



Mainstreaming the environment in Malawi's development: experience and next steps

Steve Bass, James L.L. Banda, Sosten Chiotha, Joseph Kalowekamo, Themba Kalua,
Daisy Kambalame-Kalima, Boyd Hamella, Michael Mmangisa, Gibson Mphepo,
Nyuma Mughogho, Dennis Mulebe, Friday Njaya, Elliot Phiri, Benon Yassin, and Gil Yaron

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A collaboration between IIED and PEI, MDPC

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For a full list of publications or a catalogue please contact:
International Institute for Environment and Development
80-86 Gray's Inn Road, London WC1X 8NH, UK
T: +44 (0)20 3463 7399 W: www.iied.org

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Preface

Malawi has a long-term vision of attaining a technologically driven, middle-income economy by the year 2020. Vision 2020 has emphasised environmental sustainability as a foundation for this vision. This demonstrates the country's recognition of the wise use of environmental wealth in building resilient economies that deliver high and sustained values from Malawi's rich soils, biodiversity and water bodies – as well as of the cause-effect relationship of environmental degradation with poverty. Clearly there is an imperative to act rapidly: environmental degradation is exacerbating poverty through reduced soil fertility, increased disease and parasite incidences and water scarcity; as well as reducing the quality of goods and services, which reduces people's health and livelihood status. In turn, poverty leads to the increased exploitation of natural resources, decreasing the community's will and power to manage natural resources, leading into environmental degradation.

The Malawi Growth and Development Strategy (MGDS), the country's medium term national development strategy, places climate change, environment and natural resources as one of its key priority areas. This represents a commitment to good environmental and natural resource management (ENRM) as a platform for sustainable development and poverty reduction. It aims to improve the regulatory framework for harmonised environmental and natural resource management, and to reduce environmental pollution, including greenhouse gas emissions and ozone depleting substances.

Realising that an important constraint in attaining sustainable ENRM is its lack of reflection in the policy, planning and budgeting work of many 'mainstream' government bodies and other organisations, the Government of Malawi, in collaboration with the UNEP and UNDP, developed a 'mainstreaming' project. The Poverty and Environment Initiative (PEI) project works across government in mainstreaming ENRM into policy, planning and budgeting procedures. To reinforce this, the project is producing evidence on the implications of a 'business as usual' approach in implementing development projects without considering environmental implications, aiming to raise the profile of ENRM in the country.

Mainstreaming environmental considerations into key decisions and institutional development is no easy task and that it is best informed by approaches that have worked to date. The Ministry of Development Planning and Cooperation (MDPC) and the PEI project, with assistance from the International Institute for Environment and Development (IIED), co-hosted a group of Malawian experts, who have many years of experience regarding poverty reduction, environment or finance. The idea was to reflect on Malawi's various approaches to environmental mainstreaming, to share lessons learned, and to identify key challenges for the future and best ways of addressing them. This works to inform a more systemic approach to mainstreaming in future, in particular Malawi's Poverty and Environment Initiative. Their early findings were shared with the Poverty and Environment Partnership, an informal meeting of donors and international NGOs, when the Government of Malawi hosted its 2010 international meeting.

Great value has been realised from bringing together the expert group from many fields of expertise – from government, business, non-governmental organisations and academia – in order to produce this publication. The paper offers a rich reflection of Malawian experience in environment mainstreaming, from a variety of approaches that have not been considered alongside each other until now. It identifies lessons on what works, key challenges for the future and the best ways of addressing them. The group's recommendations will hopefully contribute to shaping the implementation of Malawi's successor National Development Strategy and future environmental work of government, civil society organisations and co-operating partners.

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The authors write in their personal capacity. While this paper represents a broad consensus among the authors, this does not imply that every author is in full accord with every recommendation or analysis.

James L.L. Banda is Deputy Director for Land Management and Training in the Land Resources Conservation Department of the Ministry of Agriculture and Food Security. He is an Agricultural Engineer specialising in soil conservation. He has extensive experience in implementing community programmes and working with rural communities in Malawi.



Steve Bass is Head of Sustainable Markets at the International Institute for Environment and Development. He facilitated the retreats that resulted in this publication and edited the results. Steve has previously served as Chief Environment Advisor for the UK Dept for International Development, and Project Manager for Southern Africa of IUCN.

Sosthen Chiotha is Programme Director for LEAD Southern and Eastern Africa. An academic, he also coordinates the Masters course in Environmental Science at Chancellor College, University of Malawi. With training in biosciences ranging from public health to environmental management, his research reflects this broad background and currently focuses on climate change adaptation.

Boyd Hamella is responsible for Financial Sector Policies in the Economic Affairs Division of the Ministry of Finance. An economist, he previously worked in public finance and economic management and has a strong interest in ways to integrate environment in public finance.

Joseph Kalowekaloma is the Assistant Director, Dept of Energy Affairs, responsible for promoting new and renewable energy sources. An engineer, he has been coordinating the promotion of biomass briquettes as alternatives to charcoal and firewood, under the Malawi Poverty and Environment Initiative.

Themba Kalua currently works as a Regional Programme Advisor in the UNDP-UNEP Poverty and Environment Initiative (PEI) Africa team based in Nairobi and he has been involved in managing programmes and operations for various UN agencies for about ten years. His main responsibility is to provide technical advice and support to countries to mainstream environmental sustainability in national development planning processes. His background is in Environmental Sciences and Strategic Management.

Daisy Kambalame-Kalima is the Country Manager for Malawi of the African Institute of Corporate Citizenship. She was responsible for the establishment of several initiatives including the Malawi Global Compact Network, Business Action Against Corruption, and the Malawi Agriculture Partnership, and is a broker of various business partnerships for development.

Michael Mmangisa is the Project Manager for the UNDP-UNEP Poverty and Environment Initiative (PEI) in Malawi. He coordinated the process of developing this publication for Malawi. A Human Nutritionist and Agricultural Economist, his post involves working with the Government of Malawi to integrate poverty and environment in government planning, budgeting and policies. He has also worked as a Regional Manager for the National Smallholders Farmers Association of Malawi (NASFAM) and as Project Manager for World Vision Malawi's nutrition projects.

Gibson Mphepo is the Programme Officer for Leadership for Environment and Development, Southern and Eastern Africa (LEAD SEA). His work involves organising and conducting training and capacity building in leadership and sustainable development, project proposal write-ups and project implementation. His main focus of projects is on climate change.

Nyuma Mughogho is the Assistant Director of Forestry in Malawi, heading the Forestry Extension Services Division. Her work involves stakeholder liaison and collaboration with local communities, and she is currently focusing on issues of forestry's resilience to climate change.

The late **Dennis Mulebe** was the Head of Planning and Chief Economist in the Ministry of Local Government and Rural Development. He specialised in planning and development policy analysis, with considerable experience also in project planning and preparation. Fellow authors mark his loss with sadness but also gratitude for his many contributions to sustainable development in Malawi.

Elliot Phiri is a Policy Specialist in the Office of the President and Cabinet. He rationalises various public policy proposals for submission to Cabinet, liaises and communicates with sectoral Ministries on Cabinet feedback on the policy proposals, and provides professional advice to Ministries on policy research.

Friday Njaya heads the Planning Unit in the Dept of Fisheries. He specialises in fisheries governance regimes, especially for the small-scale sector; and has planned and coordinated several fisheries development programmes.

Benon Yassin is the Principal Environmental Officer responsible for environmental information and publications in the Environmental Affairs Dept, coordinating the preparation of national and district 'state of environment' and latterly 'environmental outlook' reports. He has also facilitated several environmental rehabilitation and conservation projects at local levels.

Dr Gil Yaron is an economist and the founding director of GY Associates Ltd (www.gya.co.uk) who gained his doctorate from Oxford University. Over the past 20 years, Gil has worked extensively on the economic and social costs of environmental degradation and poverty in Africa. He is the author of three books and many other publications on natural resource management and development.

