International Alert.

A CLIMATE OF CONFLICT

The links between climate change, peace and war

Dan Smith
Janani Vivekananda

November 2007

Understanding conflict. Building peace.

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ACKNOWLEDGEMENTS

Preparation of this report owes a lot to the participation of Kaitlin Shilling, of the Program on Food Security and the Environment, Stanford University, California, who contributed data and analysis on climate change and its consequences in a number of countries and regions. She also helped us explore the relationship between food insecurity, governance and conflict potential in both generic and country-specific terms. In addition, our work benefited from the generosity of Dr. Fiona Rotberg, of the Silk Road Studies Institute, Uppsala University, Sweden, with further contributions of data and analysis. Financial support for a project consultation in New York during the report's preparation was provided by the Center of International Cooperation, New York University. We are grateful to the Center not only for that assistance but also for the time, energy and insights of CIC's Co-Director, Dr. Bruce Jones. None of these colleagues or their institutions bears any responsibilities for any errors or uncertainties of fact or analysis that remain. This report is the responsibility of International Alert and does not necessarily reflect the views of any of our donors.

EXECUTIVE SUMMARY

Climate change is upon us and its physical effects have started to unfold. That is the broad scientific consensus expressed in the Fourth Assessment Review of the Inter-governmental Panel on Climate Change. This report takes this finding as its starting point and looks at the social and human consequences that are likely to ensue – particularly the risks of conflict and instability.

Climate, poverty, governance

Hardest hit by climate change will be people living in poverty, in under-developed and unstable states, under poor governance. The effect of the physical consequences – such as more frequent extreme weather, melting glaciers, and shorter growing seasons – will add to the pressures under which those societies already live. The background of poverty and bad governance means many of these communities both have a low capacity to adapt to climate change and face a high risk of violent conflict.

To understand how the effects of climate change will interact with socio-economic and political problems in poorer countries means tracing the *consequences of consequences*. This process highlights four key elements of risk – political instability, economic weakness, food insecurity and large-scale migration. Political instability and bad governance make it hard to adapt to the physical effects of climate change and hard to handle any conflicts that arise without violence. Economic weakness narrows the range of income possibilities for the population and deprives the state of resources with which to meet people's needs. Food insecurity challenges the very basis of being able to continue living in a particular locality and, as a response to that and other kinds of insecurity, large-scale migration carries high risk of conflict because of the fearful reactions it often receives and the inflammatory politics that often greet it.

Countries at risk

Many of the world's poorest countries and communities thus face a double-headed problem: that of climate change and violent conflict. There is a real risk that climate change will compound the propensity for violent conflict, which in turn will leave communities poorer, less resilient and less able to cope with the consequences of climate change. There are 46 countries – home to 2.7 billion people – in which the effects of climate change interacting with economic, social and political problems will create a high risk of violent conflict.

There is a second group of 56 countries where the institutions of government will have great difficulty taking the strain of climate change on top of all their other current challenges. In these countries, though the risk of armed conflict may not be so immediate, the interaction of climate change and other factors creates a high risk of political instability, with potential violent conflict a distinct risk in the longer term. These 56 countries are home to 1.2 billion people.

In most of the conflict-threatened group of 46 states (many of them currently or recently affected by violent conflict) and in many of the group of 56 that faces the risk of instability, it is too late to believe the situation can be made safe solely by reducing carbon emissions worldwide and mitigating climate change. Those measures are essential but their effects will only be felt with time. What is required now is for states and communities to *adapt* to handle the challenges of climate change.

Adaptation

In most of the countries that face the double-headed problem of climate change and violent conflict, the governments cannot be expected to take on the task of adaptation alone. Some of them lack the will, more lack the capacity, and some lack both. What is required is international cooperation to support local action, both as a way of strengthening international security and to achieve the goals of sustainable development.

Without dropping or downplaying mitigation, the international policy agenda thus needs a significant increase in the energy and resources that are focused on adaptation. Against estimated costs of adaptation that range from $10-40 billion, the resources currently available amount to a few hundred million dollars with another billion somewhere in the pipeline.

At the same time as adaptation must receive more emphasis and more funding, it matters even more that it is the right kind of adaptation and that money is spent in the right way. To organise adaptation as top-down programmes will alienate local communities because it will feel like a series of external impositions, decided by government authorities from which they feel distant and explained by outside experts with whom they have nothing in common.

A different approach is possible, based on peacebuilding, engaging communities' energies in a social process to work out how to adapt to climate change and how to handle conflicts as they arise, so that they do not become violent. It is an approach that brings the hard science of climate change – which local communities do not and cannot be expected to know in the first instance, and which must be communicated clearly – together with local knowledge and understanding to figure out the best mode of adaptation.

Adaptation and peacebuilding

The double-headed problem of climate change and violent conflict thus has a unified solution – peacebuilding and adaptation are effectively the same kind of activity, involving the same kinds of methods of dialogue and social engagement, requiring from governments the same values of inclusivity and transparency. At the same time as adaptation to climate change can and must be made conflict-sensitive, peacebuilding and development must be made climate-sensitive.

A society that can develop adaptive strategies for climate change in this way is well equipped to avoid armed conflict. And a society that can manage conflicts and major disagreements over serious issues without a high risk of violence is well equipped to adapt successfully to the challenge of climate change. Climate change could even reconcile otherwise divided communities by posing a threat against which to unite and tasks on which to cooperate.

Twelve recommendations for addressing climate change in fragile states

1. Move the issue of conflict and climate change higher up the international political agenda

New initiatives are needed to gain agreement on the importance of adaptation, especially in fragile states, and to develop international guidelines and make available adequate funding.

2. Research the indirect local consequences of climate change

Research is urgently needed on how the social and political consequences of climate change are likely to play out in specific regions, countries and localities.

3. Develop and spread research competence

University and research networks need mobilising and strengthening to develop and spread competence on these issues, especially where consequences of climate change will hit hardest.

4. Improve knowledge and generate policy through dialogue

International cooperation needs to promote dialogue on adaptation among local communities, national governments and regional organisations.

5. Prioritise adaptation over mitigation in fragile states

In fragile states, priority should be given to understanding and addressing the consequences of the consequences of climate change to prevent violent conflict.

6. Develop the right institutional context: good governance for climate change

Developing competence on adaptation needs to be treated as part of good governance everywhere.

7. Prepare to manage migration

Research identifying likely migration flows can help identify both migrant and host communities where dialogue should be started early to prepare to manage the process.

8. Ensure National Adaptation Plans of Action are conflict-sensitive

National Adaptation Plans of Action should take account of a state's socio-political and economic context and conflict dynamics.

9. Climate-proof peacebuilding and development

Peacebuilding and development strategies should include adaptation to climate change and make explicit how activities on these three interconnected strands strengthen one another.

10. Engage the private sector

Guidelines are needed to help companies identify how their core commercial operations can support adaptation.

11. Link together international frameworks of action

Greater efforts are needed to link the variety of separate international approaches with the related issues of peacebuilding, development, adaptation and disaster management.

12. Promote regional cooperation on adaptation

International cooperation on adaptation is for regional bodies as well as for the UN.

1

INTRODUCTION: CLIMATE CHANGE, DEVELOPMENT AND PEACEBUILDING

Climate change is the latest hot topic on the international agenda. Even before the Nobel Peace Prize for 2007 was awarded to the Inter-governmental Panel on Climate Change (IPCC) and to Al Gore, the issue's profile was rising. At the end of 2006, Sir Nicholas Stern headed a major review of the economics of global warming for the UK government and gained considerable media coverage.[1] In 2007 the IPCC itself produced its Fourth Assessment Report (AR4) with major media attention as each of its three working groups issued their findings.[2] The AR4 has moved the climate change debate along in several ways. First, it reflects a major increase in the degree of scientific consensus about the reality of climate change and, second, growing consensus that it is caused by human activity. Third, the AR4 emphasises that the consequences of climate change are already unfolding and, fourth, it makes long-term projections about the extent and physical consequences of climate change that are more serious and far-reaching than in previous reports.

The evidence and arguments of the international scientific body will be neither queried nor extended in this report. Our starting point is the IPCC's finding that climate change and its consequences are not topics for the long-term future alone – they are upon us.

Some governments and international organisations are developing strategies to address the causes of climate change and *mitigate* global warming by reducing carbon emissions and energy consumption. But mitigation, even if taken up immediately and on a massive scale, cannot prevent the initial effects of global warming from unfolding through world weather systems and affecting the lives of hundreds of millions of people.

Climate change is upon us and there is an urgent need to work out how to *adapt* to it. This is the next step in governmental policy. There have been some moves in this direction, with the 2006 *Stern Review* offering policy-makers a comprehensive assessment of the impact climate change will have on the global economy. Working Group II of the IPCC on Impacts, Adaptation and Vulnerability also offers valuable analysis of the implications of the physical effects of climate change across the world.

This report sets out to look further into these *consequences of consequences* of climate change. It looks at their socio-political effects – particularly in fragile states – and their implications for the risk of violent conflict.

The people for whom the knock-on social consequences of climate change will be most serious and hardest to adapt to are largely those living in poverty, in under-developed and unstable states, under poor governance. For them, the impact of the physical consequences will interact with a mix of these economic, social and political factors to produce a low capacity to adapt and a high risk of serious consequences such as widespread malnutrition and starvation, mass migration or violent conflict.

These fragile states thus face a double-headed problem: that of climate change and violent conflict. If nothing is done, the relationship between the two parts of the problem will be mutually and negatively reinforcing. There is a real risk that climate change will compound the propensity for violent conflict which, in turn, will leave communities poorer, less resilient and less able to cope with the consequences of climate change.

But there is also an opportunity here: if it is targeted and appropriately addressed, this vicious circle can be transformed into a virtuous one. If communities can enhance their ability to adapt to consequences of climate change, this will help reduce the risk of violence. And peacebuilding activities, which address socio-economic instability and weak governance, will leave communities better placed to adapt to the challenges of climate change which, in turn, will result in more peaceful societies regardless of how climate change unfolds. Indeed, climate change offers an opportunity for peacebuilding, for it is an issue that can unite otherwise divided and unreconciled communities. It offers a threat to unite against and multiple tasks through which to cooperate.

So, as the *Stern Review* argues with reference to economic policy, even if the science is wrong and the predictions of the future impacts of climate change are not ultimately borne out, taking account of climate change will create a win-win situation in fragile states.

The physical consequences of climate change may be largely in the hands of nature, but the consequences of these consequences are not. The issue of adaptation to climate change is at heart a matter of governance – the strength of government institutions, the state's efficiency (or lack of it) in providing basic services, and the influence of regional and international cooperation. It is the state's job to handle the effects of climate change so as to minimise harm to its citizens; states with good governance are by definition better equipped for the task than those without.

For example, where global warming shortens the growing season, the result will be a risk of food insecurity. The government's response will define whether this insecurity is redressed through a redistribution of resources, or whether it leads to a violent struggle for control of dwindling resources, or to large scale migration. Equally, global warming may make it impossible for people to carry on living and working in low-lying coastal areas. In this case, the response of government will define whether those people are looked after and get alternative economic opportunities or are neglected, resentful and ready to support violently overturning an unjust social order.

The task of rising to the challenge of adaptation to face the social and political consequences cannot be left in the hands of individual states that are already unable (even when willing) to care properly for their citizens. The only prospect of handling these challenges positively is through international cooperation. That means mobilising not just international organisations such as the UN and its agencies but, more especially, regional and sub-regional groupings. It means drawing on the capacities of stronger neighbours to help the less capable governments. It means richer governments – the western donor governments but also China, India and other new donors governments, such as those from the Middle East – stepping up to provide the resources to analyse and prepare for these challenges.

At the same time, the place where adaptation must happen is in local communities themselves. International and national policies need to be shaped so as to engage in the task of adapting the energies of those with most to lose by inaction and most to gain by responding creatively to the challenge of climate change. In many countries, rising to the challenge will mean unprecedented degrees of cooperation between local and national leaders, between the formal and informal authorities, and between the state and its people.

The purpose of this report is to understand how the consequences of climate change can lead to violent conflict, and to show how this will hinder the effort to adapt to climate change. Out of this, we want to show that peacebuilding and adaptation to climate change can complement each other in laying the basis for long-term social and economic development. And lastly, we want to identify policies and mechanisms that will help communities understand the challenges of climate change and respond in such a way that they avoid violent conflict.

2

THE DOUBLE-HEADED PROBLEM OF CLIMATE CHANGE AND VIOLENT CONFLICT

Climate change and violent conflict present countries and communities with a double-headed problem. The two parts are mutually reinforcing; many of the countries predicted to be worst affected by climate change are also affected or threatened by violence and instability.

The increase in global average temperatures that is already unfolding and is projected to continue will change the climate in many parts of the world. The effects will vary – sea-level rise threatening low-lying small islands and coastal areas, more severe droughts and shorter growing seasons in some places, more storms and floods in others, glaciers melting, deserts forming. These will combine with existing pressures on natural resources and lead in many areas to failing crops, inadequate food supplies and increasingly insecure livelihoods. These further consequences will be especially sharp in countries where poverty, exclusion, inequality and injustice are already entrenched.

From everything we know about how mutually interlocking factors such as poverty, bad governance and the legacy of past conflicts generate risks of new violence, it is safe to predict that the consequences of climate change will combine with other factors to put additional strain on already fragile social and political systems. These are the conditions in which conflicts flourish and cannot be resolved without violence because governments are arbitrary, inept and corrupt. If the relationship between climate change and violent conflict is not addressed, there will be a vicious circle of failure to adapt to climate change, worsening the risk of violent conflict and, in turn, reducing further the ability to adapt.

Risk and risk management

The effects of changing weather patterns will render previous lifestyles and habitats unviable in many places. Some of these changes will be sudden, such as tropical storms and flash floods. Others will be much slower in their onset, such as the steadily falling water levels in the Ganges basin, lengthening droughts on the margins of the Sahel, glacial melting in Peru and Nepal, and rising sea levels. This will lead to increased food insecurity – not just food shortages but uncertainty of supply.

