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Working Paper

Maximizing co-benefits: Exploring opportunities to strengthen equality and poverty reduction through adaptation to climate change

Working Paper, No. 75

Provided in Cooperation with:

International Policy Centre for Inclusive Growth (IPC-IG)

Suggested Citation: Perch, Leisa (2010) : Maximizing co-benefits: Exploring opportunities to strengthen equality and poverty reduction through adaptation to climate change, Working Paper, No. 75, International Policy Centre for Inclusive Growth (IPC-IG), Brasilia

This Version is available at:

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MAXIMIZING CO-BENEFITS:

EXPLORING OPPORTUNITIES TO STRENGTHEN EQUALITY AND POVERTY REDUCTION THROUGH ADAPTATION TO CLIMATE CHANGE

Working Paper number 75 December, 2010

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International Policy Centre for Inclusive Growth

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The International Policy Centre for Inclusive Growth is jointly supported by the Poverty Practice, Bureau for Development Policy, UNDP and the Government of Brazil.

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Print ISSN: 1812-108X

MAXIMIZING CO-BENEFITS: EXPLORING OPPORTUNITIES TO STRENGTHEN EQUALITY AND POVERTY REDUCTION THROUGH ADAPTATION TO CLIMATE CHANGE

Leisa Perch*

with contributions from Stephanie Gimenez Stahlberg and Carlos Potiara

Development rooted in shared responsibility, mutual accountability and, most of all, concrete results that pull communities and countries from poverty to prosperity.¹

Meeting the global commitment to limit global warming to no more than two degrees Celsius above preindustrial levels will require collective, complementary and simultaneous action by nation states and multinational entities. This crisis, however, is additional to existing development challenges and is symptomatic of a fractured development model that has tended to emphasise the quantitative over the qualitative. The climate crisis comes amid a global economic crisis and the reverberating impacts of the preceding fuel and food crises.

Multiple crises have arisen from the successive and collective failures to connect the economic, social and environmental dimensions of development appropriately, and to address systemic vulnerabilities arising from income inequality and volatility, lack of opportunities, unequal distribution of and access to resources, and a high dependence by the poor and vulnerable on climate-sensitive sectors such as agriculture. Thus the climate “crisis” presents a unique opportunity and added urgency to achieving the ideals expressed in Agenda 21 and the Millennium Development Goals (MDGs) relating to sustainable and equitable development.

Analysis of the implicit and explicit challenges in addressing the multidimensionality of development finds much potential in the “co-benefits approach”² to advancing efforts to mainstream climate change into development. This has been found to facilitate innovative approaches and to foster a focus on sustainable and progressively equitable development, suggesting that equality, growth and sustainability can be compatible. In this regard, issues of the “how” become as important as the “what” in development. At its core, the debate centres on issues of governance, manifested in both the context of social exclusion as well as the hierarchies between ideologies of thought and between sectors.

* International Policy Centre for Inclusive Growth. Leisa Perch is the lead author of this paper. Stephanie Gimenez Stahlberg (intern) provided significant research support and Carlos Potiara contributed in selected areas; they both contributed writing inputs to early drafts of the paper. We thank Radhika Lal, Rathin Roy, Danuta Chmielewska and Clóvis Zapata in IPC-IG for comments and suggestions made in the drafting and revision process. We are also grateful to Reynold Murray (UNDP Barbados and the OECS), Gabriel Labbate (UNEP/PEI-LAC), Nilufar Ahmad (World Bank), Usman Iftikhar, (UNDP/BDP/Poverty Group) and Vijay Naidu (University of the South Pacific) for their critical review, insightful comments and suggestions which helped to strengthen the presentation of the findings and other considerations, particularly in its final revision. A more narrowly focused version of this paper was presented (in Spanish) at the CLACSO-CROP -CIPS-FANJNH Seminar on Poverty, Environment and Climate Change (<http://www.crop.org/viewfile.aspx?id=168>) held in Havana, Cuba between November 9th and 11th, 2010; comments received there also informed the finalization of this paper.

The implications extend beyond a response to climate change but go to the heart of development as a whole. The underlying ideal of the Millennium Declaration (UN, 2000) is that growth should be balanced and influenced by poverty reduction, equality and environmentally sustainable imperatives. How countries fuel growth (and not just in structural and mechanical terms) determines who will have access to resources, how they will be used in a macro sense, and the sustainability of such actions. This paper is largely exploratory, seeking to identify options and structures rather than define solutions, and it focuses largely on adaptation in the context of national climate-change strategies.

1 THE CO-BENEFITS APPROACH AND RESPONDING TO CLIMATE CHANGE

Traditionally, development has often been framed within narrow economic considerations, mainly the increase in per capita GDP, underpinned by theories of the market as an agent of freedom or balance. “Markets”, however, have not been proven to act in some of the ways originally purported by Smith and Ricardo; rather, they have been shown to be socially suboptimal or unconcerned with inequality or inequity (Sen, 1993). Zaman (2008: 7) goes further, suggesting that poverty and inequality are manifestations of “inefficient equilibrium”.³

Climate change is a manifestation of such imbalance, further distorting the distribution of assets and resources, particularly for the poorest of the poor. Given the persistence of neoclassical constructs of development, however, it can be argued that without determined action and new thinking, the climate-change response will be largely mitigative and market-driven, reinforcing the traditional hierarchical relationships between the variables of economy, society and the environment, and thus having little impact on poverty and inequality, including gender inequality. In this paper, we consider poverty, inequality and climate change as such distortions and facets of inefficient equilibrium, and thus as products of the growth process and not mere incidental factors of development. We join others in challenging the widely held notion of externalities,⁴ which has directed policy responses that focus largely on situational and practical needs rather than on addressing underlying and fundamental inequalities that limit the capacity of the poor.

The human development concept and index developed by United Nations Development Programme (UNDP) under the intellectual leadership of UI Haq et al. (1990) have ably demonstrated the benefits of an expanded approach to development, including the need to focus on inequalities such as gender and a conceptual shift, wherein growth becomes a means for development rather than an end in itself. As the new language of development is increasingly framed within concepts of “the green economy”, “low-carbon development” and “climate-resilient development”, the process of achieving and measuring growth will undergo further structural change and more attention will be paid to resilience as a requirement for and outcome of development. The experience of Hurricane Katrina in the United States is perhaps one of the most telling in recent times regarding the complexity of achieving such a balance. The hurricane struck in a period of immense financial wealth and technological power in the United States but New Orleans, which bore the brunt of the impact, is still recovering five years later (Ospina, 2010).

Still, the concept of sustainability (linking the economic, social and environmental dimensions) has been the normative paradigm for development for the past three decades and more, from the Stockholm Conference on the Human Environment in 1972 to the Johannesburg World Summit on Sustainable Development in 2002. The concept of “resilient development” is newer. It engages differently with the issue of growth because it directly challenges the fossil-fuel driven development model that has been the source of economic growth, development and geopolitical power for many decades. It is linked to a growing discourse around “low-carbon development”. Though there is little research combining these various elements of the development stream, a deeper discussion in which vulnerability figures more prominently in the development discourse is implied. Thus it suggests that we move beyond the “presence” of inequality and address the dimensions of scale (significance) and capacity to withstand and overcome (in addition to survival and coping mechanisms).

Gilbert (2010) notes a growing debate about the linkages between conservation and poverty reduction, and emphasises that while most of the existing studies demonstrate an overlap between poverty and the environment, evidence of linkages remains inconclusive. There is therefore some merit in suggestions, as in Cascio (2009), that “sustainability” does not fully capture the breadth of the challenge facing us. In many ways sustainable development has become a catch-all phrase defined largely by the management and conservation of environmental resources, though that was not the original intention as it was described at the United Nations Conference on Environment and Development (UNCED) in 1992. It has tended to evoke a mental image of balance—that is, change within limits, as epitomised in *Silent Spring* by Rachel Carson (1962) and *Limits to Growth* by Donella Meadows (1972). Too often, however, its social dimensions have been forgotten or under-prioritised. As regards sustainable development efforts over the past 20 years, moreover, it has been observed that “often sustainable development ends up being development as usual, with a brief embarrassed genuflection (in other words paying lip-service) towards the desirability of sustainability” (IUCN, 2006: 4).

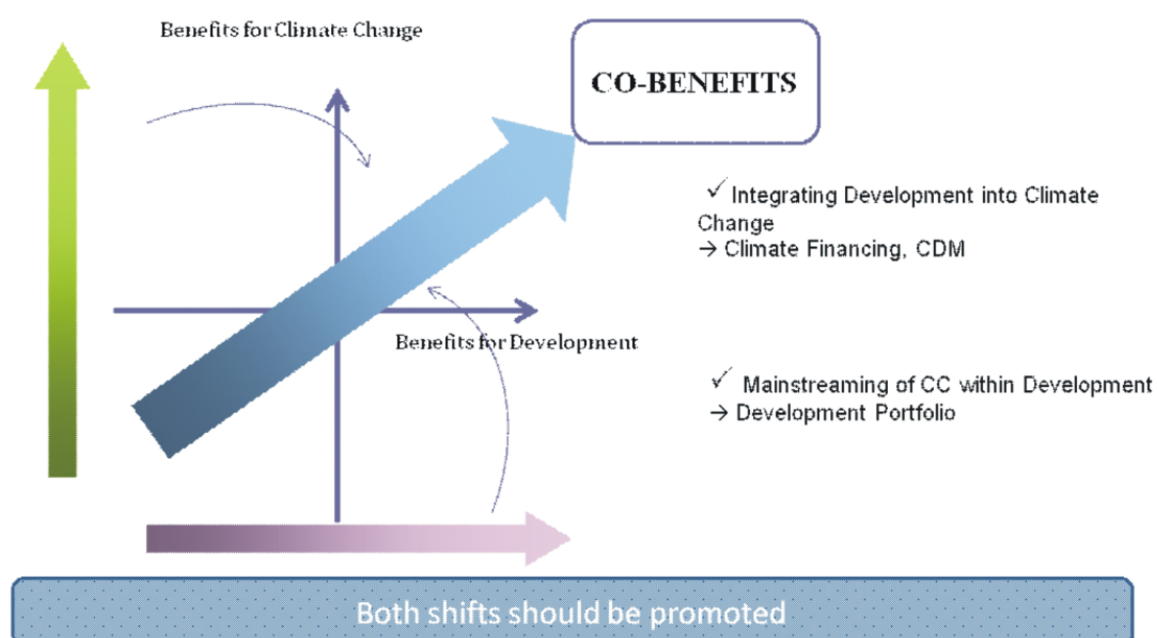
Limiting the level of climate change requires urgent action but there are also broader considerations, including significant uncertainty about the boundaries between a narrow escape and catastrophe, as well as the impact of other spill-on effects on a system already out of balance. Cascio (2009) notes that “resilience, conversely [as opposed to sustainability] accepts that change is inevitable and in many cases out of our hands, focusing instead on the need to be able to withstand the unexpected”. He speaks of resilience as the ability to thrive; an attitude of progress and advance despite risk, variability and uncertainty; one in which regeneration and diversity, as well as evolution from and by the crises encountered, are required in order to avoid collapse. Herein, resilience seems to be posited as a natural progression in the development path, particularly in the face of challenges that cannot be prevented (such as natural hazards) and those for which management is the only recourse (such as climate change). This concept of resilience is a critically needed addition to the development discourse and it helps determine the thinking in this paper. But are resilience and development compatible in reality? Can interventions enable both resilience and development at the same time?