The authors are grateful to Ministry of Development Planning and Cooperation (MDPC) for hosting a retreat in 2010 to reflect on environmental mainstreaming approaches; to the MDPC-UNDP-UNEP Poverty and Environment Initiative (PEI) for organising that retreat; to the International Institute for Environment and Development (IIED) for technical assistance; and to two of IIED's framework donors (Irish Aid and the UK Dept for International Development) for financial support. Thembi Mbekeani of MDPC provided communications advice. Leianne Rolington of IIED provided editorial and publishing assistance.

Acronyms

ASWAp	Agriculture Sector Wide Approach
BVC	Beach Village Committee
CA	Conservation Agriculture
DoE	Department of Energy Affairs
DoF	Department of Fisheries
EM	Environmental mainstreaming
FIDP	Farm Income Diversification Programme
GNI	Gross National Income
GoM	Government of Malawi
IIED	International Institute for Environment and Development
LRCD	Land Resources Conservation Department
MDPC	Ministry of Development Planning and Cooperation
MDGs	Millennium Development Goals
MGDS	Malawi Growth and Development Strategy
MPEI	Malawi Poverty and Environment Initiative
NCATF	National Conservation Agriculture Task Force
NRE	Natural resources and environment
NASFAM	National Smallholder Farmers Association of Malawi
p/e	poverty/environment (links)
SME	Small and medium enterprises
PEI	Poverty and Environment Initiative
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States International Development Agency

Summary

The Ministry of Development Planning and Cooperation (MDPC) recognises the need to ensure that Malawi's environmental assets support people's wellbeing – and moreover to ensure Malawi's development patterns are not environmentally damaging. To do this requires the 'mainstreaming' of environmental considerations into key decisions and institutions that determine development – notably in government and business. But where to start?

To begin a review of environmental mainstreaming (EM) in Malawi, MDPC organised a two-day retreat of 20 Malawian experts in environment and development from government, academia, business and civil society. Held in association with the UNDP-UNEP Poverty and Environment Initiative (PEI) Malawi programme and facilitated by IIED, this group reflected on how far environment had been integrated into Malawi's development, the various means by which this occurred (largely central government, partnership, and knowledge initiatives), and the remaining challenges. Following their subsequent research into key cases, this paper summarises the group's findings and recommendations:

Malawians depend intimately on the quality of their environment, with 85 per cent of Malawi's working population practising rain-fed agriculture. Most Malawians thus experience a direct dependence on the quality of environmental assets – soils, water, forest cover, and biodiversity. They are also highly vulnerable to environmental hazards – floods and droughts, and the long-term trends of climate change. With the urban population rising at a rate of six per cent per year, increasing numbers of slum-dwellers and street children find it difficult to access sanitation and clean water.

Few poor people have adequate incentives to invest in sustaining environmental assets, even though they are dependent on the environment. This leads to several environmental problems that are suffered most by poor people – deforestation, soil erosion, declining fisheries stocks, lack of clean water, and so on. Sometimes those problems are also unwittingly caused by poor people, as they lack better options, but they are also caused by elites appropriating environmental assets for themselves.

PEI's studies reveal the economic significance of the environment. On the one hand, the contribution of natural resources to GDP is far more than is currently measured: adding just the contribution of wildlife to tourism, plus woodfuel, doubles the GDP contribution to nearly 13 per cent. On the other hand, environmental degradation is costly but also unmeasured, halving Malawi's net national wealth accumulation.

Organisations that directly serve poor people are beginning to change the kind of work they do, to better address increasingly visible 'poverty/environment' problems that affect poor people's livelihoods, health, income, and growth. Some development NGOs such as Oxfam, World Vision, ActionAid and smaller Malawian NGOs are working more on environmental deprivations. Environmental NGOs are working more on social and developmental needs.

Thus a wide range of institutions and initiatives are already covering some 'mainstreaming' functions, the work they do being increasingly open to – and often demanding – poverty/environment considerations in planning and implementation. In one short brainstorming session alone, we identified many institutions and initiatives that cover a range of functions that help EM, including: advocacy, capacity-building, on-ground delivery, research, information-sharing, livelihood support and enterprise development. They work in several sectors: energy, agriculture, forestry, water and carbon. They are also led by a wide range of bodies: central and local government, business, and NGOs.

There are some common success factors in these existing 'mainstreaming' initiatives:

- an understanding that poverty is multi-faceted;
- an understanding that environments are complex and locally-specific;
- obtaining economic evidence of the value of environmental assets or the costs of environmental hazards;
- time to build confidence and change attitudes, incentives, procedures and behaviour in mainstream institutions;
- leadership: notably in mainstream authorities and businesses, but also by environmental organisations who have to shift to a more constructive approach to facilitating good decisions at the centre; and
- effective partnership and co-management mechanisms, with powers and incentives for local groups to practice responsible management, so that environmental assets can produce a balance of private, community and public goods and services.

These various initiatives and other 'tracks' for environmental mainstreaming, however, are not all well recognised, explored, supported or – critically – linked together.

The national development plan can offer a catalytic, enabling framework to encourage stakeholders to combine environmental and poverty objectives – but alone is insufficient. There is a presumption, led by some donors, that the national development plan is the main vehicle for EM, as if all that is needed is to plan a better treatment of environment and add environment language to key documents. While such plans can be an excellent reflection of stakeholder commitments, the process of generating those commitments cannot be short-cut. There are key decisions, beliefs and behaviours both upstream and downstream of the national development plan that can either support or constrain the integration of poverty and environment objectives. These, and the potential mainstreaming tracks that can improve them, need to be recognised and mobilised.

PEI thus aims to improve the enabling conditions for integrating environmental/natural resource management with poverty reduction – in a more systematic way. While PEI focuses on national development planning as a central EM process, it also aims to get linked poverty/environment (p/e) issues into public expenditure assessment and planning, economic case-making, and the suite of government decision-making guidelines. It can link these with the range of existing mainstreaming initiatives we have identified, strengthening all by lesson-learning, joint advocacy and partnering.

Ten overall recommendations are offered, addressed specifically at the opportunity presented by PEI, but also applying to any other work in Malawi that faces the twin challenges of integrating environmental and poverty reduction objectives. In essence, Malawi has the option to establish a resilient 'green economy', which is competitive in the world and thrives domestically, building on the rich potential of its own environmental wealth and developing the capabilities and aspirations of all Malawians, but cognizant of its own vulnerabilities, such as to climate change. To do so, however, will require public policy that (a) has a strong understanding of the nature of wealth in Malawi, and how it is built, (b) cuts out damaging and antithetical practice, (c) builds on current best practice that is efficient and effective in a relatively poor country, and (d) innovates to help achieve a new form of environmentally sound growth. Recommendations toward such ends are offered in Chapter 6, and reflected below:

1. *Political vision of creating national wealth from sustainable use of environmental assets:* With environment both more valuable to poor people than has been assumed to date, and with environmental degradation more costly, some big decisions need to be made about how government institutions and businesses operate, as well as the roles of poor groups. We encourage government to develop a political vision in support of national wealth creation,

including environmental wealth, with positive outcomes for poverty reduction. Debating the very real prospects for Malawi in shaping a resilient green economy – one that thrives on sustainable use of natural resources, that achieves social justice in doing so, but that works carefully within ecological limits – could be one means to lead towards an enlightened political vision.