Both sudden shocks and slow onset changes can increase the risk of violent conflict in unstable states because they lack the capacity to respond, adapt and recover. It is likely that the most common way of thinking about how to respond to these problems is through huge humanitarian relief efforts, since such events and the response to them get a great deal of news coverage. But there is a growing awareness that what is really needed is for communities and countries to prepare against sudden shocks, to build their resilience and their adaptive capacity. Where that is possible, as we argue in chapter 3 of this report, communities will not only be better prepared against potential disasters such

as floods, but they will, in consequence, also be reducing the risk of conflicts erupting, getting out of control and escalating to violence. Seen in this light, adaptation to the effects of climate change can be a part of peacebuilding and peacebuilding is a way of increasing adaptive capacity. In the medium to long term, peacebuilding will also increase unstable states' capacities for mitigation.

Vulnerability to climate change is the product of three factors – exposure, sensitivity and adaptive capacity.[3] The first issue is whether a country – or a city, or community, or region – is going to be exposed to physical effects of climate change such as increased frequency of extreme weather. The second issue is how sensitive it is to that exposure – a storm may hit two cities but only cause floods in one of them because it is low lying. And the third issue is whether there is adaptive capacity which, for example, enables city authorities to build flood defences and be ready with quick and safe evacuation plans, while the national government has prepared to care for those who are displaced and can swiftly allocate resources for repair and rebuilding when the floods recede.

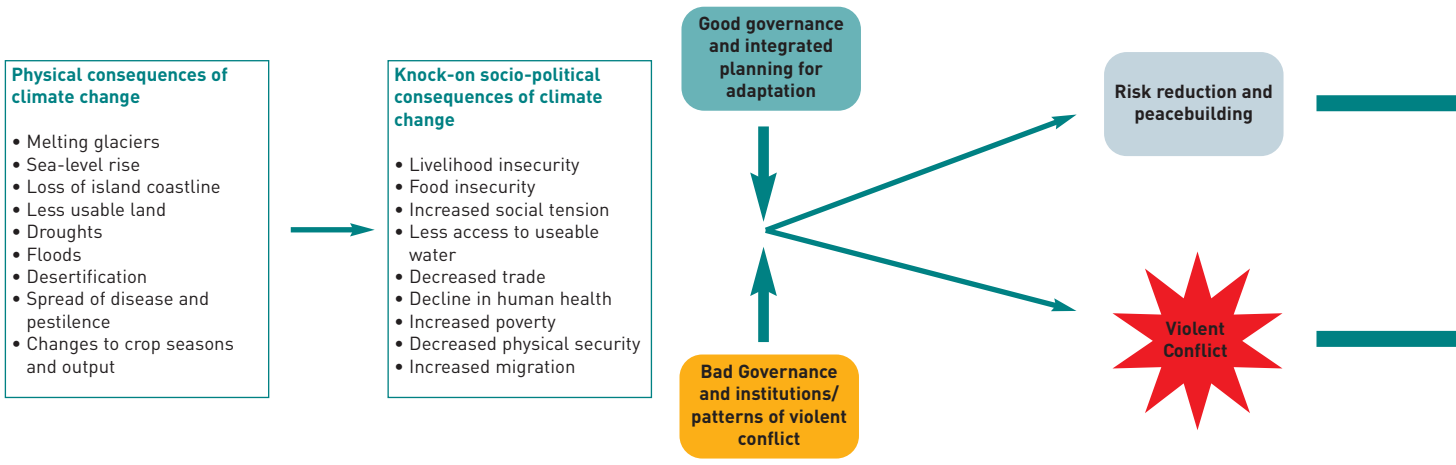
This can all be best understood as a matter of identifying and managing risk. Strengthening the capacity to adapt to climate change will not eliminate risk, but it will reduce it. Where there is a risk of violent conflict because of a combination of factors such as poverty, bad governance and a recent history of war, the capacity to manage the risks associated with climate change is also much reduced.

The consequences of consequences

In many countries, one cumulative impact of climate change will be to increase the potential for violent conflict. As we trace this process, we are looking at the *consequences of consequences* and attempting to track their interactions with other social processes with roots in different aspects of the human condition. Whether countries and communities can adapt so as to cope with the adverse knock-on effects of climate change depends on how a number of variables play out.

It is worth prefacing a brief look at these key variables with two general comments about the causes of violent conflict. It is axiomatic that conflict, as such, is not the central problem – rather, violent conflict is. In other words, conflicts are inevitable, necessary and often productive and key to social progress. What matters is how the conflicts are handled; in particular, whether the participants can reach an acceptable outcome without violence. In this perspective, the consequences of consequences of climate change are bound to include conflict, but need not include violent conflict up to and including the level of war.

The Impact of Climate Change: Two possible roads ahead



BOX 1 Algeria: Recovery from conflict is at risk

Algeria is expected to face serious climate change effects in the form of increased and faster desertification, with increasing water scarcity and severe food insecurity. Because the population and arable land are concentrated in the north of the country, these effects will be worst felt there.

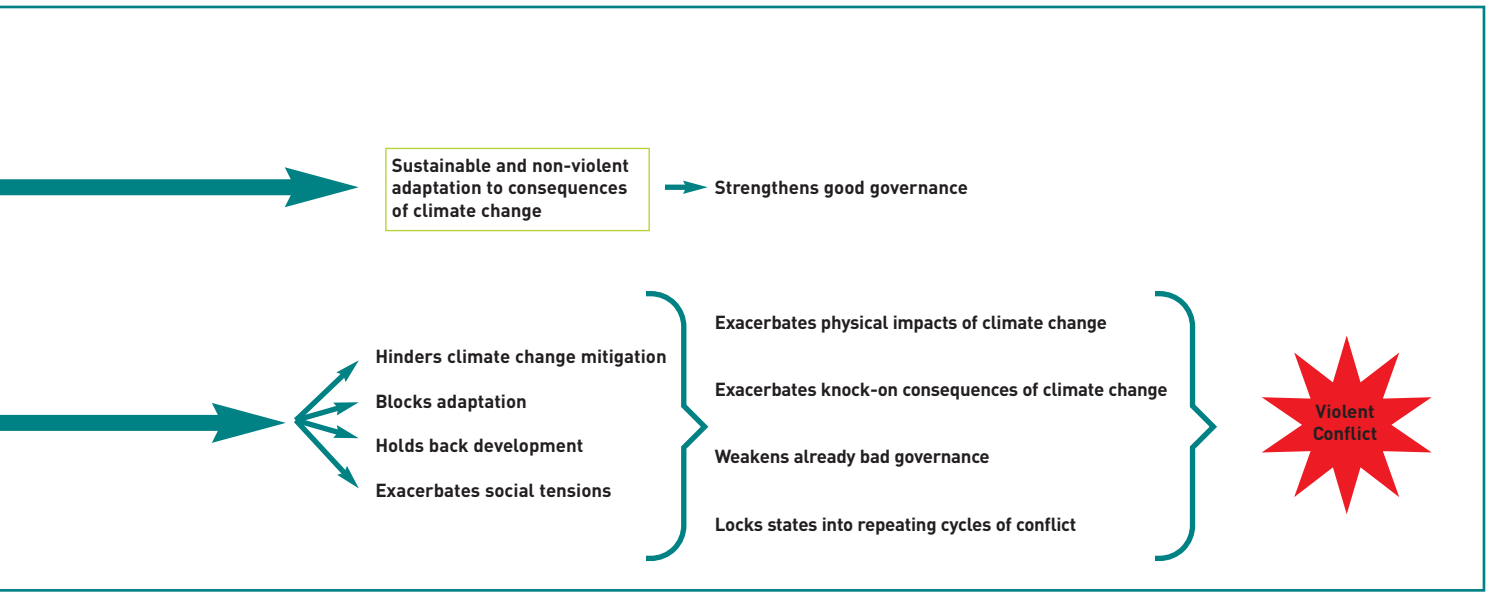
Only three percent of Algeria's land area is arable,[4] which is not nearly enough to provide food for the population so Algeria has to import about 45 percent of its total food consumption and more than half of its grain. Moreover, farmland is already at risk of desertification, which will only be accelerated by rising temperatures and decreasing rainfall. Algeria's dependence on food imports is thus likely to increase and its food security will be extremely vulnerable to possible international grain shortages.[5]

Algeria experienced a decade of civil war from 1992, with a death toll of 150,000. Since 2002, when elections were held but marred by violence, the country has embarked on a transition towards democracy and peace, though armed insurgent groups are still active and the country is still in a state of socio-economic turmoil. The economy is in the difficult process of transforming from being state-controlled to being more market-oriented. Algeria suffers from unemployment of about 25 percent overall, although among the under-25s the unemployment rate is 50 percent.[6]

In addition to the Algerian citizens who are suffering from a lack of livelihood, there are also migrants from the south. Some of these continue to Europe while others settle in Algeria, adding pressure to an already stressed demographic situation. With nowhere else to settle, many of these people will wind up in the cities or in the outlying slums. This rapid, and sometimes illegal, urbanisation exacerbates the environmental stress that already exists in the cities, such as poor air and water quality.[7]

The Algerian government has to cope with these socio-economic challenges of migration, unemployment and economic reform, and then on top of those faces the additional risks resulting from climate change. The country has been in an official State of Emergency since 1992, with wide-ranging powers for the state and limits on freedoms for political parties and other groups. Its continuation today is justified by the government on the basis of the War on Terror.[8] The issues that led to war in the 1990s have not been resolved and there are militant Islamist groups that remain committed to violently overthrowing the state. Though their capacity is much reduced when compared with the height of the war, their continued existence signals the continuing fragility of peace in Algeria.

Though there is a long way to go on the road to peace, the government has made progress and life for ordinary Algerians is much improved as a result. But in combination with other long-standing economic, social and conflict problems, the effects of climate change risk overwhelming the coping ability of both the Algerian people and the state.



BOX 2 Darfur: Understanding the causes

The conflict and resulting human tragedy that have unfolded in Darfur since 2003 have grabbed international headlines. As the UN Security Council hammered out a deal to get an international peacekeeping force deployed there, discussions about how to understand the causes of the conflict intensified.

When Darfur first made headlines, the most common way of explaining the context was in terms of ethnic differences between Arabs and Africans. More recently, some have argued – UN Secretary General Ban Ki-Moon among them – that 'the Darfur conflict began as an ecological crisis, arising at least in part from climate change'.[9]

No conflict ever has a single cause. In the case of Sudan, the escalation of violence has been attributed to such factors as: historical grievances; local perceptions of race; demands for a fair distribution of power between different groups; the unfair distribution of economic resources and benefits; disputes over access to and control of increasingly scarce land, livestock and water between pastoralists and agriculturalists; small arms proliferation and the militarisation of youth; and weak state institutions.[10]

Arab-African differences are not as clear cut as some commentators first thought. Political and military alliances frequently shift between ethnic groups, depending on pragmatic considerations. The difference between herders and farmers is also variable. According to the UN Environment Programme,[11] the rural livelihood structures in Sudan are complex and vary from area to area. In many cases, farmers and herders are not separable as some tribes practice both herding and crop cultivation.

The impact of climate change, in particular the 20-year Sahelian drought, played a major role in intensifying grievances in Sudan because it meant there was less land for both farming and herding. These issues played out against a background of economic and political marginalisation, as well as violence. The number of violent conflicts attributable to traditional disputes over the use of land escalated dramatically from the 1970s on.[12] In the mid-1980s, when the north-south Sudanese civil war broke out again after a 10-year hiatus, the government used Arab tribal militias as a means of keeping the southern rebels at bay in Darfur. As a result, ethnic identity started to become more politicised, feeding the escalation of conflicts over land issues with much more destructive fighting than in former times. In 2003 two Darfurian armed groups attacked military installations; the response of local government-backed militias was a further escalation with a campaign of ethnic cleansing, causing over 200,000 deaths and the displacement of over two million.

Thus climate change alone does not explain either the outbreak or the extent of the violence in Darfur. The other 16 countries in the Sahelian belt have felt the impact of global warming, including Mali and Chad (see Box 6), but only Sudan has experienced such devastating conflict. Darfur is, in fact, an exemplary case showing how the physical consequences of climate change interact with other factors to trigger violent conflict.

The conflict itself is taking a further toll of already scarce resources. Militias in Darfur are known for the intentional destruction of villages and forests. The loss of trees in these campaigns reduces the amount of shelter available for livestock and the amount of fuel wood for local communities. This threatens their livelihoods and results in their displacement, while simultaneously worsening the impact of desertification, which makes further conflict over land access more likely.

The massive scale of displacement in Darfur also has a serious impact on the environment. Camps for displaced people mean trees being felled for firewood. The consumption is greater in the many camps where manufacturing bricks is being taken up as a means for people to earn a living, encouraged by development organisations such as DFID. These camps can require up to 200 trees per day for brick-making.[13] Over the weeks and months, combined with the wood needed for domestic use, this adds up to a rate of deforestation that renders the camps unsustainable.

Deforestation already extends as far as 18 kilometres from some camps, as people go further and further afield to find wood. Most of those who go to gather wood in this way are women and children, and this task makes them extremely vulnerable to continuing violence from the militia groups. The incidence of rape has risen as an inevitable result. As the wood runs out, the camps eventually have to move. This is not only hugely disruptive to the hundreds of thousands of camp inhabitants, but it is also detrimental to Darfur's existing problems of drought, desertification and disputes over land-use, which were contributory factors to the conflict from the outset.

Secondly, when violent conflicts do break out, it is always against the background of a number of different factors interacting with one another. Poverty and poor governance are factors that frequently have a significant role as the background causes of violent conflict; a history of ethno-nationalist politics, environmental degradation and the legacy of previous armed conflicts are further such factors. If these are background causes, in the foreground lie the demands, grievances and positions of the contending parties and the behaviour and credibility of political leaders. It would be misleading to think that climate change alone will cause violent conflict; the problem, rather, lies in the interaction between the effects of climate change and these other factors.

Water

Climate change will significantly affect fresh water supply. Worldwide, over 430 million people currently face water scarcity, and the IPCC predicts that these numbers will rise sharply because climate change will affect surface water levels that are established by rainfall and glacial melting. In some situations, increased glacial melting will cause inland water levels to rise in the short term, followed by a downturn later, but the overall projected impact of climate change is that water scarcity will increase with time.

This will be especially problematic in middle-income countries making the transition from agricultural production to industry. Such states, of which the largest and most advanced in the process are India and China, face an urgent situation as their water resources are already stressed and depleting while demand is growing rapidly.

