

Balancing the books:

Making climate adaptation funding a reality

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Acronyms

AF	UN Adaptation Fund
CAF	(Scottish) Climate Adaptation Fund
CBO	Community Based Organisation
CIDSE	International alliance of Catholic development agencies working together for global justice.
COP	Conference of Parties (to the UNFCCC)
CSO	Civil Society Organisation
FTT	Financial Transaction Tax
GCF	Green Climate Fund
ICRAF	UN World Agroforestry Centre
ICTs	Information and Communications Technologies
IDF	(Scottish) International Development Fund
KATC	Kasisi Agricultural Training Centre
LDCs	Least Developed Countries
MDGs	Millennium Development Goals
MNC	Multinational Corporation
NGO	Non-governmental Organisation
PACJA	Pan African Climate Justice Alliance
SCIAF	Scottish Catholic International Aid Fund
SAS	Sustainable Agriculture System
UNCSD	United Nations Conference on Sustainable Development
UNFCCC	United Nations Framework Convention on Climate Change
ZCCN	Zambia Climate Change Network

A girl operates a water pump in Mukuni, Zambia.



Executive Summary

“Climate change is not only environmental injustice, but a humanitarian and development emergency of global proportions”¹

Climate change threatens the lives and livelihoods of marginalised communities and people all over the world. It undermines their capacity to break the cycle of poverty and build resilience against further shocks. Throughout the course of the 21st century, billions of people will be affected by climate change, with impacts on food security, livelihoods, health and other basic needs.² Those affected will be the poorest and most vulnerable, who have done least to cause the problem.

Scotland has already done much to address this agenda. The Climate Change Act 2009 is a real example to other developed nations, showing that political leadership and challenging carbon reduction targets can win votes. In addition, the Scottish Government’s ongoing commitment to funding international development (£9 million annually to Scottish-based NGOs working in Africa and Asia) shows solidarity with the poorest communities, despite the continuing economic challenges at home. The new Scottish Government, elected in 2011, has pledged to take the agenda further by implementing tough new measures to achieve the ambition of our climate legislation and take the agenda further by building a climate adaptation fund to support communities affected by climate change in developing countries.

In developing countries, physical security, basic needs provision and livelihoods are endangered by climate change. This is due to a combination of increased exposure to extreme weather events compared with other parts of the world; limited capacity to absorb shocks or adapt to

the subsequent impacts; multiple stresses on the natural environment, resulting in degradation and depleted resources; lack of social protection; economies and livelihoods which are dependent on agriculture; and many related multipliers of risk.

The international community has pledged to provide \$100 billion per year by 2020 for enhanced action on climate change.³ However, many leading experts calculate that this will be far from adequate. These funds will take years to filter through to those in need on the ground.

A Scottish Climate Adaptation Fund of £9 million per year, or just 0.026% of Scottish Government spending,⁴ would provide a clear example of Scotland’s leadership in supporting poor communities to build resilience in the face of climate change, building on our example within world-leading climate change legislation to reduce our contribution to the problem. Although a small nation, we can act as a model of good practice in establishing such a fund to offer support to communities in developing countries to adapt. If lessons are learned from what already works on the ground, the fund would have transformational impacts on the livelihoods of vulnerable communities threatened by climate change and consolidate Scotland’s tradition of humanitarianism and global social responsibility.

SCIAP’s vision is for a just world, where human dignity and human rights are upheld for all. Climate change undermines this vision. As Scotland’s largest international aid and

development agency, SCIAF brings a perspective to the climate change debate that draws on the experience of its partners overseas, our reach into communities, schools and parishes across Scotland, and is driven by the principles of Catholic Social Teaching. This report sets out our findings following recent field research with SCIAF partners in Zambia and Malawi. It aims to provide Scottish policy-makers with recommendations for the establishment of a Scottish climate adaptation fund. It also aims to provide a clear example of good practice for other nations considering such a fund. Lastly, it aims to provide us with a clear understanding of the linkages between our work with partners to improve food security and foster sustainability, the growing need for climate adaptation, and our advocacy agenda for climate justice at Scottish and international levels.

This paper:

- i) **calls for** integrated, locally-led climate adaption responses in developing countries, which focus on the most vulnerable sectors of society;
- ii) **recommends** ways in which Scottish climate adaptation funding channelled through civil society networks can feed into developing country adaptation at the national level;
- iii) **points to** existing innovation and 'best practice' with regard to climate adaptation initiatives in developing countries; and
- iv) **advocates** locally-based approaches to tackle the barriers to change within developing countries.

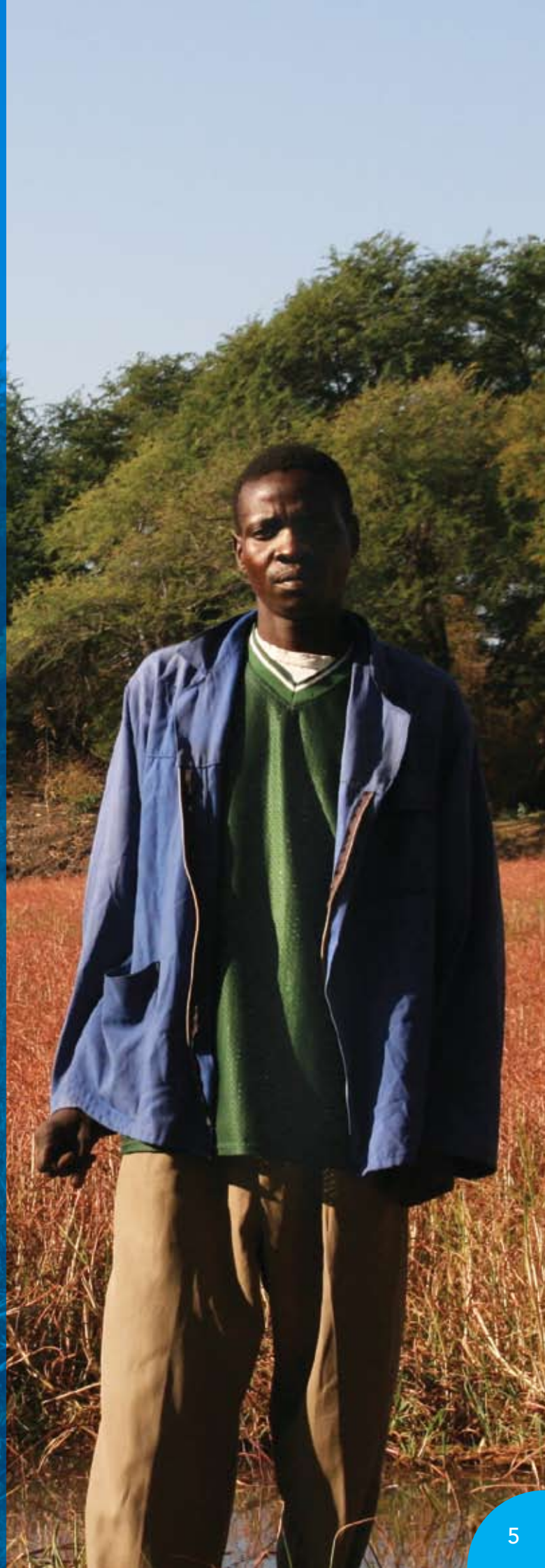
Our solidarity with the world's poorest people in overcoming the climate challenges ahead will be vital in achieving a world where every citizen is able to live life, and live it to the full.

"[O]ver the next decade, between 75 and 250 million people, in Africa alone, are projected to be exposed to increased water stress due to climate change. Millions of others are expected to become displaced due to climate change related events" ⁵ UN High Commission for Refugees

1. The case for concrete action on climate change:

A justice and peace perspective

Mwiya Nawa shows the empty dam in his community.





Women working the fields in Chongwe, Zambia.

“Climate change is not only environmental injustice, but a humanitarian and development emergency of global proportions”⁶

SCIAF’s vision is of a just world, where human dignity and human rights are upheld for all. Climate change undermines every element of this vision. As Scotland’s largest international aid and development agency, SCIAF brings a perspective to the climate change debate that draws on the experience of our partners overseas, our reach into communities, schools and parishes across Scotland, and the principles of Catholic Social Teaching.