2. *Investment in environmental assets in support of all the MDGS priority areas and an Environment Sector Wide Approach (SWAp)*: It is notable that our review, as well as the new Environmental Outlook Report and the 2010 PEI Economics study, all call for improved public and private investment in natural resource management, as a foundation for a sustainable economy and the livelihoods of the majority. This entails 'pro-poor' investment too, so that smallholders, for example, can all participate in environmental value chains. Whilst investment is needed across all the nine MDGS areas, as environmental assets contribute to each of them (and environmental hazards pose risks to each), an Environment SWAp or Environment Fund might also be warranted so that the environment sector is in good shape to support other sectors. An environmental expenditure review process would reveal where the needs and potentials are.
3. *Building an environmental valuation and accounting system that supplements the System of National Accounts*: Environmental potentials and risks need to be integrated into key economic and financial reports and decisions, especially in Malawi where environment and natural resources form an unusually important foundation for development. A system should be built, step by step, to keep track of the changing status, use and value of environmental assets. The first step is better physical information on environmental stocks and flows of, for example, forest, fish and water resources. The next is to value key environmental assets, perhaps first at the project level. Environment questions in public expenditure reviews would elicit a better picture of how much is being invested in maintaining the environmental assets, or in tackling environmental hazards, perhaps on a sector basis. All of this can better inform the budgeting process, so that the reality that environment is a foundation for development is reflected in budget decisions. There has been some study of rates of return on natural resource production (forest, fish and farm products) in Malawi which can help with the above; however, evidence of rates of return on public ecosystem services such as water conservation, soil conservation, carbon storage and clean energy, is also now needed. With Malawi so dependent on environmental assets, the idea of developing wealth accounting to supplement the system of national accounts may be explored. All of this will require associated capacity development.
4. *Focusing poverty/environment integration on three key sectors: biomass energy, sustainable agriculture and water provision*. Mainstreaming is about action, not just planning, and it is tactically better to focus action where there is a will and the means, rather than try to achieve mainstreaming on all issues at once. Agriculture, energy and water are universally important for poor groups; they face severe threats from climate change, scarcities are becoming apparent, and the sectors have relatively significant budgets. Public procurement of, for example, sustainably-produced food, timber and other products can be another way for government to lead by example, as long as this is linked to work to improve sustainable supplies in the domestic market.
5. *Putting poor groups' environment needs and knowledge centre-stage*: If environment and development objectives are to be pursued in a coherent way, local people on the ground need incentives to integrate both concerns and the confidence to use best local practices that can achieve this. For example, community practices in coping with climate variability can form sound practical foundations for climate adaptation strategies, although they will need scientific validation and support. Top-down processes need to find ways to listen to specific poor groups and to understand and support their specific p/e needs and knowledge; such as by including p/e concerns in public hearings, participatory needs assessments, community action plans and

bylaws. District Councils, NGOs and Village Development Committees need the capacity to identify and support integrated livelihood/environment development models.

6. *Mobilising and incentivising businesses to put linked poverty reduction and environment objectives at the centre of their business models:* The current focus on government plans and budgets as entry points for environmental consideration needs to be complemented with a focus on investment, enterprises and jobs that are accessible to poor people, that make better use of natural resources and that have sustainability built in. To identify good business models in Malawi, and to work out how to scale up successful approaches, we suggest engaging more with the private sector. In particular, exploring Malawian or SADC corporate-community partnerships and the role of brokers and business support organisations that help SMEs play active roles in sustainable supply chains. Malawi should accept only the best environmental standards associated with trade and at the same time build on the best indigenous technologies that satisfactorily work for the poor.
7. *Bringing together poverty/environment information and monitoring, focused on the Environmental Outlook Reporting process:* To inform both macro and micro policy, Malawi's environmental outlook reporting should be made a routine and recognised part of the machinery of government. It should adopt a continuous improvement programme to draw together relevant p/e information, organise it, communicate it in accessible ways to the general public, and make it available in just the right format to help the decision-making processes of mainstream policy-makers, planners and investors. For 'new' areas, such as carbon and green economy, Malawi would benefit from developing an efficient way to access and share international knowledge and ideas. A means also needs to be established to monitor progress in p/e mainstreaming, using a common set of p/e criteria, targets and indicators linked to the MGDS.
8. *Supporting interdisciplinary approaches:* To achieve integrated approaches on the ground, the hard boundaries separating disciplines (such as economics and environmental science) and institutions (such as government and business) need to be broken down and ways found to work together. One key to this is to organise workshops and other learning exercises – like the retreat held between our authors of very different backgrounds to build bridges, and thus to form common understanding, targets and measures. Another means is to encourage research in p/e issues, helping to improve the empirical base for decision-making and investment in the environment, as well as to validate and improve traditional knowledge. Wherever possible, such exercises should involve poor groups.
9. *Poverty/environment mainstreaming forum to address both continuing and emerging challenges:* We strongly support the idea of a continuing forum that would accelerate best-practice learning and sharing of resources in mainstreaming environment into poverty reduction. Such a forum could continue the work of PEI and address emerging integrated challenges, such as 'green economy'. Our own small team of authors has learned a lot from each other and could form a core of this forum. There is real merit in networking together diverse p/e mainstreaming initiatives for joint learning, advocacy and mutual support, and generating catalogues of best practice to scale up. An annual meeting might be considered.
10. *Capacity and tools for mainstreaming:* To be truly mainstreamed, p/e issues need to be at the heart of the daily work of key institutions. This requires capacity. For example, politicians need the ability to understand and make decisions on the complex issues. Planners need capabilities in using proven mainstreaming tools, notably environmental impact assessments (EIA), policy-oriented strategic environmental assessments (SEA), and public environmental expenditure reviews. Economists need upgrading in resource/environmental economics, to make much

more use of economic methodologies to prepare the business case for environmental investment. Civil society needs the tools to scrutinise the changing status of environment in the development process and hold government to account. Business needs to move beyond niche corporate social responsibility, towards putting sustainability and poverty reduction at the heart of business models, and to enter into partnerships to achieve this. Farmers and community groups need capacities for effective management of natural resources and for accessing value chains. All stakeholders need the means to collaborate in ways that unite environment and development interests in a green economy. This is a long-term institutional change agenda but is at the heart of what environmental mainstreaming needs to do: (re)build capacities to pursue environment and development goals together in a time of rapid change. It suggests a continuing role for PEI, or a similar cross-cutting initiative, for some time into the future.

[1] Introduction and overview

Purpose of this paper

The Ministry of Development Planning and Cooperation (MDPC) recognises the need to ensure that Malawi's productive environmental assets are used to support equitable wealth creation in a poor country but also that the development paths taken do not end up damaging those same environmental assets. To balance these twin needs requires the 'mainstreaming' of environmental considerations into key development decisions and institutions, so that environment is truly integral and indivisible in the resulting outcomes.¹

Mainstreaming is no easy task, however, since environment and development institutions operate very separately. In effect, mainstreaming is a process of institutional change. As such, it requires political leadership, public understanding and technical skills – and can take many years. These kinds of changes are often context-specific and are therefore best informed by approaches that have proven to work in the particular institutional, environmental and developmental context.²

To kick off a review of mainstreaming approaches for Malawi, MDPC organised a retreat of 20 Malawian experts in environment and development; individuals from government, business, civil society and academia who are the authors of this paper. Hosted in association with the MDPC-UNDP-UNEP Poverty and Environment Initiative (PEI) Malawi programme, the retreat received financial and technical support from the International Institute for Environment and Development (IIED), a leading policy research organisation based in London.

The multi-disciplinary 'learning group' reflected on how far Malawi had come in integrating environment and development objectives over many years; identified the various approaches to environmental mainstreaming that may have helped such integration to date (in policy, planning, information systems, finance, and other processes); shared lessons learned about those approaches; and identified key challenges for the future. The group also recommended ways forward for meeting these future challenges. The broad findings were presented by MDPC to inform deliberations of the 2010 global meeting of the multi-agency Poverty Environment Partnership, which was hosted by the Government of Malawi. Members of the group then researched particular cases of mainstreaming that derived from government, community, NGO and business initiatives, and worked together to produce the current paper.

The findings and the recommendations are aimed in particular at supporting the new Malawi Growth and Development Strategy (MGDS), with a focus on three needs. Firstly, that mainstreaming should build on what works already in Malawi; that is, bringing together the rather separate worlds of poverty reduction and environmental management. This will give mainstreaming a solid foundation, and we offer several cases on this paper. Secondly, that key processes and capacities are put in place to raise the level of political, financial, business and public attention to the environmental needs and capabilities of poor people, because current patterns of development are too vulnerable to environmental risks and are missing too many environmental potentials. Thirdly, that the information base and the economic case are made robust enough to enable policy and investment decisions that make the most of Malawi's environmental assets for poverty reduction, without degrading the environment in the process.

