Thus, Weisbach and Sunstein (2007), Weitzman (2007), and Nordhaus (2007) provide economic, legal and justice arguments that strongly support a "no-regrets" approach to increasing resilience with a focus on investments in human-capital (e.g., "basic needs" such as education and health) for the poorest and most vulnerable households and communities.

IV. Guiding Principles from Social Justice and Human Rights

In this section we examine guiding principles from social justice and human rights that will later be applied to issues related to climate change.

IV.1 Basic Concepts of Social Justice and Fairness: Egalitarian Liberal Perspectives

There are different philosophical and intellectual ways to examine social justice and human rights. For this paper, which is trying offer guidance on climate change justice and human rights, it was decided to consider an egalitarian-liberal (or liberal-egalitarian) approach. An egalitarian-liberal theory of justice seeks to combine the values of equality (also equity, justice, fairness), personal freedom (i.e., liberty), and personal responsibility (and social contracts). It is not strict egalitarianism (or equity/equality), because it considers inequalities that reflect differences in individual's choices (and the fact that certain people have handicaps), and it assumes a democratic political system. As such, egalitarian-liberals focus attention on equal opportunities and outcomes – and "rights" (or "entitlements") -- while recognizing the differences among people and places. It is believed that the commonality among people is greater than the differences, so that is possible to consider the minimum asset-livelihood portfolio needed for individuals/households to guarantee a universal set of "basic needs". In fact, egalitarian-liberals tend to support the need for a universal guarantee of "basic needs" as integral aspect of freedom and human rights, because without "basic needs", individuals/households are not really free to exercise their human rights.

Inevitably, when discussing the issue of justice as fairness, the name of John Rawls is invoked. Rawls (1971) [12] is usually cited as the basis for philosophical discussions about justice and fairness for individuals and individual nations. [13] Rawls (1999) extends some of these ideas to

[12] And also Rawls (2001), which is a revised/updated version of Rawls (1971).

[13] For Rawls, justice as fairness is based on specific definitions of liberal ideas that citizens are free and equal and that society should be fair. Justice as fairness is the most egalitarian, and also the most plausible, interpretation of liberalism's fundamental concepts. Rawls sees justice as fairness as answering to the demands of both freedom and equality, a challenge posed by the socialist critique of liberal democracy and by the conservative critique of the modern welfare state. Justice as fairness sets out a version of social contract theory that Rawls believes provides a superior understanding of justice to that of the dominant tradition in political philosophy, which is utilitarianism (White, 2008).

groups of nations and the international arena. Sen (1999; 2009), Dworkin (2000) and Nussbaum (2006) draw upon, extend and critique the works by Rawls. The justice and fairness approaches of Rawls, Sen, Dworkin, and Nussbaum are to a large extent, "human rights" approaches, because they devote a lot of attention to the importance of guaranteeing the "essential" material and non-material (i.e., tangible and intangible) human needs of all persons, with a focus on the poorest and most vulnerable. That is, their concepts of justice and fairness are based on a system of socially guaranteed freedoms and socially guaranteed access to minimum levels of opportunities and outcomes (needed to achieve "basic human needs"), and a commitment to assist the poorest and most vulnerable individuals and communities. Both Dworkin (2000) and Nussbaum (2006) devote attention to underlying inequalities between people, especially those with handicaps, and argue that there should be preferential treatment (as opposed to equal treatment) under such circumstances.[14]

John Rawls' most popular philosophical concept is the "original position" and the "veil of ignorance" (see Rawls, 1971). To paraphrase Rawls [15], if a person knew that he/she were about to be dropped from outer space onto Spaceship Earth, and did not know where they might fall, and what assets and entitlements they might have, and the rules of the given society (i.e., policy and institutional context) that they entered into, and their potential livelihood strategies and outcomes in terms of well-being … a risk-averse, rational and reasonable person facing these uncertain conditions would choose an outcome that was close to the average expected level of well-being of all humans.[16] That is, given uncertainty about their own future well-being, rational and reasonable humans, with some degree of risk aversion, would choose egalitarian outcomes for themselves and others. If we extend this parable to include the possibility that changing conditions in the climate of universe, that could result in uncertain and unpredictable meteor showers falling on Spaceship Earth (with possible increasing frequency and severity), it might be possible to extend/adjust the Rawlsian egalitarian individual outcome to a preference for an egalitarian global outcome, plus an "insurance policy" against meteor showers.

Based on the "original position" and "veil of ignorance", Rawls (2001, p.43) presents several guiding principles for justice and fairness in a liberal society:

a) All persons in a society are **equally entitled to guaranteed basic rights and liberties**, which are compatible with and reinforce basic rights and liberties for all other persons.
b) Equality of opportunities of all persons (i.e., access to assets and livelihoods) in a society to achieve a **guaranteed minimum of well-being** to be able to, in fact, exercise their rights and liberties.

[14] For example, persons with a disability will tend to be able to "accomplish" less with a given amount of income than someone without this disability. Thus, a disabled person with the same income as an able-bodied person actually has fewer assets/resources than the able-bodied person because the disability counts as a kind of resource deficit.

[15] See Rawls (2001, p.15, section 6.a).

[16] Rawls' theory of distributive justice is based on social and political principles required as rules for the design of just institutions are those that would be chosen by rational, self-interested persons in a hypothetical contractual situation (the *original position*) behind a *veil of ignorance* that precludes the contracting parties certain types of knowledge (such as their talents) so that they can negotiate freely and fairly. The condition that a person be able to "negotiate freely and fairly" is really a huge assumption, considering that many persons in the world do not enjoy freedom and are not treated fairly.

c) Social and economic inequalities in opportunities and outcomes in a society should be adjusted by policies that specifically target, and **provide the greatest benefit to the least-advantaged members of society.**

Rawls refers the 3rd principle as the "*difference principle*" or the "*maximin principle*" because improvements in well-being (i.e., "sustainable development") should generate the maximum benefits for those with the minimum levels of well-being, thereby making the biggest difference in improving justice and fairness in the society.

Returning to the "original position" and "veil of ignorance", it is assumed by Rawls that contracting parties would agree to a set of social primary goods that are needed by all individuals (i.e., citizens of society) to be able to function as good citizens. As such, "social primary goods" should be distributed equally, unless the worst off citizens benefit from this inequality. "Social primary goods" include food, health care, water and sanitation, clothing and housing, physical security, etc. Sen and Nussbaum also refer to "capabilities", which are the complementary assets and livelihoods (including policies/institutions) needed to transform "social primary goods" into measures of household well-being. Sen's capability approach argues that **"primary social goods" are necessary but not sufficient**. According to Sen, it is important to look beyond the "social primary goods" and that justice includes the freedom to achieve, not just to have some "basic needs" satisfied. The *freedom to achieve* requires a system of governance that provides protection from discrimination, access to social networks, respect, autonomy, self-awareness and agency, political and civil rights, and institutions that guarantee equal treatment. The concepts of basic needs and capability require governance systems that recognize the moral equality of all persons and guarantees basic needs and capabilities as rights. This is the underlying logic of a ***social minimum*** (White, 2008).[17]

IV.2 Introducing the Idea of a Social Minimum or "Social Floor"

The idea of a "social minimum" (or "social floor") draws heavily on egalitarian-liberal perspectives, and is often considered as a foundation for citizenship, as part of a "social contract" that entitles citizens to basic needs and capabilities to exercise their human rights.[18] Thomson (2007) extends the concept to a "universal social minimum". Thomson claims that a "universal social minimum" can help create a coherent framework that responds to the increasing economic, social and environmental vulnerabilities and risks for all humans, especially those living in poverty. Thomson (2007) claims that the idea of a "universal social minimum" is part of, but somewhat broader than SP and needs to be viewed through a special lens. In particular, Thomson notes: "For those with a comprehensive approach to SP the universal social minimum could be

[17] Thus, Rawls, argues for focusing on social primary goods, the goods which society produces and which people can use, whereas Sen and Nussbaum argue that we should focus on capabilities, or what people are able to do and to be. These approaches can be viewed as complementary to one another (although they are not always considered as such).

[18] It should be noted that the concept of a social minimum is not totally rejected by other theoretical approaches. White (2009) points out that utilitarians, for example. might not totally opposed to a social minimum, especially based on the principle of "diminishing marginal utility", which assumes that a poor person values an extra $ more than a wealthier person. However, utilitarian and market-based approaches question the "(dis)incentive effect" of providing a social minimum, and how it might impact social welfare and aggregate utility.

seen as a SP; for those with narrower approaches it could provide a framework within which SP sits. **The critical thing is that the social policy measures aimed at addressing vulnerability and risk are shaped from a human rights and social justice perspective, and that they work together as a whole**."

IV.3 Human Rights: The Universal Declaration of Human Rights

On December 10, 1948 the General Assembly of the United Nations (UN) adopted and proclaimed the Universal Declaration of Human Rights[19] "as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction."

Below are some excerpts from the Universal Declaration of Human Rights that are particularly relevant to a "risk-adjusted SP Floor".

> **Article 1.** All human beings are born free and equal in dignity and rights.
>
> **Article 3.** Everyone has the right to life, liberty and security of person.
>
> **Article 22.** Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State.
>
> **Article 25.** Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
>
> **Article 26.** Everyone has the right to education.

Based on the Universal Declaration of Human Rights there seems to be a legal framework for dealing with human rights and climate change that draws upon the concepts of justice and fairness applied by Rawls, Sen, and Nussbaum – and a global commitment to guarantee these human rights (which would guarantee a social minimum for individuals and places, and help them deal with the uncertainties and risks associated with climate change). However, there has been a major disconnect between the actual laws and the universality of their application, and the methods to enforce them and fund them.

[19] http://www.un.org/en/documents/udhr/

IV.4 Social Justice, Human Rights and Basic Needs: Toward Practical Solutions

In his recent book on the *Idea of Justice*, Sen (2009) presents different theories of social justice from around the world and through history, and critiques them in terms of their underlying assumptions about attitudes, perceptions, incentives, behavior, decision-making and impacts on various outcomes of well-being. Sen (2009, p382-3) examines "egalitarian-liberal" approaches to social justice that are based on, what he calls, the "institutional critique" and the "feasibility critique". The "institutional critique" relates to economic and social rights and the need for a formal institutionalization of these rights in a given society[20], which include clear duties and responsibilities and a system of enforcement. The "feasibility critique" relates to the economic and social and institutional realities in a given society to actually follow forth with the "guaranteed" economic and social rights claimed as universal human rights in that society. That is, there might be de-facto discrimination/exclusion of certain individuals/sub-groups and/or an inability to finance/deliver human rights for all.

Sen (2009) declared that guaranteed human rights might be a necessary condition for "basic needs", but not a sufficient condition. After questioning the practicality of "egalitarian-liberal" theories of social justice in terms of institutional and feasibility critiques, Sen (2009, p382) claims: "*The confusion in dismissing claims to human rights on grounds of incomplete feasibility is that a not fully realized right is still a right, calling for remedial action. Non-realization does not, in itself, make a claimed right a non-right. Rather it motivates social action*." Sen (2009) differentiates between social policies that attempt to achieve perfect social justice: *transcendental institutionalism*, which focus on "getting the institutions right" and social contracts , and: *realization-focused comparison* approaches which focus on eliminating the greatest injustices by trying to provide incentives for "good" human behavior and penalties for "bad" human behavior, with greater reliance on efficient market-driven systems that "should" result in socially just outcomes. Sen (2009) advocates greater attention to practical solutions that eliminate the greatest injustices.

The final chapter of Sen (2009) deals with "Justice and the World", and here he points to the **need for global systems of justice that guarantee, empower and enforce human rights throughout the world.** Basically, Sen (2009) argues that in a globalized world it is not possible to have injustices to persons in one place that do not impact other persons in other places. Although he mentions the imploding global financial crisis in 2008-2009, and refers to his famous past work on famines, Sen (2009) (somewhat incredibly) does not explicitly address global climate change. However, he claims (Sen, 2009, p.409, p.409): "*The distribution of the benefits of global relations depends not only on domestic policies, but on a variety of international social arrangements, including trade arrangements, patent laws, global health initiatives, international educational provisions, facilities for technological dissemination, **ecological and environmental restraint**, treatment of accumulated debts (often by irresponsible military leaders of the past), and the restraining of conflicts and local wars. Those are all eminently discussable issues which could be fruitful subjects for global dialogue, including criticisms coming from far as well as near. Active public agitation, news commentary and open discussion are among the ways in which global democracy can be pursued, even without waiting for the global state. The challenge today is the strengthening of this already functioning*

[20] Society is any grouping of individuals, be it in household, community, local, national, or international.

participatory process, on which the pursuit of global justice will to a great extent depend. It is not a negligible cause." To overcome the institutional and feasibility critiques, Sen (2009, p.409) points out that: "*Many institutions have a role here, including the United Nations and the institutions associated with it, but there is also the committed work of citizens' organizations, of many NGOs and of parts of the news media. There is also an important role for the initiatives taken by a great many individual activists, working together*."

V. Principles of Justice Applied to Climate Change

Climate change is most often presented as a social justice and human rights issue primarily because of the disconnect between those who "causes" the problem, those who "benefits" from the problem, those who "pay" for the problem, and the complexities in trying to sort out the causes, benefits, and costs over people, sectors, places, and time (see Gardiner, 2004) Many times this problem is presented simply as such: *climate change has been caused by wealthy, developed, industrialized countries, whose citizens have benefited by the associated production and consumption activities, and that poor and vulnerable countries bear the brunt of the costs*. In addition, the polluting actions of those wealthier people and countries in the present will cause climate change and related costs in the future, with most benefits assumed to accrue mostly to wealthier people and countries (that produce and consume more than poorer countries and thereby contribute more to the problem), and costs accrue mostly to the poorer and more vulnerable people and countries in the future. There are also distinct geographic dimensions of climate change, with many tropical and sub-tropical areas expected to suffer more than temperate and colder areas, and for most coastal areas in the world to be more at risk than inland areas (from expected sea level rise).

So, there are intragenerational and intranational/international and intergenerational and intranational/international dimensions of climate change justice (that reflect temporal and spatial differences), and there are both individualist and collective approaches to "allocating" winners and losers over space and time. There are human rights issues related to how climate change might affect the assets and livelihoods (and opportunities) of households and communities, and nations and tangible/intangible measures of well-being[21]. In addition there are human rights issues related to the "right to pollute" and the right for compensation for losses related to climate change, and the right of migration to exit an area that is negatively impacted by climate change (and the right of entry to a different place).