The conflict risk if water resources are inadequate lies in poor management that either wastes water by inappropriate use of it and inadequate conservation measures, or politicises the issue and seeks a scapegoat on which to blame shortages. Conflicting claims to water resources have been a feature of numerous conflicts as major rivers are very often shared between countries. The situation is particularly problematic when a militarily strong state or region is downstream to a militarily weaker state or region. China, India, Mexico, the Middle East, Southern Africa and Central Asia are among the countries and regions of the world that have been and are likely to be affected by violent conflict over water rights. Tensions over water rights and supply also can be worsened by development programmes that privatise control of the resource without looking after the rights of the poor.[14]

Agriculture

Temperature change and rainfall are decisive for crop and livestock production in the developing world. The IPCC prediction of a temperature rise of 1-3°C in the next 50 years in the global 'business as usual' scenario would mean crop yields falling in mid- to high-altitude regions. If this is borne out by events, regions most likely to be affected by decreasing crop yields include ones that are already prone to food insecurity, such as Southern Africa, Central Asia and South Asia.[15] Studies in India have already seen rice and wheat production decrease as temperature increases, affecting the food security of agriculture-dependent communities.[16] Projected sea-level rise from glacial melting will affect low-lying coastal areas with large populations, reducing the amount of cultivatable land across South Asia and in other areas around the world.

Any disruption in the agricultural sector can massively affect food security, especially for the poorer sections of society. Increased uncertainty about food supply will force communities to find alternative strategies, which often clash with the needs of other communities also facing increased livelihood pressure. In Africa's Sahel region, desertification is reducing the availability of cultivatable land, leading to clashes between herders and farmers. In Northern Nigeria, Sudan and Kenya, these clashes have become violent.[17] The situation in Darfur is most notable (see Box 2).

Energy

Increasing energy consumption is a key reason for global warming but climate change will increase energy requirements in developing countries. Access to reliable, sustainable and affordable energy supplies is vital for development. For example, refrigeration allows local hospitals and clinics to store vital medicines safely; electricity is the basis of modern communications; power is needed to pump

BOX 3
Peru: Possible flashpoints over water shortages

Peru's democracy has struggled since the mid-20th century as coups have repeatedly disrupted civilian rule. During the 1980s and '90s the rebel movement, *Sendero Luminoso*, was a persistent threat to the stability of the country, to which the government under then-President Fujimori reacted with increasing authoritarianism. But, since the elections in 2001, Peru has generally been perceived as a relatively strong democracy with capable institutions. Even so, uncertainty remains about political stability with renewed terrorist threats from insurgent groups in isolated pockets and continued disputes and tension along the borders with Chile[18] and Ecuador. Meanwhile, the coca growers and drug traffickers continue to cause disruption.[19]

The main climate change concern for Peru is that its glaciers are melting. Glacial coverage has been reduced by 25 percent in the last three decades and it seems likely that all the Peruvian glaciers below 5,500 metres – which is most of them – will disappear by 2015. Glaciers are a vital source of Peru's water supply: two-thirds of Peru's 27 million people live on the coast, but natural springs in the area offer only 1.8 percent of the nation's water supply. So both farmers and city-dwellers rely on water from the glaciers for their livelihoods and for a constant drinking supply.

The first effect as the glaciers continue to melt will be a surfeit of water. It could seem like a bonanza but is unlikely to last long, and in any case will only be available with efficient water management and enough capacity in the reservoirs. With mounting population pressure the demand for water is increasing; local shortages are largely the result of political decisions governed by unequal power relations. Vulnerable groups, with a weak political voice, lose out to more powerful groups.

In the face of the predicted effects of climate change, resource management needs to be extremely careful not to provoke or exacerbate local tensions. Peru, like much of Latin America, is facing efforts towards privatisation of basic services such as water and energy. The reforms of the 1990s designed by the World Bank and the Inter-American Bank for the water and sanitation sector in Peru caused water enterprises to collapse into economic crisis, while workers and consumers suffered negative economic, public health and social effects.[20] International financial institutions such as the Inter-American Bank have further plans for privatising water and sanitation facilities in Peru.[21]

More recent moves to privatise the water sector have already created significant disputes. In March 2004 large numbers of the urban poor mobilised in protest against the privatisation of water in three cities in the state of La Libertad. Almost half of the residents of La Libertad had no running water, and under the newly privatised management, the services had deteriorated even further. The problems included increased contamination as raw sewage overflowed into irrigation ditches, while the average household only received water service 3-5 hours per day.

These are the sorts of conditions that will jeopardise the social contract between citizens and the state established by Peru's nascent democracy. The peaceful acceptance of such fetid conditions by citizens cannot long be taken for granted. Local media and NGOs convey a strong feeling of local-level resentment over such conditions. Even where private water supplies have improved water access, lack of sensitivity to local context and dynamics have seen conflicts arise between new water managers and those who previously supplied water, such as travelling water vendors.

To ease these disputes and thus reduce the risk of political instability and violent conflict, water management has to recognise the possibly explosive nature of the issue. Decisions about how to manage water supplies need to include an assessment of the potential conflict impact, a mapping out of stakeholders, a heavy emphasis on community consultations and transparency about the issues and decisions, tighter regulation of the water supply business, and compensation for communities whose water supply is affected.

water for irrigation and to bring water up from deep wells; and neither industrialisation nor urban development has so far been possible without large-scale energy consumption.

Because energy is such a key development resource, care has to be taken in shaping climate policy. Attempting to develop a strategy to mitigate climate change that includes reduced energy consumption for poor countries would reduce human security, increase poverty and threaten food security. Similarly, reducing energy consumption in middle-income countries would slow economic growth, make poverty reduction much harder to achieve, and generate very high risks of political instability and conflict.

At the same time, of course, meeting increased energy requirements on the basis of business as usual will simply make global warming worse as carbon emissions continue to rise. However, making the transition from fossil fuels to alternative energy sources is proving to be complicated even in rich states with stable, capable governments. It is even more difficult in poor states because the costs of making the transition are relatively higher (i.e., the transition will consume a larger share of scarce economic resources).

Adapting to the energy pressures created by climate change without negative consequences and at affordable costs is a major challenge. Failing to meet it will exacerbate the conflict potential in numerous countries.

Health

Climate change will pose significant risks to human health. Predicted increases in temperature and rainfall in certain regions are likely to increase the incidence of water-borne diseases such as cholera and malaria which, if unaddressed, could lead to epidemics. Large epidemics could impact the socio-economic power balance and alter the relations between communities and countries based on availability of material resources to adapt. This could potentially lead to some level of instability or conflict.

Increased natural disasters such as storms and cyclones will lead to increased casualties, putting pressure on already stretched medical resources. Heat waves and water shortages will have an adverse impact on safe drinking water and sanitation that will disproportionately affect the poorest and most marginalised communities, including refugees and internally displaced people.

Failure by the state to provide for basic public health in fragile states is a fundamental factor that erodes the social contract between state and citizens which, in most cases, leads to increased political instability and, often times, violent conflict.

Migration and urbanisation

Faced with sudden shocks and with long-term challenges brought about or compounded by climate change, people will move. Taken world-wide, this migration is likely to be on a very large scale, for the basic living conditions of hundreds of millions of people will be influenced by climate change. Stern estimates the scale of migration to reach 200 million by 2050.[22] Some movement will be from one rural community to another, by those hoping to maintain their old lifestyles in a new place. Some movement will be from rural areas where agrarian lifestyles have been overwhelmed by climate change, into urban centres to search for better livelihood options. Others still will cross borders in the hope that a new land will offer better prospects. In each case, those leaving non-viable areas will often migrate to areas that are already only barely viable. A significant part of this new trend of global migration will accelerate urbanisation, adding to urban poverty, conflict and, probably, criminality.

The indirect implications of climate change such as migration and urbanisation present a particular challenge, both to conventional approaches to conflict prevention and to adaptation strategies for

climate change. Migration in itself need not be a destabilising factor; it often benefits both those who move and the communities and countries into which they move. But the experience of many countries also shows that there is often great difficulty in accepting immigration. Problems arise particularly when those who already live in an area feel that newcomers are an unwanted burden. This is especially so when communities in search of new livelihood options move to areas that are only just viable. Their presence there can compound social pressures, as it has done in Assam and Bangladesh, for example.[23] In the case of urbanisation, it is noteworthy that even very rapid urbanisation has been managed without violent conflict in prosperous and politically stable nations such as Japan; it is not the process, but the context and the political response to immigration that shape the risks of violent conflict.[24] Nonetheless, that context has so often been conducive to violence and the political response has so often been inflammatory that migration has to be recognised as not only a likely consequence of climate change, but also as a major risk factor in the chain of effects that link climate change and violent conflict.

BOX 4 Bangladesh: Climate change, migration and conflict risks

The experience of Bangladesh illustrates some of the possible tensions that link climate-related migration to violent conflict. In the recent past, migration has led to violent conflict both within Bangladesh and in neighbouring regions of India.

Bangladesh has a growing population for whom there is not enough land available, and is vulnerable to severe effects from climate change. Part of the country's vulnerability lies in its topography: about half of Bangladesh is located only a few metres above sea level, and about a third is flooded in the rainy season. The Indian Farakka Barrage has made the problem worse over the past 30 years. Completed in 1975, close to the border with Bangladesh, the barrage diverts water from the Ganges River to its Indian tributary, reducing the flow of water in the Bangladeshi tributary. This disturbance to the natural balance of the large Ganges-Brahmaputra delta has caused several severe problems:

- salt water intrusion into Bangladeshi coastal rivers, reaching as far as 100 miles inland on occasion;
- consequent decline in river fishing;
- summer droughts, making the land less productive;
- loss of land to the sea because the reduced river flow meant less sediment was carried into the delta area to give it natural protection against the sea;
- worsened flooding when cyclones hit.

These problems directly affect about 35 million people,[25] exacerbating the effects of other features of rural life – including, not least, poverty, unequal land distribution and, among small farmers, economically inefficient systems of inheritance that divided land among family members into ever smaller plots.

Unable to make a living, many people have migrated. There have been two nearby destinations, as well as others much further afield. Since the 1950s, 12-17 million Bangladeshis have migrated to India (often illegally), attracted by the higher standard of living and lower population density, moving mostly to the adjacent states of Assam and Tripura.[26] And about 400,000-600,000 people have moved within Bangladesh to the Chittagong Hill Tracts (CHT), where they have cleared trees on the steep hillsides and begun farming, resulting in soil erosion and unsustainable livelihoods. In both the neighbouring Indian states and the CHT, there have been conflicts.

Chittagong Hill tribes in Bangladesh were involved in violent conflict with the state for two decades from 1973 until an agreement was reached in 1997. Among the grievances was the influx of people from the plains, whom the Chittagong tribes viewed as a threat. Bangladeshi migration to the north-east Indian region of Assam also contributed to social frictions. The natives resented the newcomers and accused them of stealing land. The immigrants' arrival affected the economy, land distribution and the balance of political power.[27] Violence first erupted in the early 1980s.

These problems continue and further migration as a result of climate change will make them worse. In Bangladesh these pressures combine with persistent political problems that have produced bomb attacks on civilian targets and pressure in some parts of the state for a State of Emergency to be declared. If local and national governments cannot develop measures to cope with the pressures on resources from migration and climate change, the risk of further and more intense violence is very high.

BOX 5 Karachi: Urbanisation, climate change and violence

Karachi, Pakistan's largest city, is projected to have a population of 19.4 million inhabitants by 2015. The city is already affected by political unrest, with high-profile acts of political violence in 2006. Located close to the coast and only eight metres above sea level, it is predicted to be seriously affected by rising sea levels by 2050.

Like most other mega-cities, Karachi has grown rapidly. The speed of its expansion, its weak governance and poor infrastructure mean that it cannot provide basic services to this growing population. For example, provision of sanitation systems in Karachi is meager: less than 20 percent of the city's population benefit from piped sewage.[28] Life for Karachi's poor is already affected by diseases spread by poor water supply and lack of sanitation, and they also face food insecurity, physical insecurity and limited options for securing their livelihoods. The consequences of rising sea levels, including flooding and disease, will aggravate these problems.

Karachi's social geography makes it a fertile ground for the mobilisation of young men by militant, violent political groups, often connected to the fast-growing number of unregulated *madrasas* (religious schools).[29] As climate change adds to the pressures of urban poverty, Karachi risks a serious increase in lawlessness, with further consequences for political stability in Pakistan and the region, and the risk of regional economic disruption because Karachi is a significant financial centre.

Climate change and global insecurity

Failure to help already stressed communities cope with the additional pressure to their livelihoods caused by climate change means that existing grievances will intensify and the risk of violent conflict will increase. Predictions are always uncertain but it is important to identify risks. Our research for the map in this chapter indicates that problems that will be induced or exacerbated by climate change will combine with other factors to create a high risk of armed conflict in 46 conflict-affected states. We identify a further 56 in which the burden of climate change consequences could induce serious political instability, putting them at risk of violent conflict in the long term.

The 46 countries facing a high risk of armed conflict are characterised by some combination of current or recent wars, poverty and inequality, and bad governance. The latter often involves corruption, arbitrary authority, poor systems of justice and weak institutions of government, causing deficiencies in economic regulation and basic services. The combination varies from place to place but all of them suffer from a lethal mix of different types of vulnerability and, consequently, have a high propensity to violent conflict. The armed conflicts that could ensue will probably be fought out with varying degrees of intensity and violence. Some wars kill hundreds of people, others kill hundreds of thousands.

The second group of 56 countries is not so immediately unstable but their government institutions may not be able to take the strain of climate change for a variety of reasons, including a record of arbitrary rule, recent transitions out of dictatorship and war, economic underdevelopment or instability, and lack of technical capacity to handle the issues.

THE DOUBLE-HEADED RISK

The consequences of consequences of climate change include a high risk of armed conflict in 46 countries with a total population of 2.7 billion people, and a high risk of political instability in a further 56 countries with a total population of 1.2 billion.

Map key:

- A: States facing a high risk of armed conflict as a knock-on consequence of climate change
- B: States facing a high risk of political instability as a knock-on consequence of climate change
- C: Other states

Technical note

The IPCC's Fourth Assessment Report of 2007 shows that global warming will have global effects, varying in both kind and degree.