[1] 'Environmental mainstreaming: the informed inclusion of relevant environmental concerns into the decisions and institutions that drive national and sectoral development policy, rules, plans, investment and action'. www.environmental-mainstreaming.org

[2] Dalal-Clayton B. and S. Bass. 2009. *The challenges of environmental mainstreaming: experience of integrating environment into development institutions and decisions*. IIED, London

Status and trends of environmental mainstreaming

In Malawi, a majority of poor people depend upon natural resources and the quality of environmental management. With 85 per cent of Malawi's working population practising rain-fed agriculture, most people are directly dependent on the quality of soils, water, forest cover and biodiversity for their livelihoods. So too is the nation, since economic growth is agriculturally-driven, with tobacco, cotton and other agricultural crops being principal exports. People are also highly vulnerable to environmental hazards such as floods and droughts, which are increasingly frequent and which result in crop, livestock and infrastructure losses, as well health and morbidity problems.

The precise relationship between poverty and environment varies by group, as well as by environmental conditions. Particularly reliant on the environment are poor farmers (half the population are smallholders with 0.5 ha or less) and artisanal fishers. With the urban population rising at six per cent, slum-dwellers and street children also have their particular needs – notably lack of sanitation and clean water. Small vendors, casual labourers, female-headed households, orphans and disabled people are also significant sub-sectors, cutting across these urban and rural categories, who find it difficult to access environmental services such as food and energy security, shelter, and water-sanitation.

In spite of their dependence on environmental assets, few poor people have adequate incentives to invest in sustaining them. The enabling conditions are not yet in place to support people in nurturing their relationship with natural resources. Poor people lack secure rights to access or own natural resources in Malawi, with the state owning much of the land. Together with a lack of clarity regarding management responsibilities, poor enforcement of environmental laws, inadequate resource-conserving technology and insecure access to markets, poor people are sometimes driven to asset-strip and degrade resources to gain immediate benefit, rather than to invest in the long-term management of the environment. Smallholder-led agricultural growth, responsible for 70 per cent of agricultural output, has been negative until recently, dropping 1.8 per cent each year from 2000 to 2005.

This leads to several environmental problems that, in turn, entrench the deprivations of poor people. Most are resource degradation problems. Farmers are increasingly driven to practice agriculture on poor land; up to one-third of farming is now on unsuitable land. Consequently, agricultural land degradation is also growing, with soil erosion at up to 43 t/ha/year. In circumstances where 93 per cent of Malawi's energy still derives from wood, much deforestation is driven by unsustainable forest cutting for charcoal (EC, 2006). Consequently, deforestation is one of the world's most rapid: 2.8 per cent of all Malawi's forest is removed each year and nearly half of all forests have been lost in the last 30 years (EC Environment Profile of Malawi 2006). Overgrazing, illegal mining and brick-burning are further resource degradation problems, each of them largely driven by a desperate need to find ways out of poverty. Several environmental problems concern poor access to environmental services – notably only 67 per cent of the population has access to safe water supplies and 46 per cent to improved sanitation (MDHS 2004).

Unsustainable natural resource degradation has social and health consequences, as well as economic. Fisheries landings, for instance, have fallen to an average of 45,000 metric tonnes per annum in 2006 down from 76,500 metric tonnes in 1990. Consequently, per capita fish consumption has fallen from 10.2 to 4.8 kg from 1990 to 2006. Health statistics for Malawi demonstrate the consequences of food insecurity with some 44 per cent of children under five chronically malnourished and experiencing stunting. More than 20 per cent are unable to meet their minimum food requirements. The majority of those living in extreme poverty are women and children.

Such poverty/environment problems are becoming increasingly visible, affecting poor people's livelihoods, health, security and income, as well as economic growth. Indeed, they critically reduce prospects for escaping poverty. As such, those organisations that directly serve poor people are beginning to change the kind of work they do. For example, some development NGOs such as Oxfam, ActionAid and other Malawian NGOs are working more on environmental deprivations (see Box I), and environmental NGOs are working more on social and developmental needs. Some of this is driven by donors' changing policies and the availability of funds, but much by the direct evidence from poor people themselves, who are telling NGOs that their poverty is in part about growing environmental deprivations.

[Box I] A development organisation getting more involved in environment: Oxfam investing in the environment to improve food and livelihood security programmes

Oxfam's approach to understanding poverty recognises the breadth of deprivations that make up poverty, as well as their underlying causes. Oxfam's initial livelihood approaches had a focus solely on helping farmers to improve food production through yearly support to farm inputs such as fertilizer and seeds. Oxfam noted that, while these input levels were broadly similar over the years, actual agricultural production varied with climate variability coupled with environmental degradation – particularly soil erosion and loss of soil fertility. It became clear to Oxfam and partners that sustained agricultural production gains were not possible without addressing local environmental factors – aiming at soil fertility improvement, soil and water conservation and ways to improve community resilience to climate change. This realisation extended to other rural livelihood promotion and security activities that require a secure environmental foundation, notably beekeeping, which is clearly dependent upon good forest cover.

Oxfam now focuses on the complex poverty and environment relationships through use of participatory capacity and vulnerability assessment when commencing community programmes; this addresses the underlying causes of poverty, including environmental and natural resources issues. However, Oxfam notes the need to demystify concepts around 'environmental mainstreaming'. Firstly, where 'environment' seems to be too technical to most development organisations, the solution can be technical partnerships between environment and development NGOs. Secondly, where communities inevitably face short-term imperatives, it is important to ensure that environmental initiatives do not only address long term benefits but also long-term needs – an holistic approach to the fight against poverty. One such example is agro-forestry activities; Oxfam and partners have been able to support farmers in the southern region of Malawi, with medium to long-term soil improvement and forestry benefits, alongside shorter-term food production.

Consequently, a wide range of institutions and initiatives are beginning to shape enabling conditions for poverty/environment mainstreaming. Although none of them (until PEI, below) focuses entirely on the poverty/environment nexus, between them they cover a wide range of functions that are critical to linking environment and poverty reduction in mainstream decisions. Some of them concern the top-down machinery of government – central policy, planning and finance/budget mechanisms – and are discussed in chapter 2. Others might be legitimately described as mainstreaming from a more bottom-up perspective – often partnerships involving local government, businesses, sector activity and community-based initiative – and are explored in Chapter 3. Yet further initiatives are knowledge-driven approaches linking science and traditional or community knowledge (Chapter 4).

In addition, Table 1 offers an illustrative list of further organisations and initiatives that are starting to address integrated environment and poverty objectives in their work. They cover: advocacy, capacity-building, on-ground delivery, research, information-sharing, livelihood support and enterprise development. They have been working in several sectors: energy, agriculture, forestry, water and carbon; and they are led by a wide range of bodies: central and local government, business, and (especially) NGOs. The list is incomplete, however, being merely the result of a quick brainstorming by the authors, suggesting there are yet more that can be built on.

This breadth of poverty/environment initiatives is significant. Firstly, it suggests that poverty/environment issues are increasingly seen as important – far beyond environment organisations alone. This is a new situation. Secondly, it reminds us of the many ways in which environment contributes to the different aspects of poverty reduction, as laid out in the Millennium Development Goals (Table 2, below). Thirdly, it reveals a rich set of potential partners for MDPC and PEI in their work to improve the enabling conditions for tackling poverty/environment issues. It will be useful for PEI to understand these initiatives better in the near future.

Although these initiatives are highly diverse, there appear to be some common success factors in tackling poverty/environment issues. As we shall explore further in Chapter 5, the initiatives tend to include: an understanding that poverty is multi-faceted and that environments are complex and locally-specific; good evidence of the extent of particular p/e issues, especially economic evidence; time to build confidence in those institutions that need to change; and leadership.

However, these initiatives have not yet been networked together, with little lesson-learning, joint advocacy or partnering. Indeed, they may not have been placed on the same page until now. This may in part explain why few of them have reached a significant scale and why they are neither coordinated nor well supported by policy. Many initiatives would benefit from better recognition as p/e players, with networking, financial support and mobilisation.

[Table 1] Existing institutions and initiatives that address environment-development links

This is an illustrative list of activities that are either focusing on environment-development links or, in the majority of cases, increasing their attention to such links.