V.1 Social Justice and Human Rights: Summary of Key Issues to Consider

Issues of climate change justice and human rights are more complex than might be expected. Below is a summary of key issues to consider when discussing global climate change in terms of social justice and human rights include:

[21] There are tangible, objective measures of human well-being that include income and consumption, and some intangible measures that are more subjective such as "security" and "hopefulness for the future" (see Siegel and Alwang, 1999; Siegel, 2005).

a) Human Centric versus Nature-Centric Approach: climate change is related to changes in the environmental and natural systems, and how humans relate to these changes. Social justice and human rights approaches are human-centric, and view the environmental and natural systems in terms of how they help human achieve basic needs (and additional needs and wants). A nature-centric approach would value the environment and natural systems for their existence value, and not in terms of satisfying human needs and wants, per se.
b) Individualistic versus Collective Approach: human-centric approaches can be individualistic or collectivist. For global climate change it is often easier to think of people collectively, but it is really individuals (and firms) that produce pollution and suffer the consequences. Thinking of countries and generations instead of individuals in a certain time frame has been the logic driving global climate change negotiations. But, this has lead to unrealistic attempts to seek justice from past generations and/or countries/regimes that no longer exist, and to market-based utilitarian (e.g., aggregate utility) solutions that are not anchored in justice and individual human rights.
c) Corrective Justice versus Accepting the Initial Situation: there are many calls for corrective justice because past production/consumption patterns have caused the problem. However, there are multiple legal constraints to litigation based on pollution-generating activities in the past, because of 2 major reasons: i) many of the past polluters are dead, and ii) the causal relations between pollution and climate change were not "known" until the mid-1980s so it is hard to attribute "legal responsibility".
d) Distributive Justice: climate change (in)justice is often presented as a distributive issue separating rich and poor people and countries and those benefiting and those bearing the costs from climate change. Quotes like: "poor and vulnerable households, communities, and nations will suffer most from climate change" are ubiquitous. However, climate change is not the cause of distributional injustice, nor can the solutions of climate change injustice be expected to solve all distributional problems.
e) Intergenerational Justice: climate change justice intuitively seems to be all about intergenerational justice and the need to react in the present in a rapid and massive manner (e.g., conclusions of the Stern Report). However a problem for any approach to climate change justice from an intergenerational perspective is the uncertainty about climate change and uncertainty about everything else in the future that contributes to human well-being, which is the "non-identify problem' (Page, 2006).
f) Compensation from Winners to Losers: one of the leading economic approaches to climate change justice is the concept of a collectivist aggregate social utility function, and the ability for individual "winners" to "hypothetically" compensate individual "losers". However, hypothetical collectivist compensation is surely not the same as individualistic compensation for persons struggling to acquire "basic needs'.

As can be observed from the above list, the issue of climate change justice has many dimensions, and is indeed complex. Gardiner (2004, p.555) observes that: "*Very few moral philosophers have written on climate change.*[22] *This is puzzling, for several reasons. First, many politicians and*

[22] Gardiner repeats this claim in subsequent papers (e.g., Gardiner 2010, Gardiner, forthcoming), noting that in contrast to moral philosophers, climate scientists and economists and legal experts (and others) have not shied away from dealing with ethical issues related to climate change justice and human rights (either by explicitly/implicitly dealing with these issues or by ignoring them).

policy makers claim that climate change is not only the most serious environmental problem currently facing the world, but also one of the most important international problems per se. Second, many of those working in other disciplines describe climate change as fundamentally an ethical issue. Third, the problem is theoretically challenging, both in itself and in virtue of the wider issues it raises. Indeed, some have even gone so far as to suggest that successfully addressing climate change will require a fundamental paradigm shift in ethics." However, as will be highlighted in this paper, what is really required is a fundamental shift in the paradigms for applying ethics to climate change (e.g., a shift toward liberal-egalitarian and needs-based approaches rather than utilitarian and market-based approaches), instead of a need for a paradigm shift in how to deal with ethics related to climate change and sustainable development.

V.2 Egalitarian-Liberal Perspectives versus Utilitarian Market-Based Perspectives

Okereke and Dooley (2010) and Okereke (2010) note that the major challenge in the international arena is actually getting the debate about global climate change framed in terms of social justice and human rights instead of in terms of efficiency and markets. Okereke and Dooley (2010) and Okereke (2010) claim that utilitarian and market-based approaches to climate change have dominated and squeezed out social justice and human rights arguments. Or, at best, social justice and human rights aspects of global climate change have been approached from utilitarian and efficiency perspectives, which crowds out the search for global justice based on an individualist human-rights perspective.

Okereke and Dooley (2010) note that *"… there might be a fundamental mismatch between the core objectives of sustainable development as defined by the Brundtland Report – the eradication of poverty and meeting the basic needs of the global population, and some of the front running proposals [for dealing with climate change]. In other words, if the climate change regime is seen as part of the wider search for global sustainability, then it is important that proposals are judged not simply on the basis of economic efficiency outcomes, but also on their ability to promote conservation and the meeting of the needs of the most vulnerable peoples of the planet." [There is a need to] "… take an active step in ensuring the most vulnerable have at least enough resources to fulfill their basic human needs*."

Okereke and Dooley (2010) prepared a table that highlights some of the differences in perspectives for dealing with issues related to climate change justice and human rights. In the table below (which is an excerpt of the table presented in Okereke and Dooley, 2010), the major perspectives are presented, with a clear division between utilitarian and market-justice approaches and liberal-egalitarianism and meeting needs approaches. In addition to the different overall philosophical approaches, there are general differences in perspective among developed countries about the overall nature of the problem.

Table V.1 Summary of Concepts of Justice and Policy Indicators

	Description	Policy Indicators	Who Benefits	Environmental Synergies
Utilitarian	Maintaining utility for the greatest amount of people.	Utility/preference measurement. Apparent good.	Majority/consumer class.	Decisions based on preferences with no weighing for environmental soundness of preferences
Market Justice	Relies on market as main agent of wealth re(distribution), therefore performance based	Define property rights and then sell them. Results in market-based policy approaches	Privileged benefit – power/ownership	Market defines environmental value.
Liberal Egalitarianism	Equal rights to basic social goods and opportunity. Distribution should benefit the most disadvantaged	Welfare recognized – differential assistance for most disadvantaged	All benefit but relative inequality allowed despite reduced poverty	Individual autonomy emphasized; environmental limits not recognized
Meeting Needs	Moral equality of human basic needs of all takes precedence over rights of individuals. Positive rights obligate authorities to meet basic needs of citizens.	Policy focus protects most vulnerable rather than furthering the interest of the privileged and powerful	Most vulnerable	Compatible with long-term sustainability and finite biosphere.

Source: Okereke and Dooley (2010)

Following in the tradition of the Brundtland Commission, the perspective of social justice and human rights that will be followed in this paper will be based on liberal-egalitarian and meeting needs approaches. On the other hand, once policies are driven by liberal-egalitarian and needs approaches, as a 2nd round of evaluation criteria for achieving social justice, we can then appeal to utilitarian and market-justice approaches. This is in contrast to the current practice to have utilitarian and market-justice approaches leading the way.

V.3 Seeking Guidance on Climate Change Justice and Human Rights from Egalitarian-Liberal Perspectives

Egalitarian-liberals such as Rawls, Sen and Nussbaum provide some guidance for considering how to deal with climate change. However, they do not directly relate to climate change, so their concepts need to be extended and/or applied selectively. This paper will draw upon extensions and/or selective applications of egalitarian-liberal concepts, and not try to uncover new philosophical "truths". As such, we examine Paavola and Adger (2002; 2006), Hartzell (2006), Vanderheiden (2008), Posner and Sunstein (2007; 2008), Posner and Weisbach (2010), and Gardiner (forthcoming) and provide some guiding principles for dealing with climate change justice and human rights.

Paavola and Adger (2002; 2006) draw upon several different concepts and approaches to social justice and human rights and relate them to climate change, focusing on adaptation. Paavola and Adger (2002; 2006) claim that issues regarding social justice and climate change are more complex for adaptation than mitigation. Although climate change impacts are often modeled at global and national levels, the actual impacts are very local. They claim that it is really communities and households/individuals that will bear the brunt of climate change and have to make decisions about adaptation, and also bear most of the (real and opportunity) costs of adaptation. Thus global and national perspectives on climate change adaptation are inherently "unjust", because they ignore the differences in local conditions (i.e., "vulnerabilities"[23]) and distributional impacts among and within countries. Therefore, Paavola and Adger (2002; 2006) propose that justice regarding climate change include dimensions of both distributive justice and procedural justice. Procedural justice focuses attention on the *processes* for empowering participation by communities (and households/individuals) in planning and decisions about adaptation actions globally and nationally. Procedural justice and the processes under which justice is achieved are also important. As Sen (1999) points out, the processes under which just solutions are found also must be just and representative, and following Rawls (1971), they should be proactively targeted to the poor and vulnerable.

Paavola and Adger (2002; 2006) also point out that the differences between *Pareto Optimal* conditions of welfare economics based on utilitarianism (that winners can hypothetically compensate losers to achieve a social optimum), and the Rawlsian criteria of social welfare whereby changes are justified if they improve the well-being of the poorest and most vulnerable individual/household (i.e., the "maxi-min" principle). Also, in contrast to utilitarian approaches that add-up all goods into a money-metric they argue that there are other approaches that include tangible and intangible values. Adger (2002, p.5) claim: "that there are several irreducible goods that may demand different basis for justice in different context. For example, human welfare, health, absence of danger and preservation of the non-human species could be considered outcomes that mark what is just in the area of distributive justice." When discussing rights-based approaches to justice they draw upon Sen (1999) which includes rights to citizenship, well-being, security, and a place to live. Security includes economic security, but is much broader and includes aspects of physical and social and environmental security, and hopefulness toward the future.

Drawing upon various concepts and approaches to social justice and human rights, and focusing on adaptation, Paavola and Adger (2002; 2006) present four guiding principles of **"Fair Adaptation to Climate Change"** to address distributive and procedural justice in a forward-looking manner:

a) Avoid Dangerous Climate Change: by limiting future global emissions to a "safe-maximum standard" and adopt the "***precautionary principle***" of UNFCCC Article 3, to lower GHG emissions and improve energy efficiency. This does not deal with responsibility for past emissions, but does place a great deal of responsibility on present decision-makers.

[23] Vulnerability is therefore closely related to resilience, and capacity to adapt. The authors state: "This definition draws attention to factors such as assets, sources of livelihood, class race, ethnicity, gender and poverty … (Paavola and Adger (2006, p 604)."

b) Forward-Looking Responsibility: by adopting a carbon tax that is designed as a progressive tax reflecting current generation of emissions, and use the tax revenues to compensate (in reality, not hypothetically) those communities, households/individuals harmed by climate change and to assist potential losers to adopt adaptation strategies.
c) Put the Most Vulnerable First: by adopting a *global vulnerability maxi-min rule* (ala Rawls) whereby assistance would be targeted to the most vulnerable communities, households/individuals in the world. Allocation of assistance between countries and regions would be based on relative levels of vulnerability.
d) Equal Participation for All: by extending participation in decision-making and funding allocations to civil society, including community groups, NGOs, and other stakeholders. At the same time, it is important to recognize the critical linkages in decision-making and funding through global, national, sub-national, local and community levels …. all the way to households/individuals. This will require pro-active empowerment of excluded groups and democratization of the climate change debate.

The first 3 guiding principles deal mostly with distributive justice and the last with procedural justice. "The principle of avoiding dangerous climate change can provide a degree of absolute protection to all vital interest, the principle of forward-looking responsibility gives effect to efficiency concerns and the principle of putting the most vulnerable first justifies progressive redistribution to those who are in most need. The last principle provides a guideline for resolving the dilemma of procedural justice, suggesting that all affected parties have rights, which have to be respected by recognition and participation (Paavola and Adger, 2006, p.607)."

Paavola and Adger (2006) conclude by re-emphasizing the importance of having climate change justice and human rights issues on the international development agenda. They also emphasize that for purposes of political expediency and to mobilize the massive funds needed for assistance to vulnerable groups for adaptation, it is important to omit the issue of responsibility (i.e., distributive justice") for past climate change, and to focus attention on how future emitters will finance individual/households/communities before they suffer the negative impacts of climate change. They also point to the need to focus attention on provision of irreducible goods such as human welfare, health, absence of danger and preservation of the non-human species.[24]

Paavola and Adger (2006, p.607) conclude by saying: "*The safe maximum standard is needed to provide the absolute safety net and to constrain the sphere of economic optimization. The carbon tax provides powerful incentives for mitigation and thus the reduction of climate change impacts as well as an instrument to accumulate revenue for compensation and assistance. Making these funds available for proactive and reactive adaptation in developing countries would in turn diminish the residual impacts that need to be compensated. At the same time, the burden of assistance would be shared in proportion to contribution to climate change*."

Vanderheiden (2008) attempts to use Rawls as the basis for a justice and fairness approach to climate change from international and intergenerational perspectives, and basically concludes that Rawls offers limited practical guidelines beyond the Bruntland Commission's concept of

[24] As mentioned previously, Rawls and other egalitarian-liberals do not directly deal with issues like the preservation of the non-human species. However, they do deal with these issues through a human-centric perspective, which does value non-human species and the "natural" environment.

"sustainable development", which is a human-centric approach that focuses on maintaining human wants and needs over time. That is, Vanderheiden (2008, p.116) presents a strong argument to invest in human capital, because it is combination of human-made capital and natural assets that will allow societies to fulfill the Rawlsian obligation to equitably allocate resources over time, requiring of generations that "each receives from its predecessors and does its fair share for those who will come later (Rawls, 1971, p.291)." Vanderheiden (2008. p.140) makes a point to assure readers that he is not trying to argue that free market economics can save the world", but that judicious, wise, planned conservation can in fact save humanity. To Vanderheiden (2008), conservation requires conscious decisions by individuals and nations about limiting consumption and policies that aggressively promote efficient use of non-renewable natural resources, using technologies that minimize emissions and maximize resilience, and large-scale investments non-polluting renewable resources. Of course, applying Rawlsian principles of justice and fairness, it is not so difficult to adopt rules that allow the less advantaged individuals and nations to develop and generate more emissions, and to require those already developed individuals and nations to generate less emissions. Nor is it a stretch of Rawlsian principles of justice and fairness to have wealthier individuals and nations pay more to develop new technologies to support mitigation and adaptation. According to Vanderheiden (2008), to achieve climate change justice and fairness will require a global agreement that is forward-looking and is based on a "polluter pays" principle (e.g., by having a carbon tax).

Hartzell (2006) and Gardiner (forthcoming) try to draw upon Rawls (1971; 1999; 2001) to provide a framework for dealing with global climate change justice. However, Hartzell (2006) and Gardiner (forthcoming) conclude that Rawls can't really be directly applied to address causes of climate change, and he only provides some guiding principles rather than "means-ends reasoning" for addressing the impacts of climate change. Both Hartzell (2006) and Gardiner (forthcoming) point out that Rawls specifically notes that he does not deal with international or intergenerational dimensions of the "original position" and "veil of ignorance", nor does he consider non-human aspects of justice (environmental quality, per se). In fact, Rawls refers to issues concerning intergenerational and/or international justice, justice for those with disabilities, and "what is owed to animals and the rest nature as "problems of extensions", which are not directly dealt with (Gardiner, forthcoming).