Climate change is increasingly recognised as the biggest challenge faced by the world today and it represents the greatest threat to the fight against global poverty. Fundamentally, it is an issue of justice. It impacts on areas such as health, gender equality, water supply, conflict, social inclusion, financial markets, urbanisation and tourism at global levels, and most directly in the developing world.

This report sets out our findings after recent field research undertaken with SCIAF partners acting to reduce the impacts of climate change within poor communities in Zambia and Malawi. It aims to provide Scottish policy-makers with recommendations for the establishment of the

planned Scottish climate adaptation fund, based on the lived experience of our partners on the ground. It also aims to provide a clear example of good practice for other nations considering such a fund. Lastly, it aims to provide SCIAF and the wider international development movement with a clear understanding of the linkages between our work with partners to improve food security and foster sustainability, the growing need for climate adaptation, and our advocacy agenda for climate justice at Scottish and international levels.

After years of escalating concern, climate change is now firmly at the centre of political agendas and the public imagination. Rising sea levels threaten to displace entire coastal regions and communities; natural disasters, such as the floods which triggered humanitarian crisis in Pakistan in 2010, are increasingly frequent and severe; and rising mean temperatures are outstripping the bounds of infrastructure, as with the estimated 35,000 fatalities across Europe in 2003. Many millions of people worldwide face more frequent and more intense extreme weather events, such as drought, irregular rainfall or flooding.⁷

These enormous human costs are occurring against a backdrop of environmental degradation and depletion of natural resources, including water. Intensified by climate change, these environmental crises not only increase poverty, they also reduce poor communities’ ability to withstand future impacts – their resilience to climate change.

As well as threatening livelihoods and food security in developing countries, other impacts of climate change include:

- huge implications in terms of health (already resulting in over 150,000 deaths per year⁸)
- infringement of human rights
- conflict, including over land tenure
- reduced access to (over-stressed) social services
- challenges to struggling democratic structures.

All of these climate change impacts serve to reinforce existing unjust power relations. This undermines global efforts to eradicate poverty and inequality, including between women and men, and to achieve transformational change.

Scotland is seeking to address our responsibility, most recently through the world-leading Climate Change Act, which sets out ambitious targets to reduce our carbon emissions. This will require the involvement of every element of Scottish society, and should lead to a major transformation of our economy, including our energy production, transport infrastructure and waste systems, as well as our household energy consumption.

SCIAF campaigned for, and warmly welcomed, this legislation. As we move into the implementation phase, now is the time to review our responsibilities as an industrialised nation. Alongside a renewed commitment to maintaining our £9 million international development fund, it is now the time to consider how we can support developing countries to adapt to a fast changing climate, and to keep the concerns of the poorest people at the centre of this agenda.

1.1 Climate adaptation and poverty

Responding to the realities of climate change, known as 'climate adaptation', is becoming increasingly urgent all over the world. However, the most severe and tangible impacts of climate change are endured by the world's most marginalised people, who have the least capacity to cope. Impacts are experienced

very differently across communities and households, and at regional and national levels. People with the least access to resources and power are the most at risk from the realities of climate change on the ground.

The UN Millennium Development Goals (MDGs) are due to expire in 2015 and debate over a new global development framework is underway. This rethink on poverty and inequality will cover food insecurity, access to resources including water, gender equality, social protection, human development, and environmental degradation. If the list is beginning to sound familiar, it is with good reason: climate change is arguably the biggest challenge facing the international development agenda. With the benefit of hindsight and scientific advances since the MDGs were ratified, it is now clear that climate change impacts must be considered within future poverty reduction targets.



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The brunt of hardship often falls disproportionately on women, children and other vulnerable groups. Conceptions of climate change are often based on environmental degradation and natural disaster. However, at heart, it is an issue of injustice and power. Climate change has become another system which perpetuates poverty and concentrates power in the hands of the rich. Climate justice requires us to cede power to the poor.

IN FOCUS: ORGANIC FARMING AND CAPACITY BUILDING AT KASISI AGRICULTURAL TRAINING CENTRE, ZAMBIA

The Kasisi Agricultural Training Centre (KATC), a SCIAF partner, is an inspiring place to visit. Established in 1974, it has taught organic farming for over twenty years and has long been a champion of sustainable agriculture systems (SAS). Technical experts at the centre apply their knowledge within a broad vision to tackle poverty, inequality and environmental injustice, and promote the use of organic farming to build resilience against climate change.

The institution has a strong profile in Zambia and has earned a high degree of respect and influence in the sector, working with a wide range of partners on an equally wide range of innovative projects. In recent years, programmes at KATC have become increasingly focused on the implications of climate change, leading the way in the field of climate adaptation- both literally and figuratively. Their approach also includes close collaboration with public and third sector stakeholders, including advocacy and campaigning organisations with a focus on climate justice.

KATC run 15 different training courses, covering sustainable farming methods, such as: beekeeping, biological pest management, organic vegetable production, agribusiness management, basic dairy and pastures, and animal traction and management. These are targeted primarily at small-scale farmers, with participation from teachers, government officials, community leaders and NGO workers also encouraged. Separate field days are conducted on farms in rural areas, at local schools and at their on-site demonstration plots. Meanwhile, KATC support for the Chongwe district government's new organic farming programmes allows a far greater degree of outreach into communities. Indeed, collaboration with other organisations is a particular strength at KATC. Not least amongst the benefits these networks and connections bring to farmers they support is ad-hoc advice for selling crops in unpredictable markets.

Another cornerstone of the KATC approach is accessible adult participatory education in the form of 'study circles' in villages throughout the district. These study circles focus on specific issues and techniques, such as small earth dam construction, manure handling and storage, food legume crops, and organic cotton production. At the core of the initiative is community identification of 'lead farmers' and 'community facilitators', who work closely with mentors at the centre to spread knowledge in farming communities. This system enhances the effectiveness of programmes, by centralising the specific learning needs of the farmers and particular conditions in each village. It fosters long-term capacity building and greatly increases potential for further uptake across the community.

"The environment is God's gift to everyone, and in our use of it we have a responsibility towards the poor, towards future generations and towards humanity as a whole." Pope Benedict XVI⁹

PROFILE: ANNE MUTATA

Mrs Anne Mutata is the head of an eleven-person household. She has four children of her own at home and six orphaned nieces and nephews in her care. She was elected by her community to serve as a lead farmer in the organic farming programme. As such, she heads their study circle and supports village members in their learning and development. However, Anne gives up her time for anyone who comes to her for advice, even those not registered with the programme. She has witnessed the benefits of organic methods over a relatively short period of time and wants to share her knowledge with as many farming families as possible.

Anne has also established a co-operative, whose members are primarily women. When prompted, she agrees that they probably find the example she sets to be inspiring. Since she founded the co-op in 2007, 18 farmers have joined and Anne has high hopes this figure will reach 30 by next year. She is also the only farmer to sit on the board of KATC- an important position. She represents her peers and female household heads, voicing their perspectives and bringing her community a vital service.

Her endorsement of conservation farming and the training she received is unequivocal: "Before I went to the college, I couldn't make compost, the yield was very poor. Sometimes we had enough to eat, sometimes we had nothing...[now] with money from cash crops, I can pay for my children at school."¹⁰



1.2 Historical responsibility

Extreme injustice is at the core of the issue. People living in poverty across Africa, Asia and Latin America are already suffering the devastating impacts of climate change and stand to bear the brunt of severe consequences in the decades ahead. Yet these societies have produced the lowest levels of harmful emissions and therefore contributed least to the crisis. Meanwhile, in countries like Scotland, economic development came at this price. We bear the historical responsibility for climate change and must now support vulnerable countries as they grapple with the realities on the ground.

The food security of an estimated 2.5 billion people dependent on agriculture in the developing world¹¹ is threatened by changing climate systems. Meanwhile, industrialised societies are protected by the technology and high-energy consumption pathways which created climate change in the first place. This is the accumulated 'climate debt' we have a duty to repay.

CALL TO ACTION SCOTLAND: A GLOBAL CITIZEN

In advance of the 2011 Scottish Parliament election, SCIAF called for the new Scottish Government to create an international Climate Adaptation Fund of £9 million per year. This would represent just 0.026% of Scottish Government spending.¹² The election produced a SNP majority government in the Scottish Parliament, committed in its manifesto to building such an adaptation fund.¹³ This means Scotland once again has the opportunity to lead the world by example, by building and disbursing a Climate Adaptation Fund (CAF).