Government

- Ministry of Agriculture and Food Security's Land Resources Conservation Department – conservation agriculture and water harvesting
- Environment Fund – various activities under the Environment Management Act
- Forestry Department – community-based forest management
- Local Government – programme on income-generating public goods; Local Development Fund
- National Water Development Programme – integrated water resource/catchment management
- Malawi Energy Regulatory Authority – access to clean energy

International organisations

- Clinton Foundation – tree planting for fruit alongside carbon offsets
- Millennium Challenge Cooperation – integrated NRM and power in Shire basin
- Millennium Village Programme – community development with NRM
- World Bank – watershed management and disaster risk management in Shire Basin
- World Fish Centre – aquaculture and improved value chains
- World Vision – integrated aquaculture

NGO

- Civil Society Network on Climate Change – mainly advocacy, plus work in eight districts
- Cure – coordination of diverse NGO activities
- Fair Malawi – environment in production systems
- Malawi Environmental Endowment Trust – providing grants for environmental projects
- National Initiative for Civic Education (NICE) – district resource centres include environmental information
- Oxfam – sustainable agriculture; Disaster Risk Reduction regarding environment and climate change
- PROBIC – biomass energy
- Wildlife and Environment Society – advocacy on p/e
- Various small NGOs – Land Trust, REPO, et cetera – livelihood forestry

Business

- Tea sector – sustainable (community) forest management for tea production
- Sugar industry – irrigation and water management, increasingly working with communities
- Tobacco industry – some recent improvement in CSR and tree planting

Multi-stakeholder

- Carbon storage schemes – at least 12 pilots
- CBNRM Forum – contribution of natural resources to growth

Academia

- Chancellor College – training in communication for development; linking communities.
- Bunda College – faculty of environmental sciences – training on environment
- Mzuzu university – training on forestry and renewable energy
- Universities – TAPP – working with communities on NRM

Media

- Farm Radio International – awareness of NRM and environment issues
- Forum for Environmental Communicators – supporting knowledge and capacity
- Nation and Daily Times – columns on the environment

[Table 2] Contribution of the environment in achieving the MDGs

Goal	Poverty/environment linkages
Poverty 1. Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> ■ Livelihood strategies and food security of poor households typically depend directly on ecosystem, health and productivity and the diversity of services they provide. ■ Poor households often have insecure rights to land, water and natural resources, and inadequate access to information, markets and rights to participate in decisions that affect their resource access and use, thus limiting their capability to use environmental resources sustainably to improve their livelihoods and well being. ■ Vulnerability to environmental risks – such as floods, droughts and the impacts of climate change – undermines people's livelihood opportunities and coping strategies. This limits their ability to lift themselves out of poverty or avoid falling into poverty.
Gender and education 2. Achieve universal primary education 3. Promote gender equality and empower women	<ul style="list-style-type: none"> ■ Environmental degradation contributes to an increased burden on women and children (especially girls) in terms of the time required to collect water and fuelwood, thus reducing the time they have available for education or income-generating activities. ■ Including the environment within the primary school curriculum can influence the behaviour of young people and their parents, thereby supporting sustainable livelihoods. ■ Women often have limited roles in decision-making, from the community level to national policymaking, which prevents their voices from being effectively heard, particularly with respect to their environmental concerns. ■ Women often have unequal rights and insecure access to land and natural resources, limiting their opportunities and ability to access productive assets.
Health 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and major diseases	<ul style="list-style-type: none"> ■ Water- and sanitation-related diseases (such as diarrhoea) and acute respiratory infections (primarily from indoor air pollution) are two of the leading causes of under-five child mortality. ■ Damage to women's health from indoor air pollution or from carrying heavy loads of water and fuelwood can make women less fit for childbirth and at greater risk of complications during pregnancy. ■ Malaria, annual killer of an estimated one million children under age five, may be exacerbated as a result of deforestation, loss of biodiversity and poor water management. ■ Up to a quarter of the burden of disease worldwide is linked to environmental factors – primarily polluted air and water; lack of sanitation and vector-borne diseases; measures to prevent damage to health from environmental causes are as important and often more cost-effective than treatment of the resulting illnesses. ■ Environmental risks such as natural disasters, floods, droughts and the effects of ongoing climate change, affect people's health and can be life threatening.
Development partnership 8. Develop a global partnership for development	<ul style="list-style-type: none"> ■ Natural resources and sustainable environmental management contribute to economic development, public revenues, the creation of decent and productive work and poverty reduction. ■ Developing countries, especially small island States, have special needs for development assistance, including increased capacity to adapt to climate change and to address other environmental challenges, such as water and waste management.

Source: UNDP-UNEP Poverty/environment Initiative (2009) *Mainstreaming Poverty/environment Linkages into Development Planning: A Handbook for Practitioners*

Emerging and future challenges for mainstreaming

There are new and emerging environment/development opportunities and threats which may affect poor people and for which Malawi is not yet well prepared. Many arise from the current legal and market activity in attempting to set up global and regional climate change regimes – and the associated plethora of international funds and markets, such as for carbon storage and forest conservation. Carbon markets and green economy investments present potential benefits and risks to the rural landscape and poor people, depending on how the environmental benefit sought by the market (often primarily carbon storage) is balanced alongside other environmental and social benefits. Potentially, carbon finance can tip the financial equation in favour of conserving environmental assets on which poor groups depend. It can, however, also result in management for just the quantity of carbon storage alone, irrespective of the biodiversity or cultural needs from the local habitat; and it can result in managers excluding those poor groups who had been dependent on the land in question.

To make the best pro-poor, pro-environment decisions about these new international funds and investment possibilities entails a wider range of environment and poverty objectives entering mainstream decisions than at present. This will entail: (a) upholding community knowledge and poor peoples' rights as paramount principles; (b) valuing and scrutinising the range of social and environmental consequences of different business models; (c) ensuring decision-making procedures can facilitate poverty/environment mainstreaming; and (d) investing in accessing expertise for the Malawi government.

Politically, it is a good time to improve p/e mainstreaming, as the President has declared that climate change, environment and natural resources form one of the nine key priority areas for the Malawi Growth and Development Strategy (MGDS). This major policy move is very timely, given the prevailing and emerging poverty/environment problems described above – as well as the emerging but not yet proven opportunities. Malawi's mainstreaming experience described in chapters 2 to 4 may offer some foundation for this, and this paper draws the experience together to inform perhaps the major vehicle for developing the more future-proofed mainstreaming that is needed: the Poverty and Environment Initiative (PEI).

PEI was initiated to improve the enabling conditions for integrating environmental/natural resource management with poverty reduction. As a catalytic activity, PEI is not tackling the entire set of p/e mainstreaming needs itself, but focuses strategically, works with partners and informs other relevant work, such as current UK Government-supported work on climate change strategy. It supports the inclusion of poverty/environment issues in the Malawi Growth and Development Strategy and the national budget, with contributing work on economic case-making and improving government decision-making guidelines – all relatively top-down entry points for mainstreaming environment. But PEI also addresses tools such as p/e indicators for agriculture. With agriculture a key sector for the poor, this also opens PEI up to some bottom-up perspectives on mainstreaming too. As such, PEI can be a catalyst not only for MGDS enrichment but also for mobilising and harmonising many of the mainstreaming initiatives listed in Table I.

[2] Mainstreaming at the heart of government: central policy, planning and finance

If mainstreaming is required because environment and poverty reduction are dealt with in isolation by separate institutions, and if government is the main body that determines the overall institutional framework, it is not surprising that the major mainstreaming initiatives to date are linked to government. In cases A to C below, we look at government-led work to mainstream environment through: (A) government policy processes; (B) generation and use of environmental information; and (C) the deployment of environmental economics in decisions. Although notionally top-down, since Cabinet and senior government officials and experts are in the driving seat, each has elements that enable the engagement of a range of stakeholders. Thus they can potentially link with the more bottom-up initiatives we discuss in chapters 3 and 4.