Research for this report identified 102 countries* as being at risk of significant negative knock-on socio-political effects, using three criteria for selection:

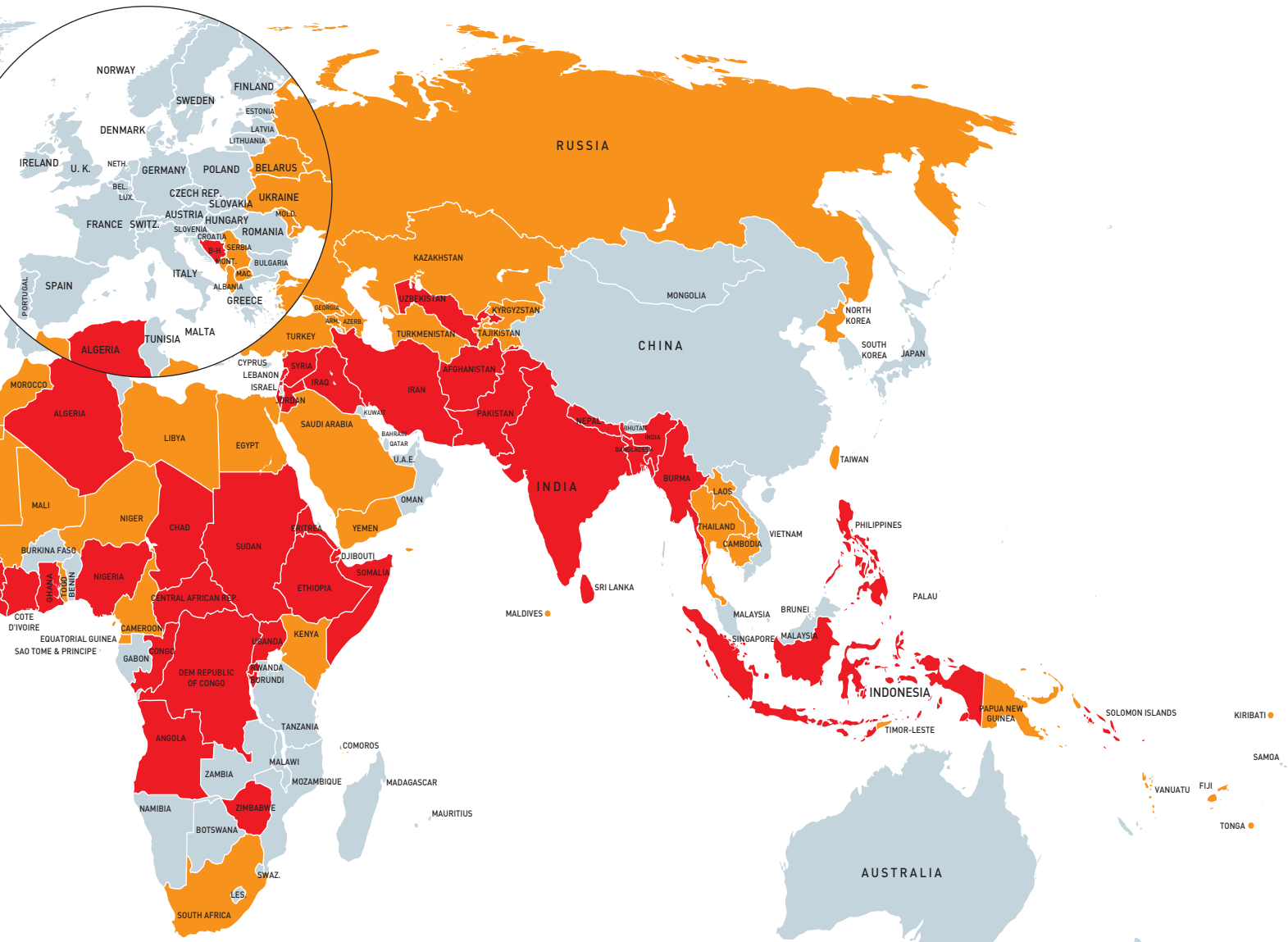
1. Their presence on a variety of international watch lists: the UK Department for International Development's 'proxy list' of Fragile States, the Global Peace Index ranking of 121 states (bottom 50 positions), the International Crisis Group 'crisiswatch' list, the World Bank's list of Low Income Countries Under Stress;
2. The presence of an operational UN peacekeeping force;
3. The prospect of, or their engagement in, economic or political transition (e.g., from autocracy towards democracy or leadership succession).

Within this group of 102, 46 countries were identified as facing a high risk of armed conflict. Primarily these are countries with current or recent experience of armed conflict, because this is a reliable indicator of propensity to further violence. In addition, particularly weak institutions of government and very poor economic performance were used as guides to the selection.

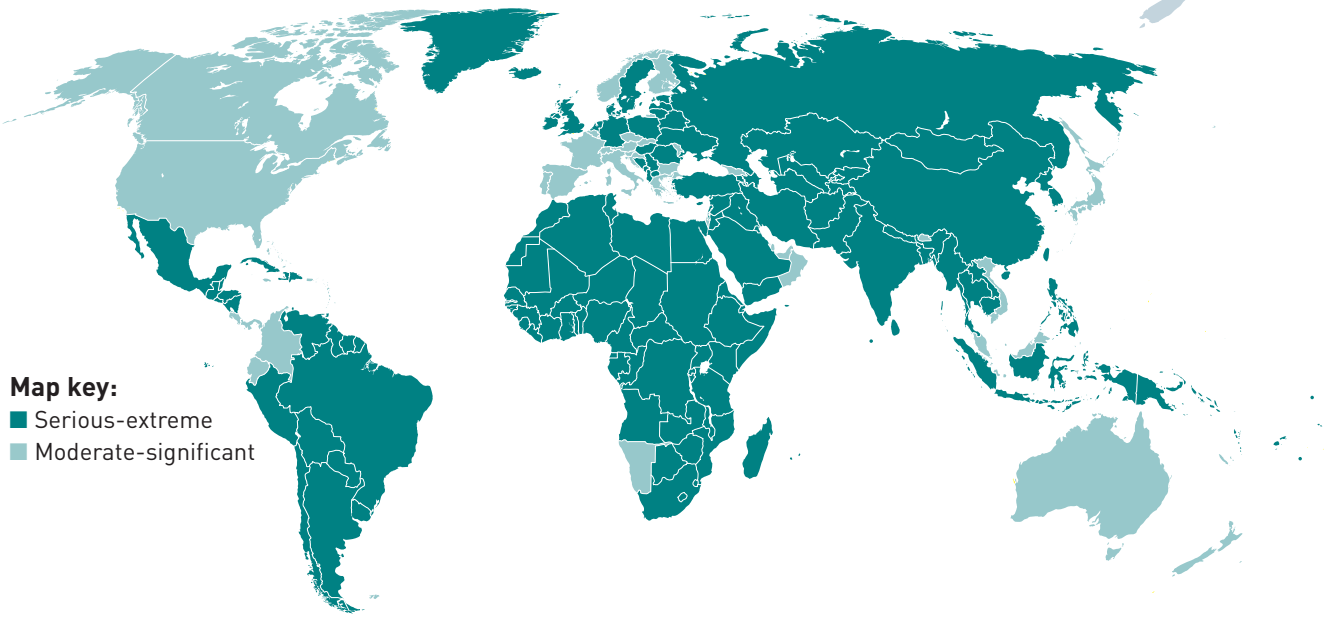
The larger map does not make predictions but indicates risk. It should be borne in mind that armed conflicts vary widely in their levels of lethality and in whether they occur at a local, national or regional level.

The smaller map shows countries' exposure to climate change, based on the A1 scenario (approximately "business as usual") used by the IPCC.

*A full listing of these countries can be found at the end of the references on page 44.



Global exposure to climate change



Governance matters

Political stability rests on the strength of the social contract between the government and its citizens. Citizens adhere to the law and pay taxes in return for the state providing for their basic needs, such as security and infrastructure.[30] When the state is perceived to be failing in its basic functions, this contract is eroded.[31] And as the basic problems that government has to solve get deeper, because the demands for resources are becoming more desperate, so the task for government gets more difficult, and the likelihood that it will fail in its basic functions accordingly increases.

BOX 6
Mali and Chad: Similar threats, different likely outcomes

Mali and Chad lie along the same latitudes with large portions of their land area covered by the semi-arid Sahel. While they share many of the same bio-physical features, their economic and political situations are radically different, creating very different levels of vulnerability for the two countries.

Mali and Chad are heavily reliant on agriculture for foreign exchange through cotton exports, and for food for their populations. Neither country has a well-developed industrial sector; what industry there is focuses on agricultural processing. Both have significant, though under-developed, natural resources. There has been renewed interest in oil in Chad and it may become an important source of revenue for the government. There is potential for renewed and increased tension in both countries between the herders in the north and the farmers in the south as they all try to cope with dwindling water resources.

Despite these similarities, the two countries face radically different futures. Chad is struggling to maintain control as refugees from Sudan spill over its borders, bringing with them more violence and disruption. What international community is present in Chad is focused on emergency relief, and even many of those agencies are pulling out as the situation becomes more insecure. Chad's lack of infrastructure, especially roads, makes it very difficult to deliver aid or technical assistance. Investment in agricultural infrastructure has been minimal and Chad relies on rain-fed systems for food and cotton. The lack of transportation means that the cotton-growing regions also have to devote precious resources to growing food as well, as they cannot rely on importing food from elsewhere in the country or from abroad.

In contrast, Mali has an elected democracy whose reach extends beyond the capital to provide at least minimal services. During the 1990s, the country emerged from a debilitating civil war and the government took the lead in regional efforts to stop the proliferation of small arms and light weapons. The country is self-sufficient in food, at least when there is no drought. The international community is actively engaged in several sectors, and the US has selected Mali to be one of the beneficiaries of the Millennium Challenge Corporation account, which is only used for 'well performing' poor countries, and which thus highlights how well Mali is doing on various development indicators.

Even so, Mali is as exposed to the impacts of climate change as Chad. Both are likely to experience higher temperature, the expansion of the Sahel desert, and less rainfall during a shorter rainy season. All of these factors will have a heavy impact on the agricultural sectors and are likely to exacerbate existing tensions between herders in the north and farmers in the south.

Where the two countries may differ is in how they react. The food security situation of both countries will be an early indication of how the countries manage to adjust to the changing environment. Chad is already extremely food insecure, but a change for the worse in the climate could worsen an already dire situation. The pressure on resources may cause an increase of internally displaced peoples, in addition to forcing people to emigrate out of the country altogether, thereby increasing population stresses on other countries. The health of the livestock population will also be a key indicator for management. In previous droughts the country lost a great deal of livestock, crippling the livelihoods of a large portion of the population. Lake Chad is also disappearing rapidly due to declining rainfall and increased demand for its water, in addition to other variations in climate patterns.[32]

Mali's relatively good governance, economic performance and political stability since the civil war ended in 1995 all suggest that it is much better placed than Chad to respond in an effective and timely way to the challenge of climate change, by adapting crops, and preparing to handle potential resource conflicts through traditional mediation.

This issue is crucial for two reasons: first, because the decisions that governments take can be extremely important in either moderating or accelerating the social impact of climate change; second, because some state functions are particularly important in relation to the risk of violent conflict. These functions include the provision of primary health care and education, the safeguarding of human rights and democratic systems, and the maintenance of an accountable and effective security sector, including police, army and judiciary.[33] In the event of climate change, an already weak government may find itself unable to meet these basic needs, and one of the consequences of that is an increased risk of violent conflict.

In addition, violent conflict can severely limit the ability of governments to assist in adaptation. Poor governance, combined with other factors, can explain why similarly bad droughts in both Ethiopia and Hungary led to violence only in Ethiopia, and why tropical storms in Haiti and the Dominican Republic led to violence only in Haiti.[34]

It is not poverty alone but uncertainty and the perceived threat of future insecurity that increase the risk of violent conflict.[35] Further, some research indicates that the risk of poverty or its sudden onset also increases the likelihood of individuals joining an armed group.[36] The influence of climate change will be felt as more frequent storms and natural disasters not only cause loss of life and homes, but more generally cause uncertainty and long-term decline in the possibility of maintaining secure livelihoods. In the developed world, these uncertainties and risks can be absorbed by the state's welfare mechanisms and insurance systems. However, in states where such safety nets are already under immense pressure, or do not exist at all due to underdevelopment, weak governance and/or conflict (most notably in countries affected by conflict), the risk of instability cannot be dealt with in this way.

Key risks

This overview of the double-headed problem of climate change and violent conflict reveals a number of key risks that have to be addressed through new policies:

Political instability: Weak governance structures underlie the problem of vulnerability to the impact of climate change. Weak governance is one of the key links in the chain of *consequences of consequences*. Climate change will put increased pressure on basic state functions such as the provision of basic health care and the guarantee of basic food security. Failed states, fragile states and states in transition, where such institutions either do not exist or are already unable to provide for the basic needs of their citizens, are particularly at risk.

Economic weakness: Economic instability will leave communities highly vulnerable, both to sudden environmental shocks and slow erosion of their livelihood security. The socio-political impacts of climate change will affect poor countries more than further developed states. Poorer countries, which tend to be agrarian states, will be far more susceptible to falling crop yields, extreme weather events and migratory movements. In poorer countries, there is no insurance, either private or state-based, against the effects of crop failure. These impacts of climate change will hinder economic development and the lack of economic development hinders the ability to adapt to climate change. Empirical studies show that poor countries facing additional pressures are more prone to conflict. Climate change can thus increase obstacles to economic development, worsening poverty and thereby increasing the risk of violent conflict is these states.

Food insecurity: In many areas, the physical effects and the socio-political consequences of climate change will combine to have a profound and destabilising effect on ordinary people's daily lives by reducing food security. The problem here is not simply food shortages but uncertainty of food supply.

This may be the result of losing arable land to desert and of shorter growing seasons, but can equally be caused by changes in the food supply chain, such as the loss of roads through flooding (and in other places, the loss of rivers through persistent drought). Political instability and violent conflict also have an effect on food security. Humanitarian assistance can temporarily fill in when there are food shortages but cannot address the underlying problem of lack of food security – and it is only when food security is restored that people can feel safe. In the absence of food security, conflict and migration are almost inevitable consequences.