This report shows that supporting vulnerable communities as they adapt to climate change is a matter of justice. Industrialisation over many decades has fuelled both financial and social progress in Scotland, and created harmful pollution which contributes to climate change. No climate adaptation funding from any one country could ever be enough to fully

repay the ecological debt owed by the rich to the poor. However, an innovative, well-resourced CAF would consolidate Scotland's tradition of global social responsibility and solidarity with the world's most disadvantaged people. It would demonstrate continued leadership for climate justice, complementing both the world-leading ambition Scotland set out with domestic mitigation targets and parallel multilateral action. It would set an example that other governments and organisations could draw upon.

Most importantly, support for innovation and sustainable adaptation to climate change has the potential to transform the lives of people in poor countries, now and for future generations. Solidarity with the world's poorest people will help achieve a world where every citizen is able to "live life, and live it to the full."¹⁴

1.3 Immediate and urgent need

With each passing conference, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) inch closer to negotiating a functioning international climate regime. Over the years, the equal importance of climate change adaptation and mitigation, and the need for huge financial input have become cornerstones of the process, with numerous commitments and pledges (see Chapter 3). These mandates will ultimately make a real difference and are to be credited. Nonetheless, fourteen years after scaled-up support for adaptation needs in Least Developed Countries (LDCs) was initially negotiated, lengthy clauses on paper mean nothing to people coping with the impacts on the ground.¹⁵ The long-term commitment for \$100bn of climate finance per annum¹⁶ will not trickle down to the grassroots level any time soon.

Meanwhile, the urgent need for adaptation to the consequences of climate change continues to build. In 2011, East Africa suffered from the deepest drought in 60 years, which the UN estimates has led to 12 million people in need of emergency aid.¹⁷ Pledges take years to translate into concrete action on the ground, whilst

accessible funding to support small-scale producers and vulnerable groups throughout the world is needed now. The international youth movement has reminded us of this at recent UN summits, with activists making powerful protest in t-shirts bearing the slogan "You have been negotiating all my life, you cannot tell me you need more time".



"It is not too late. God's world has incredible healing powers. Within a single generation, we could steer the earth toward our children's future. Let that generation start now, with God's help and blessing."

Pope John Paul II & Patriarch Bartholomew I, 2002¹⁸

2. The global context:

Time for a holistic approach to transformational change

Climate change has impacts on health and food security.



Today, the linked forces of globalisation and climate change are making themselves felt around the world. Widespread political protest has been assisted by new technologies. The fallout of the financial crisis continues, including perceptible shifts in global power structures. The most severe drought seen in 60 years in the Horn of Africa has led to humanitarian crisis. In a few short months, unprecedented floods and landslides have displaced thousands in Brazil and Hurricane Irene prompted the evacuation of Manhattan; one of a record-breaking series of major 'weather-extreme' disasters in the USA alone.¹⁹

Media commentators have invoked apocalyptic themes in reporting such events. In fact, these multiple global crises - the financial crisis, the food crisis and the energy/ climate crisis - can be better understood as the current phase of globalisation. They are some of the most powerful signals yet that the existing unsustainable and inequitable model of economic development must be reset. Any consideration of climate adaptation must learn lessons from the challenges and opportunities at global, national and community levels.

Titus Kabwe
received support
from KATC to
adapt to climate
change.



IN FOCUS: THE KULIMA SUSTAINABLE RURAL FOOD SECURITY PROGRAMME

The Kulima Sustainable Rural Food Security Programme (Kulima Programme) is a collaborative initiative, funded by the Scottish Government and implemented by SCIAF and its partners. It promotes sustainable agriculture systems (SAS) which can increase soil fertility and food production, and counteract certain impacts of climate change. The Kulima Programme brings together the expertise of nine development and advocacy agencies and research institutions in Zambia, Malawi, Burundi and Scotland,²⁰ with a strong focus on innovation and long-term vision. The overarching aim is to increase food security through a broad approach which considers political and cultural factors inhibiting uptake of SAS and emphasises local knowledge and information flows.

In addition to training and supporting small-scale farmers in SAS, the programme is designed to: educate decision-makers and civil society stakeholders with regard to benefits; influence government policy; strengthen the scientific evidence base for SAS; and understand cultural practices which inhibit uptake, despite demonstrable benefits.

Sustainable systems such as conservation farming and agroforestry are low-risk, low-cost and can lead to a host of social, economic and environmental benefits. Details of projects pioneered by the Kulima Programme's partner organisations are outlined throughout this report.

2.1 Global institutions

The current international political climate presents a crossroads (or spaghetti junction), with various multilateral institutions and processes facing either impasse, collapse or endgame. With only a few years until the MDGs expire, the majority of targets are way off-track. How a 'post-2015 framework' can address shifting geopolitical landscapes, structural power imbalances which have hindered progress, and the monumental, ever-evolving challenges of climate change is yet to be seen.

Meanwhile, the Doha Development Round of negotiations under the World Trade Organisation reaches its tenth anniversary in 2011, still having failed to strike a deal which would counter inequitable trade laws. Trade rules play a major role in perpetuating global poverty and maintaining the gulf between developing and developed countries, increasing vulnerability to climate change.

In the world of finance, many dimensions of the global architecture are under reform and very much under scrutiny. Regulation of capital markets, governance of International Financial Institutions, tax transparency and innovative sources of raising revenue have finally emerged as dominant themes on the political agenda. Innovative sources of finance, such as the Financial Transaction Tax (FTT), are needed to meet costs of the economic downturn, climate debts and commitments to international development.

Finally, the multilateral climate change regime under the UNFCCC is under serious pressure. Failure to reach a fair, ambitious and legally-binding package at the much-hyped 15th Conference of Parties (COP15) in Copenhagen in 2009, dealt a serious blow to prospects for a progressive legal framework. With the Kyoto Protocol due to expire in 2012, major diplomatic progress is needed at the forthcoming COP meetings and future summits.²¹

2.2 Community level

It is very clear that lack of political will is preventing these global processes from delivering for the world's most vulnerable populations, in spite of much lip service to the issues. Despite this – or perhaps because of it – there has been a proliferation of grassroots activity and thinking

around people-centred approaches to climate change and development, which focus on building communities' resilience in the long term.

Whilst economic and political globalisation has increased inequality and vulnerability throughout and between societies, the globalisation of technology and information has enhanced communities' ability to respond. Transnational activism has snowballed. In both developed and developing countries, NGOs, community-based organisations, trade unions, independent activists and others are in a strong position to develop joint strategies, and to pressurise public and private sector decision-makers. Just as shifts in power at the level of global politics are imminent over the coming decades, so too are new forms of civil society engagement and influence.

2.3 National and local governance

There is a missing link between international structures and the grassroots pressure for pro-poor change. It is increasingly clear that adequately resourced national and local governments in the Global South must lead 'country-owned' development and climate change adaptation planning.²² Developed country governments in the North must play their part responsibly. Support to build capacity of institutions and governance structures in some Least Developed Countries (LDCs) and fragile states, will be essential to ensure that nationally-led climate adaptation and development plans are integrated.

Supporting communities to become more resilient to future climate shocks will become increasingly integral to international development agendas over the coming years. Climate adaptation is closely linked to poverty reduction and food security - approximately 75% of the people in developing countries live in rural areas²³ and are largely dependent on agriculture for their livelihoods.

Disjointed policy-making runs the risk of 'maladaptation', where superficial gains create new vulnerabilities in the long-run and exacerbate poverty.²⁴ All levels of society – community groups and NGOs, governments and international institutions - must play a role in working to avoid this.

2.4 Looking to the future

One forthcoming opportunity to champion the integration of development, environment and climate thinking is the UN Conference on Sustainable Development (UNCSD) in June 2012. 'Rio+20' will mark the 20th anniversary of the inaugural sessions of the UNCSD, held in Rio de Janeiro in 1992. Known as the 'Earth Summit', that conference gave rise to international environmental law in the form of three conventions, including the UNFCCC. The stated objectives of Rio+20: *to further transition to the green economy in the context of poverty eradication and to strengthen global governance of sustainable development*, fit squarely with the aim of an integrated approach to building community resilience.²⁵

Although it is not clear what degree of political ambition will be invested in Rio+20, global civil society and many developing country representatives will use the platform to promote a unified position for change, and to learn from each other's experiences. As twenty years ago, activists will push a renewed drive for equitable solutions to an unsustainable status quo. They will seek to centralise the marginalised and powerless in decision-making and adopt a broad approach to growth, incorporating climate change, natural resource management and biodiversity.