The idea that interventions should achieve multiple benefits (or co-benefits) is not new; it is embedded in the international discourse dating back to the early 1970s, in Agenda 21 (1992), the Millennium Declaration (2000) and the Bali Action Plan on Climate Change (2007). The co-benefits terminology, however, has been used increasingly in the climate-change literature in recent years, though with some differences in nuance and approach.⁵ Klein et al. (2007) refer “to a small but growing literature on the potential of co-benefits (Cohen et al., 1998; Markandya and Halsnaes, 2000; Munasinghe and Swart, 2000; Schneider et al., 2000; Banuri et al., 2001; Robinson and Herbert, 2001; Smit et al., 2001; Beg et al., 2002; Metz et al., 2002; Najam et al., 2003; Swart et al., 2003; Wilbanks, 2003) ... including the potential contribution to sustainable development in a jurisdiction (Van Asselt et al., 2005)”. Some see potential for reconciling tensions around the future architecture of the climate-change regime (Zusman, 2008) by helping to build bridges and providing a balanced focus between current development priorities and the need to address the longer-term climate-change agenda. Such an approach challenges the assumption that responding to climate change is mainly a question of building new types of infrastructure and adapting to a new environmental reality (autonomous adaptation);⁶ it suggests instead that climate change could be a building block for poverty reduction and vice versa.

FIGURE 1

World Bank Framework for Co-Benefits

Capturing co-benefits:
different Paths but same Goal...



Source: Nishimae (2010).

Co-benefits underpin the UNDP approach to human development, including its partnership with the United Nations Environment Programme (UNEP) on the Poverty Environment Initiative (PEI) and the call for a “Global Green New Deal” promoted by UNEP and others.⁷ Even so, there are variations and differing definitions and the UNDP’s is one of the

broadest. Co-benefits are also reflected in the work of the World Bank, which is responsible for implementing a significant portion of climate-finance activities. Figure 1 reflects a concept of equal benefits for climate change and development. This is one of the few approaches in model form. By valuing the development benefits of apparently costly climate-change mitigation policies, the approach can help provide a more balanced assessment of costs and benefits.⁸

Within the private sector, too, more attention has been paid to business/development co-benefits as part of a broader engagement by the sector in development. Corporate social responsibility (CSR) has been important in this regard. Flagship programmes such as Blue Flag for beaches and Green Globe for hotels are efforts to strengthen the co-existence of tourism as an engine of growth and a clean environment. The Body Shop model of community trade and various other sustainability and fair-trade certification programmes are also efforts to link financial profit with social sustainability and in some cases environmental co-benefits. In this respect the movement towards greater private-sector engagement in development through corporate social responsibility has been important. Linking agriculture with tourism (agro-tourism) has been very effective in some islands in the Caribbean and has had several benefits, such as improving the livelihoods of small farmers and enriching the tourist experience (Oxfam GB, 2009).

Overall, the approach has been potentially positive in several ways. By stressing the integration between different policy objectives (coherence), it can facilitate and promote coordination between government agencies (convergence) that might otherwise result in conflicting priorities and operational mandates (Kok, 2006, cited in Zusman, 2008). The efforts of the UNDP in Bangladesh, for example, respond to these objectives (see Box 1, UNDP 2010a). Further, a co-benefits approach to coping with social and environmental issues challenges the assumption that responding to climate change is mainly a question of building new types of infrastructure and adapting to new environmental circumstances (autonomous adaptation).

BOX 1

UNDP Supporting the Government and People in Bangladesh Fighting Environmental Degradation to Reduce Poverty

UNDP is supporting the people and government of Bangladesh to strike the right development balance that conserves biodiversity through positive change in people's lives. Through strategies like livelihood diversification in St. Martin's, the government and UNDP support people as they make a change to environmentally friendly farming and agricultural practices that better utilize natural resources for long term preservation. Just as important, environmentally sustainable strategies, which preserve and protect biodiversity, also can act as a critical anti-poverty tool.

Source: UNDP Website (2010).

Notable country-led or regional examples include the government of Japan's Cool Earth Initiative (Government of Japan, 2008) and the guidance tool for quantitatively assessing co-benefits (INSAM, 2009), efforts to address solid waste management in Asia (Yedla and Park, 2009) and Asia's Clean Air Initiative. So far, much of the forward movement on the concept as a policy strategy seems to have taken place in Asia.

Equally important to the discourse on co-benefits is the potential impact of a single policy shift on many issues. India's Mission Convergence⁹ is a national example of such efforts.

At a more global level, research by Klasen and Lamanna (2008) demonstrates effectively the cumulative benefits of promoting female education at the individual, household and community levels, with benefits at the macro level and on growth in several countries. Nussbaum (2010) deals with related issues in the United States, suggesting that normative frameworks for public investment in education should look beyond considerations of national economic gain and profitable jobs.

Linking one dimension of development to another, however, will not automatically make an intervention more sustainable or create co-benefits. Nor are all development activities poverty-reducing and engendered. The relative (as compared to absolute) nature of both poverty and inequality cannot be ignored. The “mainstreaming of climate change in development”¹⁰ (the integration of climate change in all aspects of development at the national level) must also make the needs of marginalised groups central, particularly those who eke out an existence from endangered resources. At the level of policy, other experiences provide cautionary lessons. For example, in some cases trade liberalisation has eroded the ability of some citizens in many countries to feed themselves—for example, Mexico, Bangladesh, Indonesia and Mali (Williams, 2010). As a result, while economic growth imperatives might have been met, and while jobs might have been created and income generated for some, poverty and food insecurity probably worsened for others.

Hence an expansion of the discourse beyond superficial acknowledgements of the social dimensions of climate change, towards considerations of vulnerability and risk at all levels of the development process, including macro, meso and micro-level policy, is also implied. In this context “integration” will have to go beyond an acknowledgement of climate change in poverty reduction strategy papers (PRSPs) by identifying how the response to climate change could be a building block for poverty reduction or how poverty-reduction interventions could be building blocks for adaptation and mitigation to climate change. As an example, while the hotel owner and the jet-ski operator (who provides a service to hotel guests) are both economically vulnerable to climate change, the insurance, profits and financial capital available to the hotel owner are likely to limit his sensitivity to impacts from climate variability and susceptibility to significant and periodic losses. Thus, not all vulnerabilities are equal.

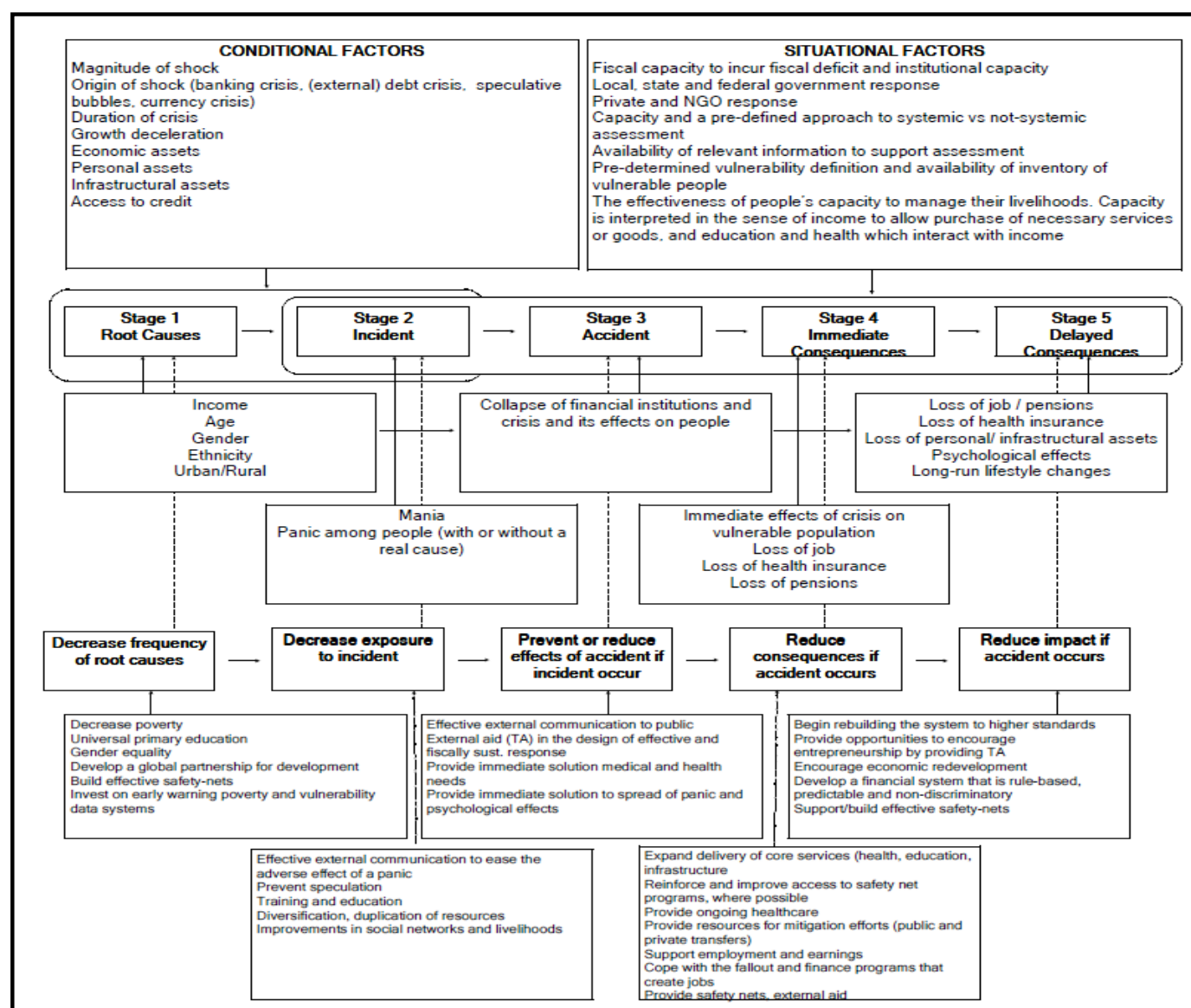
Taking into consideration the lessons of environmental policy integration in the last decade and more (Mickwitz et al., 2010), is even mainstreaming enough? Many of the existing global climate policy framework documents—the United Framework Convention on Climate Change (UNFCCC), the Fourth Assessment Report (FAR) of the Intergovernmental Panel on Climate Change (IPCC)¹¹—seem to go little further than recognising the significance of these dimensions (Perch, forthcoming), even though “the sociological literature on global environmental change emphasises the processes by which the problem of global warming is socially constructed” (McCright and Dunlap, 2000: 499).

O’Brien and Wolf (2010: 233) note that

“a values-based approach to vulnerability and adaptation recognises that economic assessments of impacts and responses, as exemplified in the Stern Review, cannot capture the full significance of climate change. The experiential and cultural dimensions of climate change, largely ignored in assessments by the IPCC, examine the meaning and relevance of climate change for individuals and groups. Vulnerability is not simply about the negative material outcomes associated to climate change ... Consequently, what is considered legitimate and successful adaptation depends on what people perceive to be worth preserving and achieving, including their culture and identity”.

Moreover, without careful consideration of the multidimensionality of development, climate mitigation and adaptation interventions could aggravate other environmental concerns. Hodas (2005) warns of the potential for greenhouse-gas “offsetting projects” and emissions-trading regimes to promote monoculture reforestation. In the context of Reducing Emissions from Deforestation and Forest Degradation (REDD), a number of concerns have been raised about the real engagement of those most dependent on forest resources (see, for example, Brown et al., 2008). “Initially, it was often assumed that by successfully reducing emissions from deforestation and forest degradation, biodiversity and other ecosystem services would benefit automatically. However, the more the scope of the mechanism was widened, the more it became obvious that REDD+ would not necessarily generate additional benefits” (Pistorius et al., 2010: ii).