Demographic changes – migration and urbanisation: Demographic changes always entail a change in power systems and resource allocation. Climate-change-related movements of people will place strain on host communities that already have scarce resources, whether because of population growth, government policy or as an effect of climate change itself. In such circumstances, there is a higher risk of violent conflict. Some of the world's mega-cities are on the coast and are themselves at risk over time from rising sea levels. The combination of population growth, inward migration, declining water supply, other basic shortages and rising sea levels in a city of 15-20 million or more inhabitants adds up to a challenge with which even the most effective city and national government would find hard to cope. Where governance is poor, a social disaster seems close to inevitable.

3

THE UNIFIED SOLUTION

The double-headed problem of climate change and violent conflict has a unified solution. The capacities that communities need in order to adapt to the consequences of climate change are very similar to those they need in order to reduce the risk of violent conflict. Addressing one part of the problem in the right way is itself a means of addressing the other part. Indeed, climate change offers an opportunity for peacebuilding: in divided communities, climate change offers a threat to unite against; the need for adaptation offers a task on which to cooperate.

The community is the vital level for action to adapt to and meet climate change but international cooperation is also essential. Climate change and its physical consequences do not respect national borders so policy and action to address the problem must be developed internationally. This truth has formed the cornerstone of efforts to mitigate climate change for two decades already.

The knock-on socio-economic consequences do not respect national borders either. Large-scale migration, loss of economic output, loss of livelihood security, increased political instability and greater risk of violent conflict will all have consequences that cross national borders. The logic that promotes international cooperation for mitigation works in the same direction when it comes to adaptation.

Furthermore, in many countries that face the double-headed problem, the government is going to be either unwilling or unable – or both – to take on the task of adaptation and peacebuilding. In many of the countries most at risk, the government – and more than that, the system of governance – is part of the problem. The task of helping communities adapt to climate change cannot be left to such governments. There is no alternative except international cooperation to support local action.

Why the international community should act

There are two central motives that should drive international efforts to address the double-headed problem we have identified: the first is to maintain international peace and security; the second, linked to the first, is to support sustainable development.

To maintain international peace and security: The UK government initiated a debate on security and climate change at the UN Security Council in April 2007. There was considerable resistance to this from other governments and it could not be said afterwards that many other governments had been convinced by the UK's arguments. But the very fact that the UN Security Council was used in this way signalled that climate change is beginning to be considered an issue of international security. The London-based International Institute of Strategic Studies, in its

annual *Strategic Survey* in 2007, similarly identified climate change as a major issue of international security and argued that this would become more widely understood as the effects of climate change begin to bite.[37]

Where the inability to adapt to climate change combines with other stresses to produce violent conflict, neighbouring states and the international community will be affected, not least through the flight of refugees. Even viewed through a narrow economic prism, the cost of a civil war is far higher than the cost of adaptation, so any reluctance in the international community to invest in the adaptation needs of poor communities would be a false economy.

More broadly viewed, a world that is forced into belated efforts to adapt to climate change is almost certainly one in which rivalries between states escalate. Without going into speculative scenarios, the risks that the world faces in relation to climate change will include increased insecurity – unless climate change is treated as an opportunity and becomes the occasion for enhanced cooperation. That is a strong motive for timely international cooperation.

To support sustainable development: The international community has already acknowledged that failure to take climate change into account in development policies and strategies will threaten the achievement of international development goals to reduce poverty and increase literacy and health.[38] Similarly, not paying attention to climate issues in development and peacebuilding can worsen tensions over resources and increase the risk of violent conflict. For example, in Liberia, UN-led programmes are retraining ex-combatants in agricultural skills and reintegrating them into farming communities. According to IPCC projections, however, the region will face a 50 percent cut in crop yields by 2020.[39] Unless the techniques taught are appropriate for the changed environment of the near future – techniques such as half moon planting and water harvesting, for example – the new livelihood opportunities for ex-combatants will be wiped out well within their working lifetime. The existence of unemployed and frustrated ex-combatants is widely regarded as a contributory factor to violent conflict,[40] and violent conflict holds back economic development. But ensuring that development and peacebuilding programmes are sensitive to climate change will bolster or even foster local adaptation and reduce the risk of climate change contributing to violent conflict.

Regional cooperation

It is not only at the level of the UN that international cooperation is relevant. While the world body's role is crucial, it needs to be supplemented by regional and sub-regional bodies such as the African Union and the Organisation of American States, and sub-regional organisations such as the Economic Community of West African States, the Association of South East Asian Nations, and the South Asian Association for Regional Cooperation. Like the EU, but with much less wealth and economic power at their disposal, these bodies represent the common interests of their member states in stability, security and growing trade and prosperity. They can often provide a forum for concerns and a mechanism of support for their members that are closer to the actual concerns of the states involved and less likely to be experienced as an outside threat than, for example, action initiated at the UN level or undertaken by rich northern governments. They could therefore have greater effectiveness and legitimacy in helping develop responses to some of the key risks in the knock-on consequences of climate change.

Some of the measures of adaptation mentioned later in this chapter, such as building stocks of agricultural products as an economic reserve, developing new crop techniques and systems, or identifying post-disaster re-employment opportunities, might be best developed on a regional or sub-regional basis. Significant numbers of states lack the capacity or the economic resources to make these preparations alone but could play a part in a cooperative system.

Some of the difficult issues of migration could perhaps also be best handled through cooperation at the regional level, developing a framework not only of law, but of interlocking claims and duties on and for one another.

A role for the private sector

The responsibility is not just with governments and inter-governmental organisations. The private sector also has a role to play. International companies operating in at-risk countries have both an interest and a responsibility in safeguarding their investments by working together with governments and communities on adaptation. At a national and local level, again, there is both a company interest and a responsibility to be part of adaptation. Local communities, after all, include small and medium-sized companies, local producers and traders.

Many corporations are already making steps towards sustainable and environmentally friendly business practices. Many companies have developed corporate social responsibility policies that aim to minimise the adverse impacts of the companies' on the social environments around them. However, without adequate information on the socio-economic consequences of climate change, some of these well-intentioned policies could actually restrict the adaptation options of some communities in the near future. For example, promoting fair trade coffee is an important step towards generating better conditions for coffee farmers. Yet the predicted increase in temperature of 2°C will dramatically decrease the amount of land suitable for growing coffee.[41] If more farmers were to go into coffee production because they were guaranteed a fair price, and if there were to be no planning for alternative livelihood strategies when climate change strikes, the long-term effect could be harmful.

Well-informed, climate-aware and context-specific business practices, on the other hand, have the scope to provide new adaptation options such as new livelihood opportunities or strengthened infrastructure. For example, if different crops are to be farmed, it is essential that there is efficient distribution of the seeds and of the products – a role for the private sector. Establishing quick re-employment options after drought or extreme weather also offers a role for private companies.

At a different level, business practice should be climate-sensitive, not only in terms of reducing carbon emissions and thus attempting to address the long-term roots of the problem, but also in terms of supporting adaptation to address the short and medium-term consequences. This can involve not only the obvious companies, such as those in energy and transport, but others, such as the finance sector, which is capable of transforming into practical commercial considerations the argument in the 2006 *Stern Review* that responding constructively to climate change is economically beneficial. Adaptation will require investment, and in some cases will be suitable for private sector investment.

Complexities of cooperation

There is already a considerable international agenda for cooperation on the issue of climate change. For many observers and especially for environmental activists, this agenda does not go nearly far enough on mitigation. But the perspective advanced here is different: important though it is to mitigate global warming, examining the interrelationship between climate change and the risk of armed conflict leads to the conclusion that adaptation needs more attention and more action. Some academic commentators have pointed to 'the long-standing unease in the policy community with regard to adaptation'.[42] Though adaptation does feature on the international agenda, it is mitigation that takes the lion's share of the headlines and the policy initiatives. It is time to recognise that while mitigation is essential, its benefits will come slowly and, in the meantime, adaptation is urgent.

BOX 7 Current frameworks and action on climate change adaptation

INTERNATIONAL FRAMEWORKS

UN Framework Convention on Climate Change (UNFCCC): International efforts to tackle climate change are primarily pursued through the UNFCCC. The UNFCCC is an international environmental treaty produced at the United Nations Conference on Environment and Development, known as the Earth Summit, held in Rio de Janeiro in 1992. The parties to the UNFCCC meet annually; the December 2007 meeting in Bali is the 13th Conference of Parties. The UNFCCC acts as an umbrella for international dialogue, policy and funding on climate change. Its overarching mandate, stated in article 2 of the Convention, is to limit greenhouse gas levels to a 'level that would prevent dangerous anthropogenic interference with the climate system'. Under this framework, mitigation of climate change dominates the agenda, with most funding and policy attention geared towards the future of the Kyoto Protocol and a number of separate initiatives.

Intergovernmental Panel on Climate Change (IPCC): The IPCC is the most authoritative source of internationally accepted scientific assessments. These assessments feed into the UNFCCC process and constitute its scientific basis. However, though based on pure science, the reports of the IPCC are produced through intense political negotiation, especially over the confidence with which future effects are predicted, and concerning the analysis of how observed features of climate change are caused. The Fourth Assessment Report (AR4) from the IPCC has come out during 2007 and is more far-reaching in its socio-political analysis of the impacts of climate change than its predecessors. Working Group II of the IPCC, in particular, has looked more closely at the climate impacts and vulnerabilities of fragile communities than in previous reports. However, it is not the role of the IPCC to provide an assessment of the likely impacts of climate change on violent conflict, so the issue of conflict and peacebuilding potential is not explored in the AR4.

UN International Strategy for Disaster Reduction (ISDR): The ISDR was set up to coordinate approaches at a local, national and international level with the aim of building disaster-resilient communities by promoting increased awareness of the importance of disaster reduction as an integral component of sustainable development.

The Hyogo Framework for Action (HFA): This is a 10-year action framework (2005-2015) for disaster risk reduction. Its three aims are to: integrate disaster risk reduction into sustainable development policies and planning at all levels, with emphasis on disaster planning, mitigation, preparedness and vulnerability reduction; develop and strengthen institutions, mechanisms and capacities at all levels; and to systematically incorporate risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

Neither the ISDR nor the HFA was designed to address directly the issues posed by climate change and conflict but they provide useful frameworks to guide and monitor action. However, these frameworks are only as effective as their implementation. NGOs are already finding that action around the HFA is highly top-down and does not sufficiently include local actors.

Global Environment Facility (GEF): Multilateral funding for climate change is mainly channelled through the GEF, a funding agency established in 1991. While most funding for climate change over the last decade has been for mitigation, the GEF has recently set up four new funds for adaptation in developing countries. However, one barrier to using these funds is the GEF rules, which state that they can only be used for the 'incremental costs of global benefits'. While it is relatively easy to calculate the costs of global benefits arising from mitigation projects, it is more difficult to do so for adaptation projects as benefits are usually local rather than global. The four funds are:

- *The Least Developed Countries Fund*: This fund is only for those countries classified as LDCs. It therefore excludes many middle-income countries that also face the risk of instability or violent conflict in the face of climate change. It is reliant on voluntary contributions for funding. Since its launch in 2001, the LDC fund has attracted $120 million in pledges, but only $48 million has been received as of April 2007.
- *The Special Climate Change Fund*: This is for adaptation planning and technology transfer in all developing countries and is reliant on voluntary contributions for funding. As of April 2007, $62 million has been pledged, and $41 million has been received.
- *The Strategic Priority on Adaptation*: A three-year

initiative to pilot adaptation capacity-building measures, funded by $50 million from GEF Trust Funds.[43]

- *The Adaptation Fund*: This is intended to fund actual adaptation measures in developing countries. It is not yet operational; the plan is to fund it from CDM credits, amounting to an estimated $1 billion over the next five years. Of the 13 countries that have submitted their NAPAs to the UNFCCC, the total cost of projects proposed to meet only the immediate adaptation needs is $330 million. Factor in the long-term costs, and the 89 other countries in need of assistance, and it is evident that this fund is just a drop in the ocean of what is required.

The cost of adaptation is still hugely under-researched and so an estimate of how much is needed is difficult to discern. However, the World Bank has produced a preliminary estimate that it will cost approximately $10-40 billion to climate-proof investments in the developing world.[44] Even judged against the lower estimates, the pledges received to date are massively inadequate.

At the same time as noting the relative paucity of funds available for adaptation, it is important to add that the international donor community does not only need to spend additional money, it also needs to change the way it meets its current commitments for expenditure on development and peacebuilding. These activities need to be climate-proofed – i.e., the way that development and peacebuilding money is spent has to alter if the challenge of climate change is to be met. This should take an important place on the international agenda, starting with the December 2007 Conference of Parties of the UNFCCC (CoP 13) in Bali.

Organisation for Economic Cooperation & Development (OECD): One forum that has begun looking at integrating the development, peacebuilding and climate adaptation strands is the OECD. The Development Assistance Committee (DAC) is extending the chapter on Environment and Resources in the OECD's *Guidelines for Conflict Prevention* to take account of climate change. And the DAC Network on Conflict, Peace and Development Cooperation is researching the links between the environment, conflict and peace, issuing briefs and specific assessments on land, water, valuable minerals and forests.[45] The OECD's Working Party on Global and Structural Policy has also recently set up a Climate and Development Project where climate change and conflict are intended to be addressed with strong participation from developing countries.

AT THE REGIONAL LEVEL

The European Commission (EC): The EC is developing a global monitoring system for environment and security in 2008 as part of the European Strategy for Space.[46] This monitoring measure is intended to oversee implementation of the Kyoto Protocol; it will largely benefit mitigation, rather than adaptation. There are also discussions about the need to link climate change to broader security and development policy strategies and the EC is establishing a new Global Climate Change Alliance between the EU and other vulnerable developing countries.

Apart from the EC, there do not appear to be major regional initiatives addressing adaptation and even the EC is only now coming to this issue.