[Case A] Integrating policy processes – how public policy in Malawi incorporates environment and offers potential for green growth

Elliot Phiri

Mainstreaming instrument(s)	Cabinet Manual for policy coherence Guide to Executive Decision Making Processes
Key actors	Cabinet Central government administrators and experts
Benefits	Public policy traditionally sets the framework and tone for all government activity and investment in Malawi Potentially can reframe whole-of-government approach to poverty/environment
Constraints	Too focused on environmental problems and safeguards Poverty/environment potentials relatively ignored
Recommendations	A political vision in support of wealth creation, including environmental wealth, with positive outcomes for poverty reduction The policy process guide for public officials needs to include ways to integrate environmental concerns

Author's key message

It is time the public became aware of just how far the environment contributes to Malawi's wealth, and of the varied policy instruments and processes that can support environmental activities as a foundation for poverty elimination.

In this case study we explore several multi-disciplinary efforts associated with integrating environment and natural resources management in public policy in Malawi. We explain the types of public policy operating in the country and describe policy processes and the key role of the Cabinet in public policy making. We embrace issues pertaining to policy-driven conflict, government's overriding policy priorities, the potential pool of experts in the policy processes, and the importance of political influence in public policy – all of which offer potential for shaping a green, growth-oriented economy.

Our discussion further considers the fact that environmental inclusion in policy is primarily for 'negative' reasons – to tackle damaging practices that harm people and the environment. More positive reasons – to reduce poverty and sustain economic growth through the better use of environmental assets – are relatively ignored. To make further improvements, we suggest a focus on policy coherence, consultation and national wealth accounting.

Rationale for public policy action linking environment and poverty

Integrating environment and natural resource management in the public policies in Malawi is incontestably vital. There is a compelling reason for properly planning, meaningfully managing and guardedly governing the environmental capital in a poor economy like Malawi, where 40 per cent of the population lives below the poverty line (National Statistical Office, 2008). To ensure stable national development, integrating environment sustainability should be a *sine qua non* for public policy-making. Public policies are intended to be the administrative and political tools or mechanisms by which the aspirations of the people to socially and economically improve their standing are affirmed and communicated. The policies come in a number of forms.

Types of public policy in Malawi

Malawi is committed to responsible environmental management. This is manifest at the highest level by the constitutional provision that compels progressive adoption and implementation of policies and legislation aimed at managing the environment responsibly (Malawi Government, 1995). Several types of public policy are significant in ensuring that environmental management meets poor people's needs – in particular:

- *Formal public policies* result from an established process that can take between 9 and 18 months to complete. The issue in need of resolution is usually a broad area of public interest and is examined and treated in a variety of established ways. The policy arising from such a process is published as a public or government policy once the cabinet has approved or endorsed it.
- *Cabinet directives* are issued for urgent situations requiring immediate interventions. Such policy interventions are intended to address specific and confined challenges.
- *Government circulars* are administrative instruments, which may direct enforcement of actions that address certain challenges in the administrative milieu. They are usually concomitant to some standing policy or policies.
- *Acts*, approved by Parliament as the legislative body, and related or subsidiary legal instruments, give serious and binding support to the implementation of the policies. The related or subsidiary legal instruments include regulations and bylaws.

Policy processes in Malawi and the key role of the cabinet

In Malawi, policy development processes are managed by technocrats, who involve or consult stakeholders. Those stakeholders responsible for funding, and politicians in the executive and legislative branches of government, are especially key for input and direction. It is in this consultative process that issues of environmental sustainability can be factored into the policy proposal under consideration. Doing so is the responsibility of the policy drafters, upon their evaluation of the probable impact of the proposed solution on the environment or *vice versa*.

The cabinet is collectively the public policy holder and, consequently, all members of the cabinet subscribe to public policies and must always defend them. In recent years, there has been particular interest given to the way public policies are developed, to ensure *coherence, consistency, currency and complementarities (4 Cs)* across sectors relevant for development.

In view of this need for cross-policy rigour in the face of prevalent policy conflict, a Cabinet Manual (Office of President and Cabinet, 2004) was developed. This offers a notable improvement over the previous practice, where central agency coordination in policy development was – in practice – a dispensable detail in the policy process. Thus the cabinet office is now able to perform due diligence on public policy proposals before the cabinet finally considers and approves them. With environment a cross-cutting issue, mechanisms that aim at cross-policy coherence and rigour are potentially key entry points for mainstreaming. Environment or natural resource management has not so far been a key area of consideration in the due diligence menu, however, since it was not explicitly prescribed in the Manual. This gap has gained some attention and now a proposed policy guide – discussed later – will prescribe environment as a critical item in the menu.

Policy-driven conflict

Prior to the formalised policy process embodied in the Cabinet Manual, it was not uncommon to see policies that were in conflict, sometimes to the detriment of the environment. For instance, through two public institutions, government would issue antithetical policies on the use of a natural resource or an aspect of the environment. The ministry responsible for forestry, for example, would be eager to protect areas in wetlands and riverine areas that are considered fragile, and would take a policy position urging tree planting along the riverbanks to control soil degradation. Yet the ministry responsible for agriculture, or its agents, may encourage use of the riverbanks to support winter cropping.

Obviously, the particular natural resource and the environment at large immediately suffer from such conflicts of interest. However, the ultimate victim is the ordinary citizen who depends on the natural resources or the environment for livelihood and survival. In this case, soil from the river banks easily erodes into the rivers and precipitates siltation in the larger water bodies. In the process, the amount and quality of water available to people for various purposes is consequently affected. Furthermore, hydropower potential is compromised. These are just a few of the negative effects arising from one particular clash of policy objectives. To reverse or resolve such a disparity or an anomaly in the absence of a well-evaluated, firm and coordinated policy intervention is almost impossible because the beneficiaries of the winter cropping would do everything possible to defend their government-given sources of livelihood.

Government's overriding policy priorities

A cross-cutting view of the environmental aspects of all development objectives is one thing. A focus on specific environmental actions is another. Fortunately, the Malawi Government is becoming increasingly aware that to achieve sustainable development, it is overwhelmingly desirable to invest in environment and natural resource management as a priority. Where the previous development plan for 2004 to 2009 focused on six themes, not including natural resources and environment; for the period 2009 to 2014, the government has given overriding priority to nine areas which are reflected in its revised Malawi Growth and Development Strategy (MGDS):

1. Agriculture and Food Security;
2. The Greenbelt Irrigation and Water Development;
3. Education, Science and Technology;
4. Transport Infrastructure and Nsanje World Inland Port Development;
5. Climate Change, Natural Resources and Environmental Management;
6. Integrated Rural Development;

7. Public Health, Sanitation and HIV and AIDS Management;
8. Youth Development and Empowerment; and
9. Energy, Mining and Industrial Development.

All nine priorities are environment-dependent or environment-influenced. The fifth also confers a distinct priority on environment as a sector. Meanwhile, the environmental aspects of the other eight priorities can be assured (a) if environmental coherence guidelines (in the Cabinet Office manual, above, and other means such as the environment budget guidelines) can be firmed up, and (b) if planning moves to an outcome-based approach, where the contributions of environmental activities to each outcome can be identified (e.g. see Table 2.1).

The realisation of this nine-part scenario presumes, and rightly so, a mix of expert and stakeholder input. It involves the engagement of minds of different professional orientations, political persuasions, economic dispositions and social stations, working within a framework of environmental safeguards and accessing good information about the state of the environment. Participatory mechanisms will also be critical to the improved involvement of ordinary people in policy development. But only a targeted, rich information campaign – supported by relevant education – is likely to make these minds knowledgeable and adept in, or amenable to, environmental mainstreaming.

On paper, the Government of Malawi prescribes the due diligence, safeguards and information required to ensure that each of the nine priority areas addresses relevant environmental concerns. Whether practice is in accord with paper provisions is being addressed through a current study on integrating environment and natural resource management in public policy-making processes in Malawi.