FIGURE 2

Social Responsibility Risk Reduction Model by Sebnem Sener, 2009

Source: Munich Re Foundation and United Nations University.

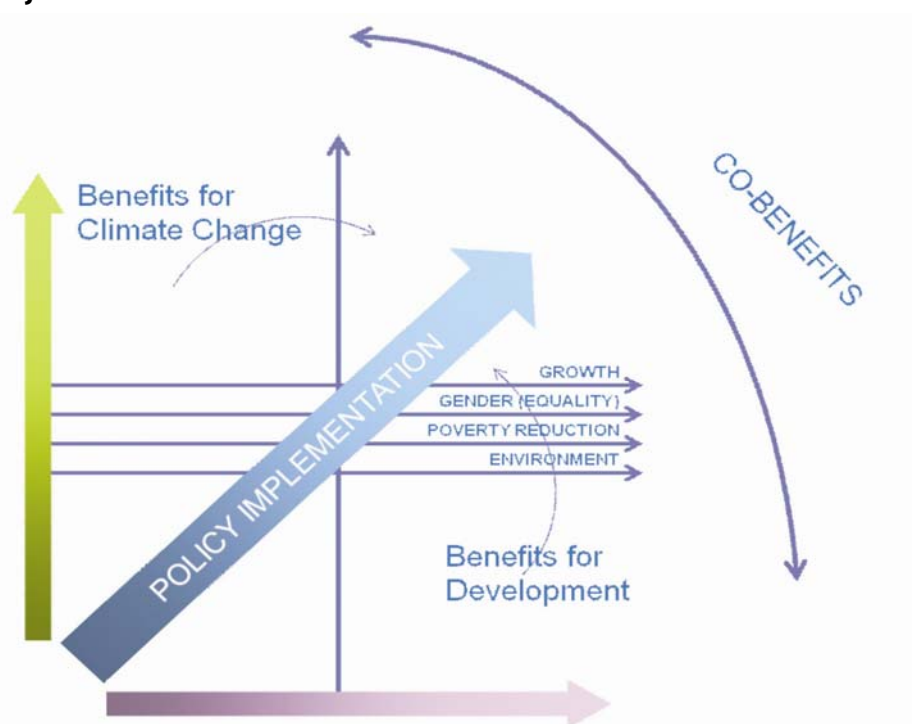
Why are these specificities so important? The model proposed by Sener (see Figure 2) demonstrates the immediate and delayed consequences of disaster risk. It also captures a number of the complex issues that frame social vulnerability. From this it is inferred that moving towards resilience will require a “process” shift, from responsive (event-related response) to proactive and anticipatory frameworks of response (risk management and risk reduction models), involving a more systematic approach to reducing vulnerability in all of its forms. Thus a higher priority would have to be accorded to the conditional and situational factors that shape sensitivity, susceptibility and vulnerability to events, whether one-time, periodic or part of a more systematic change.

This extends the IPCC’s (2007b) definition of adaption, which refers to three components: exposure, sensitivity and adaptive capacity. Results from the Kyoto Mechanisms Information Platform also highlight the importance of a process with clear objectives, awareness and capacity building, linked to interventions and actions.

Moving forward thus requires rethinking the current two-dimensional focus (climate change-development-climate change) on co-benefits. Accordingly, the proposed adjusted framework focuses on optimising co-benefits in a multidimensional context (growth, gender, poverty and environment, or GGPE) and stresses harmonised and convergent policies to achieve multiple outcomes. In so doing, “development” is defined in such a way as to ensure that that pro-poor, engendered and equality-driven elements are disaggregated (the earlier model seemed to bundle them together and these cannot be easily substituted for each other) and that “beneficial to climate change” is not seen as being automatically “beneficial to the environment”.

FIGURE 3

Adjusted Co-Benefits Framework Based on GGPE Considerations



Source: Prepared by the author on the basis of World Bank framework (see Figure 1 of this paper).

Achieving such a balance is not necessarily a linear process. Recent reviews of progress on achieving the MDGs emphasise the successes of multidimensional approaches in health by means of the links forged between human and environmental health factors (poverty, gender inequality, maternal and child health with access to water and sanitation services), as well as the benefits of sequenced and holistic approaches to education (UNDP, 2010b). In an effort to reflect these considerations, Figure 3 illustrates the ideal co-benefits scenario, wherein positive impacts are derived across all four dimensions of GGPE.

As an example, the recycling of plastics and glass is considered. It is a potential source of new growth because it could create markets for new goods and services, stimulating new business and jobs. It will also have positive environmental effects by reducing the volume of solid waste to be landfilled or burned, and could reduce littering. At too small a scale, however, recycling could also do little for growth while contributing positively to the environment. Additionally, unless well-defined, such an initiative could miss opportunities to generate new sources of income at the household level (through economic incentives for the collection of recyclable materials), leave the poor and vulnerable still without improved access to waste disposal and sanitation services, and fail to promote new micro-business opportunities for the poor and for female heads of poor households as collectors, sorters, bundlers and distributors of recyclable materials. The need for funds could also mean that the poor collect and store large amounts of unclean refuse and containers, exposing themselves to a number of environmental health hazards through infestation by rodents and other vectors. Conversely, tackling all of these issues, holistically or sequentially, potentially brings positives in all dimensions of GGPE.

Herein we differentiate between interventions that can produce marginal shifts and positive changes in one dimension (such as capacity building through workshop participation) and those that create a more fundamental change across dimensions (capacity building through a workshop that leads to a new job or better income, leading to children being able to take advantage of educational opportunities). Optimal co-benefits would be achieved through interventions that will have a positive impact in all four dimensions of the GGPE framework. For example, it is conceivable to have a project focused on a new growth sector that is founded on environmental sustainability (recycling), that involves the poor as collectors of material and as workers, but that targets women in the household as consumers. While it may not automatically address all aspects of gender equality, it recognises the role of women in the household and can help them significantly reduce their time use and potentially their expenditures on certain goods and services, making their time and resources available for other activities. In other words, co-benefits are progressively built over time and through strategic inputs, not dissimilar to a health pyramid or a wealth pyramid approach, both of which are defined by a “building blocks” approach rather than a straight path to the desired outcome.

Optimal co-benefits are thus more likely when equal attention is given to how we do development as to what we do for development, and when we consider scale as well as scope. By giving equal priority to the conditional and situational factors which shape exposure, sensitivity, susceptibility and ultimately vulnerability, policy and interventions can better respond to the immediate situation as well as the longer term, as compared to emergency responses which tend to target all who are affected regardless of level of impact, economic

status or capacity to bounce back with or without assistance. Each “poor” person is not without influence or power (poor men have economic more power in the household than poor women for example) or without assets; nor is every woman poor and disempowered. The next section investigates how concepts of sustainability and multidimensionality have fared in the context of national, global and institutional policy frameworks and some lessons which can assist to better frame efforts to achieve co-benefits.

2 ADDRESSING MULTIDIMENSIONALITY IN A STATE OF FLUX: COMPLEXITY OR OPPORTUNITY?

There is little doubt that the unequal distribution of impacts, unequal responsibility for climate change, unequal costs for mitigation and adaptation (referred to as “triple inequality” by Roberts and Parks, cited in Sowers, 2007), unequal participation in the international economy (Ibid) and procedural inequities in national planning for adaptation (Adger, 2003) create a unique policy challenge in shaping a national climate-change response.

Limited success has been achieved so far, however, in developing and implementing multi-sectoral policies—that is, where the complementarities and interdependencies between sectors and factors define and shape the “what”, “how” and “who” of policy action. The lack of coordination and coherence in government is frequently cited as one of the main problems in the public sector (Peters, 2005). At the global level, this fragmentation or “siloeing” of policy has been manifest in the limited coordination among development agencies. The United Nations admits that the lack of coherence in its policy and operational activities has severely restricted its ability to help countries meet development objectives (UN, 2006). As a result, relatively few policies and programmes have effectively cohered across economic, social and environmental sectors. The UNDP’s MDG Synthesis Report suggests that, for many developing countries, the integration of long-term policy considerations such as the environment remains fairly new, Bhutan being one of the few to have fully embraced environmental issues in its development strategy (UNDP, 2010b: 42).

These critiques are given further weight by the findings of the report of the International Commission on Education for Sustainable Development Practice (ICESDP), which notes that “the lack of cross-disciplinary knowledge and skills within the field of sustainable development highlights the need for a new type of ‘generalist’ practitioner, one who understands the complex interactions among fields and is able to coordinate and implement effectively among the insights offered by subject-specific specialists” (Earth Institute, 2008: 3). Interviews conducted by the author with sources at the national and global levels, including the World Bank, the World Wildlife Fund, the UNDP and the Women’s Environment and Development Organization (WEDO), underscore the fact that the “how” remains the greatest challenging in moving forward on sustainable and co-benefits approaches.

It can be concluded, therefore, that addressing multidimensionality requires confronting fundamental questions of who is targeted, why they are targeted, and through what mechanisms: in other words, “for whom and of what”. The 2010 World Development Report notes that “understanding the drivers of human behaviour is essential for climate-smart development policy” (2009: 322).

2.1 GENDER AND DEVELOPMENT

With a more inclusive concept of growth,¹² understanding how gender affects development progress is critical. While the poor and vulnerable may be identified for specific attention in the context of disasters and climate change, socially and culturally-defined gender roles influence the shape of experiences and capacities to adapt to these challenges (UNDP, 2010c).

Women and girls in poorer societies face the greatest risks from climate change because they account for a larger share of the agricultural workforce, are usually responsible for fetching water, fodder and firewood, and have fewer income-earning opportunities (UNFPA, 2009a). Women have fewer assets than men to help them recover from natural disasters, and usually do not own land that can be sold to secure income in an emergency (WEDO et. al., 2008: 11). They also shoulder the burden of caring for other family members, which limits their mobility and potentially increases their vulnerability to sudden weather disasters, trapping them in a cycle of deprivation, poverty and inequality (UNFPA, 2009a: 4). As the stories from a rural community in Bolivia reveal (see Box 2), these impacts are far-reaching.

BOX 2

Climate Change and Women in Rural Bolivia

In the rural community of Botijlaca, near the Huyana Potosí and Chacaltaya mountains of Bolivia, women bear the brunt of climate change.

Glaciers provide those communities with water for drinking, cooking, and irrigating crops. But the glaciers are melting and disappearing. Chacaltaya, which used to be world's highest ski resort, has shrunk by 80 per cent of its original size in the last two decades.

Seventy year-old Felicia García says crops in the community are failing because of the lack of water. Like most families in the community, her entire income is from harvests, and now there is barely enough to feed them. The harvest is only half of what it used to be. The community is disappearing. The men, including Felicia's elderly husband, are forced to leave in search of jobs, leaving women like her alone to try to keep alive their farms, raise whatever livestock remains, and raise their families.

Felicia's neighbour, Inocencia, is raising seven children and working up to five hours a day in the field since her husband left to work in a mine. With their taps now almost completely dry, women are forced to find water wherever they can, no matter how difficult getting there may be, or how clean the water is. Leucadia Quispe says she spends hours hauling water in five-litre containers, one in each hand. The dwindling water supply also results in less fodder for her llamas and sheep, and some of her llamas have already starved to death.