AT THE NATIONAL LEVEL

National Adaptation Programmes of Action (NAPAs): Under the framework of the UNFCCC, the core instrument for addressing adaptation by countries at the national level is through NAPAs. The idea of a NAPA is to provide a process For Least Developed Countries to identify priority activities that respond to their urgent needs for adapting to climate change. To date, 22 states have drawn up a NAPA[47], and 13 have submitted them to the UNFCCC. In theory, NAPAs take into account existing coping strategies at the grass-roots level, and build upon them to identify priority activities, rather than focusing on scenario-based modelling to assess future vulnerability and long-term policy at state level. However, the process of drafting the NAPAs so far seems to rest more on assistance from donors such as the World Bank and the UN Environmental Programme rather than on participation from community groups and civil society. The NAPAs have an evident potential for integrating peacebuilding and development concerns with adaptation to climate change, but it is too soon to tell whether actual steps are being taken in this direction. In the absence of an effort to integrate the plans and action, the risk is that NAPAs will become just another box for poor governments to tick on the way to getting some funding.

Trade-offs and synergies between adaptation and mitigation

The IPCC's AR4 notes the risk of an unwelcome trade-off between adaptation and mitigation because resources committed to one are not available for the other. As far as the poorest countries are concerned, the fact is that their carbon emissions have been marginal compared to industrial countries and, more recently, the fast developing middle-income countries. Africa as a whole, home to 14 percent of the world's population, is responsible for 3.6 percent of global carbon dioxide emissions while, to take a random example, Australia has 0.32 percent of the world's population, yet produces 1.43 percent of carbon dioxide emissions.[48] With the exceptions of Libya, the Seychelles, Nigeria and South Africa, African countries emit only 0.5 tonnes of carbon dioxide per capita each year. By comparison, as the world's largest emitter, the USA emits over 20 tonnes per capita.[49] For poor and politically unstable countries facing the combined risk of climate change and conflict, therefore, there is not much to gain by concentrating scarce resources onto mitigation, and however heroic their efforts, they will not make much of a dent in global emission levels. From the perspective both of the individual countries and of the international community as a whole, the priority need in the poorest countries is for adaptation.

An additional trade-off between mitigation and adaptation policies has been less discussed. In some circumstances, measures to reduce GHG emissions risk actually hindering adaptation. For example, among the World Bank's activities in Sri Lanka is the new Renewable Energy for Rural Development Project[50] which aims – among other strategies – to strengthen the national grid through support for privately owned mini-hydroelectricity plants and other renewable energy projects. It is likely to divert scarce water supplies from communities' consumption and agricultural needs. That risks weakening food security at a time when, as part of adaptation to climate change, it should be strengthened. It also risks fostering social tensions because of local resentment towards development initiatives that misfire. Similarly, in Cochabamba, Bolivia, making water into a marketable commodity by contracting water provision out to the private sector pushed up prices and led to violent protests in January to April 2000, with over 100 people injured.[51]

The limits of carbon trading

Carbon trading is one of the key ways in which states are attempting to address the problem of climate change at the international level. Most carbon trading schemes are registered with the Clean Development Mechanism (CDM), an arrangement under the Kyoto Protocol allowing industrialised countries that have committed to reducing greenhouse gas emissions to invest in projects that cut emissions in developing countries as an alternative to more costly emissions reductions in their own countries.

Mitigation is self-evidently important and carbon trading has long been seen as a productive way of doing it but, recently, a number of concerns have arisen around the CDM. A study by *Nature* in 2007[52] revealed that the CDM was becoming a lucrative industry where companies were paid as much as 50 times more than it cost to reduce emissions. Further investigations have found that there are loopholes allowing for spurious credits to be awarded. There is evidence that the majority of CDM projects would have happened anyway – in other words, companies were simply using the CDM to generate extra income. There were even cases of projects being retrospectively given the CDM tag. Thus, the CDM was not acting as an incentive for new environmentally responsible activities.[53]

Among other problems, the CDM's failure to take account of poverty is concerning. Most CDM projects are in countries undergoing rapid industrialisation and very few are in Africa; in 2005, these accounted for only seven projects in all, 2 percent of the total (and, of these, five were in South Africa).[54] The real problem, however, is the risks entailed in some of the projects. For example, a World Bank landfill gas project in Durban, South Africa, is actively opposed by most local communities because of its adverse health effects.[55] If the effort is made to mitigate climate change in this way, pursued at the expense of the needs and well-being of local communities, there is a risk of

social instability. In regions that are already unstable and face a myriad of other pressures, failure to take account of conflict dynamics can contribute to an escalation of such instability into violence.

The problem of maladaptations

The IPCC's Working Group on Impacts, Adaptation and Vulnerability has rightly noted the importance of addressing climate change adaptation in fragile states, especially where these responses are so-called 'no regrets' policies – that is, policies that turn out to be of benefit to a community whether or not the predicted climate change impacts occur.

The IPCC warns against the risks of what it calls *maladaptations*, which are the result of responses to climate change that lack foresight about climatic or relevant social trends.[56] However, the IPCC draws a problematic conclusion when it argues that this means there should be more emphasis on mitigation to prevent future maladaptations that would increase the costs of climate impacts. It would be equally possible to turn this the other way around and say that the problem of what might be called *mismitigation* – as outlined above – means there should be less emphasis on mitigation for fear it will go wrong.

The solution is to ensure that maladaptation does not occur at all. In fragile states, this would mean ensuring that policies on climate change are sensitive to conflict risks and, at the same time, ensuring that peacebuilding and development take account of the consequences of the consequences of climate change. In essence, the process entails incorporating adaptation into peacebuilding in a manner that takes account of future vulnerabilities to climate change.

Ensuring the approach is evidence-based

The issue of maladaptation shows that the need is not only to give more attention to adaptation but to make sure it is effective – more of the right kind of adaptation. To this end, examples such as those from Bolivia, Sri Lanka and South Africa show the importance of basing adaptation policies on solid knowledge about local circumstances, including anticipated climate change impact and a thorough contextual analysis.

There are two problems with this – one is time. Such work will take two to five years to complete. Meanwhile, the effects of climate change are already unfolding. The response, therefore, must be incremental. Peacebuilding will help develop the adaptive capacities of communities so they can use the research findings as they come through. In the meantime, peacebuilding and development must be as climate-sensitive as existing knowledge allows, recognising that this knowledge will deepen as time goes by.

The second problem is the risk that the approach to conducting, reporting and using research will be technocratic, top-down and alienating. To ordinary people it will feel like outside experts coming and telling them how things are, how they should live and what they should do. The likelihood is they will ignore this advice or, if necessary, fight it.

A different way of working is possible, grounded in a peacebuilding approach. This emphasises the importance of local knowledge and seeks the active participation of local communities in working out how best to adapt to climate change. While much of the technical knowledge, such as complex climate modelling, would of necessity need to be transferred from states with more advanced research and development capacity, figuring out what to do could and should be an inclusive and participatory process. Where communities are divided because of the experience or risk of violent conflict, addressing these problems could, in fact, provide the occasion for developing a practical, problem-solving dialogue through which cooperative relationships could be established and steadily built up. The aim, in short, is to bring hard science and local knowledge together.

Peacebuilding

'Peacebuilding' means societies equipping themselves to manage conflicts without resorting to violence. It looks different in different contexts – the detailed activities range from local dialogues promoting reconciliation to advocacy that shapes economic policy and business practices. The key is to understand that it is not possible to build peace for people and communities that have been involved in violent conflict; rather, those people and communities must build peace for themselves. It is, however, possible for outsiders to help and participate in that process.

Peace is sustainable only if it is based on a social process in which citizens participate as equals. In general, they will do this only when they see that the peace process offers justice, economic equity and progress, security and good governance. These are the foundations of peacebuilding which, in the long term, are the basis for strong and responsive institutions of government. Peacebuilding is thus holistic, acting on all aspects of a society's security, socio-economic foundations, political frameworks, justice systems, and traditions of reconciliation to strengthen the factors that can contribute to peace. And peacebuilding is also inclusive of all actors and perspectives, including those who are frequently marginalised or excluded.

Peacebuilding works – but it works slowly. It was well over a decade before the peace process in Northern Ireland was regarded by most observers as relatively stable – from the IRA's ceasefire declaration in 1994 to the return to a power-sharing government in 2007 – and the violence in Northern Ireland, though painful and protracted, was relatively low-level by international standards, while the peace process was lavishly funded by comparison with other cases. Peace in Bosnia-Herzegovina has taken a similarly long period to secure, and the process is by no means completed. In Burundi in 2007, there remain elements of risk in the peace process that was initiated in 2000. Peacebuilding takes patience and care and, in its early years, is extremely precarious because it takes far fewer people acting irresponsibly to return a country to violence than are needed to work together to sustain the peace. Yet peacebuilding can transform societies into functional communities that can exist without the threat of violent conflict – a process that we see unfolding in Liberia today.

In Liberia, the key need to which International Alert has been able to contribute is communication as the basis for social participation in the peace process. In Burundi, where Alert has been working since 1995 when civil war was intense, the organisation was able to work at several levels. Alert provided space for political and community leaders to meet, develop mutual confidence and jointly develop ideas for moving the country onto a peaceful path. Alert also worked with civil society activists to help found a national women's peace organisation that, acting as an umbrella for local women's groups, has trained over 10,000 people in conflict resolution, mediation and facilitation. In the Democratic Republic of Congo, Alert has recently developed a programme bringing together people from different regions into a national dialogue on how to sustain peace and human rights in a country that, from the colonial period until recently, knew only dictatorship and war. In the South Caucasus, several Alert projects help people come together and exchange ideas across entrenched lines of conflict, helping to develop social foundations for possible future peace deals.

These activities cannot make peace by themselves, but nor can peace be made without them. A sustainable peace requires a peace agreement between the leaders of the contending parties, their continuing commitment to it after signature, and a social setting to support it and encourage political leaders' continued commitment. The problem that peacebuilding addresses is that, through the experience of violent conflict, societies lose the capacity to resolve difficult issues peacefully. Variously, they lose the institutions that can mediate and negotiate disputes and differences before they get out of hand, and they lose the cultural habits of compromise and tolerance that are required for serious differences to be settled by agreement. Helping societies regain these attributes is what peacebuilding is about.

The way peacebuilding is implemented has to be tailored to the needs of the specific context. Each society and community has its own modes and values. Because the point of peacebuilding is to help societies renew the attributes of a peaceful society, it cannot work on the basis of a top-down recipe. It has to support and enhance the efforts and energies of ordinary people, to develop a process from the ground up so as to ensure that the opportunity offered by a formal peace agreement is seized and lasting peace is created.

Linking peacebuilding and climate adaptation

In one sense, adaptation to climate change could take many forms, some of them profoundly destructive. If good land for farming or grazing becomes scarce, it could be said that when one group attacks another to drive it away, that is a form of adaptation. Likewise, if the pressures of climate change lead large

BOX 8 Liberia: Peacebuilding works

Liberia suffered extreme violent conflict and arbitrary dictatorship from 1980 to 2003. The causes of conflict are deeply rooted in historically entrenched inequalities in the distribution of power and a reliance on violence to gain wealth and power.

Almost half of Liberia's population of 3.1 million lives in the capital, Monrovia. Many areas outside the city are inaccessible by road and remain isolated. Politicians and civil servants spend little or no time in those regions, and few of the legal and developmental changes initiated in the capital are experienced in rural areas. This marginalisation can express itself in feelings of apathy and a reinforcement of the culture of impunity.

In October 2005, two years after the fighting ended, Ellen Johnson-Sirleaf was elected President. Liberia is now in the process of consolidating peace, although the situation remains volatile. The country carries a heavy burden of debt, while an influx of returning refugees and internally displaced people to rural regions exacerbates land disputes between ethnic groups. Liberia also faces the problem of its bad neighbourhood: regional instability repeatedly threatens to destabilise the peace process.

Given the real and perceived inequalities between those living in the capital city and those in rural areas, it is vital that communication be enhanced in rural Liberia. International Alert has been working in Liberia since 1993 and its current work focuses on the issues of communication and participation. The aim is to enable groups who feel marginalised and alienated to articulate their views, needs and rights through the media rather than resorting to violence. Alert also works to ensure that journalists are trained in responsible reporting. In addition, we are using community radio to improve access to impartial and balanced information in the eight most conflict-affected counties of Liberia, so that people there understand the ever-changing political situation and feel able to engage with processes originating in Monrovia.

Alongside this work, Alert and our Liberian NGO partners have organised three popular annual Peace and Culture Festivals, bringing together performers and cultural troupes, along with members of local communities, from the eight counties and the neighbouring countries of Cote d'Ivoire, Guinea and Sierra Leone. The 2007 festival was attended by an estimated 10,000 people. These festivals use cultural activities – comedy, drama, music and dance – to bring people together and help heal the divisions that have been created by years of violence. They serve as a reminder that Liberians from different parts of the country and people from the neighbouring countries have cultures that, while significantly different, nevertheless share many core values, including powerful modes of communication and a strong sense of community. Both need to be mobilised over an extended period of time to build a sustainable peace.

The Liberia Media Project is part of a wider strategy to build sustainable peace in Liberia and the sub-region through communicating messages about peacebuilding and reconciliation. The combination of traditional and contemporary communication mechanisms can enable media to represent local people who, in turn, feel more empowered in their society and are more likely to resolve differences peacefully. Across the sub-region, communication and improved access to information can have a powerful effect on conflicts that spill across borders and threaten areas of stability.

numbers of people to leave their homes and migrate to urban slums, that also is a form of adaptation. But what people want and need are forms of adaptation that protect human security.

Successful adaptation to climate change will still involve changes in how people live. The key to linking peacebuilding and adaptation with climate change is to ask how people can best change the way they live. What is the best process of change – that is, the process that offers the greatest opportunity to cope peacefully with the challenge of climate change and adapt to it in a way that protects people's well-being? It is, surely, a process that simultaneously meets two objectives: it needs to be based on a proper appreciation of the challenge – i.e., it needs to be scientifically informed; and it needs to be a process that thoroughly involves the people whose lives will change so they shape it and buy into it. For this to be the case, the people involved in the process must understand the problem (so the science must be communicated clearly), see what the options are, gauge the impact of inaction, and choose to change. This approach acknowledges that local knowledge alone is not enough because climate change throws up unprecedented problems, but nor is the best hard science enough by itself, because adaptation needs to be locally grounded and culturally appropriate.