However, drawing on Rawls (1999), Hartzell (2006) concludes (with some minor embellishments by the authors) the following principles of climate change justice:

Environmental Integrity of a Territory, and Global-Local Responsibilities

Global climate change is a global phenomena that is manifested locally in a spatially unequal manner, because of differences of differences in the starting climatic conditions and climate changes, and the vulnerabilities (assets, context and livelihoods) associated with different locations – this affects both the local contribution of global climate change and the local impacts. Thus, climate change justice has strong global and local linkages.

a) Societies have an obligation to preserve the environmental integrity of their territories in perpetuity, which implies "sustainable" management of population and natural resources.

b) Preserving the environmental integrity of local environments (at the national and sub-national levels) requires, to some extent, addressing the global causes and local harmful impacts of climate change.
c) Societies have an obligation to address the global causes and local impacts of climate change in perpetuity.

Duty to Assist Other Peoples Living Under Unfavorable Conditions in Their Territory

Since climate change will likely have negative impacts that prevent some individuals and communities from accessing the basic necessities of life, and therefore interfere with their achievement of their human rights (ala the Principles of Justice and Fairness):

a) Societies are required to honor human rights, with or without climate change.[25]
b) Able societies have an obligation to assist other societies who are unable to honor the human rights of their citizens, with or without climate change.
c) When climate change interferes with a society's ability to honor the human rights of its citizens, able societies have an obligation to assist the peoples in other societies honor the human rights of the other societies.

Based on Hartzell (2006) it seems that Rawls (1999) would support the existence of global funds for climate change mitigation and adaptation, emergency assistance in the case of natural disasters, and an open migration policy for individuals in territories that can't preserve their environmental integrity in perpetuity.

Posner and Sunstein (2007; 2008) and Posner and Weisbach (2010)[26] assert that climate change raises difficult issues for science, economics, and also with regard to justice. Furthermore, they claim that the question of climate change justice has received relatively little attention – especially in a formal legal perspective. They present and analyze climate change justice in terms of corrective justice and distributive justice. *Corrective justice* focuses attention on attributing legal responsibility for causing climate change, and *distributive justice* focuses attention on who/how/when those who caused the problems associated with climate change will compensate those suffering from the problem. Thus, corrective justice and distributive justice are closely related. Based on legal concepts of justice, they conclude that the basic principles of corrective justice and distributive justice are not so easily applied (at least not in a correct legal manner) to climate change justice, especially if the objective is to help the poorest and most vulnerable households and individuals.

Some of major arguments from Posner and Sunstein (2007; 2008) and Posner and Weisbach (2010) are:

a) Corrective Justice Is Not So Straightforward: attributing responsibility for past emissions based on national boundaries ignores the global benefits of trade, and blames present generations for actions of past generations. As an example, they raise the issue of

[25] The authors have added the phrase "with or without climate change", which is implied in Hartzell (2006).

[26] Posner and Weisbach (2010) is a new book that draws upon Posner and Sunstein (2007; 2008) and other writings.

corrective justice for slavery in the USA, whereby the vast majority of present-day Americans are from families that immigrated to the USA after slavery was abolished.[27]

b) Intergenerational Justice is Not so Straightforward: Emissions reductions will mostly help future generations of poor persons as opposed to poor and vulnerable persons living in the present and near future, while the current poor might shoulder a disproportionate burden of costs that make them poorer and more vulnerable. Furthermore, with changes in technology and increases in productivity and changing tastes, it is hard to predict who will be poor and vulnerable in the future.

c) Climate Change Impacts are Location and Household Specific: Current climate change models predict significant negative impacts for India, Bangladesh and much of Africa. However, depending on their location in the world, millions of poor and vulnerable people in the world (e.g., in Russia, China) might actually benefit from short and longer term climate change. Furthermore, there are rich households in countries that are poor and vulnerable, and poor and vulnerable households in rich and resilient countries.

Most importantly, Posner and Sunstein (2007; 2008) and Posner and Weisbach (2010) conclude that **even if global warming is taking place (whatever the cause of this climate change) and if distributive justice for poor and vulnerable nations or households is the objective, there are much more efficient and equitable means to achieve this objective than emission reductions set at national and global levels.** Furthermore, they argue that efforts to radically and rapidly reduce emissions might have very negative impacts on poor and vulnerable nations and households, unless there is a significant program to compensate for (real and opportunity) economic costs that such actions would entail.

Thus, a powerful final "punch-line" from Posner and Sunstein (2007 2008) and Posner and Weisbach (2010) is that concerns about distributive justice and corrective justice, in the name of the poorest and most vulnerable households (e.g., by well intentioned NGOs and academics), might actually be impeding immediate actions to help the poorest and most vulnerable households adapt to climate change, because the debates over corrective and distributive justice are hindering a "feasible" global treaty – which they feel is urgently required to deal with the manifestations of climate change. Thus, Posner and Weisbach (2010, p.4-5) propose a "forward-looking, pragmatic perspective" as opposed to a backward-looking, idealistic perspective as the most constructive manner to assist the poorest and most vulnerable nations and households, "while being consistent with the requirements of justice."

Based on the readings reviewed above, the following is a list of **Guiding Principles for Dealing with Climate Change Justice**:

a) apply the "precautionary principle" and cut emissions of GHGs (and other pollutants),
b) identify solutions that are forward-looking and not based on blame for the past,

[27] It should be noted that they do not mention the possible justification for affirmative action in the USA based on current socio-economic statistics that indicate that African-Americans tend to be the poorest and most vulnerable group in the overall population.

c) seek out global win-win solutions,
d) provide actual compensation (as opposed to theoretical Pareto-compensation) to losers,
e) focus attention/assistance on the most poor and vulnerable people and places,
f) recognize that there are numerous linkages through global, national, local, community and household levels that can help pool resources and manage risks,
g) climate change is a global phenomena, but with local impacts and the need for local solutions (assisted by global funding pools),
h) climate change might have negative impacts and prevent some households from obtaining subsistence survival, but there are also new opportunities,
i) do not try to use climate change as an entry point to solve all the world's problems, but there are efficient and equitable ways to deal with providing basic rights (including security) and justice to all people under the auspices of climate change justice.

V.3 Climate Change Justice and Fairness: Processes and Procedures

The institutional set-up, process and procedures are also critical for designing an appropriate operational response. Several chapters in the recent book edited by Mearns and Norton, editors (2010) highlight the critical roles of processes and institutions in facilitating equitable and efficient approaches to climate change. In particular, the chapters by Mearns and Norton (2010), Agrawal (2010) and Ribot (2010) highlight the critical roles of processes and institutions. [28]

Similarly Posner and Weisbach (2010) recognize the importance of broader governance issues in the terms of processes and procedures related to climate change justice. Citing Easterly (2006), Posner and Weisbach (2010, Chapter 4) argue that climate change justice with internationally funded "compensation" aimed at the poorest and most vulnerable households and communities is a major challenge because national and local governments are not necessarily the best stewards of the interests of the poorest and most vulnerable households. This is one of the reasons they argue for the delinking of climate change justice and distributive justice, despite the underlying logic. On the other hand, they do allude to **the fact that targeted investments that help poor and vulnerable households become more resilient might in fact have "win-win" solutions (i.e., "co-benefits"), albeit not necessarily the most *efficient* use of scarce resources.** That is, **they argue that to help the poorest and most vulnerable households, why not just directly invest in improved housing, education, health, water and sanitation, etc.** Paavola and Adger (2006) highlight the importance of participatory processes and empowerment of the poorest and most vulnerable households and communities as a major issue in achieving distributive and procedural justice for climate change adaptation, because the impacts of climate change are very people/place specific. However, Thomas and Twyman (2005) warn that it is critical to consider the limits to participatory processes and empowerment, per se, when considering the actual distribution of resources and social procedures and real access to "justice". That is, because of underlying asymmetries of political power, participation does not guarantee fair results.

[28] See the Social Development Department (SDV), World Bank website on Local Institutions and Climate Change: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/0,,contentMDK:22187389~pagePK:210058~piPK:210062~theSitePK:244363,00.html

Based on the Universal Declaration of Human Rights, there seems to be a legal framework for dealing with human rights and climate change that draws upon the concepts of justice and fairness applied by Rawls, Sen and Nussbaum – and a global commitment to guarantee these human rights (which would guarantee a social minimum of "basic needs" for individuals and places, and help them deal with the uncertainties and risks associated with climate change). However, there has been a major disconnect between the actual laws and the universality of their application and methods to enforce them and fund them. This would imply that many countries sign the respective treaties, but do not follow them. Or, they selectively comply or simply do not sign-up. This would indicate that there is a need for more effective international arenas to hear cases of climate change justice and human rights violations.

The processes and procedures, and the role of public and private institutions at different levels (e.g., household, community, local, national, and global) will be critical to operationalize a which is globally guaranteed, nationally managed, and locally implemented "risk-adjusted SP Floor". As pointed out, there are existing international agreements on human rights and climate change justice that are not being implemented.

VI. Social Protection: Moving Toward Increased Resilience

In this section key concepts from social protection (SP) are introduced, with a focus on social risk management (SRM) and adaptive social protection (ASP). Then new approaches for the application of social protection in the world are highlighted.

V1.1 Social Risk Management (SRM) Framework

The social risk management (SRM) framework provides a conceptual framework to examine *how society manages risks* (Alwang and Siegel, 1999; Holzmann and Jorgensen, 2000). The SRM framework was proposed as a response to a global crises (the Asian/global 3-F's crisis) in the late 1990s (Holzmann and Jorgensen, 2000) and the 1990s UN-sponsored international Decade of Natural Disaster Reduction[29]. Thus, the similarities with underlying condition to the ongoing 3-F's Global crisis that began in 2008 are quite notable. The main idea behind SRM is that all individuals, households and communities are vulnerable to multiple hazards/risks, whether they are natural (such as earthquakes, flooding and illness) or man-made (such as unemployment, environmental degradation and armed conflict). These shocks hit individuals, communities, and regions mostly in an unpredictable manner or cannot be prevented, and therefore, they cause and deepen poverty. Poverty relates to vulnerability since the poor are typically more exposed to risk while they have limited access to appropriate risk management instruments. Hence the provision and selection of appropriate SRM instruments becomes an important mechanism to reduce vulnerability and provide a means out of poverty. This requires striking a balance between alternative SRM arrangements (informal, market-based, public) and SRM strategies (prevention, mitigation, coping), and matching appropriate SRM instruments. The recognition of the importance of risk management for the poor, together with the need for voice and empowerment, and for the creation of capacities and opportunities, are the foundation of the WDR 2000/01 (see World Bank, 2001a). Indeed, WDR 2000/1 and the SP Strategy Paper (World Bank, 2001b) stresses the virtuous cycle of opportunity-security-empowerment, the

[29] http://en.wikipedia.org/wiki/International_Decade_for_Natural_Disaster_Reduction

differentiation between risks, poverty and vulnerability and propose the use of social protection instruments as "springboards" for poverty-reducing growth by focusing attention on assets and livelihoods and various tangible and intangible measures of well-being (not just income/ consumption flows). Some of the important intangible (i.e., hard to measure) indicators of well-being include security, hopefulness toward the future, living in a clean environment). In addition, the SRM approach devotes attention not only to those poor at any given point in time (e.g., those individuals and households below a poverty line), but also those non-poor households that might in fact fall below the poverty line due to different risks and/or an inability to manage risks. As such, the SRM framework provides a forward-looking and dynamic concept of poverty (that includes poor and non-poor households) that explicitly considers risks and risk management capacity.[30]

To better understand the dynamics of poverty and vulnerability, especially in the context of climate-related hazards/risks, it is important to augment the SRM approach with an asset-based approach (see Siegel and Alwang, 1999; Heitzman, Canagarajah, Siegel, 2002; Siegel, 2005; Heltberg, Siegel, Jorgensen, 2009, USAID website[31]; Jones, et. al., 2010). Asset-based and livelihoods approaches[32] assume that household well-being is multi-dimensional and a function of household assets and livelihood strategies and the political/institutional context. Assets are understood broadly to include productive assets (human, natural, physical, and financial assets); social and political assets; and location assets (see Annex 1; Fig. 2).Household decisions to accumulate and allocate assets – often called their livelihoods strategy – and returns to their asset portfolio (expected returns and variance of returns) are profoundly influenced by the political/institutional context, and by risks. Household livelihoods, livelihood resilience, and well-being depend on the interface between risks; assets; and the policy, institutional, and structural context. Risk affects the expected returns and variance of returns on assets and livelihood strategies, and therefore household well-being and future asset accumulation. Households are poor because they have limited quantity and quality of assets; their assets have low expected returns and high variance of returns; and because they face an adverse political/institutional context. There are structural traps that reinforce poverty and vulnerability, including insecurity through exposure to shocks and absence of risk management; limited citizenship and absence of voice and rights; spatial disadvantages and remoteness; social discrimination through exploitation or exclusion; and limited job opportunities. All of these factors coalesce to keep some individuals, groups, and nations poor and vulnerable.

Households use their assets and livelihood strategies to deal with hazards/risks shocks but this interferes with their ability to maximize productivity from these assets. When trying to deal with hazards/risks, households often have few options except to draw down their assets. (although

[30] According to the World Bank's SP Sector's website: Considerations of risk and vulnerability are key to understanding the dynamics leading to perpetuating poverty. Poverty is more than inadequate consumption or inadequate education and health — **It is also fear for the future**. Vulnerability affects everyone but is greater for the poor who face large risks from shocks to their income-earning capacity due to natural and man-made disasters, crime and violence, unemployment, old age, exclusion and discrimination, gender inequality etc. In short, the poor need to feel empowered with skills and voices to overcome their fear of isolation. And governments need to be able to respond to risks through a series of market and non-market mechanisms that do not adversely affect long-term development.

[31] See http://www.povertyfrontiers.org/ev02.php?ID=1090_201&ID2=DO_TOPIC

[32] Asset-based approaches and livelihood approaches are very similar (see Siegel, 2005, p.6).

their ability to do depends on the structural context as mentioned above). In order to preserve the ability to use assets for short-term coping, households often prefer relatively secure and liquid asset portfolios to the detriment of expected returns and long-term adaptation. This can give rise to asset-based poverty traps, whereby the household's asset-portfolio not sufficient to provide it with a "minimal" set of "basic needs" to exit poverty. Greater recognition of the role of such poverty traps and the trade-offs between short-term coping and long-term adaptation is important for poverty reduction, especially in the face of climate variability and change. "These factors motivate our proposal for a greater role for social policy to promote resilience to break such poverty traps (Heltberg, Siegel, and Jorgensen, 2009, p.92)." Taken together, the SRM and asset-based approaches lay the foundation for thinking about "minimum asset-portfolios" needed to keep households above the poverty line in the face of multiple hazards/risks (Siegel and Alwang, 1999; Siegel, 2005; Hetlberg, Siegel, Jorgensen, 2009).