The western model of economic development forms the basis of most growth strategies and much collective aspiration across the developing world. Yet it is not possible for these strategies, pinned on steep growth trajectories and high levels of consumption, to come to fruition. The world does not have enough resources for its soon-to-be 9 billion citizens to consume at the levels set by industrialised countries in the 20th century; these are not sustainable patterns of behaviour.

Civil society stakeholders propose a parallel framework to the MDGs, which requires action to be taken in developed countries, in addition to financial contributions. The Millennium Consumption Goals (MCGs) would track progress towards vital shifts in lifestyle norms, which must complement the transition to low-carbon economies. These would include benchmark targets on (for example) working hours, personal/ community/ municipal energy consumption,

pollution and air travel. The concept has earned high-level support and was formally proposed at a preparatory conference (PrepCom1) for Rio+20 in January 2011.²⁶

Theory of change scholars highlight 'policy window' opportunities which arise periodically at times of crisis.²⁷ The international community has arrived at a crossroads, where solutions to the climate crisis can be harnessed to build resilience in vulnerable communities. This also presents an opportunity to deliver across other social change agendas. For instance the interests and rights of minority groups, such as people living with disability or HIV can be integrated in climate adaptation processes.

This would be made possible by solutions to the climate crisis that centralise the voices of the poor, address structural gender imbalances and seek to realign unjust power relations between the Global South and Global North. Scotland can support this through exerting pressure at UK and EU levels and through showing solidarity in funding effective, localised adaptation initiatives, shaped at grassroots level by individuals most affected by the impacts.

As has been all-too-well documented, however, the window of opportunity for climate action is closing fast and a decisive, progressive and unified response is needed without further prevarication. Acts of political leadership are urgently needed.

IN FOCUS: DISASTER RISK MANAGEMENT in Livingstone, Zambia

Livingstone, Zambia lies on the banks of the Zambezi river, just several miles from Mosi-oa-Tunya (Victoria) Falls. The falls are world-famous as a force of nature, due to the scale and magnitude of their waters. Over 2km in length, with an average flow rate of 1088 cubic metres per second, Mosi-oa-Tunya translates as "Smoke that thunders", for the spray that can be seen from an astonishing distance. Yet, farmers in the district struggle to overcome extreme water shortages, which have steadily increased over recent years with

irregular rainfall patterns and recurring drought.

In Bbilibisi Village, Sikaunzwe, lack of water has led to failed harvests and reliance on short-term coping strategies which have serious impacts on wellbeing—particularly of women and children. According to villager Mwiya Nawa, with climate change, traditional reliance on ground water has become increasingly insufficient and sometimes women from his community travel 50km to the Zambezi for access to water. In turn, this has consequences for the health and education prospects of children, particularly girls, who must accompany their mothers or take on other domestic responsibilities.

In consultation with local organisation (and SCIAF partner) Caritas Livingstone, the need for a small dam was accordingly identified as the most applicable measure for the community, under a government-supported Disaster Risk Reduction initiative. However, the fledgling project is experiencing some teething problems. Although the dry season still loomed ahead, when Mwiya took us to see the water supply, much of it had drained away. Caritas Livingstone were surprised—struggling with resourcing constraints, the last community visit and site inspection had been several months before when the waterhole had been full.

The land in Sikaunzwe was unable to retain water using tried and tested technologies successfully employed elsewhere. This experience points to the need for sustained resources to enable scaled-up monitoring of projects on the ground, for thorough assessment of local conditions in the design of programmes, and for



capacity building of civil society organisations (CSOs) in rural areas. These imperatives are particularly pronounced in the changing context of unpredictable climatic change.

Members of the community told us that the 2010-11 season has been particularly harsh. In addition to drought and unpredictable rainfall, Sikaunzwe experienced virtually unprecedented low temperatures, with rarely seen frosts decimating certain crops and killing fruit trees. This loss of crops and source of income has severe implications for some farmers, including Alicie and her family. Usually she harvests enough to sell surplus crops at market. This year, however, due to drought and frost, the yield will only suffice to feed her family. She doesn't know how she will pay her children's school fees.



Drought and frost have impacted on Alicie's crop yield.

3. Paying the price for climate adaptation:

Developing a climate
adaptation fund

Watson Tebulu now teaches his neighbours the adaptation techniques he learned from KATC, Chongwe, Zambia.

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SCIAF was encouraged by the cross party support for international development and justice and peace work, in the run up to the 2011 Scottish elections. We were particularly keen to see reference to climate change adaptation in party manifestos. The SNP Manifesto 2011 states:

"[a]nd we will increase our support to developing nations as they respond to the challenges of climate change. We have heard the calls from many for Scotland to create a Climate Adaptation Fund. Given the pressures on the Scottish Government's budget we will work with partners in business, charitable foundations and non-governmental organisations so we can co-ordinate efforts to build a Scotland-wide climate adaption fund."²⁸

The SNP's "Justice and Peace Manifesto Spotlight" also echoed this: ***"[w]e recognise the need for a Climate Adaptation Fund and will work towards this."***²⁹

These pledges were strongly welcomed by SCIAF, other international development agencies in Scotland, environmental NGOs and the umbrella organisations Stop Climate Chaos Scotland and NIDOS. Collectively these groups have been calling for a Scottish Climate Adaptation Fund since 2007.

Scotland set an important example with the Climate Change (Scotland) Act in 2009; a level of ambition which campaigners have been able to promote on the international stage. The pledged introduction of a Scottish Climate Adaptation Fund (CAF) presents an opportunity to show continued leadership on climate justice and consolidate Scotland's record on global social responsibility. However, this will only be effective if the fund follows key principles of accountability and transparency, and focuses its efforts on supporting the most marginalised communities and individuals in the developing world who are in need of the most help.

PROFILE: VAINESS MOONGA

Vainess Moonga is a passionate convert to organic farming methods. She has witnessed erratic seasonal weather patterns in recent years, and increasing hardships in Kazangula District in Western Zambia as a result. She heads a household of seven, including two young grandchildren, and has received support from SCIAF partner KATC in adopting sustainable techniques such as composting. She described how increased yields at harvest have enabled her to fortify the family home with iron, buy medicines for her grandchildren and afford veterinary services for her livestock.

Vainess works hard to persuade village members of the benefits organic farming can bring. She also facilitates village meetings- a forum for farmers to discuss challenges, including the increasing threats of climate change, and to share experiences. It has become her ambition to establish a co-op. She hopes farmers working together to secure fairer prices for their produce and pressure local authorities to support organic farming will strengthen their ability to manage the impacts of climate change.



3.1 The global picture

At the 2009 COP in Copenhagen, parties to the UNFCCC pledged to provide resources approaching \$30 billion per annum (p.a.) in climate finance for the period 2010-12 in 'fast-start' finance. In parallel, developed countries committed to increase this sum to \$100 billion p.a. by 2020.³⁰

There is broad consensus that \$100 billion per annum will not adequately cover the climate debts of developed countries. The World Bank estimates that the "price tag" of adaptation alone will amount to between \$70-100bn per annum (p.a.) between 2010 and 2050, based on a 2 degree Celsius rise in temperature by 2050.³¹ Other studies add cross-sectoral adaptation costs, such as water supply, human health, coastal zones, infrastructure and ecosystems, leading to significantly higher estimates in the region of \$140bn-\$210bn by 2030, and show that even the most narrow interpretation of adaptation costs will incur sums well in excess of \$100bn p.a.³²

Secondly, the figure of \$100bn is predicated on parallel cuts in greenhouse gas emissions, which would cap global warming at 2C, whereas the current level of tabled emission-reductions targets sets the world on a path towards a catastrophic 4C rise in temperature.³³ Further, although the Copenhagen Accord commits to a "balanced allocation between adaptation and mitigation",³⁴ approved climate finance to date is weighted heavily in favour of mitigation priorities.