With so many men gone, many girls have no option but to drop out of school to toil alongside their mothers.

Source: UNFPA (2009a).

It is critical that constructs of gender also consider the strategic concerns of power and vested interests. For many, gender is a visceral issue that challenges fundamental personal perceptions and beliefs; the personal is political (Hanisch, 1969). Addressing women's economic empowerment without addressing the underlying drivers of violence against women, for example, will be a failure to address the more subtle and hidden power dynamics

that exist within society and between men and women (UNDP 2010b). Sources interviewed for this paper have suggested that gender mainstreaming has not worked as a strategy because of deeply ingrained values, and that the role of women in climate change and development is still yet to be internalised by policymakers.

Critically too, inequality also affects growth. In a 14-country study, Klasen (2006) was able to demonstrate the positive impact that literacy, labour-force participation and access to resources by women have on pro-poor growth and, importantly, the rate of growth. Oxfam (2000) notes that “inequality is not just bad for social justice, it is also bad for economic efficiency”.

2.2 ECONOMIC GROWTH

The centrality of the imperative for economic growth has usually directed all political efforts at the national and international levels towards its attainment, often without much concern for social inequalities and all other distortions. Much of the recent literature (ECLAC, 2010; UNDP, 2009b, 2010b; World Bank, 2009; Klasen, 2006) has emphasised that inequality negatively affects growth, especially pro-poor growth.

Conventionally, governments have compensated for poverty and inequality through social policy and social-protection mechanisms, and for cyclical fluctuations such as the collapse of a sector (housing market, financial sector) through fiscal and financial stimulus. Specifically, national governments have traditionally dealt with inequality, access to basic services and redistribution through compensation in the form of cash and in-kind transfers with conditional and unconditional terms. Financially, significant resources are committed to social welfare and social protection. Brazil expects to spend R\$13.68 billion (US\$7.93 billion in current dollars) on its *Bolsa Família* programme (Government of Brazil, 2010), or about 7.88 per cent of the 2010 budget. This form of redistribution has many positives, but it can also be inefficient (because they can be duplicated across various institutions),¹³ more costly (because the cost of living and inflation affect the amounts that families need to survive), and somewhat inflexible (not always able to adapt to rapidly evolving risks or multiple risks, as noted by Perch and Roy, 2010). Thus, both the externalities and their related compensatory frameworks tend to be costly to development as whole.

Climate change is likely to add to these challenges and tensions, including the potential multiplication of the demand and need for compensatory mechanisms. It has been estimated that even minimum climate change could significantly affect economic growth in Africa; PACJA (2009) suggests an impact equivalent to 1.5–3 per cent of GDP by 2030. Micro-level analysis on the losses caused by the effects of climate change on key crops in African agriculture could be in the range of US\$16–36 billion (Kurukulasuriya and Mendelsohn, 2008). Moreover, growth and development will probably also be affected by the increased incidence of diseases such as malaria and dengue, and the impact on the young, the productive labour force and the elderly. These costs will be felt at the household, community, sectoral and macro (aggregate) levels, and are difficult to fully estimate and quantify. Since the development challenges are many and thus much demand is made on available resources, competition for finance and a narrowing of fiscal space seems likely. Davies et al. (2008) caution that “social protection initiatives are unlikely to succeed in reducing poverty if they do not consider both the short and long-term shocks and stresses associated with climate change”.

Critical for national growth are the actions of one nation towards another. This is true also for climate change, since development in the context of such change is dependent not only on individual actions but also on the collective action of all nations. According to OECD/IEA (2008): “Globally, CO₂ emissions will need to fall substantially to avoid the worst effects of climate change; if the world is to reduce emissions by 50 per cent from current levels by 2050, the total investment required to achieve this represents around \$1.1 trillion per year—an average of 1.1 per cent of global GDP each year from now until 2050”. No single country can achieve the shift required for structural change in development as a whole; clean energy and clean technology will require the commitment of all countries. Table 1 suggests that we are still some distance from the level of action required.

TABLE 1

Selected Country Pledges for Emissions Reductions and the Proposed Commitment Dates

Country	Pledges
Brazil	36-39% below projected levels by 2020
China	Reduce carbon intensity by 40-45% from 2005 by 2020
EU	20% emission cut by 2020 from 1990 levels and by 30% if other nations deepen their reductions
India	Reduce carbon intensity by 20-25% from 2005 by 2020
Japan	25% below 1990 levels by 2020
Russia	Unofficially by 20-25% by 2020. Economic collapse in the 1990s means it can increase emission by a third over 2005 levels and still meet that goal.
UK	34% cut in greenhouse gas emissions by 2020 from 1990 80% cut by 2050
US	Aim to cut emission by 17% by 2020, from 2005 levels – this is close to 4% below 1990 levels

Source: BBC, 2009

As a result, synergies between local and global co-benefits become vital (World Bank, 2009). The drivers for national action, however, are likely to be catalysed by different forces. Research by Bah (2008) shows that structural transformation in less developed countries (LDCs) seems more likely in times of economic decline and stagnation, suggesting that growth and innovation are not inextricably linked in LDCs and that the current economic crisis may provide scope for ambitious change approaches in those countries. A new report by the International Monetary Fund highlights the following critical pathways for key developing regions: “South Asia’s priority is to reduce fiscal deficits and control debt accumulation, while sub-Saharan Africa has to focus on improving infrastructure and job creation. The Middle East and North Africa need to open the door to a new generation of private entrepreneurs and to let women fully join economic life” (Rastello, 2010).

What could this mean for the structural transformation of the economy by replacing fossil fuels with renewable and “greener” energy sources? It adds to the underlying political economy of energy access and use. High dependence on fossil fuels for most countries is often at the expense of the environment (in other countries and locally through increased air pollution, particularly indoors). It also impacts on livelihoods since the high cost of importing fuels is often translated directly into consumer prices, particularly for food (Perch and Roy, 2010). This cycle of dependency and interdependency further constrains internal capacity of small island developing states (SIDS) and LDCs to innovate or to implement home-grown solutions, since growth is increasingly influenced by exogenous factors.

Still, making renewable energy affordable and accessible is, at heart, a policy decision with potential social, environmental and economic benefits. Energy poverty has undoubtedly constrained development in some countries (Germanwatch, 2010). The UNDP reports that more than 75 per cent of sub-Saharan Africa’s total population (and an estimated 90 per cent in rural areas) lacks access to electricity and that, in South Asia, more than 50 per cent of the rural population or more than 300 million people lack access to electricity (UNDP, 2010b: 42). Consumer interest and demand are important, but the availability and accessibility of energy and the technologies to make it cleaner are critical. Affordability, particularly for the poor, is also an important factor for reducing energy poverty; the government’s role in improving access and availability is obvious. Importantly, the availability of small-scale technologies, affordable and usable by the poor and those involved in economic activities at the small and micro-scale, will be key.

Climate change is likely to add to existing fiscal burdens and constraints as disasters and other shocks increase in frequency and intensity (ECA, 2009). In the absence of well-defined policy, competition for finance in LDCs could lead to tradeoffs (Huq et al., 2003) rather than co-benefits.

2.3 THE INTERSECTIONS OF POVERTY, GENDER AND ENVIRONMENT IN DEVELOPMENT

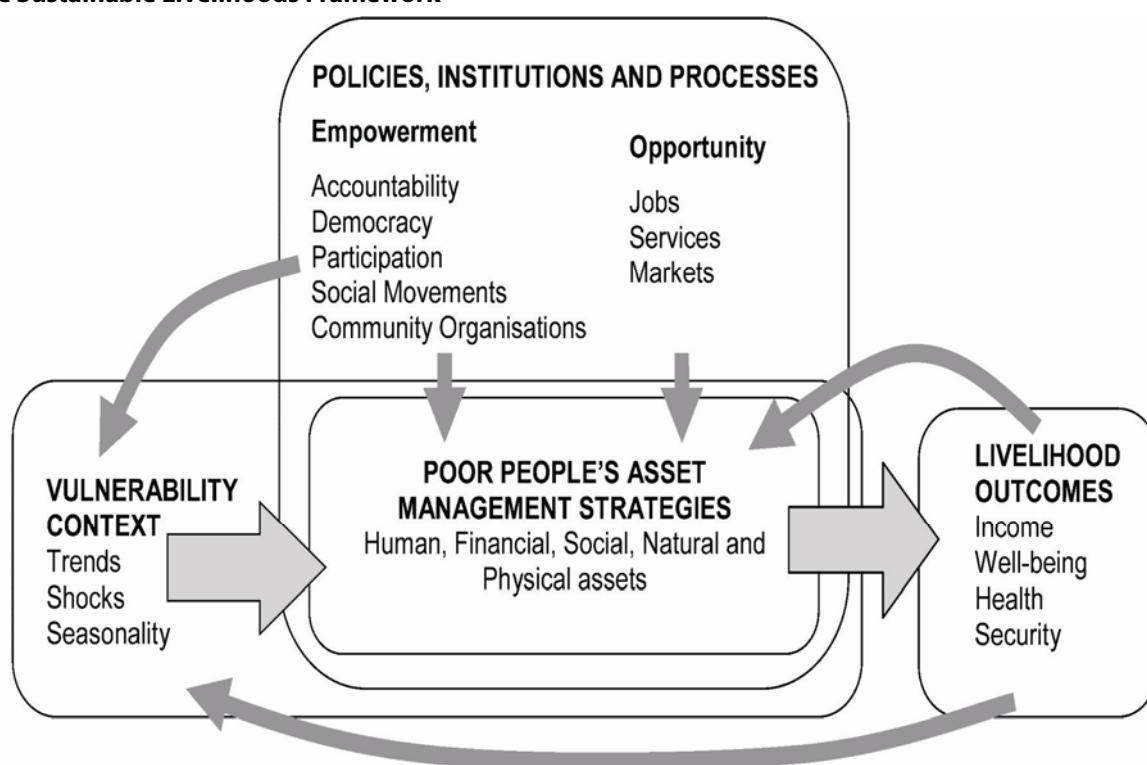
Conceptually and empirically, research has demonstrated that men and women use natural resources and technologies differently, that gender norms are still important for structuring participation in the labour force and facilitating access to assets with implications for contributions to economic growth, and that men and women experience inequality and exclusion in starkly diverse ways (World Bank, 2009). There is still, however, limited recognition that poverty often overlaps with areas of high vulnerability to climate variability and change (Germanwatch, 2010), as well as areas of environmental stress.

The agriculture sector illustrates the complexities and the opportunities. Many rural households, highly dependent on subsistence farming and often below the poverty line, lack title to their land. In the absence of legislative efforts, they will be excluded from carbon-credit schemes (White and Martin, 2002, cited in De Pinto et al., 2010: 20). Specifically, gendered access to tenure and land rights often means that women, more so than men, may not have the capability to take advantage of economic empowerment opportunities afforded by mitigation and carbon-credit schemes. Climate change is also likely to worsen crop failure, increase disease and the mortality of livestock, aggravate livelihood insecurity, and negatively affect health and education (IFAD, 2008). Such impacts will exacerbate the difficulties of making a living from subsistence agriculture, adding to existing vulnerabilities such as

socioeconomic, demographic and policy trends, which limit small farmers' capacity to adapt to change (Morton, 2007). Conversely, the agricultural practices recommended to sequester carbon have potentially important environmental co-benefits such as improved water quality..