These considerations are even more important when looking at one of the most difficult problems thrown up by climate change and one where some of the greatest fears are likely to reside – migration. As we have argued earlier, as many examples have shown, migration itself does not generate violent conflict, yet it can be an important part of the chain of effects leading to violent conflict because of the responses it so often gets and because of the context. When people find a large number of newcomers arriving, the key issue is to try to develop a common understanding of what the problem is, why it has come about, and then what can be done about it in a way that most meets everybody's needs. The best time to have this discussion is before the pressures of immigration have become intolerable. Research, good information systems and clear government and inter-governmental policies are all essential. But perhaps more important than anything is a commitment to timely dialogue in, with and between the communities that are affected – both those who are forced to migrate by the physical effects of climate change, and those who become hosts to the new migrants. The political issues wrapped up in this part of the climate change problem are extremely tangled, with competing resentments about who benefits from any resources that can be mobilised, and the risk that the question will be politicised in an inflammatory way. To leave such a potentially explosive set of issues alone, however, is to risk that explosion occurring.

The best process of change for a successful adaptation to climate change, in short, is the same as the processes involved in peacebuilding. In both, energies must be engaged in different parts of society – among communities and their leaders, in the private sector, media, political groups, social activists, students and intellectuals – and at different levels – among the elite and among ordinary people. In both, the process must include women as well as men, youth as well as mature adults, minorities as well as majority communities, and it must cross political divides as well. The techniques that will be used are also the same: encouraging dialogue; building confidence; addressing the issues that divide groups and out of which they perceive conflicts to grow; learning; mutual education; developing and strengthening civil society organisations to carry the work forward; strengthening both the capacity and the accountability of the institutions of government.

The processes of peacebuilding and adaptation are not only similar in these ways, they are also synergistic. A society that can develop adaptive strategies for climate change in this way is well equipped to avoid armed conflict. And a society that can manage conflicts and major disagreements over serious issues without a high risk of violence is well equipped to adapt successfully to the challenge of climate change.

There could be a further linkage, because climate change could become a reason for moving on from some of the attitudes and behaviour that were generated by the experience of armed conflict. International Alert has supported dialogues in conflict countries that bring together people who have very different and incompatible perspectives but who share an understanding of the risks and

unbearable costs of continuing with (or returning to) open, armed conflict. In the same way, dialogues could bring together people whose different and incompatible perspectives do not prevent them from understanding the common threat of climate change and the shared need to adapt to meet this challenge. It is, seen in one light, no more complicated than adding another crucial item to the agenda of peaceful dialogue. But because it cannot be blamed on one conflicting party over another, and yet it affects all, climate change may have more power for bringing people together than much of the rest of the agenda. Climate change could generate a pragmatic unity because it offers a threat that can put other problems in perspective. And adaptation to climate change offers tasks that can be the object of cooperation between formerly antagonistic groups.

Developing social resilience

Climate adaptation and peacebuilding need comprehensively to address the key risks faced by fragile states affected by climate change. These risks, as outlined at the end of chapter 2 of this report, are political instability, economic weakness, food insecurity and demographic changes such as migration and urbanisation. The measures that are adopted and the way they are implemented have to target not just these four issues but the linkages between them. Awareness of these risks will help national governments and donor agencies develop programmes for the linked goals of development, peacebuilding and adaptation. In so doing, the result will be societies that are increasingly resilient in the face of both short-term shocks and slow onset changes.

One way to gauge this objective is by drawing from the literature on reducing the risk of disaster and looking at the concept of *social resilience*. This can be understood as the capacity to absorb stress or destructive forces through resistance or adaptation; the capacity to manage or maintain certain basic functions and structures during disastrous events; and the capacity to recover after the event.[57] In principle, the idea of resilience is relevant for thinking about a society's ability to cope with a wide range of problems, from natural calamities, through economic shocks, to invasion, to slow onset changes in the natural environment.

Key characteristics of a resilient society are that it is well governed, understands the risks it faces, can manage those risks and minimise its vulnerability to them, and that it is prepared to respond to unpreventable disasters. Being well governed, the society has clear policies and a strong framework of law and regulation, implemented by capable institutions. It understands the risks it faces because it has the scientific capacities to do so, and can manage them successfully not only because of good planning, but because of public awareness as a result of good communications and sharing of information. It can minimise its vulnerability because it has made provision for social welfare as well as physical protection, and it is well organised with good early warning systems to be able to respond quickly if a natural disaster should strike. Indeed, such a society may experience extreme events such as hurricanes, storms and earthquakes, but its resilience means those events will not actually be disasters.

This depiction of a resilient society is abstract and idealised. It does not describe an existing society – especially not one to be found among the 102 countries that face the double-headed risk of climate change and violent conflict – but it sets objectives to aim for. What it makes clear is that physical protection and preparation for quick response to extreme events are the results of exploring problems and identifying possible solutions, as well as deploying expert knowledge within an open process of information-sharing and discussion. The closer it is possible to get to an inclusive process with the participation of all affected groups, the greater the degree of resilience that can be developed.

Simultaneously addressing peacebuilding needs and climate change adaptation will involve considering how different sectors and actions are connected. For example, building a new road will not only improve transport infrastructure but may also encourage poor communities to settle along the roadside as a means of enhancing their livelihoods through road-side trading. If the road is cutting

BOX 9 Nepal: scenarios of conflict and peace

Nepal[58] is in the process of emerging from a 10-year civil war. The conflict, which began in 1996, stemmed from a combination of issues driven by endemic poverty, inequality, arbitrary authority and corruption at all levels. These fuelled a widespread sense of injustice and frustration. An attempt at democratic reform in 1990 ran out of steam because the elected politicians could not solve the problems of development in Nepal. Against this background of frustrated expectations, the Communist Party of Nepal (Maoist) launched an insurgency, operating in rural areas marked by lack of access to resources and social services for marginalised groups.

Nepal's economy is one of the poorest in the world with 90 percent of the population relying on subsistence agriculture for their livelihoods.[59] Much of Nepal consists of rugged terrain and only 20 percent of the land is arable. The lives of many inhabiting the hilly and mountainous areas depend on fragile ecosystems and, to make matters more difficult, many farmers do not have secure title to the land they work.

The war unfolded as a low intensity conflict. On the government side it was mainly the police forces that were involved and the Maoists' insurgent strategy made steady progress for several years. Things changed when King Gynanendra came to the throne after the death of his brother in the royal massacre of June 2001,[60] and decided on a more active pursuit of the war, giving the army a larger role. The strategy was counter-productive and the Maoists took control of ever larger areas. The King steadily increased his authority in and over the government and, in February 2005, took over absolute power.

The Peoples Movement in spring 2006 (known as *Jana Andolan II*) forced the King to surrender absolute power. The Maoists ceased combat, established an office in the capital Kathmandu, and joined the provisional coalition government.

However, the situation is by no means settled and peace is by no means certain. In early autumn 2007, the Maoists left the coalition government (though they did not leave the political process), arguing that the King should be stripped of all his remaining powers and rights before elections are held for a Constituent Assembly. To a considerable degree, apart from the Maoists, the most influential politicians in Nepal today are the same ones who were unable to sustain democracy in the 1990s. Nepal's infrastructure, governance mechanisms and economy are fragile and the transitional government is still highly dependent on foreign development aid for the delivery of basic goods and services.

The task of building peace is complicated not only by the aftermath of war and the persistence of its underlying social and economic causes, but also by the effect of environmental changes. Because of flooding and land scarcity, people have had to work poor land. For example, the Midland region is severely deforested and eroded, and there is a shortage of wood and fodder for daily use. Many communities are already under extreme pressure and their difficulties will be compounded by the effects of climate change.

Impact of climate change

Recent climatic trends show an increasing mean temperature over recent decades, most markedly at high altitudes.[61] This has already affected the Himalayas, with glaciers melting, increasing the volume of glacial lakes, and making them more prone to flooding. As this process continues, however, flooding will give way to water shortages. There is also a moderate risk that the monsoon might intensify due to climate change,[62] which would affect the variability of river flows and hamper the operation of hydroelectric plants, which are highly dependent on predictable river flows.[63] Being 90 percent dependent on hydroelectricity,[64] Nepal's energy supply is likely to be severely affected by the consequences of climate change.

Development aid and climate-sensitivity

Nepal receives just over $400 million per year in overseas development assistance, which accounts for over half of the government's total expenditure.[65] Despite evidence of climate change already taking place, Nepal has received little attention or funding under the UNFCCC (see Box 7) to assist adaptation efforts.

Furthermore, there is very little acknowledgment of the effects of climate change among the development community in Nepal. An analysis of the strategies and project documents of the 10 largest bilateral and

international donors to Nepal reveals little explicit mention of climate change. These issues are currently viewed as 'secondary' by aid agencies, especially in Kathmandu, with attention focusing on the Constituent Assembly elections and associated security risks. Nor does Nepal's Poverty Reduction Strategy Paper, agreed with the World Bank and used as a guide for development and assistance, acknowledge the impact of climate change. This is particularly striking because of the wealth of research on the effect of climate change in Nepal that was available at the time of its drafting.[66]

This lack of attention to climate change exists despite an OECD-DAC study's calculation that approximately 50-65 percent of total Official Development Assistance investment is in projects that are highly likely to be affected by climate risks.[67] This includes both activities that may be affected directly by climate change, as well as development activities that may affect the vulnerability of local coping mechanisms to climate change.[68]

Peace, development, climate – which takes priority?

One of the most significant factors causing Nepal's civil war was the failure of the post-1990 democratic governments to fulfil the expectation among ordinary Nepalis of a better life under democracy. The present transitional government faces the critical task of building trust among its citizens by fulfilling their expectations of reduced poverty, inequality and corruption – that is, by generating fairness and justice in society and government. This combination of social, economic and political development is imperative for Nepal to achieve sustainable peace.

Like other countries attempting to make their way out of a period of violent conflict, Nepal faces the challenge that peace is essential for development and development is essential for peace. It is not possible to give one priority over the other. At the same time, as in other countries, development and peacebuilding have to be climate-sensitive – which they are not at present – or the physical effects of climate change will have negative consequences for peace and development alike. To achieve these interlocking goals, Nepal needs responsive and efficient government institutions. Further, it needs a new social consensus supporting these goals so that there is community-level participation in development, peacebuilding and adaptation to climate change.

It is not difficult to envisage a Nepal that is unable to carry out the necessary combination of tasks. In that case, even if war has not recurred for other reasons, the effects of climate change will worsen the situation of ordinary people, development goals will not be met, demands and pressures on government will intensify. The inability of the government to respond positively will make a repressive reaction to pressure more likely – and the ingredients will all be in place for a return to civil war. In short, the consequences of climate change are exacerbating the risks of armed conflict recurring to which Nepal is already vulnerable. If further violence cannot be prevented then, whatever its causes, it will ensure that development is thrown further back and adaptation to climate change is neglected.

Is it possible to envisage a Nepal that manages to combine peacebuilding, development and adaptation? Some signs of the basis for a more positive scenario are to be found in the Peoples Movement in April 2006 and in the strength of civil society organisations. Further signs could be seen in August 2007 when floods hit the Terai plain, where much of Nepal's industry and agriculture is located and half of its population lives. The floods posed severe risks for short-term development prospects, at a time when grievances have been voiced in the Terai that their diverse local interests are not fully represented in the agreements that brought the civil war to an end. But careful management of the flood relief operations actually brought conflicting parties together and had a positive impact on the peace process.

This may not have been achieved by design but the response to the Terai floods offers an illustration of how climate responses and adaptation strategies could be used as a vehicle for peacebuilding. Going beyond that example, long-term response to climate change will work best if it has been formulated through dialogue among the people and communities most affected. It would be necessary to repeat this many times over in communities throughout the country and this kind of problem-solving dialogue is also needed at the national level. The scientific knowledge and the organisational resources and energy needed for this task do exist in Nepal; the challenge is mobilising them in time.

across a flood plain, those communities also will be increasing their level of vulnerability to climate change. Making a difference in one sector – such as hydropower – without improvements in the provision of other basic services – such as domestic water supply – can fuel new grievances (see Box 3). Developing the resilience of communities so they can adapt successfully to climate change will include developing the capacity to understand these linkages and to act on them.

The practicalities of adaptation

Adaptation to climate change is already taking place, but it is rarely done in order to build resilience. To date, most adaptation efforts have been initiated within a narrow frame of reference, looking at cost and benefit in terms of narrow economic interests. This, in itself, would not be a bad thing if it were set within a context of social adaptation and building resilience. When it is not, it risks being dysfunctional.

The concrete measures of a successful process of adaptation will emerge from local initiatives and will take a different shape in different contexts as they address different consequences of climate change. There are some examples that can be cited to indicate the practical import of the argument:[69]

- In Mexico and Argentina, in response to increased flooding risks, a number of adjustments have been made: planting dates have been changed and new varieties of crop have been introduced, including drought-resistant plants such as agave and aloe. There also have been changes to overall management systems: stocks of the product have been built up as an economic reserve; farms have diversified by adding livestock operations and the plots used for crops and for grazing have been separated so as to diversify exposure; crop insurance has been set up and local financial pools established as an alternative to commercial crop insurance.

- In Botswana, national government programmes have been set up to re-create employment options after drought. This has entailed working with local authorities and providing assistance to small subsistence farmers to increase crop production.

- In the Philippines, responses to rising sea levels and storm surges include the introduction of participatory risk assessment; provision of grants to strengthen coastal resilience and rehabilitation of infrastructures; construction of cyclone-resistant housing units; retrofit of buildings to improved hazard standards; review of building codes; and reforestation of mangroves.

- And in Bangladesh, where an already rising sea level means that salt water intrusion is a major issue (see Box 4), steps are being taken at the national level, where climate change concerns have been included in the National Water Management Plan and, at local levels, for example, through the use of alternative crops – such as switching from rice production to farming prawns – and the use of low-technology water filters.

Opportunities for coherent adaptation are greater in some sectors, such as agriculture and forestry, buildings and urban infrastructure, but are currently limited in others, such as energy and health. This is only due to a lack of conceptual and empirical knowledge around these areas. There is an evident need to address these research and knowledge gaps, while taking immediate action on areas with stronger existing levels of knowledge and understanding.

The difference in adaptive capacity within and across societies is also a critical issue to be acknowledged in policy and practice. Climate change may not target the marginalised over the affluent, but the differential in capacity to adapt determines who suffers and the extent of that suffering. Communities already facing multiple pressures, such as poor access to economic and natural resources, will face barriers to adaptation. Addressing these barriers will itself be a means of promoting adaptation through bolstering capacity for the process of adaptation.