VI.2 Adaptive Social Protection (ASP) Framework

The concept of *adaptive social protection* (ASP), which draws on the SRM framework, refers to a series of measures which aim to build resilience of the poorest and most vulnerable people to climate change (see IDS, 2008; OECD, 2009; Davies, Oswald, Mitchell; 2009; Davies, et. al., 2009; Jones, et. al., 2010[33]). It has been developed based on the view that combining components of social protection (SP), disaster risk management (DRM) and climate change adaptation (CCA) in programs and projects will help to simultaneously tackle unsafe living conditions, counter the underlying causes of vulnerability, and promote people's ability to adapt to a changing climate. ASP takes into account the full range of SP measures and instruments available, including longer-term mechanisms designed to combat chronic poverty and vulnerability, as well as short-term interventions to reduce the impact of shocks. SP programs can help poor and vulnerable households and communities with disaster risk management (DRM) related to current climate hazards/risk (DRM), and climate change adaptation (CCA) to deal with future climate hazards/risks. The point is that there are existing SP programs and instruments to deal with DRM and CCA, and that these SP programs need to be mainstreamed and integrated with DRM and CCA (Siegel and de la Fuente, 2010).

An ASP approach is characterized by a number of features (see OECD, 2009). These include:

a) Reducing risk**.** By reducing risk, SP can build up resilience to help people adapt to changing climate conditions.
b) Targeting poverty and vulnerability**.** The poorest and most vulnerable members of society are targeted due to a focus on SP instruments that they can access such as asset transfers in addition to market-based mechanisms which may be harder to reach.
c) Adopting rights-based approaches**.** Where appropriate and country-led, the equity and justice dimensions of chronic poverty and climate change adaptation are addressed due to the adoption of a rights-based approach to vulnerability reduction.
d) Promoting transformation**.** By focusing on the underlying structural inequalities and barriers that people face, ASP provides an emphasis on transforming and promoting

[33] Jones, et. al. (2010) applied a livelihoods approach to the adaptive social protection framework (ASP).

livelihoods as well as protecting them, and builds long-term resilience to climate change and disasters.

e) Adopting multi-disciplinary approaches**.** The vulnerability- and poverty reduction efforts of development actors will become more effective due to the adoption of both the natural and social sciences in policymaking and program/project planning and implementation.

These features are based on the following underlying principles (see OECD, 2009, p.211-212)[34]:

a) Attention to the underlying causes of poverty and vulnerability for particular people, and the need for targeting that is based on vulnerability to multiple shocks and stresses.

b) Rights-based rationale for action, stressing equity and justice dimensions of chronic poverty and dealing with disaster risk management and climate change adaptation, in addition to instrumentalist rationale based primarily on economic efficiency.

c) Emphasis on transforming assets and livelihoods as well as protecting them, and adapting to climate variability and climate change, rather than simply reinforcing ah-hoc coping mechanisms.

It seems that SP has a broader and more appropriate mandate to dealing with climate change justice and human rights, than either CCA or DRM. SP, CCA, and DRM all focus on the need for ex-ante actions and to try and move away from ex-post responses like emergency/disaster relief. However, as pointed out by Muller (2002) and Richards (2003), developing countries facing increased climate variability and extreme weather events (that might actually be climate change), are extremely interested in emergency/disaster relief for the present (and not on mitigation and adaptation activities that might reduce vulnerability and increase resilience for the future). Interestingly, both Muller (2002) and Richards (2003) propose the need for a global climate change disaster insurance facility, and improved global financial mechanisms to assist in recovery and reconstruction. Thus, an important dimension of climate change justice for poorer households and nations is the need for *immediate* relief from the direct and indirect impacts of climate variability and severe weather events, and not a longer-term planning horizon. This justifies the need for policies that can assure households some minimum expected level of well-being and also insure against hazards/risks.

VI.3 New Approaches to Social Protection (SP)

SP programs such as community-driven social funds, conditional cash transfers (CCTs), cash transfers to vulnerable groups, attempts at "universal" health care and education, public works programs, health insurance, unemployment programs, micro-finance and micro-insurance, pension plans, social inclusion programs, and emergency assistance have all opened up new possibilities for decreasing vulnerability and building resilience -- with a focus on household and

34 For more details, the reader should read the papers that present the ASP framework (IDS, 2009; OECD, 2009; Davies, Oswald, Mitchell, 2009; Davies, et. al., 2009). These papers present the overlaps and gaps between SP, CCA, and DRM in dealing with climate-related hazards/risks and multiple hazards/risks, although as presented in this paper, it is important to consider direct and indirect climate-related hazards/risks.

community-based risk management (see Grosh, et. al., 2008; Holzmann, 2009; World Bank, 2009b).

Many countries have adopted various types of CCTs that provide targeted assistance to poor households to provide incentives for parents to send their children to school that includes an integrated education/nutrition/health "package".[35] CCTs are based on a multidimensional perspective of poverty reduction, broadening the development impact of growth. Similar to other SP programs, they also help protect people and productive assets from the lasting effects of idiosyncratic and aggregate shocks. **CCTs have also been included in the UN 'Social Protection Floor' Initiative, which aims to secure a "minimum level of access to essential services and income security for people in the context of current crises and beyond"** (Fajth and Vinay, 2010).

In some countries, CCTs have become the largest social assistance program, covering millions of households, as is the case in Brazil and Mexico. CCTs have been praised as a way of helping households break out of a vicious cycle whereby poverty is transmitted from one generation to another; by promoting child health, nutrition, and education. There is increasing evidence that CCTs have improved the lives of poor people. Transfers generally have raised consumption levels - and reduced poverty -- by a substantial amount in some countries. CCT programs have also provided an entry point to reforming badly targeted subsidies and upgrading the quality of safety nets. CCTs have been an effective way to redistribute income to the poor, while recognizing that even the best-designed and best-managed program cannot fulfill all of the needs of a comprehensive SP system. CCTs therefore need to be complemented with other interventions. To maximize their potential, CCTs should be combined with other programs to improve the quality of the supply of health and education services, and other supporting services that constitute a basic needs package. Similar to Sen's critique of necessary, but not sufficient condition of "social minimum goods", it is important to consider "capabilities" and outcomes rather than focusing only on access to services. For example, CCTs are not the "ideal instrument" to directly deal with hazards/risks and transient poverty, although they help households decrease vulnerability and increase resilience (Fiszbein and Schady, 2009).

Before crises occur, CCTs could be instrumental in increasing resilience by helping children get immunized, better-fed, and educated, and helping get families better-informed and better connected to service providers and community support systems. However, once crises occur, conditional programs are relatively poorly equipped to provide emergency support; unconditional transfers may be more effective as rapid crisis response. This is because they require less complex administration, and because their coverage may be expanded at lower costs and much more rapidly to counteract sudden deteriorations in well being. Importantly, while CCTs can provide a ready-made channel for increased transfers to those households which are already in the program, they do not act as automatic stabilizers (as do, for example, unemployment benefit claims) hence they require active management in times of crisis (Fajth and Vinoy, 2010).

[35] Conditional cash transfers (CCTs) are programs that transfer cash, usually to poor households, on the condition that they take specified actions (see Grosh, et al., 2008; Fiszbein and Schady, 2009).

CCTs may be more viable than unconditional transfers in political economy contexts where simple "cash handouts" are not accepted by society (or are accepted with suspicions that they will promote irresponsible behavior). However, Fajth and Vinoy (2010) claim that conditionality is not really needed for results. They claim that it is the access to information, awareness building, empowerment, and strengthening of social capital that is really the key. In addition, CCTs have traditionally been used to promote access to highly valued health, nutrition and education services.

There are different SP instruments that are can be used for CCA (Heltberg, Siegel, Jorgensen, 2010) and for DRM (Siegel and de la Fuente, 2010). The table below highlights the convergence between SP, DRM and CCA in terms of objectives, instruments and expected outcomes, based on the adaptive social protection (ASP). In the table there are several SP instruments that are mentioned. Cash and asset transfers seem to have an important role, along with public works and financial and insurance services. These instruments all help to reduce vulnerability and increase resilience of households and communities. See table 5.1.

Table 5.1: Climate Change Adaptation (CCA) and DRM Disaster Risk Management (DRM) through Social Protection (SP)

SP category	SP instruments	CCA and DRM benefits
Protective: protection that provides relief from deprivation	- social service provision - social transfers (food/cash), including safety nets - social pension schemes - public works programs	- protection of those most vulnerable to climate risks, with low levels of adaptive capacity
Preventive: prevent falling into deprivation	- social transfers - livelihood diversification - weather-indexed crop insurance - social insurance	- prevents damaging coping strategies as a result of risks to weather-dependent livelihoods
Promotive: promote asset and livelihood enhancement that can provide exit from deprivation	- social transfers - access to credit - asset transfers or protection - starter packs (drought/flood-resistant) - access to common property resources - public works programs	- promotes resilience through livelihood diversification and security to withstand climate related shocks - promotes opportunities arising from climate change
Transformative: transform underlying conditions to address social justice and exclusion and improve adaptive capacity	- promotion of minority rights - anti-discrimination campaigns - social funds - proactively challenging discriminatory behavior	- transforms social relations to combat discrimination underlying social and political vulnerability

Source: OECD (2009, p.205)

V.4 Rights-Based Social Protection: Social Guarantees

A relatively new approach to implementing human rights at the national level is the provision of "social guarantees" that assure a package of benefits in terms of income and access to basic needs and services (e.g., food, health, education, water and sanitation, employment). World Bank (2008a) presents a social guarantees framework, which is an innovative approach to integrate a

rights-based perspective into social policy. The social guarantees approach is based on concepts of social justice and human rights, but its real strength is the fact that it gives operational guidance for these approaches into policies and programs. As such, World Bank (2008a; Gacitua-Mario, Norton, Georgieva, 2009) propose that a rights-based approach to social policy include the following features:

a) The definition and widespread communication of rights, entitlements, and standards which enable citizens to hold public policymakers and providers to account for the delivery of social policy;
b) The availability of mechanisms of redress which citizens can utilize if they are unable to enjoy specified entitlements or social minimums;
c) A commitment to the equitable delivery of the specified rights, entitlements, and standards to all on a universal basis.

Social guarantees can bridge the gap that exists between legally declared norms and their effective implementation. In particular, social guarantees favor a legal articulation of rights that results in the provision of benefits associated with given rights. The policy mechanisms that social guarantees envision can be defined in a precise manner, as well as be flexible and revisable. A social guarantee approach can be used to strengthen both the delivery and monitoring of social programs because: a) it requires an institutional design that emphasizes synergy and coordination among agencies and providers to help social programs achieve their full potential, b) it contributes to reducing gaps in opportunity among citizens by promoting universal access to, and a basic quality standard for, essential services, and c) it contributes to strengthening democratic governance, because it requires the achievement of a non-discriminatory agreement among all members of society as to the level of basic entitlements of each individual or collective. Thus, social guarantees can be viewed as "safeguards" that society provides to all its members, ensuring their access to essential opportunities and wellbeing (World Bank, 2008a).

Globalization and climate change have created, and are still creating, many opportunities and many hazards/risks that are unevenly distributed around the world. "These trends call for an expansion of the concept of social policy toward a comprehensive "social contract", moving away from a model of state or market provision of welfare services to needy beneficiaries to form a contract between the state and citizens with rights and responsibilities on both sides. For example, a comprehensive social policy would guarantee access to a minimum set of publicly or privately provided services – such as transportation, property rights, or health care – as part of a contract between the state and its citizens. This truly would free individuals and firms to engage in free-market activities because of their greater ability to take on risks as these minimum standards are met (Jorgensen and Serrano-Berthet, 2009, p.46-47)." By looking at this issue through the lens of social justice, targeting criteria for benefits can be assessed on how accurately they ensure a citizenship approach whereby every citizen has access and is guaranteed a minimum standard. This does not mean paying out an equal amount to all citizens; rather, it means that every citizen has a right to a given service. This is a type of "targeting with universalism" approach (Jorgensen and Serrano-Berthet, 2009, p.58). Indeed, the debate over targeting (eligibility for benefits depends on "means-testing") versus universalism (eligibility to

receive benefits as a right) is complex and requires attention, especially in the context of setting up mechanisms for funding a social policy based on social guarantees.
In the context of social guarantees "*we are concerned primarily with universal human rights – rights that apply equally to all human beings, irrespective of their membership in particular families, groups, religions, communities or societies. Most human rights apply to the individual, but sometimes the equal worth and dignity of all people can be ensured only through the recognition and protection of individuals' rights as members of a group* (Gacitua-Mario, Norton, Georgieva (2009, p.4)." In the context of global climate change justice and human rights, the "group" is the global society and the debate is really about how to define, fund, deliver, and monitor the universal provision of "basic needs". That is, how to fund, manage and implement the "risk-adjusted SP Floor".

Devereux and Sabates-Wheeler (2007) claim that advocates for SP fall into two broad camps, which they call '*instrumentalists*' and '*activists*'. The '*instrumentalist*' arguments point to the dysfunctionality of extreme poverty, inequality, risk and vulnerability to the achievement of development targets on which there is broad consensus (e.g. the MDGs). For this '*social protection for efficient development*' group, SP is about putting in place risk management mechanisms that will compensate for incomplete or missing insurance (and other) markets. In contrast, '*activist*' arguments view the persistence of extreme poverty, inequality and vulnerability as symptoms of social injustice and structural inequity, and campaign for SP as an inviolable right of citizenship. For this '*social protection for social justice*' group, targeted transfers are a compromise between *ad hoc* humanitarianism and the ideal of a guaranteed '*universal social minimum*', where entitlement extends far beyond cash or food transfers and is based on citizenship, not philanthropy or enlightened self-interest. They conclude that it is interesting that these ideological battles are being fought over seemingly technical choices in SP policies and programs and instruments, and choices in design (targeting *vs.* universal provision, cash *vs.* food aid, conditional *vs.* unconditional transfers). "*Where a convergence between 'economic' and 'social' goals can be demonstrated, consensus is possible – but these opportunities are few and far between* (Devereux and Sabates-Wheeler, 2007, p.1-2)". CCTs and the focus on providing "basic needs" in the context of a "social contract" are an example of such a convergence. Evidence of this is the praise that the market-oriented UK-based weekly magazine, *The Economist,* gave to CCTs in July 2010, they "*benefit millions. The programs have spread because they work. They cut poverty. They improve income distribution. And they do so cheaply. All this has been a pleasant surprise. …. CCTs are a good start. But they are only a start"*[36] In the case of climate change justice and human rights it seems that there is convergence

[36] "… the world's favorite new anti-poverty device, the conditional cash-transfer program (CCT) in poor and middle-income countries. These schemes give stipends and food to the poorest if they meet certain conditions, such as that their children attend school, or their babies are vaccinated. Ten years ago there were a handful of such programs and most were small. Now they are on every continent—even New York City has one—and they benefit millions. The programs have spread because they work. They cut poverty. They improve income distribution. And they do so cheaply. All this has been a pleasant surprise: when they were introduced or expanded, critics feared they would either make the poor dependent on hand-outs or cost far too much. In fact, they are cheap (Brazil's, the biggest, costs 0.5% of GDP). And they show income transfers can work nationally. CCTs work because they are rules-based and relatively uncorrupt. [And] they make a difference to the poorest because they are reliable—unlike the rest of the poor's income. CCTs also help the next generation. By requiring children to have lessons and health checks, the programs should make children better educated and healthier than their parents. But CCTs are not magic bullets. … In rural areas poverty leads to a lack of the basics: food, water, primary schools, simple health care. CCTs

between economic and social and environmental goals, and many available technical choices to operationalize "*SP for social justice and efficient development*" based on the idea and ideal of a *universal social minimum*.