There are also conceptual challenges in defining how we can create co-benefits for poverty reduction from environmental actions. What is good for the environment is not necessarily good for poverty and vice versa. Bill Adams, who studies conservation and poverty at the University of Cambridge, cautions that "conservation and poverty alleviation are not natural bedfellows, not least because development usually goes hand in hand with greater consumption of natural resources. They are not in principle incompatible, but most ways of doing poverty alleviation are not good for the environment" (quoted in Gilbert, 2010). This is a critical consideration in the context of how poverty/environment interactions in development are approached.

FIGURE 4

The Sustainable Livelihoods Framework

Source: Tincani, Murray and Perch (2007). Adapted/Re-drawn from Environmental Resource Management (2002); "Predicted Impact of Global Climate Change on Poverty and the Sustainable Achievement of the MDGs: Vol 2, DFID Review, p10

It is also important to recall that even poverty and gender inequality are not absolutes but are relative concepts, since they refer to the status of one group relative to another in a specific context. Not all rural people are poor, not all women are disempowered in the same ways, and not all environmental projects amount to sustainable development. Those who have access to resources, education and opportunities are certainly vulnerable to climate change, but in a different way; they are much less vulnerable than the poor because of their capacity to cope, and to identify or create other opportunities for themselves.

Linking vulnerability, adaptation and mitigation can theoretically move us forward; the Sustainable Livelihoods Framework outlined earlier highlights key considerations for doing so. To date, the delineation between adaptation and mitigation has perhaps been a false choice between people-centred and technologically-centred responses to climate change. Climate-change mitigation, in fact, presents a significant opportunity to address the shape of growth (through low-carbon strategies), the scope of growth (significance) in linking such change to new technologies and new jobs for creating and installing them, and the scale (development versus market-driven) in potentially targeting the poor in terms of access as well as in expanding opportunities for employment and income-generation. In the context of efficiency (managing scarce financial resources) and effectiveness (deriving sustainable benefits across society), addressing energy poverty seem a natural win-win.

Clearly, there must be institutional structures that can facilitate, enable and encourage such transformations in concept and application. But the limitations of existing frameworks of action, including those that are project-based (like National Adaptation Plans of Action or NAPAs), merit further analysis as regards the structural frames they place on response efforts and the flexibilities or inflexibilities they may imply.

3 STRUCTURAL ISSUES IN TACKLING MULTIDIMENSIONALITY IN POLICY

Even with a better understanding of the opportunities for co-benefits within the climate-change response, there is a need for institutional structures to permit the realisation of such co-benefits. In this context, we consider a broader concept based on Hobson's (2006) definition of institutions as "systems of established and prevalent social rules that structure social interactions. Language, money, law, systems of weights and measures, manners and firms (and other organisations) are thus all institutions" (quoted in Zaman, 2008b). Thus, we not only consider the policy discourse itself but also the mechanisms (plans of action, guidance, working groups, funding agencies and operational frameworks) which give its meanings and objectives shape and form.

To date, frameworks for climate change have largely been defined at the global level and implemented at the national level, it is so due to the nature of the problem itself which is globally defined and nationally generated. Still, emerging economies such as Brazil, India and China have shown their willingness and capacity to contribute to the framing of such frameworks through nationally-driven innovation frameworks. Brazil's leading position on biofuels, particularly ethanol and biodiesel, exemplify such efforts. Most countries, however, are highly dependent on the globally defined framework, particularly as a source of finance and normative guidance. This is particularly true for those most dependent on the global response to enable national efforts, such as LDCs and SIDS. Many climate-finance mechanisms are targeted at these countries (UNFCCC, 2008). The dependency of LDCs in particular on development assistance more broadly (Huq et al., 2003) makes their response more open to direct influence from the strengths and weaknesses of the current mix of bilateral, multilateral and multi-donor mechanisms; in 2005, LDCs received a quarter of all aid (Bernaldo de Quirós, 2007). Hence their efforts at transformation through adaptation or mitigation or both are significantly influenced by the maturity or immaturity of the global policy agenda.

For these countries, the policy response is defined within UNFCCC on the basis of negotiations by the Conference of the Parties and informed by the findings of the IPCC, other research, and the deliberations of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body on Implementation,¹⁴ as well as numerous experts and working groups. Agreements are further translated into financing mechanisms such as the Adaptation Fund and the Special Climate Change Fund. Moreover, a series of sub-frameworks, including the Nairobi Work Programme on Vulnerability (UNFCCC, 2010), the NAPAs and Nationally Appropriate Mitigation Actions (NAMAs) guide and/or define responses in the context of adaptation and mitigation. Adaptation efforts largely frame the context for mainstreaming climate change in development. The Nairobi Work Programme potentially has a key role in helping LDCs to understand vulnerability and adaptation, and to identify practical ways to take action “on a sound scientific, technical and socioeconomic basis” (UNFCCC, 2010).

A look at self-assessments by the World Bank and the Global Environment Facility (GEF), which implement a significant portion of available climate-finance activities, highlights some of the challenges in achieving co-benefits at the global and local levels. The Bank acknowledges some gaps in its efforts, notably the fragmented integration of climate benefits in its core development portfolio (World Bank, 2010). Improved coherence approaches have been identified by the Bank, namely (i) a primary focus on the link between the environment and climate change; (ii) ensuring that adaptation is included; and (iii) strengthening economic analysis (Nishimae, 2010); but these remain limited in terms of social considerations and analysis. At an institutional and policy level, European Union (EU) has also struggled in mainstreaming environmental considerations (Mickwitz et al., 2009). Even an institutional commitment to “gender mainstreaming”¹⁵ has not necessarily translated into greater operational effectiveness in the GEF. There is recognition internally that its record on mainstreaming gender can be improved (GEF, 2008).

Additionally, negotiated text within the UNFCCC is still largely vague on social considerations. While NAPA guidelines state that “particular attention should be given to including the voices of the poor (women and men) during stakeholder consultations” and “should promote consideration of broader social and environmental issues”, our review of the 32 NAPAs [available in English] suggests that the conceptual and operational difficulties highlighted earlier in this section are also reflected at the national level. ActionAid (2009), too, concludes that few NAPAs have been able to effectively link poverty and inequality to vulnerability to climate change.

From our analysis, only 12 NAPAs demonstrated a multidimensional analytical framework for their projects, linking climate change concerns with the environment, gender and poverty. Of these, three are SIDS: Guinea-Bissau, São Tomé e Príncipe and the Solomon Islands. The other 9 are Bangladesh, Burundi, Eritrea, Lesotho, Malawi, Niger, Sierra Leone, Sudan and Uganda. Other countries defined the climate/development nexus in a more limited fashion (see Annex 2): climate change and the environment (the largest group by a wide margin), climate change and gender (the smallest number) and climate change and poverty (second largest).

More specifically, 67.5 per cent of NAPAs reviewed did not prioritise gender, and 18 per cent did not prioritize poverty in their adaptation response. This is at odds with thinking that there is a two-way relationship between poverty and inequality (UNRISD, 2010; UNDP, 2010b; UNDP, 1990) and with LDC status, wherein poverty and inequality are central to limited progress on human development. Thus, it can be argued that making the climate change-gender/climate change-inequality link is one of the weakest areas in the adaptation policy context.

TABLE 2

Development Dimensions in National Adaptation Projects

Country	Total proposed projects	Projects addressing gender, poverty reduction and sustainability	Strategy/entry points identified for co-benefits
Bangladesh	15	5	Food security Reforestation Aquaculture Enhancing adaptive capacity
Burundi	12	1	Poverty reduction
Eritrea	5	1	Most vulnerable – women and the poor – social protection program
Guinea-Bissau	14	2	Food security
Lesotho	8	2	Development and Poverty reduction program
Malawi	5	1	AIDS/HIV
Niger	14	6	Food security Promoting peri-urban markets Diversification of income-generation activities
São Tomé e Príncipe	20	4	Poverty reduction Food security
Sierra Leone	24	5	Education HIV/AIDS
Solomon Islands	7	1	Education
Sudan	5	1	Food security
Uganda	9	4	Enhancing adaptive capacity Reforestation Improvement of water supply

Source: Prepared by the author and research associate on the basis of individual NAPAs sourced from the UNFCCC website.

If a line is to be drawn between the analysis in the NAPAs and the resulting projects developed for funding, it can be argued that some effort has been made to create policies that respond to the multidimensionality of development. On the other hand, when we examine in more detail the interventions designed to advance adaptation in the strongest NAPAs, (see Table 3), the challenges in defining strategic entry points for reconciling climate change and development become clear.

Broadly, the difficulties highlighted in the preceding analysis suggest that multidimensionality often becomes “lost in translation”. The strong analysis in the NAPAs does not always translate into clearly defined and prioritized actions (as seen in Table 2). There is an still observable gap between what is said (intentions) and the projects/strategies (reality) presented and approved for the purpose of fostering adaptation. While the NAPAs of Bangladesh and São Tomé e Príncipe stand out as examples of good practice¹⁶ for integrating the multiple dimensions of development in climate change, the current framework has largely integrated a link between gender and poverty (potentiality of impact/implication) but has not fully translated it. The Niger NAPA stands out for seeming to achieve a greater balance towards multidimensionality in its projects (6 out of 14 address gender, poverty reduction and sustainability). While food security is common entry point, some countries also identify more unique pathways, defined no doubt by their reality, such as HIV/AIDS, education and aquaculture.

Interviews with sources suggest additional challenges in defining and implementing multi-sectoral interventions at the national level. In particular, the lack of cooperation between ministries has been identified as a significant barrier to multidisciplinary approaches, with a marked impact on the mainstreaming of gender in environment and climate change. Other challenges of note are:

- the relative weaknesses in political power, and technical capacity in many ministries of the environment;
- the conceptual difficulties of delineating climate-change and disaster-risk reduction (long-term and short-term); and
- the prioritisation of activities at the national level.

Many of the interviewees underscored the critical need for women's involvement if structural change is to happen, particularly women who understand the language of "climate change in development". It was suggested that the "technical language" of the climate-change discourse has sometimes acted as a means of exclusion.

At the level of making the case to access available climate finance, similar challenges arise also for other countries, lower and higher Middle Income Countries including SIDS. Given the nature of the multi-lateral process, much is left to self-reporting (by national entities) regarding the extent to which factors and dimensions are crucial and how these were considered. A review of the operational policies and guidelines for parties to access resources from the Adaptation Fund indicates that, intellectually and technically, there is recognition of a broad number of factors including urgency, co-benefits, the need for multi-sectoral and cross-sectoral benefits, adaptive capacity, and consideration of poverty-reduction strategies (AFB, 2008: 5, 15). The strategic priorities suggest that the Adaptation Fund Board (AFB) pay particular attention to "economic, social and environmental benefits" (AFB, 2008: 16). The project-eligibility criteria for the Adaptation Fund application process (AFB, n.d)¹⁷ asks: "Does the project provide economic, social and environmental benefits, with particular reference to the most vulnerable communities?" This is quite broad, raising questions of how co-benefits are to be assessed and who is accountable if they are not fully realised (governance issues). While there is a technical review process by the AFB, the level of gender and social analysis involved is unclear.