Meanwhile, it is not known how the \$100 billion p.a. will be sourced, particularly in light of banking sector and financial market meltdowns, austerity packages and high national deficits. This has advanced the debate on innovative sources of funding, such as a Financial Transaction Tax (FTT), particularly in the EU. However, several major economies remain opposed to an FTT and it is very uncertain how much of the revenue would ultimately be earmarked for developing countries. In this context, there is high risk of 'double counting', whereby existing international development budgets are rechanneled into climate finance and yet chalked against both targets. Developed countries must also increase transparency with regard to climate finance contributions.³⁵

However, significant progress was made in terms

"The human impact is obvious, but what is not so apparent is the extent to which climatic events can undo the developmental gains put in place over decades. Droughts and floods destroy lives, but they also destroy schools, economies and opportunity."

Archbishop Desmond Tutu³⁶



Archbishop Desmond Tutu calls for climate justice at Copenhagen in 2009.

of climate finance at COP16 in Cancun. Parties agreed to establish a Green Climate Fund (GCF), which will “support projects, programmes, policies and other activities in developing country Parties” and receive a “significant share” of fast-start and long-term finance as it begins to roll in.³⁷ A Transitional Committee spent 2011 designing the GCF, and will present proposals for approval at COP17 in Durban. These gains were widely heralded as a central success of the Cancun conference.

Yet, all of this reminds us of the cumbersome nature of the multilateral process. The experience of the UNFCCC Adaptation Fund does not offer comfort: the mandate for its creation was negotiated in 2001, it finally became operational in 2009.³⁸ Once operationalised, climate financing cycles comprise of clunky layers of bureaucracy: ‘pledged’, ‘deposited’, ‘approved’ and ‘disbursed’. Following disbursement, implementing agencies invest the funds in project cycles of their own, which subsequently take significant time to bear fruit. Meanwhile, farmers in drought-stricken areas cannot afford to bide time. The problem of mobilising capital in the short-term is extremely pressing.

3.2 Key principles for climate adaptation finance

In light of these substantial challenges, a number of guiding principles have emerged as the backbone of the call for good climate finance. The points below apply equally to international or smaller-scale approaches, such as a Scottish Climate Adaptation Fund.

● **Additionality**

The world of climate finance sees a high incidence and risk of ‘double counting’ by developed countries, in order to meet political commitments on paper. This is the repackaging of existing pledges on climate change, development, disaster relief or related programmes such as health, as ‘new’ finance. In practice, the use of development budgets for climate adaptation diverts money away from other sectors tackling equally urgent needs on the ground.

‘Additionality’ is the concept that financial support, and in this case climate adaptation funding, must not be drawn from existing national or international budgetary commitments in other fields. Whilst climate adaptation is of course

closely linked to other social and development indicators, the arguments for additional resources are clear.

Much has been written about economy-wide impacts and opportunities wrapped up with climate change. This includes the influential ‘Stern Report’ of 2006, which asserts that “[t]he benefits of strong early action on climate change outweigh the costs... ignoring climate change will eventually damage economic growth”.³⁹

At a humanitarian level, additionality increases prospects of sustainable livelihoods and food security for the world’s poorest people. The metaphor of a double-edged sword is apt, as failure to uphold these commitments would lead to widespread loss of life and increased vulnerability throughout the developing world. All climate adaptation finance, whether through the GCF, bilaterally or through co-funding arrangements, must be additional to existing financial commitments.

● **Public funding**

Most analysts accept that innovative sources of funding, including leverage of private sector revenues, will be necessary to mobilise colossal sums of climate finance over the coming decades. However, public funding must remain at the centre of climate finance. Investment in climate adaptation from private non-state bodies presents complex challenges, due to fundamental conflicts of interest, and accountability and sustainability issues.

● **Accessibility**

One of the most significant pro-development decisions to come out the UNFCCC has been the accessibility of the existing Adaptation Fund (AF). ‘Direct Access’ is an approach centred on country-owned adaptation and reduced bureaucracy, to speed up disbursement of funds. Multinational agents, such as the EU or UN Food and Agriculture Organisation, are eliminated from the process, with oversight and financial management of programmes passing to an equivalent national body. Guidelines on allocation of resources by the AF include the obligation to assess:

- Level of vulnerability;
- Level of urgency and risks arising from delay;
- Ensuring access to the fund in a balanced and equitable manner;

- Lessons learned in project and programme design and implementation to be captured;
- Securing regional co-benefits to the extent possible, where applicable;
- Maximizing multi-sectoral or cross-sectoral benefits;
- Adaptive capacity to the adverse effects of climate change.⁴⁰

A Scottish climate adaptation fund should emulate these guidelines to the highest possible degree.

● Eligibility criteria

Finally, adaptation funding must be allocated to initiatives that directly aim to tackle the impacts of climate change on the ground. This is in line with AF and general UNFCCC guidelines, which mandate funds for “concrete adaptation activities”.⁴¹ Technology transfer of low-carbon innovations and other support for mitigation efforts in developing countries is an important element of the wider climate landscape. However, such programmes categorically do not qualify for adaptation funding. Nor is ‘in-kind’ support from private sector or government agency experts an appropriate substitute for finance.

UNFCCC definitions around capacity-building and secondary adaptation practices (see Chapter 4) are less clear, due to the range of financial mechanisms employed (e.g. sector support, concessional loans).⁴² However, initiatives which aim to create broader enabling environments for practical climate adaptation interventions can be appropriate within bilateral and co-funding arrangements.

● Parameters

One key set of questions revolves around ways in which an international CAF introduced in Scotland would complement the long-term goal of a nimble, accessible multilateral system. Careful planning will be needed to ensure such a fund feeds into the wider picture of centrally co-ordinated global financing for country-led plans.

Given that the global climate financial architecture is still very much in the early days of its evolution, there is a clear opportunity for innovative parallel funding instruments, such as a CAF to lead the way. The need for interim, short-term measures

which sidestep heavily bureaucratic and lengthy processes, is clear-cut and urgent. A Scottish CAF could complement the overarching process, by ensuring that access modalities and guiding principles conform to those made under the UNFCCC. It could channel funding into innovative programmes which integrate broad climate adaptation and development concerns, and lead by example with effective reporting mechanisms.

A progressive approach to climate adaptation would consolidate Scotland’s position at the forefront of climate policy and practice. It would complement the ambition shown with national mitigation targets, plans to harness Scotland’s enormous potential in renewable energies and natural resources (our ‘climate surplus’⁴³), and the related Scottish government focus on technology transfer for water and sanitation.

A CAF could also be a complementary partner to the Scottish International Development Fund (IDF). As with the IDF, the development of working relationships between CSOs and research institutions, both in Scotland and ‘in-country’, should be a key feature. Furthermore, the Malawi Development Programme incorporates precedents such as an emphasis on development education through fostering links between schools. This holistic approach to global citizenship could be expanded to inform the parameters of the climate adaptation fund, with a similar focus on direct ‘people-to-people’ ties.

This grassroots approach would also add value to climate agendas at the UK level, playing on Scotland’s strengths and providing an example for other socially-responsible governments.

● Objectives

A Scottish Climate Adaptation Fund should work towards a clearly defined set of objectives, against which funding is awarded to implementing agencies and programmes subsequently monitored and evaluated. Lessons can be learned from the early years of the IDF, which critics suggest lacked coherence when first established.⁴⁴

These objectives should include the following:

- **To complement and feed into integrated, nationally-led climate adaptation strategies, in line with wider poverty reduction planning in developing countries;**
- **To directly fund innovative adaptation**

programmes, rather than offer 'in-kind' expertise or technology transfer relating to climate mitigation;

- To allocate resources in line with 'Direct Access' funding access guidelines.