VII. Innovations in Insurance and Finance

There is ample evidence that climatic change is already influencing the frequency and intensity of hazard events. There are indications that in the future there will be an increase in the frequency and severity of heat waves, droughts, bush fires, tropical cyclones, tornados, hailstorms, floods and storm surges in many parts of the world. Insurance-related mechanisms can lessen the negative effects of climate change and minimize the risks of an increasing number of climate-related natural disasters. As expected losses from climate-related hazards continue to increase, there is a need to explore options for pooling and transferring risks associated with climate change. Market insurance and risk transfer solutions for *climate insurance* can be part of the solution in enabling disaster-prone countries to successfully manage the new climate risks on the horizon.[37] Actually, all countries can benefit from improved risk reduction, risk pooling and risk transfer (i.e., global "co-benefits"). In fact, a major attraction of globally pooling and transferring climate-related hazards/risks is that having a global risk pool and transfer mechanism should lower the costs of insurance for everyone because of the uncorrelated spatial risks in a global pool. This has been a driving factor in the interest of global insurance and reinsurance firms to get involved in global climate change.

VII.1 Micro-finance and Micro-insurance

Microfinance offers poor people access to basic financial services such as loans, savings, money transfer services and micro-insurance. People living in poverty, like everyone else, need a diverse range of financial services to run their businesses, build assets, smooth consumption, and manage risks.[38] In addition to ongoing efforts to advance financial services for the poor by supporting micro-finance and micro-insurance through CGAP[39], there is a new "Insurance for the Poor Program" at the World Bank that started in 2008. The specific objectives of this new program are to reduce the vulnerability of poor households by helping them to develop sustainable livelihoods through enhanced access to insurance and related financial services. The major areas of focus are health insurance, life insurance, crop and livestock insurance, and natural disaster insurance (Mahul, 2010).[40] The new micro-finance and micro-insurance products that are being developed and adopted around the world demonstrate how basic needs can be both delivered and protected for the poor, including those in remote areas. The proliferation of ICT options, especially the use of cellphones and smartcards, have opened up new possibilities for implementing a "risk adjusted SP Floor".

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are good at providing those because, however small the stipend, it gives children an incentive to go to school and encourages markets to develop in the goods and services that were lacking before…. CCTs are a good start. But they are only a start." The Economist (2010a; 2010b).

[37] http://www.climate-insurance.org/front_content.php?idcat=885

[38] See http://www.cgap.org/p/site/c/about/

[39] See http://www.cgap.org/p/site/c/home/

[40] See: http://treasury.worldbank.org/bdm/pdf/Brochures/Catastrophe_Risk_Financing_Brochure.pdf

VII.2 Insurance and Climate Change

There has been increasing interest in using financial and insurance instruments for SP, DRM and CCA. Muller (2002, p.4) notes that: "*As early as 1991, Vanuatu, on behalf of the Alliance of Small Island States (AOSIS), put forward a proposal for an "International Insurance Pool" to provide financial insurance against the consequences of sea level rise, a pool which was meant to be replenished by mandatory country contributions and 'used to compensate the most vulnerable small islands and low-lying coastal developing countries for loss and damage resulting from sea level rise.' Until recently, however, the only significant trace of this proposal in the decisions of the COP was the inclusion of the word 'insurance' in … the Kyoto Protocol*." Muller (2002) proposed a Climate Impact Relief (CIR) Fund as part of an organized international disaster relief system that draws upon existing finance and insurance mechanisms. He claims that a CIR-Fund is a realistic option, both politically and economically, because it should not require new funds or institutions, per se, only more efficient use of existing funds and institutions. Richards (2003) cites the CIR Fund as one possible option as a type of instrument that can be combined with efforts to reduce vulnerability and increase resilience, and also increase incentives for improved disaster preparedness and adaptation. Richards (2003) also notes that enhanced resilience and adaptive capacity can be promoted by asset and livelihood climate insurance.

There has been increasing interest in the use of insurance products to address climate change adaptation since the Kyoto Protcol called upon the international community to "consider actions, including those related to insurance, to meet the specific needs and concerns of developing countries with respect to the adverse impacts of climate change (see Linnerooth-Bayer and Mechler , 2006)." The Bali Action Plan of 2007 specifically calls for risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance, as a means to address potential losses and damages in developing countries that are particularly vulnerable to climate change. The references to insurance in the Bali Action Plan strengthen the existing mandates to use insurance that were part of the Kyoto Protocol (Linnerooth-Bayer, Bals, Mechler, 2008).

VII.3 Munich Climate Insurance Initiative (MCII) Proposal

As a response to the renewed attention in insurance to help deal with CCA and DRM, the Munich Climate Insurance Initiative (MCII)[41] was initiated in 2005 by the private

[41] **http://www.climate-insurance.org/** MCII provides a forum and gathering place for insurance-related expertise applied to climate change issues MCII has four basic objectives: a) develop insurance-related solutions to help manage the impacts of climate change, b) conduct and support pilot projects for the application of insurance-related solutions, in partnerships and through existing organizations and programs, c) identify success stories and disseminate information about the factors that are necessary to design and implement effective climate insurance-related mechanisms, and d) promote insurance approaches in cooperation with other organizations and initiatives within existing frameworks such as the United Nations system, International Financial Institutions, international donors, and the private sector. These objectives are captured in the title of a recent MCII publication: Solutions for Vulnerable Countries and People: Designing and Implementing Disaster Risk Reduction and Insurance for Adaptation (see Warner, et. al., 2010).

insurance/reinsurance firm Munich Re. This initiative brings together insurers, climate change and adaptation experts, NGOs, and policy researchers intent on finding solutions to the risks posed by climate change. MCII provides a forum and gathering place for insurance-related expertise applied to climate change issues.

The MCII has made a proposal that suggests establishing a risk management module as part of an international CCA/DRM strategy, with important roles for SP (Linnerooth-Bayer, Bals, Mechler, 2010; Warner, et. al., 2009; 2010). The module includes two pillars, *prevention* and *insurance*, which would act together to improve ex-ante and ex-post risk management. The pillars would be financed by an international adaptation fund in accordance with the UNFCC Convention's principles of common but differentiated responsibilities and respective capabilities of countries, and that payouts would be disbursed to those who suffer most from climate change. As such, funding would mostly be provided by Annex 1 countries and international development agencies.

a) Prevention Pillar: The proposed prevention pillar is part of a comprehensive risk management approach that focuses attention on reducing vulnerability and increasing resilience of sectors, households, communities, and nations based on the use of country-based risk-vulnerability assessments. Risk-vulnerability assessments can identify possibilities for risk reduction, and also help lay the groundwork for risk transfer (i.e., insurance) systems.
b) The Insurance Pillar: The proposed insurance pillar has two tiers that reflect the different layers of risk that should be addressed for effective climate adaptation: (1) "high level" risk that exceeds the ability of any given country to pay in the case of an extreme event, and (2) "middle level" risk that is within the ability of any given country to cope if the proper facilitating framework were in place. "Low level" risks can often be more cost effectively addressed with prevention measures (under the prevention pillar). In fact, "low-level" risks might most effectively be dealt with using SP instruments that help lower household and community vulnerability and increase resilience by providing "basic needs". Having a risk management strategy that combines the preventive pillar and the 2-tier insurance pillar is an example of a "no-regrets" approach to climate change, because households and communities are encouraged to lower vulnerability and increase resilience and thus receive benefits whether or not there is climate change.

Tier 1 of the insurance pillar is designed as a *Climate Insurance Pool (CIP).* By pooling the risks across the developing countries qualified for the scheme, considerably less capital is needed compared to a situation where each country must raise its own capital for dealing with catastrophic events. The CIP is supposed to cover an agreed proportion of a pre-defined high layer of risk in eligible countries. In principle, the scope of the CIP can be rather comprehensive and range over, e.g., public and private property, infrastructure as well as lives and livelihoods. Tier 2 is a *Climate Insurance Assistance Facility (CIAF).* This means a middle risk-layer entity which is not aimed at providing insurance per se, but to provide *assistance* for setting up insurance programs such as by supplying capacity building and technical support.

In a critical review of the MCII proposal in terms of climate change justice, Duus-Otterstrom and Jagers (2009) conclude that this proposal is promising because it goes beyond traditional market-based commercial insurance for weather and climate-related hazards/risks. Although it has a lot of promise for addressing climate change justice and human rights by focusing attention on poor and vulnerable households, communities and nations, there are still details about funding, eligibility for coverage and payments (i.e., "who pays and who benefits and by how much"). According to Duus-Otterstrom and Jagers (2009, p.18): "Perhaps the core issue at stake here can be said to boil down in a trade-off between a maximally fair insurance model and one which is somewhat fair while also relatively feasible." They claim that from a purely normative standpoint, climate change justice might "require" that developed countries cover all costs of CCA, whether they are preventative or insurance-based – especially for the poorest and most vulnerable countries. However, developed countries (i.e., *Annex 1 countries*) might not agree with such an expansive and expensive proposal, countering that developing countries pay for some of their own insurance, especially the preventative pillar. However, in reality it is clear that both preventative and insurance-based options are closely linked, and less funding for one pillar will require more financing for the neglected pillar. That is, there are "co-benefits" between Tiers 1 and 2, and between Pillars 1 and 2.

VII.4 Index-Based Insurance and Potential for Multi-National and Global Risk Pooling

There has been considerable interest has been development of index-based insurance products for SP, DRM, CCA (Gupta, 2008; Hellmuth, et. al., 2009; Hill and Torrero, 2009; Heltberg, Siegel, Jorgensen, 2010). Under an index-based insurance scheme, payouts are "triggered" using an objective indicator or *index*, instead of requiring actual field-based or household-based damage assessments. When a specified event is triggered the insured party receives an insurance payment according to the pre-defined payment formula based on the "index". For example, insurance will be paid out in the event of drought as a result of less than an anticipated amount of rain, a wind storm of certain category, or an earthquake registering a certain Richter scale, occurring within a fixed distance from a location. This innovative approach to insurance provision means that policyholders qualify for payouts as soon as these objective indexes are triggered, without having to wait for claims to be settled in the traditional way that requires damage assessments. The insurance will pay if the index is triggered, irrespective of the actual damage or loss. Index-based insurance reduces moral hazard and adverse selection, ensures timely payout, reduces administrative costs, and provides a standardized and transparent structure. The product is also versatile and can be combined with other financial products such as loans. Subjectivity is removed from payment decisions because the payout is based on whether an easily measurable event has occurred or not. Index-based insurance is already being used as an instrument for SP and integrated SP/DRM/CCA approaches in several countries such as Mexico, Ethiopia, Malawi and India. The World Food Program (WFP) and International Fund for Agricultural Development (IFAD) are major proponents of this approach for use in early warning systems (EWS) that can trigger rapid responses to pending disasters, thus preventing the need for emergency humanitarian assistance after the event. The Weather Risk Management Facility (WRMF) is a joint WFP/IFAD initiative to support the development of weather risk management instruments in developing countries.[42]

[42] See http://www.ifad.org/ruralfinance/wrmf/index.htm and http://www.ifad.org/ruralfinance/pub/wrmf.pdf

Linneroth-Bayer and Mechler (2006); Linneroth-Bayer, Bals, Mechler (2008), Gupta (2008), Linneroth-Bayer (2010) and Warner et. al,, (2009; 2010) highlight the potential links between financial and insurance instruments and climate change, with reference to global risk transfer and pooling. Linnerooth-Bayer (2010) even raises the possibility for setting up a system of "international social protection for climate-related disasters". Once again, the idea is that wealthier people and countries could finance a global social insurance fund that links the adaptation and development agendas, and lays the foundation for a globally guaranteed and nationally managed and locally implemented social protection response to climate change.

Several of the new World Bank finance and insurance products and services draw upon international risk pooling and transfer mechanisms that could be applicable to a response to climate change (see Annex 3). There has also been use of innovative finance and insurance products to support different SP approaches to managing hazards/risks and underlying vulnerabilities and capacity constraints, notably different micro-finance schemes and micro-insurance for health and life, and weather-index insurance (Pollner, Kryspin, Nieuwejaar, 2008; Hill and Torrero, 2009; Hellmuth, et al., 2009; Heltberg, Siegel, Jorgensen, 2010). The focus on innovative finance and insurance instruments is for household, community, local, national and international levels, and includes different types of compensatory and contingency funding arrangements involving public and private sectors (Davies, et. al., 2009; Wiseman and Hess 2008; World Bank, 2010b[43]).

The Caribbean Catastrophic Risk Facility (CCRIF) [44], which was launched in 2007, is a multi-Government (with 16 countries) owned risk pooling facility designed to limit the immediate financial impacts of major hurricanes and earthquakes to member governments by quickly providing short term liquidity when it is "triggered". It is the world's first regional insurance fund utilizing parametric insurance. CCRIF represents a paradigm shift in the way governments treat risk, with Caribbean governments trying to make sure that they have funds available for rapid response to a major hazard event. Pacific Island Countries have recently requested the World Bank's assistance to design a similar to protect them against the impacts of major natural hazard events. In response, the World Bank is currently leading a Pacific Catastrophic Risk Financing Initiative in partnership with the GFDRR and Asian Development Bank (ADB). The concepts underlying these multi-country risk pooling institutions could be extended to a global pool and institution.