Our review of four (Niue, Senegal, Guatemala and Honduras) of the eight project proposals submitted to the AFB for approval in 2010¹⁸ suggest a mix of attempts to contextualise the social and economic dimensions of climate change. Niue's project proposal (US\$3.45 million), which focuses on food security and the reduction of climate risk through integrated community-adaptation measures and institutional strengthening, is mainly scientific. It features no substantive discussion of social pressures on the availability of resources, the need for the resources, and the structure of food production and supply in Niue. There is little poverty data or socioeconomic data, and the sole mention of gender refers to "ensuring that techniques and technologies are gender sensitive" (Government of Niue, 2010: 21) in the context of key assumptions to be explored during project formulation. Senegal's proposal (US\$8.2 million), which centres on the vulnerability of coastal areas, mentions "poverty reduction, gender-related issues and the MDGs"

(Government of Senegal, 2010: 1), and specifically outlines the role of women in family subsistence and their significant contribution to the rural economic structure, particularly in agriculture and fishing. It also makes a clear distinction between the roles of men and women in fishing and outlines women's more subtle role in fisheries, including processing. It pays particular attention to women in the project objectives, results and outputs. Honduras's proposal (more than US\$5 million), which focuses on the urban poor, provides solid socioeconomic information on the context of vulnerability (Government of Honduras, 2010: 2), but gender is mainly reflected in the indicators and targeting information. Guatemala's proposal is stronger overall on socioeconomic information and the drivers of social vulnerability; of the four proposals examined, it was the strongest on disaggregated data for various groups, identifying reasons for the difference (critical for gender as opposed to women and development) and linking this to specific strategies and target groups in the project activities. Women, indigenous women, the poor, and small and poor producers are specifically identified (Government of Guatemala, 2010: 8, 9).

Outside the climate-change framework, a number of relevant efforts in the South that have been designated as good practice in regional and global studies can shed light on what is needed to improve multidimensional/multi-benefits at the national level. While not necessarily expressed in specific co-benefits language, the Mission Convergence, National Rural Employment Guarantee Programme (NREGP) and Barefoot College in India, the Expanded Public Works Programme (EPWP) and Working for Water Programme (WfWP) in South Africa, Brazil's National Programme for the Production and Use of Biodiesel (PNPB), and Ethiopia's Productive Safety Net Programme (PSNP) are helpful in understanding the types of structures that have facilitated efforts to achieve multiple outputs from one intervention (see Table 3).

These experiences resonate for their efforts to achieve high-value co-benefits, their unique structural features and the clear link to a defined policy framework. In all of the examples, some level of coordination between sectors has been crucial and in a few cases, such as the NREGP and PNPB, the programmes are supported by national legislation.

In Brazil, according to Zapata et. al. (2010), without the right economic incentives¹⁹ and regulations—such as a government policy requiring biodiesel/diesel blending into gasoline (of at least 5 per cent)—smallholder farmers would have been unable to compete with large-scale soy producers. As a whole, these examples reflect efforts to change how development is approached. Even so, many of these experiences are still quite young in the life-cycle of programmes and hence it is too soon to determine the full scope of co-benefits that will be achieved; they also have limitations. In the case of the PNPB in Brazil, gender and inequality issues in the broadest sense were not always clearly defined and there is a recognised need to strengthen inclusive processes.

TABLE 3

Co-Benefits in Action: Selected Case Studies

Programme summary	Growth co-benefits	Gender co-benefits	Poverty co-benefits	Environmental co-benefits	Unique structural elements
1. Mission Convergence in India: in which the government brought together “all welfare entitlement schemes on a common platform, while strengthening the implementation machinery at the lower levels, and incorporating civil society organisations as partners in overseeing the entire process” (Singh, 2009).	Efficiency (use of resources and effectiveness (impact of resource use).	Strengthening links across sectors and addressing Gender in Development and not just Women in Development.	Greater participation by the poor in decision-making and policy. Better targeting of pro-poor initiatives.	Reduced reliance on the environment for survival; better conservation of natural resources	Common policy and implementation platform.
2. Barefoot College: a non-profit organisation in India, focusing on rural development through self-sufficiency and sustainability. Focuses on training women for “technologically challenging” jobs that have traditionally been done by men (Barefoot College, 2).	Engaging women in productive activities and hence improving their contribution to economic growth. Helps India move towards Low-carbon development.	Improving women's social and economic position and expanding opportunities for them.	Increased skills likely to lead to new income-generating opportunities. Sense of ownership. Reduces energy poverty in rural villages.	Women are trained to install, maintain and repair solar panels in rural villages. Contributes to climate change mitigation (IAP, 2010).	Community-based: A Village Energy and Environment Committee (VEEC) determines how much each family can pay for the solar energy per month, and who will be selected to be trained as a Barefoot Solar Engineer (Roy, n.d.).
3. NREGP (India): A policy link exists between India's main employment programme for the poor (NREGA) and climate change adaptation efforts through jobs including the expansion of rural infrastructure. Guarantees 100 days of work a year per household. “Here is a programme which is an anti-poverty project that also yields co-benefits of adaptation to climate change and reduction of vulnerabilities against climate change,” ²⁰ said Rita Sharma who heads the ministry overseeing the jobs scheme.	Enhances contribution of the poor, women and rural communities to overall productivity. Reduces reliance on welfare. Part of crisis-related stimulus.	Women's participation as a percentage of total beneficiaries should be at least one-third in each state, but in some states their share is higher than 80 per cent (Dreze and Oldiges, n.d.).	Extends opportunities to the poor and guarantees access to jobs for part of the year. Expands rural infrastructure enhancing time use and access to markets. Wages higher than rural alternatives.	Approximately, seventy per cent (70%) of work under the NREGA are “green jobs” such as water harvesting, afforestation and land development (Mukherjee, 2009). Other relate to rural infrastructure, digging of canals and other works.	Policy structure linking jobs, environment and poverty established in law through the National Rural Employment Guarantee Act NREGA); based within a social transfer programme.

Programme summary	Growth co-benefits	Gender co-benefits	Poverty co-benefits	Environmental co-benefits	Unique structural elements
4. EPWP (South Africa) ²¹ aims at providing the poor and unemployed with temporary jobs to carry out socially useful activities (GoSA n.d.). The target is to create one million job opportunities within five years, including for environmental and social sector jobs (Antonopoulos, 2008).	Fostering pro-poor growth.	A lot of these services which are usually part of women's unpaid work are now a source of income. Pays women for historically unpaid work (Antonopoulos, 2008).	200,000 jobs created. Also aims to provide skills, training and formal accreditation so that participants are better prepared for longer-term jobs (Antonopoulos, 2008).	Potentially: 200 000 hectares of land cleared, 40 wetlands rehabilitated, 700 kms of coast cleaned, 32 waste management programmes created and 150 historical and community tourism projects, (GoSA, n.d.).	Social protection framework; Links green jobs, livelihoods and gender equality.
5. Called at first Working for Water in South Africa, it transformed afterwards into eleven programmes. Initially targeted water losses caused by invasive weeds and secondary effects on downstream ecosystems (Lieuw-Kie-Song, 2009).	Facilitates greater participation by women and the poor in productive areas and reduces productivity losses for invasive plant species.	A clear gender-directed policy on environmental issues.	Contains underlying poverty reduction strategy and has benefited 119,000 persons.	Reduces the harm of invasive plant species on ecosystems and access to water.	Government, through the funding mechanism, could act as intermediary, buyer or as a market regulator to avoid unanticipated consequences (Lieuw-Kie-Song, 2009).
6. Brazil's PNPB adopts an explicit policy to incorporate family farmers into the biodiesel value chain. Incentives by GOB included distribution of seeds, technical assistance, credit and formal contracts for small-scale family farmers. Special economic incentive instruments target the less developed Northeast region (Zapata, et al., 2010).	Structures the supply chain of biodiesel in Brazil and expands the sources for the production. Linked to a regulation that demands biodiesel/diesel blending into gasoline (of at least 5 per cent) (Zapata et al., 2010).	Gender is not an issue that has been identified in the policy design of the PNPB. However, several women are small-scale farmers and take part in the programme.	Directly integrates small farmers in new markets and provides a guaranteed additional source of income for them and their families.	Expands low-carbon path of development.	The Selo Social (Social Label) certification for purchases, gives tax exemptions to the refineries purchasing a minimum required amount from smallholder farmers, and full tax exemption to those purchasing from farmers in the Northeast region. (Zapata et al., 2010).
7. Ethiopia's PSNP provides cash and food in exchange for work during the food insecurity and hunger period, (Davies et al., 2008).	Maximises benefits across sectors; reduces need for emergency welfare mechanisms in times of drought.	Includes focus on women and gender dimensions of poverty.	Cash transfers alleviate stress and insecurity; build assets and gather funds for mitigating climate-related risks.	Prevent the use of environmentally-damaging coping strategies particularly in times of drought.	Safety net programme – linking social protection and climate change.

Accordingly, strategies targeted only at one dimension in the context of climate change, are unlikely to resolve fundamental issues of inclusive development or to be sustainable. Broader lessons from development make this clear. "For countries that have been successful in increasing the well-being of the majority of their populations, long-term processes of structural transformation, not poverty reduction per se, were central to public policy objectives" (UNRISD, 2010: 2). For the most part, adaptation projects are still too new for more detailed analysis of whether they will achieve co-benefits, but there is a need for better defined short-term and long-term priorities, within a "building blocks approach", for sustained and progressive development.

The context within which "climate change in development" is being shaped is important in this regard. While the large emerging economies in the G77, and China, have a greater scope and scale for self-innovation (as the case studies have demonstrated), SIDS and LDCs do not. The effectiveness of the global policy and operational frameworks are important considerations, given the significant influence they have on the support that is or is not provided to strengthen the achievement of co-benefits from climate change. The weaknesses of the existing mechanisms have clearly affected how "development" co-benefits, particularly those for gender equality, have been defined so far in NAPAs and adaptation projects. "About 21 per cent of the GEF projects reviewed (36 of 172 projects) involved project activities, outcomes, and/or components that specifically target women, and in some cases men, to adequately address the gender dimension" (GEF, 2008: 21). On climate change specifically, only 11 per cent involved any gender mainstreaming action (GEF, 2008: 23). It is also worthy of note that the mainstreaming of gender in UNDP- supported Adaptation Fund proposals, was also variable and inconsistent.

With significant resources available for climate change adaptation and mitigation, and the fast tracking of finance a priority, it is timely for co-benefits approaches to be strengthened conceptually as well as strategically. Co-benefits potentially serve a significant policy and political purpose in linking short-term requirements with long-term development imperatives such as climate change.

4 MAKING IT WORK: OPTIMISING CO-BENEFITS IN NATIONAL CLIMATE CHANGE POLICY

Perhaps the most important lesson from the analysis thus far is that multidimensionality in policy is not only conceivable, it is possible, and that our success in achieving it will be determined as much by the structures that shape the climate response as by the interventions themselves. The hegemony of economic considerations in development has clearly been costly. The literature on ecological economics makes a valuable contribution to the latter issue by emphasising that the assumption made by the traditional, neoclassical school of thought (that the variables of labour, capital and natural resources can be replaced by each other) is flawed, because the environment can never simply be wholly substituted (Costanza, 1997).

Acknowledging that government management and policies had to become more efficient and effective, many states have undertaken reforms to "make government work better and cost less" (Peters, 2005). Achieving coherence at the macro level, with clear priorities and strategies, and simplifying procedures and combining programmes (convergence) at the meso level, have been effective ways for governments and agencies to tackle both issues.

Implementing a co-benefits approach in national public policies still presents a universal challenge. To date, none of the adaptation efforts in plans or projects present a truly comprehensive approach (as defined by our GGPE approach) to address the intersections of gender, poverty and sustainability; in general they have addressed two or three of the dimensions. Poverty reduction and food security were most often the key strategic approaches for doing so. As countries design climate-change adaptation and mitigation policies, there are significant opportunities to maximise the benefits beyond adaptation to climate change (in the medium and long term), to include more short- and medium-term benefits in reducing poverty and expanding opportunities for men and women in alternative, income-generation activities. National plans of action should “communicate” multidimensionality and urgency.