4

CONCLUSIONS AND RECOMMENDATIONS

As the IPCC notes, 'societies have a long record of adapting to the impacts of climate through a range of practices…but climate change poses novel risks often outside the range of experience, such as impacts related to drought, heatwaves, accelerated glacier retreat and hurricane intensity.'[70] In short, the future will not be the same as the past. The severity of impacts, both sudden shock and slow onset, will leave some communities unable to adapt to or cope with the physical effects and knock-on consequences of climate change. The most vulnerable communities with the weakest adaptive capacity are in fragile states.

This report has shown that in fragile states the consequences of climate change can interact with existing socio-political and economic tensions, compounding the causal tensions underlying violent conflict. In 46 states already affected by violent conflict, the dual problem of climate change and violent conflict can lock the state into a downward spiral where violent conflict restricts the adaptive capacity and climate change worsens the conflict. In a further 56 states, the consequences of climate change could move them into political instability, creating a high risk of violent conflict further on.

But the potential downward spiral can be transformed into a virtuous circle. The solution to this double-headed problem is a unified one. Essentially, this involves applying the established principles of conflict-sensitive development practices to climate change policies and practice. At the very least, climate change need not increase the risk of violent conflict and, at best, addressing climate change in fragile states can promote peace. By acting together to prevent violent conflict, governments and institutions will be better placed to address the demands of climate change adaptation. In fragile states, therefore, donor governments and institutions must do their best to ensure that climate change strategies are conflict-sensitive, and that peacebuilding and development activities are climate-sensitive.

Far from complementing one another, policies and strategies for development, peacebuilding and climate change are often disconnected and divergent. This is always an error, because it means opportunities for synergy are lost, and it can be dangerous when the different strands of policy undermine one another. The added dimensions of climate change to the multi-dimensional context of poverty and fragile states mean that decision-making must involve collaboration between the various donor agencies and government departments with the relevant fields of expertise. While there are some examples of joint action between national governments and international donors,[71] research for this report found little evidence of policies or projects that specifically address climate change within an existing development and peacebuilding framework. This is probably due to the general lack of capacity of government institutions to engage with a relatively large number of donors – they often seem to spend their entire time in review meetings with different donors instead of getting everybody

together in one forum – as well as the limited scope of project funding and the lack of information sharing between environmental bodies, development actors and affected communities. Beyond this, however, as argued above, such activities need to be developed and implemented with local communities participating fully from the outset.

Failure to integrate climate change considerations into development and peacebuilding activities renders these activities, at best, short-term and, at worst, harmful. Interventions that are not conflict-sensitive can exacerbate conflict dynamics and worsen the situation which they intend to assist.[72] Lack of conflict- and climate-sensitivity will slow down the development potential of fragile states, which will, in turn, increase the risk of violent conflict.

The core message of this report is that conflict-sensitive climate change policies can actively promote peacebuilding, and that climate-proof peacebuilding and development policies can be effective climate change adaptation policies. To this end, it is imperative to recognise and maximise the synergies between climate adaptation policies and peacebuilding activities in achieving the shared goal of sustainable development and peace.

This report is an attempt to identify, describe and explain a major problem, to indicate some paths that could be followed in order to find solutions and, by so doing, to emphasise the important place the double-headed problem of climate change and violent conflict should henceforth occupy on the international political agenda. We have argued that a harmonised approach – whereby peacebuilding activities and climate adaptation strategies respond to the need to strengthen governance and social resilience – provides the best solution to address the key risks of political instability, economic weakness, food insecurity and demographic changes posed by climate change in fragile states.

National governments and international organisations are only now starting to understand the social and political dimensions of the climate change problem. The first needs – which this report is a modest step towards meeting – are to raise awareness of the problem, to increase understanding of the ways in which the knock-on effects of climate change can unfold, and to generate a search for means of adaptation. The concrete measures of adaptation, tailored for each locality, are not sitting on a shelf waiting to be picked up; they have to be worked out through a process that brings together the necessary hard science and local knowledge.

However, even as the process of raising awareness and developing concrete measures slowly begins, the effects of climate change are unfolding. There is thus an urgent need to act, yet an inadequate knowledge basis on which to do so. In these circumstances, the best option is an incremental approach. To begin with, in fragile states where climate change will be an issue, development and peacebuilding strategies must be adapted so that they are sensitive to the future impacts of climate change. This will reduce the chance of donor intervention hindering adaptation options. Building on this, information sharing between environmental, development and peacebuilding organisations could promote understanding of the problem and lay the basis for mapping out adaptive strategies.

Here we offer 12 recommendations on the broad direction of international policy. Except at the most generic level, we do not set out solutions to the problem of climate change and conflict, but rather ways in which we believe those solutions can be identified.

Twelve recommendations for addressing climate change in fragile states

1. Move the issue of conflict and climate change higher up the international political agenda

It is now time to place the human, social consequences of climate change front and centre. This means speculating on the basis of projections and can seem abstract and hard to pin down. It is, however, necessary if we are to understand what is unfolding and how we should react. The *Stern Review*[73] made a start by exploring social and economic consequences. The UK government, which sponsored the *Stern Review*, went a step further by arranging a debate on climate change and security at the UN Security Council. Further initiatives are now needed to gain agreement that the social consequences are important and can be addressed, to move the issue forward through international institutions such as the UN and EU, to develop international guidelines for adaptation, and to make available adequate funding.

2. Research the indirect local consequences of climate change

This report represents a first step at exploring the chain of effects between climate change and violent conflict, at gauging the scale of the problem, and at identifying remedial measures. But the knock-on effects of climate change will be different in each place, not only because the physical effects are different, and the other key features of the natural environment are different, but also because the social structure and economic base are different. The consequences of climate change in Kathmandu will be different from the consequences in rural Nepal, let alone in Bangladesh, the Nile Delta, or Peru. The generic analysis in this report therefore needs to be followed by further exercises going into the detail of how these effects play out in regions, countries and localities, and defining the necessary measures for adaptation.

3. Develop and spread research competence

It is an urgent priority to get this research under way and, at the same time, it is necessary to ensure that long-term competence to undertake such research exists in those regions and countries that are likely to be affected. This indicates the need for a major programme of long-term capacity building in both the natural and social sciences. It is a big challenge, but there are simply too many risks involved in not taking it on. Without developing local competence, it is all too likely that the hard science on climate change will be seen as a foreign invention, while the social science assessment of risks will be treated as political interference. Equally, in both social and natural science, distance does not generate precision about consequences; the best place for the research to be undertaken is *in situ*. University and research networks already exist worldwide and need to be mobilised and strengthened in order both to develop and spread competence on these interlocking issues.

4. Improve knowledge and generate policy through dialogue

This report has argued three points about dialogue:

a) That the best way to garner information includes drawing on local knowledge and the best way to achieve that is through dialogue;
b) That the best way to develop policy is by putting local interest and scientific research into dialogue with each other;
c) That dialogue around climate change can be a means of peacebuilding and that cooperation on adaptation to climate change can be a joint task to emerge out of a peacebuilding dialogue.

International cooperation needs to focus on providing the financial resources, training and enabling environment for multiple levels of dialogue to be pursued by local communities, national governments and regional organisations In this nascent field, cross-border information sharing and lessons learned will provide examples of good and bad practice.

5. Prioritise adaptation over mitigation in fragile states

This report has shown that in fragile states, adaptation to climate change is the most pressing need. The majority of fragile states have subsistence economies and thus very low carbon emissions. While countries that lead the way in producing carbon emissions should lead the way in reducing them, there is little that can be done and little that will be achieved at a global level by pursuing mitigation strategies such as Clean Development Mechanism projects in fragile states, unless such projects also increase adaptive capacity. With limited international funds and capacity available among donors and national governments to address climate change, priority in fragile states should be given to understanding and addressing the consequences of the consequences of climate change, to prevent the even greater international problem of climate-related violent conflict.

6. Develop the right institutional context: good governance for climate change

The research competence, local participation and multiple levels of dialogue outlined above will lead nowhere unless they feed into the right institutional context – political parties, leaders and government departments that can both understand and absorb the hard and social science, as well as appreciate the validity of local perspectives and knowledge. Developing competence on climate change issues, including adaptation, needs to be seen henceforth as an integral part of good governance in all the states facing the combined risk of climate change impact and violent conflict or instability. Good governance is an increasingly important part of development cooperation, which means that donor governments have every possibility to act on this.

7. Prepare to manage migration

Some of the most serious problems and perhaps greatest fears raised by climate change concern migration. Most studies of the social consequences of climate change identify large-scale migration as a likely outcome and responses to migration could generate conflict. Research identifying likely migration flows would help identify both migrant and host communities where dialogue should be opened pre-emptively, to anticipate problems, identify possible benefits and prepare to manage the process.

8. Ensure National Adaptation Plans of Action are conflict-sensitive

National Adaptation Plans of Action are a useful starting point. However, in the context of fragile states, the value of NAPAs will be realised only if they take account of a state's socio-political and economic context and conflict dynamics. To this effect, they should be joined up to existing national strategies on poverty and conflict resolution.

9. Climate-proof peacebuilding and development

Likewise, peacebuilding needs to reflect the need for adaptation to climate change. Through the UN Peacebuilding Commission, two countries (Burundi and Sierra Leone) now have peacebuilding strategies; more are expected to follow. A joint mission by western donor governments developed a common framework for supporting the Comprehensive Peace Agreement in Sudan in January 2005. The Poverty Reduction Strategic Plan for the Democratic Republic of Congo, agreed between the DRC government and the World Bank, is intended to give a comprehensive sense of the country's needs as it attempts to recover from decades of dictatorship culminating in years of anarchy and civil war. These are a few examples of how countries trying to make their way out of violent conflict increasingly work along lines laid out in a strategic plan or set of guidelines. All such plans can and should have the added component of adaptation to climate change, should explicitly link it to peacebuilding and development, and should make explicit how activities on these three inter-connected strands strengthen one another.

10. Engage the private sector

The private sector has a role that could be crucial in driving forward adaptation, but care will be needed to ensure that the economic opportunities that adaptation offers are not taken up in a way that is ultimately self-defeating. Governments and inter-governmental bodies should:

a) Work with major multinational companies to develop guidelines for supporting adaptation to climate change in the poor and unstable countries where they have operations.
b) Help national and local companies identify ways in which their ordinary commercial operations can support adaptation by changing, as appropriate, production, products and distribution.

11. Link together international frameworks of action

There are several different internationally agreed frameworks that address aspects of the interlinked issues of climate change, peacebuilding and development, for example the OECD-DAC guidelines on development in fragile states, NAPAs and Poverty Reduction Strategy Papers at national level, the European Commission, the disaster risk reduction frameworks such as Hyogo and the ISDR, the Global Environmental Facility and its various funding mechanisms. A concerted effort is needed in a variety of different international fora to ensure that these different frameworks are coherent with one another and mutually supportive.

12. Promote regional cooperation on adaptation

The framework of international cooperation on climate focuses on mitigation and is largely a global agenda, through the UNFCCC and the Conferences of Parties. The EU is probably the only regional body with a developed climate policy. Other regional bodies such as the African Union and the Organisation of American States, and sub-regional ones such as the Economic Organisation of West African States, the Association of South East Asian Nations, and the South Asian Association for Regional Cooperation, all have potential key roles in raising awareness, developing policies, generating consensus and mobilising resources to support adaptation.

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LIST OF STATES AT RISK

A: States facing a high risk of armed conflict as a knock-on consequence of climate change

1. Afghanistan
2. Algeria
3. Angola
4. Bangladesh
5. Bolivia
6. Bosnia & Herzegovina
7. Burma
8. Burundi
9. Central African Republic
10. Chad
11. Colombia
12. Congo
13. Côte d'Ivoire
14. Dem. Rep. Congo
15. Djibouti
16. Eritrea
17. Ethiopia
18. Ghana
19. Guinea
20. Guinea Bissau
21. Haiti
22. India
23. Indonesia
24. Iran
25. Iraq
26. Israel & Occupied Territories
27. Jordan
28. Lebanon
29. Liberia
30. Nepal
31. Nigeria
32. Pakistan
33. Peru
34. Philippines
35. Rwanda
36. Senegal
37. Sierra Leone
38. Solomon Islands
39. Somalia
40. Somaliland
41. Sri Lanka
42. Sudan
43. Syria
44. Uganda
45. Uzbekistan
46. Zimbabwe

B: States facing a high risk of political instability as a knock-on consequence of climate change

1. Albania
2. Armenia
3. Azerbaijan
4. Belarus
5. Brazil
6. Cambodia
7. Cameroon
8. Comoros
9. Cuba
10. Dominican Republic
11. Ecuador
12. Egypt
13. El Salvador
14. Equatorial Guinea
15. Fiji
16. Gambia
17. Georgia
18. Guatemala
19. Guyana
20. Honduras
21. Jamaica
22. Kazakhstan
23. Kenya
24. Kiribati
25. Kyrgyzstan
26. Laos
27. Libya
28. Macedonia
29. Maldives
30. Mali
31. Mauritania
32. Mexico
33. Moldova
34. Montenegro
35. Morocco
36. Niger
37. North Korea
38. Papua New Guinea
39. Russia
40. Saudi Arabia
41. Serbia (Kosovo)
42. South Africa
43. Taiwan
44. Tajikistan
45. Thailand
46. Timor-Leste
47. Togo
48. Tonga
49. Trinidad and Tobago
50. Turkey
51. Turkmenistan
52. Ukraine
53. Vanuatu
54. Venezuela
55. Western Sahara
56. Yemen

The impact of climate change will make the poorest communities across the world poorer. Many of them are already affected by conflict and instability and thus face a dual risk. The consequences of climate change will fuel violent conflict, which itself hinders the ability of governments and local communities to adapt to the pressures of climate change. This dual problem has a unified solution. Developing a society's ability to handle conflicts will enhance its capacity to adapt to climate change – though the tasks seem different, the capacities to carry them out are effectively the same. Equally, a capacity to adapt to the effects of climate change will head off destabilising conflicts. Where climate change and violent conflict create a potential vicious circle of destructive effects, adaptation and peacebuilding combine to construct a virtuous circle of increasing stability.

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ISBN: 978-1-898702-90-0