Policy against damaging practices that harm poor people and the environment

Vehicles that are condemned in developed countries due to their air pollution are exported to and welcomed in Malawi – immediately and disproportionately exposing people to increasing poor health or high health costs. In the longer term, the climate is also affected by these same vehicles, resulting in climate change. The use of many farm and veterinary chemicals is another example of the country 'importing unsustainability', at a cost to the environment and the health of Malawians. In the 2010/11 national budget, the government has now constrained the import of older vehicles through the imposition of prohibitive customs and duty charges. Such government directives can be a relatively quick measure for addressing undesirable challenges against the environment and human welfare. It requires, however, a well-resourced and managed bureau of standards to prevent harmful products from reaching Malawian soil; to withdraw them if they are already on the market and in circulation; to ensure that Malawi accepts only the best environmental standards through imports; and, at the same time, to build on the best indigenous technologies that satisfactorily work for the poor and the environment.

Importance of political influence in policy – shaping a 'green growth' oriented economy

At the highest level of political leadership, State President Ngwazi Professor Bingu Wa Mutharika is passionate about eradicating the poverty that yokes the citizens of the country. He is disposed to turn Malawi from being predominantly an importer and consumer, to being a much more significant producer and exporter, as a major means for his vision of poverty elimination to be realised. He has acknowledged the critical role of climate change control, natural resource management and environmental sustainability on which wealth creation is incident. Nonetheless, an intense pre-occupation with poverty reduction can inadvertently make the environment vulnerable if care is not exercised in achieving a balance: balance between the wealth of the nation, that of the community, and that of the individual, where different forms of wealth are needed.

Here, the balance between environmental assets and other forms of wealth (financial, physical, social, and so on) can be critical.

The economy has been growing steadily for the last six years. The highest growth rate of 9.7 per cent per annum attained in 2008 made the country the second fastest growing economy in the world (Ministry of Development Planning and Cooperation, undated). There are acknowledgements, notably by the State President and cabinet ministers amongst many, of the downside of the unbalanced and irresponsible use of the resources at Malawi's disposal. If not handled comprehensively, with a '4Cs' approach, all these developmental initiatives may be short-lived if they exacerbate the declining state of the environment, in spite of some sporadic efforts in the positive direction. Appropriate policy mechanisms therefore have to take centre stage.

Thus, the policy that has led to the government's outstanding self-sufficiency in food (Office of the President and Cabinet, 2010) overwhelmingly owes its success to the utility of the environment. To firm this up, the Green Belt Initiative will draw on year-round sources of water to produce more than is required for internal consumption, so that the excess is turned over to export. This will incrementally raise exports that are natural resource-based. Such policy moves are essential if Malawi is to realise its real potential to move towards a thriving green economy, with livelihoods, jobs and businesses based on and sustaining the environment, rather than asset-stripping it. But they must be based on good information on environmental limits.



Green Belt Initiative

[Recommendation A] A political vision in support of wealth creation, including environmental wealth, with positive outcomes for poverty reduction

Constant and consistent political commitment and champions for mainstreaming the environment are as essential as the institutional and financial resources that are already firmly understood as necessary for Malawi's sustainable development. A political vision is key: Malawi has the option to establish itself as a resilient green economy, which is competitive in the world and thrives domestically. It would be building on the rich potential of its own environmental wealth, and developing the capabilities and aspirations of all Malawians, but cognisant of its own vulnerabilities, such as to climate change. To do so, however, will require public policy that (a) has a strong understanding of the nature of wealth in Malawi and how it is built; (b) cuts out damaging and antithetical practice; (c) builds on current best practices that are efficient and effective in a relatively poor country; and (d) innovates to help achieve a new form of environmentally sound growth.

In particular, it is time to fully consider the potential for identifying *wealth* – the balance of asset classes – as the major outcome sought through the nine MGDS priorities and within this, the significant contribution made by environmental wealth. The National Assembly should be engaged in this significant area of discussion, analysis and endeavour. PEI may wish to consider presenting its 'poverty'-environment links as 'wealth'-environment links, where relevant, because both politicians and the electorate are more keenly interested in wealth creation than poverty reduction. This recommendation links to recommendation D on moving towards a routine wealth accounting mechanism connected to the national accounts, so that policymakers can get a sense of how far development is building environmental wealth, and how far it may be destroying it.

[Recommendation B] The policy process guide for public officials to include ways to integrate environmental concerns

For development to be sustainable, wealth creation needs to be based on well-planned, -managed and -governed environmental assets or capital. Yet the various efforts contributing to economic success operate as separate initiatives, with environmental sustainability and natural resource management not always fully respected, integrated in, or rewarded by the associated policies. Since the institution of the Cabinet Manual, a number of weaknesses have come to light in the policy development framework. To address these weaknesses, a responsive mechanism has been proposed: a Guide to Executive Decision-Making Processes, which will offer rigorous processes of policy formation that include policy impact assessment and public consultation. An initial draft of this Guide was determined to have inadequately covered environmental mainstreaming in policy development. It does intend to make environmental impact assessment mandatory, however, in order to produce public policies that cater for constant utility of the limited environmental capital. PEI has lent support to completing this Guide, so that it better integrates environmental sustainability and natural resource management in the policy process.

Mainstreaming is largely about making better decisions and, in a top-down policy context, guiding the decision-maker can be the best thing to do. The guide therefore features guidelines for officials on mainstreaming environment management in all public policies and proposes indicators for monitoring. This step will pull the loose strands in policy development tighter and place them in proper perspective. All policies that have not yet mainstreamed environment will have to be reviewed and, wherever necessary, revised by relevant line ministries. Through such changes in technocratic and bureaucratic work, a paradigm shift is being introduced in public policy development, which will serve to reinforce cabinet and Parliament interest and engagement in p/e issues.

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[Case B] Integrating information mechanisms – how Malawi’s new Environmental Outlook reporting supports sustainable development

Benon Yassin

Mainstreaming instrument(s)	Environment Outlook Report process
Key actors	Environment authorities Malawian experts, supported by aid
Benefits	Data to make clearer case for environmental investment for poverty reduction Time series to show trends over time and effects of investment Clarity on how environment affects people, and engagement of many groups in the EOR production process, links the EOR closely to social/ economic users Potential link to MGDS framework to answer environmental questions associated with MGDS and to inform its overall progress
Constraints	Low base of existing data, capacities, resources Current weak demand for information from non-environment authorities
Recommendations	Routine environmental outlook work in the machinery of government that responds to the needs of non-environment bodies

Author’s key message

The time has come for improved investment in the environment – which in turn requires investment in good environmental information, ground-truthing that information locally, and making it available to those whose awareness and decisions need to be strengthened.

Background

Malawi is endowed with a diverse natural resource base, including some of the most fertile soils for agricultural use in Southern Africa; closed forest resources covering about 30 per cent of the land; abundant water resources; and a remarkably diverse flora and fauna – of which the uniquely rich fish resources stand out. If properly utilised, these resources can provide the basis for the sustainable socio-economic development of the country. They are, however, subject to increasing pressure, exacerbated by the high population growth and low level of environmental awareness, and that pressure contributes considerably to the vicious cycle of poverty. This poses critical challenges to both economic growth and environmental management.

The ability to keep the environment and natural resources under continuous review is therefore critical for informed decision-making. The key mechanism for doing so in Malawi is preparation of the Environment Outlook Reports (and previously, State of Environment Reports). The purpose of the Environment Outlook Report (EOR), which many countries now prepare on a periodic basis, is to inform and influence key policy and planning debates – and in Malawi’s case notably

the Malawi Growth and Development Strategy (MGDS) – about issues of environment and sustainable natural resources management. As Case A emphasises, it is vital that such issues are fully considered in these central policy and planning processes, since they are variously drivers and constraints of sustainable economic growth and poverty reduction. The EOR itself cannot ensure this integration directly; but its content, style, ownership, credibility and delivery mechanism will all be important factors in ensuring its use by decision-makers.

Earlier experience in Malawi – State of the Environment Reporting

State of Environment Reports were prepared every two to three years following the approach presented in the National Environment Action Plan (NEAP, 1994) and provisions of the Environment Management Act (EMA, 1996). The first National State of Environment Report (NSOER) was published in 1998. The second, in 2002, was used to update the NEAP, and framed the preparation of the first District State of Environment Reports (DSOERs) in all 28 districts.