As a policy strategy, a co-benefits approach potentially reinforces both coherence and convergence as a means to link any development intervention with potential economic, social and environmental benefits, as well as to reduce, if not avoid, unintended negative consequences. This includes ensuring that climate-resilient initiatives do not undermine other local and global efforts to help and sustain the development process. While tradeoffs are ultimately necessary, it is crucial that a stronger analytical framework be used to determine present and future consequences. Eagerness to take action should not distract from opportunities to maximise benefits across a number of interests.

If that is acknowledged, the interdependencies between *mainstreaming climate change in development* and *mainstreaming development into climate change* become evident. While there seems to be movement towards a low-carbon economy, there is still some way to go before the cumulative impact of national efforts will reverse or stabilise climate change. It is already clear that the emission-reduction targets of the major CO₂ emitters under the Copenhagen Accord are not yet sufficient to limit global warming to two degrees Celsius (Schleich et al., 2010). This suggests that more aggressive fossil-fuel demand reduction and replacement at the national level will be required to limit the creep towards a dangerously warming climate.

Importantly, this review suggests that it is possible to have co-benefits at a number of levels. So far, in the main, the analysis tells us that progress on co-benefits leans more towards addressing the existence of other development dimensions. When we examine the NAPAs as a potentially key instrument for mainstreaming climate change in development, 20 (the majority) reflect the existence of development dimensions, while five identify significant intersections between dimensions and only seven reflect the broadest considerations of sustainability and co-benefits.²² Generally, growth is not discussed.

Hence the pre-requisites for moving from the achievement of *some level of co-benefit* to *optimal co-benefits* will require changes in how we assess co-benefits at the global and local levels and how policy is designed. In the area of **assessment** there are varying levels at which co-benefits have been demonstrated and identified; concepts and practice are still evolving. The following three stages can help to distinguish co-benefits and improve strategies to achieve them by more fully taking into account the extent to which they address GGPE issues:

- **Existence** refers to those policy documents that mention a factor of development such as poverty. Often, analysis is limited as regards causes and other dynamics. Overall, development is addressed at a superficial level.

- **Significance** refers to improved processing of GGPE issues. The level and, most importantly, the magnitude of weight given to GGPE issues is central to the identification of specific activities, thereby improving the chances of having an impact across more than one sector.
- **Sustainability** is demonstrated through strategies that address the confluence of three important parts of sustainability and that target these linkages. Development needs have been aligned with climate-change imperatives.

These distinctions in recognising both the scale and magnitude of the efforts proposed can be seen as a direct reflection of the analysis of the interplay between the dimensions of GGPE. Such an approach also better reflects the fact that these dimensions are not static, and that there is a level of movement that is a pre-requisite for sustainability.

At the level of **national policy design**, the shape and framing of co-benefits have been considered, including the benefits of links made between macro-level policy (regulations, laws or policy frameworks) and sectoral transformations. At the heart of these is an issue that bears repeating: that interdisciplinary approaches are fundamental to tackling complex policy challenges. Just as no single country can solve climate change, no single sector or discipline has the answers for successfully mitigating and adapting to climate change. A common language, therefore, is crucial to establishing a common understanding and a platform for engagement. Ostrom (2008: 249) points out that

“scholars engaged in studying global environmental change are trained in a multitude of disciplines. Effectively addressing important questions related to global environmental change is hindered because each of our disciplines has developed its own language and has developed its own definitions (sometimes multiple) for important concepts. Gross misunderstandings can occur due to the multiplicity of concepts that are used in so many diverse ways.”

A number of important lessons emerge, including the following.

- Build on what already exists; there is no need to reinvent the wheel.* Additional value can be added by strengthening the reach of existing mechanisms, such as social-protection instruments, into other areas, resulting in greater impact and efficiency in the use of resources. India’s NREGP and Ethiopia’s Safety Net Programme are good examples in this regard.
- Gender dynamics in the access and capacity to use technology should be confronted.* The Barefoot College approach can ensure that mitigation efforts also reach a greater number of beneficiaries, including women. Additionally, community-led approaches can provide complementarity to macro-level policy, ensuring that the impacts reach those in greatest need.
- Government has a key role in leading the way: more steering and less rowing.*²³ South Africa’s WfWP and Brazil’s PNPB demonstrate the capacity of government to innovate and to match critical needs with opportunity. The South African case also stands out for giving value to historically unpaid work by women. As Lieuw-Kie-Song writes (2009: 24), “markets are not yet functioning fully and the poor and

the environment carry the burden of continued market failure ... [and] are not able to afford to pay." Government, through the funding mechanism, could act as intermediary, buyer or as a market regulator to avoid unanticipated consequences.

- iv. *Linking green jobs, livelihoods and gender can be very effective.* As with the EPWP and PSNP, such programmes can allow for the targeting of multiple environmental, social and economic imperatives. By providing a way to address both short- and long-term development objectives, a number of policy and political tensions that usually arise can potentially be resolved or reduced.
- v. *Regulation can be an important driver for business action for development.* The British approach to climate change highlights the benefits of a more fundamental policy link between macro-level climate-change policy and corporate social responsibility frameworks in advancing transformation in the productive sector. "Regulation, in particular, has been an important driver for business action on climate change. This is enhanced by increased regulatory pressure for climate change mitigation on businesses and the supply chain, such as product standards, taxes and subsidies and mandatory disclosure of environmental information" (BIS, 2010: 28).
- vi. *Local development is a necessary complement to national and global action.* The Barefoot College highlights the role of community/local-development approaches in facilitating transformation from the bottom up. The initiative focuses mainly on tackling energy poverty. The community, through the Village Energy and Environment Committee, is significantly involved in the process, including decisions about the role of families, how much they will be paid and who will become a Barefoot Solar Engineer (Roy, n.d.). The Barefoot College approach not only empowers the community and gives them a sense of ownership, but also contributes directly to climate-change mitigation at the national level (IAP, 2010).

While these examples of good practice have moved the discourse forward significantly and have demonstrated the potential for integration and strategic action, they represent attempts at policy innovations rather than structural change in national policy at the macro level. This is a critical distinction. While they help to make the case that there is willingness and a capacity within the system to evolve and change, they also lend support to the concern that the critical mass needed to structurally transform how we do development does not yet exist. "Countries will need to plan for adaptation with much greater rigor, focus, and urgency than has been the case until now—aligning the actions of public, private and NGO stakeholders in concerted effort" (Lord Nicholas Stern in the Foreword of ECA, 2009). Equally, the global policy framework must also mature to reflect a more robust vision for sustained and resilient development, giving equal importance to its social and environmental dimensions. As regards the latter, this will include considerations beyond climate change.

Thus two additional elements for linking climate change and development in other policy frameworks become critical:

- i. *Mainstreaming climate change and development in other policy areas.* For SIDS on the frontline of the impacts of climate change, but for which NAPAs are largely not applicable, this is particularly important. National Assessment Reports (NARs) that

are part of the reporting framework under the Mauritius Strategy for Implementation of the SIDS/Programme of Action, Poverty Reduction Strategies and National Communications provide further potential for linking co-benefits in planning and maximising potential in the implementation phase. Moreover, this offers an opportunity to reinforce key messages. Samoa's NAR, for example, paid greater attention to poverty issues than its NAPA, while the analysis of gender issues remained consistent.

- ii. *Reflecting the human dimensions of change.* Inevitably, maximising co-benefits also requires us to confront the transformative processes needed to meet the global minimum level of climate change. Research and analysis linking vulnerability, adaptation and mitigation (Martens et al., 2010) further demonstrate the benefits and possibilities to be derived from integrating the social sciences in climate research.

There are other encouraging signs. The recent decision by the government of Ecuador to place the Yasuni Ishpingo Tambococha Tiputini National Park under the protection of a UNDP trust fund is a significant step towards achieving the critical balance needed between global and local co-benefits in climate-change efforts. Bisrat Aklilu, Executive Coordinator for the UNDP's Multi-Donor Trust Fund Office, told MediaGlobal, "They realise their responsibility to the world to protect this world heritage, so they are sacrificing 50 per cent of the income they could have generated from extracting the oil reserves" (Wheat, 2010). Moreover, the carbon emissions that could have resulted from extractive activities amount to more than 400 million metric tons of carbon. A study by Conservation International ranked Ecuador number one for richness of biodiversity, with over 70,000 types of insects found in any one acre of forest (Ibid, 2010).

Perhaps even more important is recognition that a "co-benefits" approach is not a panacea for multidimensionality and complexity. There is no "magic bullet" for the achievement of sustainability. The approach's more significant contribution is likely to be in helping to unpack the intersections between the four dimensions, and in achieving a mutuality of benefits across dimensions rather than the traditional trade-offs between them.

There is an urgent need for a more in-depth review of co-benefits approaches on a larger scale, including mechanisms for the transfer of lessons across sectors. Currently, lessons and good practice tend to remain largely shared within sectoral boundaries and disciplinary ambits with little opportunity for true cross-practice development practice. Further, while tradeoffs are necessary, particularly for policy action, improved understanding of likely and potential social and environmental costs will be critical. At the same time that we enhance co-benefits, we should also try to avoid co-losses and other unintended consequences. For the latter in particular, enhanced frameworks for cost-benefit analysis will be important in improving decision making, including those circumstances in which government might have to compensate for unavoidable losses.

Moreover, robust conceptual frameworks will only be useful to the extent that the normative framework that guides finance (from both internal and external sources) reflects a broader understanding of development and climate-change interactions at the national level, including the opportunities for the climate-change response to enhance development. It is often within the frame of adaptation that development and climate-change interactions are

expressed and defined. Currently, however, adaptation finance is outstripped by that for mitigation and remains far less than is needed (Perch, forthcoming). Crucially, the existing global terms of trade and the shifting balance of power are also likely to shape and influence the pace of transformation efforts, particularly in the form, cost and availability of new and potentially “green” technologies, and may be defined more by what is economically attractive in the short term than what is desirable for the long term, particularly as countries try to emerge from the global economic crisis. The potential for the climate crisis to create “new business” may compete with, and even override, other interests and efforts to achieve a more balanced approach, in which equal priority is accorded to both adaptation and mitigation.

Unless the global finance regime and the operational frameworks within the World Bank, the GEF and the United Nations are significantly strengthened by a more comprehensive conceptual and operational framework for co-benefits, national efforts are likely to remain weak and limited (in scope and impact within countries) and as a contribution to the global response to arrest catastrophic climate change.

5 CONCLUSIONS

We are undeniably in a cycle of crisis, and the need for action on climate change is among the most urgent of development challenges. As the interdependencies increase between states, between sectors across state lines, and even within states, win-wins for the common good will become even more important and necessary in the normative of development thinking. This review suggests that research, evidence, intellectual leadership and structures exist within nations and at the global level to facilitate improved development practice, as well as sustained and resilient progress.