Recipients of Scottish CAF grants should subsequently clearly demonstrate how climate adaptation programmes will:

- **prioritise the needs of vulnerable and marginalised communities and households within those communities, including women, children and minority groups;**

- **systematically ensure that maladaptive practices which are not aligned with nationally-led adaptation strategies are not supported;**

- **support Southern partners' collaboration with local government, traditional leadership and CSOs across sectors wherever possible;**

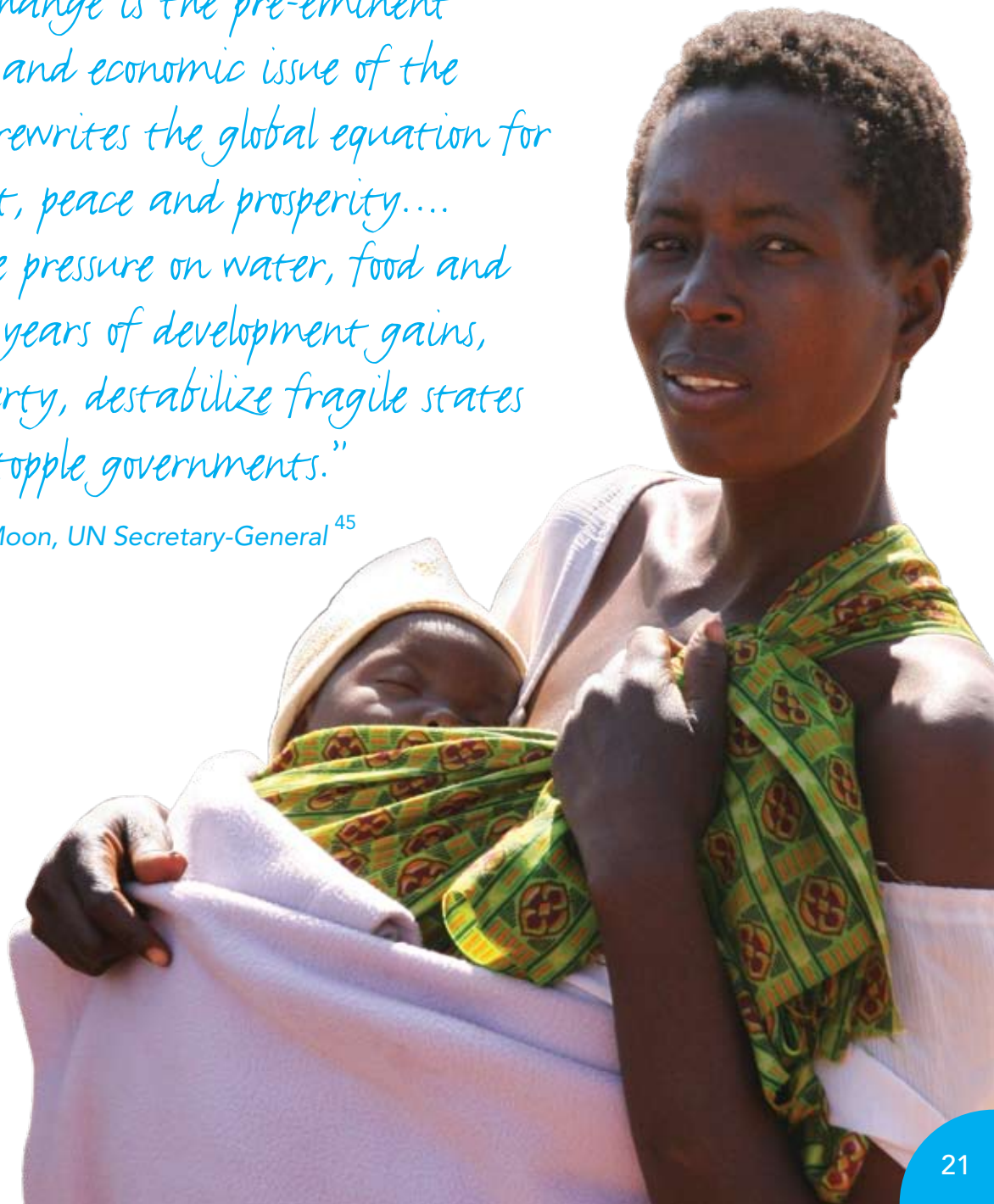
- **monitor and evaluate programmes in line with the objectives and principles of the fund.**

In the case that private sector finance is leveraged, one further crucial objective must be:

- **to create and maintain robust systems which ensure that donors are accountable to the principles of the fund.**

"Climate change is the pre-eminent geopolitical and economic issue of the 21st century. It rewrites the global equation for development, peace and prosperity.... It will increase pressure on water, food and land, reverse years of development gains, exacerbate poverty, destabilize fragile states and topple governments."

Ban-Ki Moon, UN Secretary-General ⁴⁵



4. Joined-up climate adaptation: What works on the ground?



A girl collects water from the nearest river, Mukuni, Zambia.



The impacts of climate change are evolving and the risks are extremely hard to predict. Climate adaptation must be forward-looking and innovative. In developed countries, climate adaptation strategies can include investment in hi-tech flood defence mechanisms, development of climate-resilient infrastructure, air-conditioning systems or pioneering meteorological research and technology.

In Least Developed Countries (LDCs) where populations are highly dependent on small-scale agriculture, resources are limited, and infrastructure and institutional capacity are underdeveloped, climate adaptation covers a wide range of coping strategies which can save and transform lives. At the community level these include sustainable agriculture initiatives, building natural flood barriers or small dams, and capacity-building through community-based organisations. There is already a raft of good practice at community level from which Scotland can learn as it establishes a climate adaptation fund.

4.1 Sustainable agriculture systems

For the billions of people who the UN estimates will “face shortages of water and food and greater risks to health and life as a result of climate change”,⁴⁶ a critical element of adaptation will be the scaling-up of existing sustainable agriculture systems.

Sustainable agriculture has been an area of focus for international development agencies for many years. However current rates of human-induced climate change, particularly global mean temperatures, are occurring too rapidly for normal natural adaptation processes to keep pace. As climate change continues to present new challenges to small-scale farmers, increasing focus on sustainable agriculture systems will be a key element of ‘climate-resilient’ development.

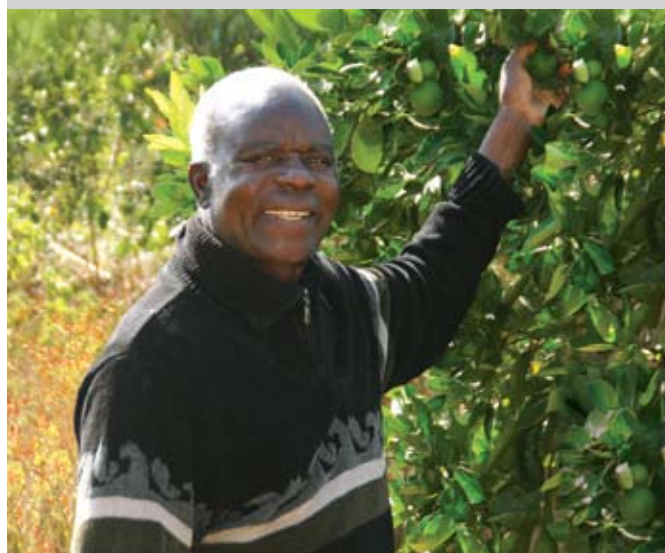
Sustainable agriculture includes methodologies which reduce environmental degradation, increase productivity and can therefore improve food security. It aims to balance competing ecological, economic and social pressures, within the limits of living ecosystems. For instance, techniques such as composting, mixed-cropping, crop rotation, growing green manures, fallows and agroforestry have the proven potential to restore and sustain soil fertility by increasing levels of nutrient-rich organic matter in the soil. Over time, these and other methods can lead to increased yields and the production of safe and affordable food. Some

PROFILE: MOSES MULENGA

Moses Mulenga is a farmer in Chongwe district. In 1996 he attended his first training courses in sustainable practices at SCIAF partner KATC, learning techniques such as composting, green manures, agroforestry and diversification away from dependence on staple crops like maize. Quickly seeing returns from tree-planting on his land, he gained permission from the Village Headman to erect a fence as protection from ‘charcoal burners’,⁽ⁱ⁾ and set about reforesting his land. These trees now serve to enrich his soils and provide protection against extreme weather events and drought. Moses cultivates a wide range of crops- including sorghum, pigeon peas, cotton, millet, soya, oranges and avocados- and sells the surplus at market.

During a tour of his farm, Moses shared expertise in an array of techniques: minimal tillage to conserve moisture in the soil, barrier plants which act as natural pesticides, mulching, ‘potholing’ for planting of avocado seeds, as well as staples such as composting... the list goes on. He is also a very strong advocate for sustainable organic agriculture: “I can now make profits on what I sell, so use the money for school fees or for my health...I am now a happy farmer”.⁴⁷

⁽ⁱ⁾ “Charcoal burners” cut down trees for fuel and to sell. The practice places a lot of strain on the land and on energy security.



sustainable agriculture systems (SAS) draw on traditional indigenous knowledge systems, where cultures revolve around respect for nature and living in balance with the environment.⁴⁸ This ethos is at the core of sustainable and climate-resilient development concepts, in theory and in practice.