In 2009, the World Bank and International Finance Corporation (IFC) have established the Global Index Insurance Facility (GIIF)[45] to help developing countries have access to insurance products for climate-related risks. The GIIF takes an innovative index-based approach to insurance that aims to expand access to insurance products in developing countries, and particularly to farmers and people in rural communities. The GIIF is trying to work with local insurers and financial institutions, as well as regulatory bodies and organizations from the private

[43]There are several new innovative financing and insurance products and services offered by the World Bank Group. These include: a) contingent financing, b) sovereign catastrophe insurance pools, c) catastrophe bonds, d) weather derivatives, e) catastrophe insurance pools, f) index-based agricultural insurance, g) agricultural insurance pool, and h) specialized index-based insurance facility (see World Bank, 2010b)

[44] See http://www.ccrif.org/news/ccrif-case-upscaling

[45] See http://www.ifc.org/ifcext/gfm.nsf/Content/Insurance-GIIF

sector to build capacity and a suitable regulatory and commercial environment for index-based insurance products. The GIIF Trust Fund provides advisory services and capacity building program, providing substantial funding to build local partners' skills and support the regulatory environment, product development, and specific risk transfer projects in African, Caribbean, and Pacific Island countries. The European Commission (EC) has committed €24.5 million to the GIIF Trust Fund, which is also supported by the Dutch Ministry of Foreign Affairs.

According to Kanbur (2010, p.9) the World Bank and donors should support a 2-track SP strategy for individual nations, with a) the day-to-day SP needs, and b) emergency relief. As such, he suggests that consider setting up a *pre-qualified line of assistance for social protection which kicks in automatically when certain crisis triggers are breached*. Then he notes that there already are already instruments that do this. For countries eligible for IBRD loans, the World Bank has offered a catastrophic risk DDO (CAT DDO).[46] The CAT DDO is part of a spectrum of World Bank Group catastrophe financing instruments (that are based on having a global insurance fund) available to assist borrowers with immediate liquidity following a natural disaster. It is meant to serve as bridge financing, while other sources of financing are mobilized. The borrower is expected to implement a DRM program, which the World Bank monitors on a periodic basis. Funds may be drawn down in the event of a natural disaster resulting in a declaration of a state of emergency. This could be one way for the international community to support the "risk-adjustment" part of the "risk-adjusted SP Floor".

VIII. Risk Adjusted Social Protection Floor

Following the review of the literature in previous sections on sustainable development, climate change, social justice, human rights, social risk management and adaptive social protection it is possible to identify a set of common principles to address climate change from a social justice and human rights perspective. As pointed out previously, the starting point of this paper is a search for solutions to climate change that are, in fact, anchored in social justice and human rights. As such, an egalitarian-liberal approach was followed, as opposed to a utilitarian market-based approach. Hence the solutions are based on equity and efficiency (as opposed to focusing on efficiency). Or, to be more precise, our 1st order objective function is finding a solution to climate change adaptation (CCA) that is based on social justice and human rights, while the 2nd order objective is to achieve social justice and human rights in CCA an efficient manner.

The design of a practical approach to implement these principles can draw upon recent innovations in social protection, finance and insurance. That is, the proposed "risk-adjusted" should be able to draw upon existing and available programs. Thus, it is really a question of whether the global political willpower exists to seek equitable and efficient solutions to some of the threats elicited by climate change; based on concerns for social justice and human rights. This section will review the key principles drawn from the previous literature review and present the existing UN proposal on the Social Protection Floor (SP Floor). Then, the "risk-adjusted SP Floor" is introduced by highlighting the importance of adding a risk adjustment component to existing SP Floor proposals.

[46]See http://siteresources.worldbank.org/INTPERUINSPANISH/Resources/DDOProductEnhancements.pdf

VIII.1 Summary of Principles from Sustainable Development, Climate Change, Social Justice and Social Protection

Below there is a summary of key principles derived from the literature review on sustainable development, climate change, social justice and social protection.

VIII.1.a Basic Needs and the Idea of a "*Social Floor"*

The idea that there is some "minimal" level of basic human needs to which all persons are entitled comes out strongly from all the strands of the literature that were reviewed in previous sections. From the Brundtland Commission's report *Our Common Future,* the concept of sustainable development is a human-centric approach that ensures basic needs for all, in the present and future. That is, there is acknowledgement that poverty reduction is a necessary condition for sustainable development and achieving present and future needs of humans. Similarly social justice theory as articulated by Rawls – notably the concept of the *veil of ignorance* - lead to an egalitarian-liberal approach whereby everyone should be guaranteed a minimum level of basic needs. The international conventions on human rights similarly identify a set of basic needs and entitlements that are universal, and part of a global social contract. Likewise, the social risk management (SRM) framework, with its focus on preventing "irreversible damage" of household and community assets and livelihoods shares a concern to ensure (and insure) that people do not fall below a minimum level of well-being. The focus on guaranteed minimum levels of basic needs is not always explicit in the SRM framework, because it is deeply imbedded in a risk management and poverty reduction framework, not a rights-based framework. However, Devereux and Sabates-Wheeler (2007) argue that there is an increasing convergence across rights-based and risk management and poverty-reduction based approaches -- in the literature and in practice. That is, there is a convergence of SP instruments, such as CCTs that support basic needs which emanate from egalitarian-liberal and market-based utilitarian approaches. This convergence, possibly a new "*Beyond Washington Consensus*" in response to the 3-F's Global Crisis and increasing concerns about natural disasters and climate change, is already being applied in practice in many countries that have established and/or expanded their SP programs, and particularly in countries that have moved their social programs towards the idea of a social guarantee that is a nationally guaranteed and managed "entitlement" to prove "basic needs" (notably education, health and nutrition).

Negotiations on climate change have not explicitly elicited support for a social minimum (or social floor) or guaranteed basic need. The support has been more implicit by those advocating a "no-regrets" approaches to human vulnerability (Heltberg, Siegel, Jopgensen, 2009) and social policies for climate change (Heltberg, Siegel, Jorgensen, 2010). Traditionally there has been a concern with the poverty impacts of climate change and how/why the poor are more vulnerable and will be more negatively than rich people, who in turn caused most of the pollution that is attributed to climate change. In fact, much of the thinking and attention to climate change has focused more on climate forecasting and climate change models that examine impacts to the natural environment. This is in contrast to the human-centric approach of sustainable development articulated by the Bruntland Commission. However there is nothing in the climate change literature that would argue against a basic needs or SP Floor approach. In fact, there are

many social scientists from different disciplines that have explicitly or implicitly derived a "basic-needs" approach when seeking global solutions based on social justice and human rights.

VIII.1.b Importance of Risk/Vulnerability Relationships, Assets and Insurance

In addition to satisfying basic needs, the principles drawn from the literature review show that it is important to consider the issues of risk/vulnerability, assets and insurance. As the recent crises have shown, the multiple hazards/risks and vulnerabilities are inter-connected and the exact impact dynamics are difficult to predict. More people are exposed to climate, market and political hazards/risks every year as globalization proliferates around the world. So any program that attempts to deal with climate change needs to take into account hazards/risk and vulnerability stemming from a variety of sources, and much address their global dimensions and implications. From the sustainable development literature the principle of no-regrets (i.e., in a universe of uncertainty, identify policies and programs that would be equitable and efficient whether there is yes/no climate change) offers some guidance for the prioritization of policies and investments. Similarly the asset-base and sustainable livelihoods literatures, and extensions of SRM (and adaptive SP) point to the importance of asset endowments and the management of household and community assets and livelihoods, and the role of risk management. The basic elements of a human-centric approach should focus on activities that build resilient assets and livelihoods and generate positive impacts from a developmental perspective (increased growth and decreased poverty), irrespective of the ubiquitous environmental, economic, political and social uncertainties. Similarly, from the current practices in finance and insurance, there is an increased emphasis on finance (savings and credit) for self-insurance and for insurance products based on risk pooling. There are more microfinance institutions and insurance programs for the poor, as well as financial and insurance institutions and programs at national, regional and global levels that exploit economies of scale with instruments such as index-based insurance, catastrophe bonds and other types of disaster insurance instruments. Thus, insurance for the poor no longer includes self-insurance through asset building and savings, but insurance products can now be accessed by poor and vulnerable individuals (notably women) and households. In the past high transactions costs and the limited risk pool were major constraints for insuring poor people, but with the links to global insurance (and re-insurance) markets and the availability of information and communication technology (ICT), this is also no longer a binding constraint.

VIII.1.c Need for Global Agreements and Guarantees, and Global Funding and Risk Pooling

The literature review indicates that the risk-adjusted basic needs package needs to be globally agreed upon and guaranteed, and backed by global funding and risk pooling. It is a fundamental principle of the Brundtland Commission's work and the resulting UN agreements to address sustainable development and climate change that these environmental-developmental problems are global in nature and solutions should also be global. From a funding perspective, the principle of "polluter pays" would indicate that richer people and countries should pay more for addressing climate change since they are the primary polluters, so at least some of the funding should be global in nature. With increasing uncertainty about extreme weather events and climate change, the demand for global risk pooling is increasing as a means to spread and transfer risks, and lower the costs of insurance. From justice theory we can draw similar conclusions. For example, when Rawl's *veil of ignorance* is applied to a global issue like climate

change, "the society" that would agree on a basic needs approach would be the global community. Similarly, in Sen's critiques of Rawls he discusses the need for a practical approach that address the major and most pernicious injustices – in the case of climate change this would be addressing the fact that the people hurt the most are different from the people that cause the least harm. In addition Sen's concept of "discourse", or the need for global debate on what justice-enhancing measures should look like, would lead to a global participatory process that could lead to greater empathy and understanding among people around the world and lead to new approaches to a global "social contract" based on social justice and human rights that addressed climate change and other global issues, including migration across national boundaries.

VIII.1.d Need to be Nationally Designed and Managed

While the different strands of literature all provide evidence to support a response that is globally agreed upon and at least partially globally funded, it is well known that actual SP programs and other developmental programs must be appropriate to the national circumstances, and thereby designed and managed nationally. Similarly, from the international human rights literature, because of vast differences among countries, it is important to draw upon the principle of "progressive realization[47]". That is, although human rights are universal, each nation must move towards full realization as its social, economic, political and cultural circumstances allow – as long as the trend is in the "right" direction. For example, as the SP practice of conditional cash transfers (CCTs) proliferates around the world, national programs (and sometime each sub-national region in large countries) is tailored to its specific circumstances[48] Where SP and human rights converge -- in the progression toward universally provided *social guarantees* --each country designs its own social minimum package, that is revised/updated over time as the situation allows.

VIII.1.e Need to be Locally Implemented and Monitored and Evaluated

While SP programs need to be nationally designed and managed, the implementation should be as local as possible, with strong community-based participation. There is considerable evidence that targeting works well when communities are involved. Similarly there is good evidence from assessment of different developmental programs, that local participation in monitoring and evaluation (M&E) with national verification and audits functions better than centrally planned interventions. From a theoretical perspective, and a growing body and actual experiences, support for any public interventions to enhance risk management efforts by households and communities would lead to local level implementation (World Bank, 2009c). Similarly, Sen's insistence on the need for practical solutions to poverty and other social/economic/political injustices also point toward a more local level of implementation. The historical lack of good GIS data and poor access to ITC for remote and poorer areas has been a major constraint to linking national priority setting and local implementation, and M&E efforts. However, with advances in GIS technology and ITC, this is no longer a constraint. In fact, the opportunities

[47] See http://en.wikipedia.org/wiki/International_Covenant_on_Economic,_Social_and_Cultural_Rights

[48] There is also a lot of scope for regional coordination and learning across countries with similar culture or history. For instance the Organization of American States has been an important forum to share information about social gurantees and the Arab League is looking at a similar role for itself.

exist to combine people-centered multi-hazard early warning and rapid response systems with planning and M&E to create a positive dynamic with local ownership and empowerment (Siegel, 2010; UNDP, 2010).

VIII.2 The UN Social Protection Floor (SP Floor) Initiative and "Risk-Adjusted" SP Floor

The SP Floor Initiative is a recent international effort stimulated by the global 3-F's crisis that draws on the concept of a "social minimum". The UN SP Floor Initiative meets most of the criteria outlined above: it is globally agreed, nationally designed basic needs and human rights based. What is missing has been the idea of explicitly addressing hazards/risks (it is implicit in much of the work). As such, the concept of the proposed "risk-adjusted SP Floor," is presented as an extension of the UN SP Floor Initiative that explicitly addresses risk. It must be emphasized that this paper advocates extending the proposed UN SP Floor concept rather than proposed a new concept altogether, such as a more anonymous "Risk-Adjusted Social Floor". The appeal of the UN SP Floor Initiative is that it is "on-the-table" and already being discussed, and therefore consistent with one of the major thrusts of this paper that a risk-adjusted basic needs package is a practical suggestion, considering ongoing global initiatives in social protection and incurance/finance.

VIII.3 The UN Social Protection Floor (SP Floor) Initiative

The idea of a SP Floor was proposed by the World Commission on the Social Dimension of Globalization (2004), which stated "A certain minimum level of SP needs to be an accepted and undisputed part of the socio-economic floor of the global economy." Since then, the term "social floor" or "social protection floor" has been used to indicate a set of basic social and political rights, and basic needs to which citizens in the global economy should be entitled.

Several agencies of the UN have recently proposed a "Social Protection Floor" (ILO and WHO, 2009a; b; Ortiz, Fajth, and Yablonski, 2010; Jacquier and Schmitt, 2010); Voipio, 2010; Pinheiro, Bertanou, Jacquier, 2010). The UN's SP Floor Initiative is a direct response to the "Global 3-F's Crisis", and the weakness or absence of formal global and national social protection instruments to lessen the impacts on poor and vulnerable households and communities. The SP Floor Initiative is a partnership and many UN Agencies and other international development agencies,.[49] The OECD-POVNET is a major intellectual force behind the concept of a global SP Floor (Voipio, 2010).

The SP Floor Initiative promotes a holistic and coherent vision of national SP systems as a key component of national development strategies. It seeks to support countries in identifying and closing crucial protection gaps through coherent and efficient measures that maximize the effects of scarce resources on the reduction of poverty and insecurity, to ensure "guaranteed access" to essential services and social transfers. The SP Floor Initiative will be integrated into existing

[49] ILO and WHO are lead agencies at the global level. Participating UN-system agencies**:** FAO, ILO, IMF, OHCHR, UN Regional Commissions, UNAIDS, UNDESA, UNDP, UNESCO, UNFPA, UNHABITAT, UNHCR, UNICEF, UNODC, UNRWA, WFP, WHO, WMO, World Bank. Leading and cooperating agencies may vary at the country level based on which agencies are best equipped to lead the SP Floor Initiative in concrete country contexts. Collaboration is also sought from development partners: i.e. bilateral donor agencies, development banks and NGOs working in social protection.

national planning processes, rather than creating a parallel process. The process to develop the SP Floor framework should always be consultative, inclusive and participatory, involving government representatives from relevant ministries, UN social partners, parliamentarians and civil society. National SP Floor frameworks will come in different shapes and sizes. Each country has different social needs, development objectives and fiscal capacity, and will choose a different set of policies. Interventions could include various age and gender-sensitive social protection programs, such as early childhood development programs, family allowances and parenting services, nutrition supports, access to life-saving medicines, health-insurance and outreach services, water and sanitation, active and passive labor market programs, social and disability pensions, special needs education etc. The SP Floor needs to be implemented via communities and be accessible to every individual.