Such collective action becomes more likely if the root causes and structural realities that have enabled poverty, inequality and environmental degradation to persist are confronted. Perhaps one of the greatest flaws in efforts to date has been the inability to effectively treat the economic, environmental and social dimensions as equally important and mutually supportive preconditions for development. Additionally,

- i. the treatment of poverty and inequality as inevitable and disconnected externalities of economic growth has often defined perception and understanding of the poor and excluded (outside of the main or norm) and solutions to poverty (income-oriented, compensatory and regressive);
- ii. the dependence of the poor and excluded on vulnerable natural resources of variable and declining quality significantly weakens their opportunities and capacities to improve their lives. As a result, poverty-reduction initiatives that have made no reference to the environment, and vice versa, have often made inconsistent and short-term gains, particularly in rural areas; and
- iii. some vulnerabilities as well as poverty are not solely defined by environmental risks; some are largely driven through inequalities.

Co-benefit strategies can make a contribution at a number of levels: in assessing advances in addressing the multidimensionality of progress; in better defining multidisciplinary approaches, particularly in the context of climate change and development; and in achieving

coherence between short- and long-term as well as local and global complementarities. Efforts must be multidimensional in the face of the challenges to be confronted. The “how” remains the greatest challenge in moving forward on sustainable and co-benefits approaches.

For a co-benefits approach to contribute to a more effective mainstreaming of climate change in development at the national level, a number of considerations will be key for the policy process, including the following:

- There is an opportunity to tackle poverty and inequality in every development intervention. This is not the sole purview of the “social” sector.
- Achieving maximum positive impacts from any single development intervention is a worthy effort on the grounds of both efficiency and effectiveness.
- Actions in one area should not undermine or neutralise progress in another. This can be facilitated by undertaking appropriate poverty, social and environmental impact analysis *ex ante* and *ex post*.
- Interventions set within the larger macro policy framework seem to produce higher-value benefits.
- Social-protection mechanisms and concepts need to become more “adaptive” to the increasing frequency and intensity of shocks, and also to vulnerability and inequality.
- Understanding co-benefits *ex ante*, as well as “costs avoided”, will also mean a better understanding of damage and loss from shocks and disasters. Bringing coherence to tools such as Damage and Needs Assessments [used in Disaster Risk Reduction] are important for improving and enhancing cost-benefit analysis and tradeoffs.
- There are interdependencies between actions at the local and the global levels. Greater accountability is needed in the global climate-finance architecture to ensure the mutuality of benefits across dimensions and reduce unintended consequences. This includes coherence between global policy frameworks for economic, social and environmental development.
- Good intentions are necessary but are not sufficient for the achievement of sustained, inclusive and resilient development.
- “Gender-sensitive” and “pro-poor” should be seen not only as development results but also as critical elements of the policy formulation and implementation process. Too often, they have tended to be narrowly defined or understood as outputs and results.
- An incremental approach to sustainable and progressive development may serve to respond to the “overwhelming” nature of the complexity of the challenge by reducing the pressure to arrive at all-encompassing, one-shot solutions. Thus, strategic actions become critical for both efficiency and effectiveness in development action.

To date, the development scorecard has been marked more by highs and lows than by consistent progress. The speed and size of growth has not always translated into progress for all or for sustained improvements. Extraordinary economic growth and financial wealth have often gone hand-in-hand with crippling deprivation and suffering at the global level and within countries. Devastating crisis has often followed periods of incredible boom.

There is perhaps no better time than the present to consider the simple truth that ***sustained development progress will be defined not by the quantity of our effort but by its quality***. Beyond moral imperatives, the success of transformation efforts, local and global, is likely to be framed by the extent to which economic, social and environmental systems, equally and mutually, resile in the face of crisis, as well as our individual and collective capacity to navigate an uncertain future. Co-benefits can definitively play a role in doing both.

ANNEX 1

SOURCES INTERVIEWED

Nicholas Perrin	World Bank, ECA Region
Nilufar Ahmad	World Bank, Environment Group
Cate Owren	WEDO
Jeannette Gurung	WOCAN
Yianna Lambrou	FAO (Global)
Diana Tempelman	FAO, Regional Office for Africa
Ian King	UNDP Sub-regional Office for Barbados and the OECS
Mihoko Kumamoto	UNDP/BDP/EEG
Ayodele Odusola	UNDP/Regional Bureau for Africa
Vladimir Mikhalev	UNDP Regional Centre for Europe and the CIS
Pradeep Sharma	UNDP Country office for East Timor
Karen Bernard	UNDP Pacific Centre
Judy Oglethorpe	WWF-USA
Gallianne Palayret	OHCHR Regional Office for the Pacific
Paula Holland	SOPAC
Deborah Clifton	UN-OCHA, Pacific Region
Padma Narsey Lal	IUCN, Pacific Region

ANNEX 2

EVIDENCE OF CO-BENEFIT APPROACHES IN NAPAS TO-DATE

Climate Change and Environment	Climate Change and Poverty	Climate Change and Gender	Climate Change+ Environment + poverty + gender
Afghanistan	Afghanistan	Bangladesh	Bangladesh
Bangladesh	Bangladesh	Burundi	Burundi
Bhutan	Bhutan	Eritrea	Eritrea
Burundi	Burundi	Guinea-Bissau	Guinea-Bissau
Cambodia	Cambodia	Lesotho	Lesotho
Cape Verde	Cape Verde	Malawi	Malawi
Comoros	Comoros	Maldives	Niger
Eritrea	Eritrea	Niger	Sao Tome and Principe
Ethiopia	Ethiopia	Samoa	Sierra Leone
Gambia	Gambia	Sao Tome and Principe	Solomon Islands
Guinea-Bissau	Guinea-Bissau	Sierra Leone	Sudan
Kiribati	Kiribati	Solomon Islands	Uganda
Laos	Laos	Sudan	
Lesotho	Lesotho	Uganda	
Liberia	Liberia		
Malawi	Malawi		
Maldives	Mauritania		
Mauritania	Mozambique		
Mozambique	Niger		
Niger	Rwanda		
Rwanda	Sao Tome and Principe		
Samoa	Sierra Leone		
Sao Tome and Principe	Solomon Islands		
Sierra Leone	Sudan		
Solomon Islands	Tanzania		
Sudan	Tuvalu		
Tanzania	Uganda		
Tuvalu	Yemen		
Uganda	Zambia		
Vanuatu			
Yemen			
Zambia			

Source: Individual country NAPAs sourced from the UNFCCC website. Codification done by author and research assistant.

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NOTES

1. Remarks by President Barack Obama at the MDG Summit in New York, 22 September 2010.
2. Zusan (2008) points out that “co-benefits have been treated variously as the climate benefits of developmental actions and the developmental benefits of climate actions”.
3. In Zaman (2008) this is defined as where some of the players form a coalition and constrain the other players in a way that, whatever strategies they (the outsiders) take, each player in the coalition will always receive a better payoff than that of the any player outside the coalition.
4. We use this terminology to challenge the concept of the “incurability of poverty”. Much can be done to reduce the scope and extent to which poverty is part of the structural asymmetry of the economy, as suggested by Zaman (2008: 8).
5. See OECD (2009), Government of Japan (2008) and World Bank (2009b).
6. The IPCC (2007b) denotes automated adaptation as adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems.
7. See UNEP (2008), UNDESA (2009) and UNDP (2009a).
8. See Pachauri (cited in Carrington, 2009), who points to better energy security, protecting consumers from oil price spikes, new employment in green industries, more productive agriculture and lower air pollution, cutting health costs.
9. Delhi (India) Mission Convergence’s goal is to have a multi-pronged, multidisciplinary convergence of services covering welfare schemes such as health, education, nutrition, social security, employment, gender equity, pension and empowerment of communities (Singh, 2009).
10. As defined by the UNDP (n.d) in its *Mainstreaming Adaptation in Development* service line, this process involves “developing overarching national adaptation programmes where climate change risks are routinely considered as part of national planning and fiscal policies formulation.”
11. The IPCC notes that, to date, “social and cultural limits to adaptation are not well researched”, acknowledging the scant attention that the climate change literature pays to addressing social limitations thus far (IPCC, 2007: 737, cited in Jones, 2010).
12. As defined by the IPC-IG, inclusive growth is “both an outcome and a process. On the one hand, it ensures that everyone can participate in the growth process, both in terms of decision-making for organising the growth progression as well as in participating in the growth itself. On the other hand, it makes sure that everyone shares equitably the benefits of growth. Participation without benefit sharing will make growth unjust and sharing benefits without participation will make it a welfare outcome” (IPC-IG website).
13. It is important to note that the “Single Registry” approach used in Brazil to support *Bolsa Família* goes a long way to resolving the usual issues of duplication and leakage.
14. A Subsidiary Body for Scientific and Technological Advice (SBSTA) counsels the Conference of the Parties on matters of climate, the environment, technology, and method. It meets twice a year. A Subsidiary Body for Implementation (SBI) helps review how the Convention is being applied, for example by analysing the national communications submitted by member countries (UNFCCC website, n.d.).
15. “Gender mainstreaming” was defined by the United Nations Economic and Social Council in 1997 as “a strategy for making women’s as well as men’s concerns and experiences an integral dimension of the policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated” (UN, 2001).
16. Bangladesh prioritizes women and the poor in its NAPA (Government of Bangladesh, 2005), and was nominated for “Gender Champion of the Week” at the Copenhagen 2009 climate talks for its strong interventions on gender and providing significant support for women to participate in the climate talks (Somera, 2009). São Tomé e Príncipe’s NAPA offers another example of how it is possible to combine several benefits in one project: constructing two systems of water supply in rural zones combines adaptation to climate change, helps the rural poor, and decreases the burden that women face in water collection (Government of São Tomé e Príncipe, 2007).
17. The AFB operational guidelines note in Annex 1 that “In accordance with decision 5/CMP.2, paragraph 2 (c), projects and programmes funded under the Adaptation Fund should also take into account, inter alia, national sustainable development strategies, poverty reduction strategies, national communications and national adaptation programmes of action and other relevant instruments, where they exist.”
18. This analysis was limited to those projects available online at the time of writing of the paper. These were reviewed on 2 September 2010 accordingly.
19. These incentives given by the government of Brazil include distribution of seeds, technical assistance and credit to family farmers, and the *Selo Social* (Social Label) certification for purchases, which gives tax exemptions and

other economic incentives to those purchasing a minimum required amount from smallholder farmers, and full tax exemption to those purchasing from farmers from the less developed Northeast region (Zapata et. al., 2010).

20. The linkage is forged through environmental services provided by rural households when they engage in works under NREGA. Defined and prioritised under the act, works can significantly change the environment through rejuvenation of the natural-resource base. Water conservation, land development and afforestation through NREGA can provide local services such as ground-water recharge, enhanced soil fertility and increased biomass. These, in turn, can generate global benefits such as adaptation to and mitigation of climate change and biodiversity conservation (Sharma, 2009).

21. South Africa is the first country to include such jobs as part of its employment creation program, and there is a focus on two social areas: childhood development, and home and community-based care (Antonopoulos, 2008).

22. The NAPAs were evaluated on the following basis: if NAPAs only mention issues but do not prioritize them, they were listed under "existence". Given that seven do not discuss issues of gender and women were listed separately. NAPAs that give priority to poverty reduction, the environment and gender equality, but not to sustainable development and/or economic growth, and do not explain their interactions well or at all, were listed under "significance". NAPAs that were more comprehensive and addressed all issues, explaining their intersections and interactions, and have accorded them priority as sustainable goals, were designed to be more "sustainable" in their approach, in keeping with the globally accepted definitions of this terminology.

23. This terminology is borrowed from Peters (2005). It seemed particularly appropriate to the context of climate change and the dilemma regarding the role of government. These issues were also acknowledged in the 2010 *World Development Report* (World Bank, 2009).



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