The potential benefits of sustainable methods for small-scale farmers are enormous. Techniques for returning vital nutrients into the soil replace high-cost inputs such as fertilisers which cause erosion, increase vulnerability to flooding and are often difficult to access in marginalised or poor communities. Sustainable agriculture is low-risk, requiring low levels of capital investment and external inputs. To highlight just one method, crop diversification enhances food and nutritional security through increased soil health, insurance against (mono)crop failure and heightened potential for household income.

Conservation farming is the collective term for this broad range of approaches, which includes organic agriculture and agroforestry.

IN FOCUS: AGROFORESTRY via the UN research centre ICRAF, Malawi

Agroforestry is a sustainable agricultural system which can lessen the impacts of climate change. It integrates animal husbandry and land use practices, such as intercropping of trees and agricultural crops, and has real benefits for small-scale farmers. Planting certain types of trees has been proven to increase agricultural productivity, replenishing the soil with vital nutrients. As well as increasing fertility, this biomass helps to prevent both saturation and erosion, thus protecting crops against extreme weather events. Agroforestry also ticks boxes with regard to other climate issues, such as carbon sequestration and biodiversity, and can provide a source of fuel and cash crops at the farm level.⁴⁹



The UN World Agroforestry Centre (ICRAF) is an important proponent of the practice, through its pioneering research programmes, collaboration with district governments, as well as hands-on application of agroforestry in communities throughout Africa. The HQ for Southern Africa is situated in Malawi, one of the most densely populated countries in the world, as well as one of the poorest. Environmental stress and natural resource scarcity are enormous problems, which are steadily worsening with the impacts of climate change.

Dr Gudeta Sileshi is an agroecologist at ICRAF. As he explains,

"Climate change is not a fairytale.... there is flooding, so some people living on the riverside...regularly their homes are affected, animals, crops damaged and so on and so on. The trees buffer the farm household and even the land, when there are droughts...the trees tend to soak up the water, instead of flooding, instead of soil erosion, the trees act as a trap – the soil acts like a sponge..and when there is drought, the trees tend to bring water from the depths of the soil up to the crop."⁵⁰

Josamu Chikalema is the Village Headman of Chimbalanga Village II in Salima District, on route to which the impacts of drought and of deforestation are very plain to see.

Having witnessed neighbouring farmers plant 'fertiliser trees' and increase their yields, he led a group which approached the local government Extension Department for advice.⁵¹

The group now receives farming inputs and ongoing support through the Ministry of Agriculture's Food Security programme, created in consultation with ICRAF. The initiative is a strong example of an integrated approach to food security, across sectors and with due mainstreaming of climate adaptation imperatives.

4.2 Sharing knowledge

Supporting farmers to share knowledge, and offering access to information and communication technologies (ICTs), are essential to improving communities' resilience to climate change.

IN FOCUS: COMMUNICATION, COLLABORATION, INTEGRATION at Kasisi Agricultural Training Centre, Zambia

One of KATC's particular strengths is the degree of collaboration infused throughout its programmes. Aside from training civil society and government stakeholders, including staunch proponents of conventional (unsustainable) methods, KATC works closely with a wide range of partners. In some cases projects have been pioneered at the centre and rely on financial support from KATC. In others, the relationship is symbiotic. These partnerships include ICT initiatives, producer associations, advocacy platforms and research institutions, and have led to many different models of innovative, integrated adaptation programming. For example:

Radio Yatsani: a community radio station which includes programming on sustainable agriculture. The project is interactive, with farmers calling in to ask questions, offer advice and share experiences. Past broadcasts include Harvesting and Post-harvest Management, Velvet Bean as Poultry Feed Supplement, Marketing of Organic Products and Dairy Farming.

Chinyunyu Multipurpose Telecentre: a community centre, based in the Chinyunyu area of Chongwe District, which is not on the national grid. Services include IT literacy training, internet access for farmers to research particular problems, and facilities to charge mobile phones which enables farmers to share information and seek advice.

Zambia Climate Change Network: an umbrella advocacy platform for climate justice. ZCCN's main priority is to mobilise CSOs and civil society more broadly. It also lobbies government on greater prioritisation of climate change issues. ZCCN is an active member of the Pan African Climate Justice Alliance, feeding the voices of Zambian farmers into the international political process through PACJA's influence at the UNFCCC.

Organic Producers and Processors

Association of Zambia: a not-for-profit movement which promotes sustainability and high-quality organic produce. OPPAZ's agenda includes: members' income generation; lobbying government for pro-organic policies and a national organic regulatory framework; engaging poverty reduction agencies and climate change lobbyists; alternative livelihoods/ adaptation strategies such as beekeeping or small livestock.



Samson Chinyonga is a volunteer at the telecentre, helping farmers to access information and training about climate adaptation. Pictured with SCIAF Policy Officer Jill Wood.

5. Lessons learned:

The challenge of climate adaptation on the ground



Small scale farmers are particularly vulnerable to climate change.

Understanding the barriers to climate adaptation in developing countries is an area of increasing focus for researchers. These include SCIAF's Kulima programme partners, the University of Edinburgh and the James Hutton Institute, as well as the UN body ICRAF. This work draws on related work by social justice groups and think-tanks, like SCIAF partner the Jesuit Centre for Theological Reflection, bringing together expertise from across civil society.

With a continued focus on sustainable agriculture in Zambia, based on recent field research with SCIAF partners, this chapter touches on a mixed selection of such barriers, to underscore the depth of the challenge which makes holistic approaches so vital. These are adaptive capacity of farmers, political and corporate barriers, anthropological issues relating to uptake, gender and climate adaptation, and the role of civil society in influencing enabling environments.

5.1 Adaptive capacity

A long list of factors feed into the ability of individuals to adapt to the impacts of climate change. These include access to decision-making structures and social services, the presence of CSOs, or community-based organisations (CBOs) such as co-operatives, health and wellbeing, standing in the community, literacy and respect for human rights. The more vulnerable a household, the less it is able to adapt and build resilience to climate change.

IN FOCUS: GENDER

In agricultural societies, women experience the impacts of climate change differently from men, due to traditional gender roles and division of labour. Women are often primarily responsible for cultivation of crops and must therefore bear the brunt of increased hardships that stem from water scarcity and degradation of land. Numerous climate-related pressures force small-scale farmers to cultivate increasingly marginal plots of land, which can be both distant from the household and increasingly labour-intensive due to poor soil quality. Access to water remains a major issue, with women often walking very long distances, adding significant pressures on their time and security.

Climate change also imposes multiple strains on the parallel domestic roles of women. Their responsibilities for health and nutrition, providing water, cooking, caregiving for the sick, childcare, gathering fuel and managing household budgets are compromised by the environmental and social stresses examined throughout this report. These additional burdens have profound impacts on household dynamics, further undermine resilience and serve to reinforce existing inequalities along gender lines.

Women also have less power to adapt to these impacts of climate change. Although women possess specific insights and skills based on division of labour, their knowledge is largely neglected by policymakers. Typically women have unequal access to decision-making structures and to information, precluding input into shaping adaptation plans according to their needs. Predominantly male village elders tend to lead community-based adaptation actions, in accordance with specific experiences and customs of their own. Women are also typically poorer than men, with less access direct access to income and to credit. This undermines their ability to adapt. Gender inequality is exacerbated by climate change.

These climate-related stress factors are experienced even more disproportionately in female-headed households. Increased reliance on short-term coping strategies has particularly detrimental impacts on children's education, especially for girls. In addition, women are less likely to have the time to learn and adapt to labour-intensive sustainable farming practices. Existing literature points to the need for more thorough, evidence-based analysis of these and other gendered climate change impacts, including in adaptation responses such as sustainable agriculture systems.⁵²

Edith with her reduced yield after drought and frost impacted her harvest. Mukuni, Zambia



5.2 Political and commercial barriers

Some of the most significant barriers to wider use of sustainable agriculture systems are political and economic. Wealthy sectors of society often have direct or indirect stakes in key sectors of the economy, which include agri-business in many agricultural societies. By definition, the voices of elite actors have a disproportionately high degree of access and influence over decision-makers - indeed overlap between the two is not unusual.