The concept of the SP Floor is to guarantee a set of basic social rights, services and facilities for every human being. This can be seen as a core obligation (i.e., "*global social contract*") that ensures the realization of minimum essential levels of rights embodied in human rights treaties. The SP Floor promotes a holistic and coherent vision of national SP systems as a key component of national development strategies.. The SP Floor Initiative aims to promote nationally defined strategies that protect a minimum level of access to essential services and income security for all. It focuses on two critical components:

a) *Essential Goods/Services*: ensuring the availability, continuity, and geographical and financial access to essential goods/services such as food and adequate nutrition, water and sanitation, health, education, housing and other social services,

b) *Essential Social Transfers:* realizing access by ensuring a basic set of essential social transfers (in cash and in kind) to provide minimum income and livelihood security, throughout the life cycle (children, working life, old persons) paying particular attention to vulnerable groups.

According to Pinheiro, Bertranou, Jacquier (2010) the SP Floor should have a stabilizing impact and promote *resilience and inclusive growth* improving the capacity of national SP systems to deliver adaptive responses to external and internal risks that otherwise could result in severe welfare losses. They claim that as a rights-based approach, the SP Floor has *citizenship* and *political stability* as core components with strong links to democratic governance (including transparency, accountability, and participation) and help in the prevention of social unrest by creating *social cohesion* because it deals with poverty, inequality and vulnerability. However, there is a need for appropriate conditions and mechanisms to *build the required political will* at *global, national, and community levels*. An important dimension for ensuring the feasibility of the SP Floor is its financing. There is a need for more evidence of the cost of national SP Floor policies. The potential role of global funding based on a principle of common but differentiated responsibility is needed. This would be a role consistent with mandates for the UN and international financial institutions.

VIII.3.a Why is a Risk Adjustment for the SP Floor Needed?

To make the concept of the SP Floor more relevant to addressing the dynamics of poverty in a world or risk and uncertainty, a "risk adjusted social floor" is proposed (see Siegel, 2010). As

discussed in the introduction, a key lesson from the recent crises is the interlinked and nature of crises and the often compounding effect that climate change will have on existing vulnerabilities. While the need for dealing with risk is implicitly addressed by the SP Floor Initiative, it is critical to explicitly consider hazards/risks and add a 3rd element to: a) e*ssential goods/services* and b) e*ssential social transfers:*

c) Risk management to Guarantee Essential Goods/Services and Transfers and Emergency Relief: to make sure that essential goods/services and transfers are maintained/augmented (and if needed, expanded to existing and/or additional beneficiaries) in the time of crisis.

There is a need to make sure that the SP Floor is flexible and responsive to different types of *risks that could threaten the ability of national, local and community levels to make sure that the* basic human rights of all human beings are guaranteed when there are special circumstances and situations. This might involve voluntary or involuntary migration and resettlement within and across national boundaries. That is, what might be considered "minimum" basic needs in "normal times" might not be sufficient in the times of crises, and the entitlement to basic needs should not be jeopardized or penalized by a person's location at any given moment in time. Special vigilance and innovative systems will be required in terms of monitoring, early warning, and contingency plans and financing to guarantee timely and dependable access Heltberg, Siegel, Jorgensen, 2010; Siegel, 2010).

According to ILO and WHO, there is already some consideration of risk and hazards in the idea of the floor, what the authors propose here is to make that concern explicit and implementable (ILO and WHO 2009a, p.5): *"… [the] SP Floor takes a holistic approach to SP. On the one hand the SP Floor will work on means to ensure the availability of goods and services in areas of health, water and sanitation and housing, education, food and related information, etc. At the same time, the SP Floor will secure rights and transfers that guarantee effective access to these goods and services for all throughout the life cycle; children, active age groups and older persons, paying particular attention to vulnerable groups by considering further key characteristics that cut across all age groups (gender, socio-economic status, ethnicity, disabilities, population exposed and/or highly sensitive to adverse external effects such as natural hazards, intense climate phenomena, etc.).*"

The new and evolving literature on the SP Floor is still grappling with many basic issues about benefits and beneficiaries and funding and sources of funds. This debate could be widened to consider a "risk-adjusted SP Floor" that encompasses climate risks (including climate change) and other natural disaster risks. The UN and its various agencies have a key role to play, and have many of the legal human-rights and climate change justice agreements in their hands. . For example, it is suggested that the "*Delivering as One*" initiative might be a good foundation and starting point (ILO and WHO, 2009a, p.12). It would seem that the World Bank also needs to be a major player for the lofty ideals of a "risk-adjusted SP Floor" to become a practical reality.

VIII.4 Implementation Issues for a Risk Adjusted SP Floor

Like any new idea, implementation issues are a major concern. However, as emphasized throughout the paper, the "risk adjusted SP Floor" is a new concept that draws upon existing

types of SP/DRM/CCA interventions including various finance and insurance instruments. The real challenge is garnering the international and nation political willpower and funding resources.

VIII.4.a Financing (global and national)

Initial work on the SP Floor has grappled with issues related to implementation modalities and costs at the national level (ILO and WHO, 2009a;b). Examining a wide range of developing countries, it has been estimated that a SP Floor might cost an average of 2-4% of GDP, and that a Global SP Floor might cost between 2-6% of global GDP (Ortiz, Fajth, Yablonski, 2010). Various mechanisms for funding Global and National SP Floors are under consideration, and there is **scope for integrating a "risk adjusted SP Floor"** with the financing insurance of CCA and DRM efforts. Most countries have some SP programs already in place, and the question is often how to identify synergies and overlaps (and gaps) in the existing SP programs in order to achieve a more holistic system that is not just a safety net, but also a springboard for the poor and vulnerable (see World Bank, 2001). However, as highlighted in the SRM literature, **money spent on social protection that protects and strengthens human (and social) capital should not be considered a cost, per se, but as an investment.** That is the idea behind the World Bank's SP strategy "From Safety Net to Springboard", that many (but not all) expenditures on SP are actually productivity enhancing investments in assets and livelihoods (World Bank, 2001a). In the context of the "no-regrets approach" and climate change justice, and also considering the ongoing global 3-Fs crises, **investing in a risk-adjusted SP Floor, and increasing household and community resilience, should actually result in significant returns on investment.**

An important aspect of a globally guaranteed "risk-adjusted SP Floor" will be the (global) funding required for it to be national managed and locally implemented. Funding should be based on principles of climate change justice, including *common but differentiated responsibility*. There is a need for global funding mechanisms based on the climate change justice of *common but differentiated responsibility*. These issues are being explored, and more needs to be done (Milanovic, 2007; Holmquist, 2010; Brincat, 2010; Linnerooth-Bayer, 2010; Warner, 2009; 2010). Preliminary ideas include an airline tax, which would mainly hit better off people and would be an implicit carbon tax, given the relatively high carbon emissions of airline travel, there is already an experiment with this to finance health interventions that should be looked at. If there is little political will to engage in taxation, another option would be to begin with voluntary contributions like the voluntary carbon market in the US or the RED initiative where people pay a higher price for a product in turn for a contribution by the producer to a worthy cause.

VIII.4.b Practical Design and Implementation Issues

To get an idea of how a "risk-adjusted SP Floor" might be applied in practice, it is suggested to examine the countries in Latin America that have been implementing social floors for several years, under the name of "*social guarantees*" (Gacitau-Mario, Norton, Georgieva, 2009). The respective Governments guarantee (but do not directly provide) a standard package of "basic needs" services to all its citizens. The "basic needs" package for an individual country is adjusted based on a broad participatory debate and available fiscal resources. Where such a national guarantee does not exist, there might still be multiple SP programs that can demand a substantial

share of the national budget (e.g., subsidies of fuel and food account for to 10 % of GDP in some countries). Often such programs are poorly targeted (e.g. fuel subsidies) and/or leave major shares of the population uncovered. However, these types of programs are usually poorly coordinated and suffer from high transaction costs. So even where the nation-based social guarantees do not already exist, they could possibly be implemented, to some extent, by increasing coverage, lowering costs and improving transparency of existing SP programs. This point is highlighted in all the literature advocating a SP Floor – that most countries already have some SP programs already in place, and the question is how to identify synergies and overlaps (and gaps) in the existing SP programs to achieve a more holistic system.

For the "risk adjusted" part of the SP Floor, we would look to the experience with CCTs, index-based insurance, and other innovative finance and insurance instruments. For instance if one part of the social guarantee is a minimum guaranteed income, a payment to supplement the minimum could be triggered by an event such as extremely high or low rainfall for households in the region. Alternatively the conditions in the CCT could be for households to participate in an insurance program in addition to conditioning the cash transfer on resilience-building investments on human capital.

IX. Conclusions and Next Steps

In this paper it is argued that a risk adjustment to the proposed UN SP Floor, combining existing instruments from social protection, and finance and insurance could provide a socially just, human rights and economically efficient response to address hazards/risks directly and indirectly related to climate change. Admittedly, this proposal is really more relevant in the context of climate change adaptation, and it is critical not to abandon effects to achieve global agreements to reduce GHG emissions.

The "risk adjusted social floor" should be globally agreed, nationally designed and locally implemented. In the previous section we argue how to address some of the practical implementation issues by combining recent innovations in SP, finance and GPS and ICT. Many issues remain and there is need for careful gradual phased scaling up and need for substantial high class evaluation to continue to improve implementation and gradually build global political consensus on the way forward. In this forward looking session we briefly address each of these issues.

Concerns about human security in the context of climate change and other global "crises" (e.g., the on-going global 3-F's crisis) offer an opportunity to look for new approaches that can lead to a more sustainable future There are new approaches and paradigms to dealing with climate change, including an increased focus on building resilience of households and communities to multiple hazards, including those that are directly and indirectly related to climate. However, a major challenge to pursuing global approaches to climate change justice and human rights is the lack of global social and political structures (i.e., governance).

It is important that development agencies move toward a *no-regrets resilience-based approach to adaptive social protection* that is globally guaranteed, nationally managed, and locally administered (Siegel, 2010). The proposed "risk-adjusted SP Floor", guarantees basic needs of all persons living in the global community, and also helps them manage hazards/risks. A "risk-

adjusted SP Floor" is a potential option to help lower vulnerability and build resilience to the ever-changing hazards/risks faced by human beings in the global community.

The UN and its various agencies have a key role to play, but other key stakeholders, especially the World Bank, regional international development banks, multi-lateral and bilateral donors, and NGOs need to be major stakeholders if the concept of a "risk-adjusted SP Floor" is to become a reality. While the concept of a SP Floor is sometimes challenged by the potential high costs, actions to reduce vulnerability and increase household and community resilience should rather be considered as investments in human and social capital (and not costs, per se). That is, they are investments in human, social and environmental assets that increase growth potential. Moreover, there are possible cost savings associated with increased human security and a decreased need for expenditures to protect property and person against criminals and terrorists motivated by poverty and other deprivations.

To move from the current conceptual debate to practical implementation of the risk adjusted social floor would probably require a few national governments, possibly in a regional alliance to show how the program would work. Conceptually this could build on the ongoing debates in many countries on the SP-floor, enhanced with better linkages to national debates about CCA and DRM – which is not common at present. If a country supported by its development partners would adopt the basic principle that each citizen of the country has the right to basic social services and protection against different hazards/risks, this would open up a revision of all national programs in the areas of SP, CCA and DRM to ensure that they add up to a genuine "risk adjusted Social Floor". From the introduction of national social guarantees we know that the impetus was often dramatic political and social change (e.g. Chile and South Africa) and that that these new policies led to a redefinition of the national social contract. In that context, the current events (first quarter of 2011) in the Arab World might be a good time to consider these types of reforms. Judging from the experience in Latin America and Africa with social guarantees a broad national debate and consultation would be essential in constructing the national SP Floor in other countries, especially those with large percentages of non-citizen residents..

Wherever the first steps are taken, it will essential to build a global coalition to support the early movers with funding and knowledge sharing. Maybe the existing coalition for the UN SP floor could form a sub-group that would work with international civil society, the IFIs and national and regional universities to develop the knowledge base. Similarly the coalition could join forces with the "Leading Group" to develop global funding to supplement national efforts, e.g. through carbon taxes, airline taxes or voluntary social credits a la carbon credits. More research and debate is needed on this.

Whether or not the risk adjusted SP Floor would require a new international institution to help raise and coordinate funds and provide knowledge generation and exchange remains to be seen. Existing global models should be assessed such as the Global Environment Facility, the Carbon Investment Funds and the Global Fund for HIV AIDS, to see which model might be applicable. Further research and studies will be essential to identify optimal implementation modalities..

One reason for the success of CCT has been the thorough evaluations carried out. This has meant that the individual countries could learn the lessons of others and quickly adjust their own

measures for maximum impact. The evaluations have also further build political support for CCTs and meant their expansion to other areas. Similarly community-driven development has expanded across many countries and sectors based on evaluation results. It would be important for the global community to support early movers on the risk adjusted social floor with the monitoring and evaluation.

This paper has tried to argue that the answer to dealing with climate change in a socially just, rights-based and economically efficient way is to combine approaches from a number of disciplines and practices that are not traditionally associated with rights based and social justice approaches. The key next step will be to form a support group for the first country or group of countries that want to take this on. There is no need to wait, the instruments are available. What is needed is the political willpower and consensus and commitment that something must be done. The time is now (and running out???) to move to quickly make Bruntland Commission's vision for a Common Future and sustainable development a reality: *development that meets the [basic] needs of the present without compromising the ability of future generations to meet their own [basic] needs.*

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ANNEX 1: Concepts and Definitions = Risk-Vulnerability Chain

The risk-vulnerability chain conceptualizes the relationship between risks, risk management arrangements, and household vulnerability (see Figure 1).[50] This presentation follows Siegel and de la Fuente (2010).

Disaster Risk = Hazard x Vulnerability – Disaster Risk Management Capacity

The hazards, and the exposure and sensitivity of assets and livelihoods to them together, determine expected losses. Households use risk management strategies that are either ex-ante (prevention, reduction, compensatory arrangements) or ex-post (coping) actions. Risk, the probability of a loss of well-being, depends on the hazards, exposure and sensitivity, expected impacts and losses, and ex-ante and ex-post risk management strategies.