Closely related is the fundamental opposition between the powerful agri-business sector and the principles of sustainable agriculture systems. Synthetic fertilisers, insecticides and pesticides, genetically modified seed varieties and the singular promotion of specific products, generate enormous profits for the dominant companies which control the markets. However these practices encourage mono-cropping and undermine agricultural productivity and food security in the long term. Very often companies are subsidiaries of multinational corporations (MNCs), headquartered in developed countries. The much-prized direct foreign investment, welcomed by governments in order to stimulate the economy, ultimately adds weight to the sector lobby in an already unbalanced playing field. MNCs and their offshoots have a much higher degree of influence on policy-makers than proponents of alternative agriculture systems.

Accordingly, political commitment to the promotion of synthetic fertilisers is commonplace in developing countries and critically compromises the pockets of support for sustainable agriculture practices across government institutions. This commitment often manifests as fertiliser subsidies for small-scale farmers, as part of conventional food and agriculture programmes, along with a certain amount of staple-crop seed. The majority of farmers who

have been incentivised to experiment with alternative techniques continue to rely on fertilisers simultaneously. This mixed approach detracts from the potential benefits of sustainable farming, resulting in much lower conversion rates to purely organic methods than anticipated in both Zambia and Malawi.⁵³

The long-term vision of proponents of sustainable agriculture systems involves displacement of conventional technologies by organic agriculture equivalents at the commercial level.⁵⁴ This could include promotion of drought-resistant crops and diversification by agribusinesses, along with opportunities in 'green economy' innovation. With private sector buy-in and political will, this would represent a substantial step on the path to a just and sustainable future.

5.3 Barriers at physical and cultural levels

It is understandable that poor small-scale farmers can be resistant to change. Whilst a small number of people are prepared to leap into the unknown and trust the advice of pioneering experts, the majority of farmers prefer to rely on the low-risk strategy of short-term gain, rather than longer-





term investment in techniques that are new to them. Technology adoption studies show that generally, once a proportional pool of 'innovators' has been exhausted, a longer period of low adoption rates ensues, during which support from other stakeholders is garnered and systemic breakthroughs are achieved. Ultimately a critical mass of uptake is reached.

At a practical level, some sustainable practices such as composting, green manures, ridging and cultivation of barrier plants can be more labour-intensive than conventional farming methods like the application of inorganic fertilisers and pesticides. In Zambia, traditional cycles of agricultural labour incorporate a period of rest following planting, however this time is used for compost preparation under sustainable agriculture systems. This also has implications for domestic time pressures and household dynamics. The increase in labour was regularly cited as a barrier to uptake by 'early adopters' and outreach workers interviewed in Zambia and Malawi.⁵⁵

Clearly, accurate information and access to knowledge also play a central role here. Misinformation, misconceptions/ popular myths and instinctive mistrust of innovation are major deterrents to change for subsistence and smallholding farmers reliant on consistent yields. Perceptions of organic methods as labour-intensive are a major hurdle, yet some techniques, such as minimum tillage reduce labour and whilst many of the methodologies require extra work at first, less attention is demanded thereafter.

Nonetheless, training and outreach are a central element of programmes at centres such as KATC and ICRAF and despite this, reluctance to adopt techniques has been more widespread than predicted.

This is a real challenge. For some communities, for instance, climate variability and climate change are the will of God, poor harvests are not to be questioned and new technologies represent a form of sacrilege.

Conversely, the worldviews of some indigenous groups traditionally drew on living in harmony with nature and incorporate sustainable farming techniques. Local people must be

empowered through local civil society to find their own ways to adapt their traditions to the new realities of climate change.

5.4 Role of civil society

There is a clear role for local civil society in overcoming these social, political and cultural barriers to change. Funding channelled through local CSOs is likely to be more effective. Powerful interests can be challenged and local opinion-formers engaged. CSOs in rural areas often have a presence which allows a greater degree of outreach to the most marginalised communities, and can help to tailor broad directives to local conditions.

CSOs have a vital role to play:

- helping to ensure the voices of rural communities threatened by climate change are heard in national and international fora, championing the needs of the most at risk;
- increasing effectiveness of central policies at the local level, by tailoring them to local conditions;
- lobbying central government for coherent development and climate adaptation strategies, for increased resources for district government officials and for adequate access structures in rural areas;
- creating relationships with district governments, strengthening links between senior politicians, civil servants and farmers living in poverty;
- highlighting and researching barriers to adoption, grounded in hands-on understanding of the local context;
- holding governments to account over their commitments and use of resources channelled through UN adaptation funding mechanisms.

SCIAF's Kulima programme includes a range of research on political and anthropological barriers to climate change, to seek ways to overcome the issues raised in this chapter. In addition, the programme fully involves local civil society organisations to link research with adaptation practice on the ground and with local advocacy, presenting solutions to developing country governments. More lessons will be drawn from this programme to support learning on climate adaptation over the coming years.

6. CONCLUSION AND RECOMMENDATIONS

This report demonstrates the urgent need for concrete action on climate adaptation, based on the principles of climate justice. The impacts of climate change are escalating dramatically. Those already coping with poverty are most at risk, with vulnerable communities and individuals bearing the brunt of climate shocks. Meanwhile, industrialised countries bear the historical responsibility for climate change and are in the strongest position to act quickly. In the words of UN Secretary General Ban Ki-Moon, "Climate change links us more directly and dramatically than any other issue".⁵⁶

The increasingly interrelated nature of climate adaptation and poverty reduction points to the need for holistic approaches to achieving sustainability, which draw on expertise across sectors. Food security, livelihoods and sustainable agriculture systems are key areas where major overlap between poverty reduction and climate adaptation agendas can be harnessed to build resilience, increase benefits for marginalised groups and work towards transformational change. Success will also depend heavily on integration of climate adaptation priorities throughout multilateral institutions, national governments and across the third sector.

Innovative climate adaptation practices, including those which focus on information and knowledge flows, enhancing adaptive capacity of the vulnerable, are urgently needed. The time for action is now. Committed finance in support of integrated climate adaptation initiatives must be mobilised without delay. This will save and transform lives.

This report accordingly makes the following recommendations:

Parties to the UNFCCC must:

1. act decisively and swiftly to operationalise the UN Green Climate Fund (GCF), drawing on the access and allocation modalities of the Adaptation Fund where applicable;
2. adopt a package recommended by the Transitional Committee to the GCF which affords the highest degree of transparency and civil society participation;
3. secure a fair, ambitious and legally-binding deal, which builds on previous 'on-paper' commitments to equal weighting for adaptation and mitigation priorities.

The UK Secretary of State for Climate Change must:

4. show leadership on climate finance, including within EU and UN negotiating contexts as part of a global deal;
5. take early action to deposit committed funds in the GCF once operational;
6. speak out in pressurising regressive Members States to increase levels of climate change ambition at the EU level.

The Scottish Government must:

7. move to implement a Scottish Climate Adaptation Fund (CAF), which:
 - promotes concepts of climate justice, climate debt and global citizenship
 - adheres to the concept of additionality
 - is resourced by public finance inasmuch as possible
 - prioritises the adaptation needs of the poorest and most vulnerable people
 - supports local civil society to promote adaptation techniques relevant to the local context
 - constitutes non-concessional grants, based on closely monitored allocation criteria
 - does not include transfer of 'in-kind' expertise or mitigation technologies
 - provides learning on adaptation funding for other organisations and public-sector bodies
8. continue to demonstrate broad political leadership on issues of climate change and global justice, consolidating Scotland's tradition of solidarity with those most in need.

SCIAF will continue to engage in national and international debates, along with our partners in Scotland and in developing countries. Our international programmes, research and policy development will continue to prioritise a focus on climate change and meeting the needs of the poorest and most vulnerable.

We call on the Scottish and UK Governments to play their part.

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'For the human family...home is the earth, the environment that God the Creator has given us to inhabit with creativity and responsibility. We need to care for the environment: it has been entrusted to men and women to be protected and cultivated with responsible freedom, with the good of all as a constant guiding criterion.'

*Pope Benedict XVI,
Message For World Day of Peace, Jan 2008*

Front cover photo: A woman in Mukuni, Zambia, tends her crops.

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