Hazard. Hazard is an event that can cause danger, damage, loss, injury, or any other undesirable consequences for a household (or an individual or a community). Hazards can also interact. Many disaster risks are the result of linked hazards and have inter-related impacts. Moreover, losses associated with natural hazards interact with other hazards stemming from, for example, markets or policy failures.

Vulnerability (Exposure and Sensitivity of Assets and Livelihoods). Households' risk exposure and sensitivity depend on their asset portfolio, asset allocation, and livelihood strategies (e.g., crop and livestock mix and varieties, diversification of farm and off-farm or non-farm activities). The risk exposure and sensitivity of households is based on their asset and livelihood decisions, which are shaped by the policy, institutional, and structural context outside their control..

Expected Losses. The expected losses from any hazard depend on the probability of a hazard event occurring and the exposure/sensitivity of assets/livelihoods. Expected losses denote the severity of potential negative impacts from risks before a hazard event is manifested and before any ex-ante or ex-post risk management.

Risk Management Strategies: (ex-ante and ex-post): Households and societies manage risks through multiple complementary strategies that can be taken independently by households and/or through planned societal actions.[51] These strategies all have real and opportunity costs and can be separated into *ex-ante (*before a hazard event occurs), and *ex-post* strategies (after a hazard event has occurred).[52] Risk management, if successful, results in increased *resilience*, the ability to avoid the negative impacts of hazard events and to recover from them.

[50] Different studies define risk and vulnerability and other key terms of the SRM risk-vulnerability chain differently For different definitions of vulnerability in the literature see Alwang, Siegel, and Jorgensen (2001) and Adger (2006).

[51] This is the difference between "autonomous adaptation" and "planned adaptation".

[52] The costs of risk management are often overlooked. Yet both ex-ante and ex-post risk management have real and opportunity costs, even as the risky event may not occur or, if it occurs, ex-ante actions may not have success. It is also often overlooked that even the best of ex-ante strategies need to be complemented with ex-post coping (insurance, for example, rarely compensates for the entire loss).

Ex-ante risk management strategies: Prevention or reduction: actions to reduce the probability of hazard events (e.g., cloud seeding to change rainfall patterns); Reduction of exposure and sensitivity reduction: actions to reduce household vulnerability to given hazards (e.g., asset and livelihood diversification); and arrangements for compensation if there is a future hazard-generated loss (e.g., formal insurance, holding of savings, and social networks), and planned coping.

Ex-post risk management strategies: Coping actions are taken to compensate for losses after realization of a hazard event. Coping costs are rarely shared equally within households but borne according to age, gender, and status (for example, poor households forced, withdraw boys or girls from school, or reduce food consumption of some members). In many cases, for poor and vulnerable households, ad-hoc coping (see below) results in the degradation of assets and reduction of livelihoods and well-being, and a downward spiral that might even be irreversible (or require a long time for recovery). *Ad-hoc (i.e., unplanned) coping* after a hazard event is realized and arrangements for compensation either do not exist or are insufficient to cover losses.

Risk is the expectation of losses of well-being should a hazard event occur. Well-being proxies such as poverty lines and health and nutritional status are often used as a benchmark to determine the severity of a loss relative to the overall well-being indicators. Thus, an individual or household is considered "at-risk", if the hazards can result in a loss that pushes the household below the well-being benchmark (say, the poverty line). In our definition, risk depends on the characteristics of the vulnerability (exposure and sensitivity) to the hazards; expected impacts and losses; and risk management capacity.

Resilience is the ability to resist the potential negative impacts of risky events and the extent to which households can recover from negative impacts of risky events.

Figure 1: The Risk-Vulnerability Chain

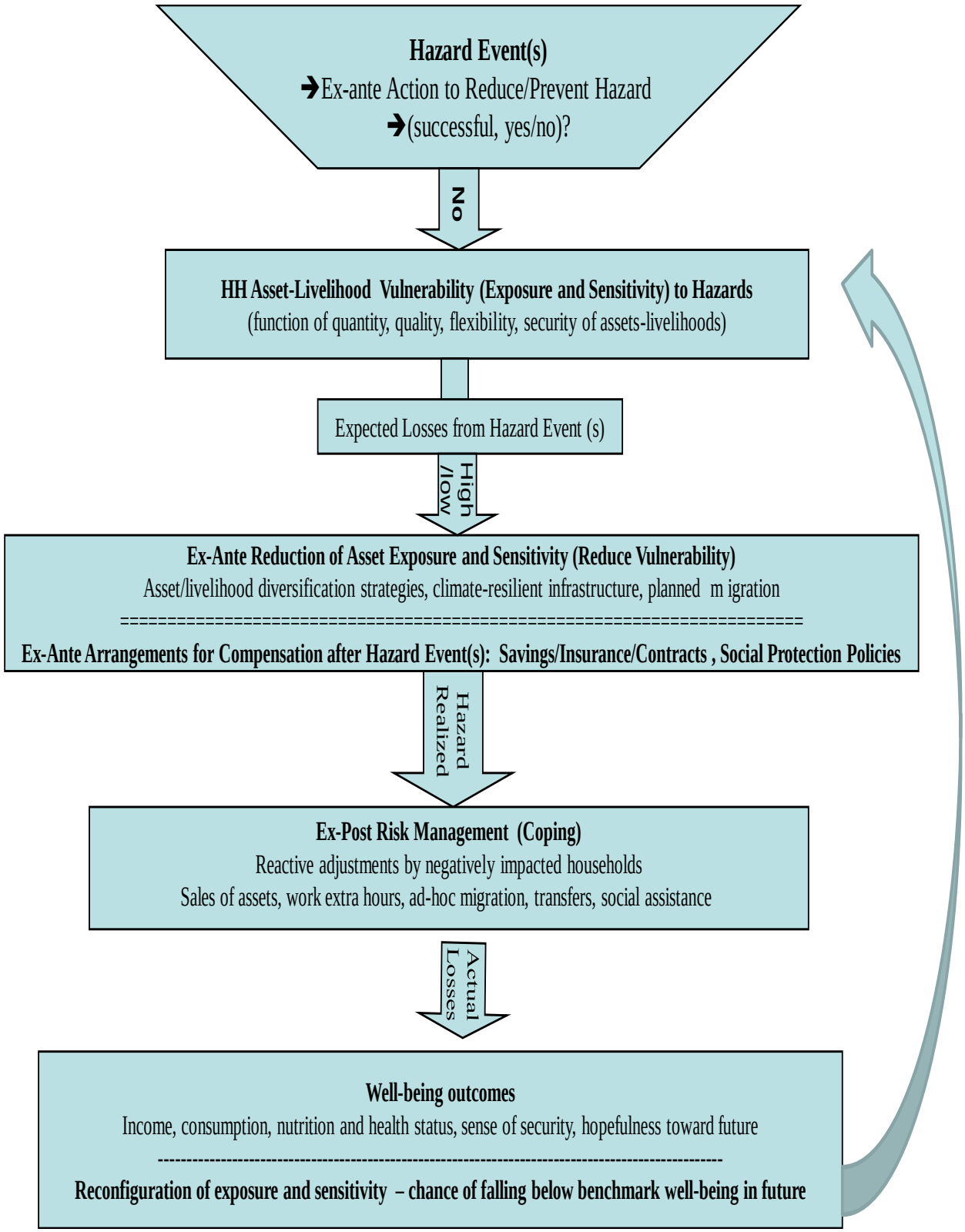
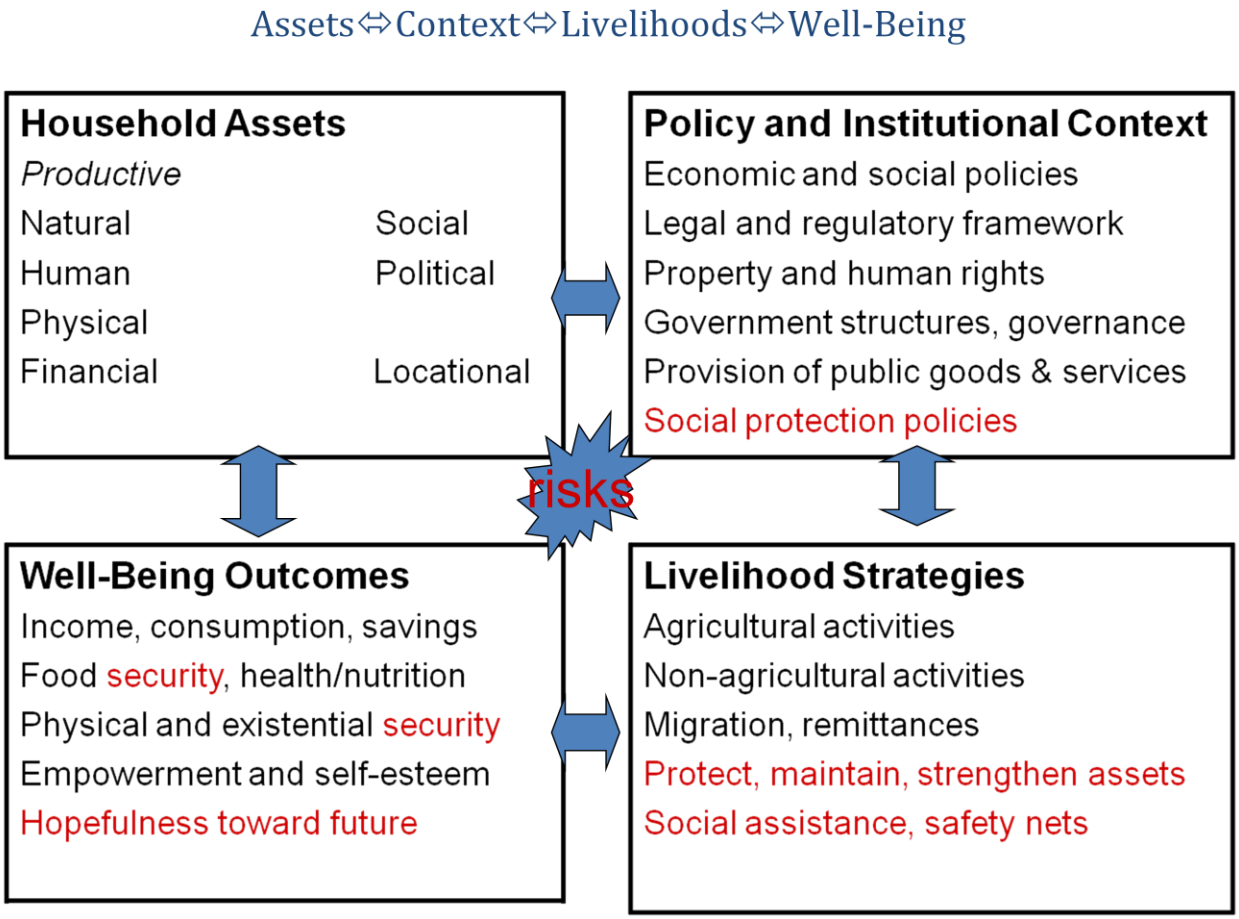


Figure 2: Asset-Based Approach



Annex 2: Similarities and differences between *Disaster Risk Management (*DRM), *Climate Change Adaptation (*CCA), and *Social Protection (*SP):

***Disaster Risk Management (DRM)*:** focus on natural hazards (hydro-meteorological, and geo-physical) and extreme events, and emergency responses. Hazard forecasts for future based on past, try to lower vulnerability ("reduce the risks") in short-term to medium-term.

Climate Change Adaptation (CCA): focus on natural hazards and direct/indirect impacts of climate-related factors (extreme weather events and changes in climate variability). Hazard forecasts for future based on past, present, future and try to lower short-term and longer-term vulnerability. Adjustments over time (i.e., adaptation) as climate change takes place (or is expected to take place), with proactive actions.

Social Protection (SP): focus on provision/guarantee of "basic needs" through asset and livelihood enhancement and risk management for multiple-hazards (e.g., environmental, socio-economic, cultural) using mixed quantitative/qualitative methods. Includes public and private sector interventions to strengthen and protect assets and livelihoods of individuals and households and improve access to basic needs, and help manage hazards from economic, social, natural sources. Special focus on "vulnerable groups" (poor, elderly, sick, disabled, unemployed, children, socially excluded). Objective to proactively reduce vulnerability and increase resilience via assets/livelihoods.

Annex 3: New Direction in Finance and Insurance at the World Bank

Through lending operations and advisory services, the World Bank Group is supporting several innovative financing and insurance products and services (World Bank, 2010) that are useful for managing climate-related risks. These innovative finance and insurance products and services draw upon international risk pooling and transfer mechanisms that could be applicable to the proposed "risk-adjusted SP Floor"

Contingent Financing. Development Policy Loan (DPL) with Catastrophe Deferred Drawdown Option (CAT DDO) to provide immediate liquidity up to USD500 million or 0.25% of GDP (whichever is less) to IBRD-member countries in the event of a natural disaster.

Sovereign Catastrophe Insurance Pools. Advisory services to help countries establish regional vehicles
to pool risks and access international catastrophe reinsurance markets on competitive terms. The Caribbean Catastrophe Risk Insurance Facility (CCRIF), for example, offers parametric insurance
against major hurricanes and earthquakes in 16 Caribbean countries. A similar initiative for the Pacific Island countries is in preparation.

Catastrophe Bonds. Cat bonds to transfer risk to investors by allowing the issuer to not repay the
bond principal if a major natural disaster occurs. The World Bank Group has developed a platform
for a multi-country, multi-peril cat bond that transfers diversified risk to private investors.

Weather Derivatives. Intermediation services to help protect countries against the risk of adverse weather events. The first such initiative, designed to help Malawi protect itself against the risk of severe
drought, is an option on a rainfall index linking rainfall with national maize production.

Catastrophe Insurance Pools. Advisory services to help countries establish national catastrophe insurance pools such as the Turkish Catastrophe Insurance Pool, which offers efficiently priced earthquake insurance to more than 2.5 million homeowners. A similar pool is planned in Romania.
The World Bank Group is also supporting the creation of a regional catastrophe reinsurance pool for South-East European countries.

Index-Based Agricultural Insurance. Index based insurance programs to protect private sector participants such as farmers and rural financial institutions against extreme weather. The National Agricultural Insurance Scheme (covering more than 20 million farmers) and the Weather-Based Crop Insurance Scheme (covering more than 600,000 farmers) in India protect against poor harvests caused by drought or frost. Similar initiatives are ongoing in Malawi, Thailand, and Central America.

Agricultural Insurance Pool. Advisory services to help countries establish agricultural insurance pools such as the index-based livestock insurance program in Mongolia (covering more than 600,000 animals and involving four private insurance companies).

Specialized Index-Based Insurance Facility. Advisory services supported the creation of the Global Index Insurance Facility, a multi-donor trust fund that promotes index-based insurance in developing countries.