The NSOERs and DSOERs followed a sectoral approach and used a scientifically-valid and well-proven Driver Pressure State Impact Response (DPSIR) framework, with the focus on status and trends of environmental changes. The reports addressed the policy and institutional framework for: environmental management; housing and human settlements; forestry resources; fisheries resources; water resources; biodiversity; soil and land resources; energy; mining and industry; and climate change. They were prepared by sector ministries and departments, and coordinated by the Environmental Affairs Department (EAD). A two-tier fast track approach entailed national and district processes starting at the same time, coordinating in data collection, and with aggregation of sectoral reports through national-district liaison workshops. The national process also culminated in a policy brief delivered in the national assembly by the minister responsible for environment.³

The process of developing DSOERs and NSOERs was long and complex due to staff turnover. It was also expensive, due particularly to the frequent liaison needed between the districts and the national level, necessitating long distance travel and time for consolidation of the sectoral reports. The reporting processes were linked only weakly to major national development programmes such as the Malawi Poverty Reduction Strategy (MPRS): this, perhaps, has been their biggest drawback. Although the NSOER and the suite of DSOERs have raised debates on environmental issues that directly affect people at both national and local levels, they have not been used as extensively as they might in major development decisions. Neither have the reports been adequately disseminated to the general public, to permit public accountability and citizen action.

A more integrated, future-oriented approach: Environment Outlook Reporting

The first Environment Outlook Report commenced in 2009 with support from the joint UNDP-UNEP Poverty and Environment Initiative.⁴ A similar process is being followed in the districts, funded by local councils and, in some cases, by NGOs such as Concern Universal in the districts of Balaka, Ntcheu and Dedza. EORs are expected to be produced every five years, in line with the revised EMA (which is yet to be approved by Parliament).

Identification of national experts and thematic areas

The EOR is prepared by a consultancy team of national experts comprising a Lead Author and Thematic Authors. The EOR aims at integrating with the principal Malawi development framework

[3] In each district, the development of the DSOER was coordinated by the District Environmental Officer, supported by the District Environment Sub-committee (DESC) comprising representatives from sector ministries and departments and NGOs. The DESCs advise the District Executive Committee (DEC) (the technical arm of the District Council) on environmental and natural resources management matters. The Decentralized Environment Management Manual provided authors with guidelines for producing the reports.

[4] The process is being led by EAD in the Ministry of Natural Resources, Energy and Environment, in collaboration with the Ministry of Development Planning and Cooperation.

right from the beginning, and thus its main focus has been directly on the nine priorities of the Malawi Growth and Development Strategy (MGDS).

The EOR addresses the implications of ENRM programmes for key thematic areas of the MGDS and development programmes. It provides a detailed account of environmental and human well-being trends and dynamics, using an Integrated Environmental Assessment (IEA) approach. As it continues to be based on the DPSIR framework, as with previous SOE reports, this will allow some continuity and tracking of change. It will also include an assessment of policies and opportunities for change (UNEP, 2007). In brief, the EOR answers the following key questions:

- What is happening to Malawi's environment and why?
- What are the consequences to the environment and humanity?
- What is being done and how effective is it?
- Where are we heading?
- What actions could be taken for a more sustainable future?

By addressing such policy-driven questions, the EOR is as much framed by decision-makers' concerns as by the technical issues addressed by environmental experts, increasing the likelihood of it being used in decisions.

The 2010 EOR will outline the socio-economic development of Malawi in relation to nine ENRM thematic areas, all of which are relevant to p/e integration and closely mirror the MGDS: (a) poverty, environment and economic development; (b) land and agriculture; (c) water resources; (d) biodiversity; (e) atmosphere and climate change; (f) human settlements; (g) environment and health; (h) mining, energy and industry; and (i) forestry and woodlands.

Preliminary, expert and peer reviews

There are several stages in preparing the EOR. The draft thematic reports are subjected to a preliminary review by a joint task team in EAD and MDPC/MPEI and the thematic authors to ensure a useful flow of information in preparation for comprehensive review by sector experts. They are then reviewed by experts drawn from government, the private sector, NGOs, academia and the media to ensure that they are factually correct and accurately reflect sector issues. This also promotes ownership of the report by other stakeholders. The report was further edited by a team of experts from the University of Malawi.

Development of Scenarios and Policy Analysis

In any country experiencing high economic growth and high pressure on natural resources, such as Malawi, it will be critical to anticipate how such pressures will continue and affect future development paths. In other words, an environmental assessment needs an 'outlook' component that addresses the possible range of tomorrow's problems and opportunities. This will help in shaping anticipatory policy instruments.

Thus the EOR assessment includes the development and analysis of scenarios for the country's environment and natural resources. These scenarios contain different assumptions about how current trends will unfold, how critical uncertainties will play out and what new factors will come into play in the future. They are intended to illustrate the role of human agency in shaping the future and in determining the links between issues, in order to provide better policy- or decision-support – as well as to stimulate engagement in policy. Authors are trained in the development of scenarios and policy analysis with support from UNEP. The EOR also includes a policy analysis, which covers available policy instruments relevant to good environmental management; and existing policy gaps and interrelations, in order to identify appropriate actions that can address the issues raised in the reports.

Public consultation and awareness – and relevance to the public

With the chapters consolidated in a draft Environment Outlook Report, the process culminates in a final national consultative workshop to secure the views of stakeholders and their consensus on the issues and actions proposed in the report. Participants include representatives from government, NGOs, the media, and private sector organisations. To raise public awareness of the report, the finalised EOR will soon be launched publicly, with an accompanying video of public perceptions and interests, and an atlas of environmental change. It will also be summarised as policy briefs for presentation to the National Assembly and others.



In its consultation process, therefore, its information coverage, its communication and its intended utility, the *EOR deliberately puts people at the centre*. In this way, it is a highly valuable tool for mainstreaming, as it touches on issues important for social and economic policy and it potentially engages a wider range of stakeholders than planners. This is in sharp contrast to many previous sources of environmental information, which suffered from not being linked to the other issues of the day, or to mainstream players' interests and institutions.

[Recommendation C] Routine environmental outlook information linked into the machinery of government that responds to the needs of non-environment bodies

The EOR process and the SOER processes before it, both at national and local levels, have been characterised by their reliance on external funding. Evidently, they are not yet considered a central piece of the machinery of government. There is need to identify a sustainable mechanism for financing these processes, including to adequately support data collection and compilation expenses. The chances for this seem good, since the EOR itself (along with economic study outlined at Case C below and this paper as one further contribution) increases the chances that Malawian authorities and stakeholders come to a firmer realisation that environmental assets and hazards are key and direct determinants of developmental success. It should follow that adequate investment in the EOR process, and in the information systems needed to support that process, will truly be warranted. While funding for this should be secured, the approach taken may need to adapt more closely to the precise needs of mainstream bodies for environmental information. In other words, it should respond to mainstream demands and processes and not just to what environmental organisations would like to provide in the way of information. This will help to feed the next stage: some kind of national accounting process that presents the EOR information in economic terms and that would have a direct input into state expenditure decisions. Case C introduces the idea of set of national environmental or ecosystem accounts.

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[Case C] Integrating environment in finance – experiences in environmental valuation, budgeting, fiscal reform and accounting⁵

Mainstreaming instrument(s)	Economic analysis – PEI's economics study The budget process
Key actors	Ministry of Development Planning and Cooperation Ministry of Finance Sector ministries
Benefits	Economic information on benefits, costs and risks of environment – to inform decisions and reveal real national process (adjust GDP) Environmental fiscal reform Increased budget for environment authorities
Constraints	Little precedent yet for routine environmental valuation, accounting and fiscal reform No cross-cut environmental analysis and budgeting in eight of nine priority MDGS themes
Recommendations	Major investment in routine valuation of environmental assets, accounting for the environment, and environmental expenditure review and budgeting – with associated capacity development

Authors' messages

It is time to account for the significant economic contribution of the environment to our daily lives. If we did so, we would get a truer picture of the value of our economy, which would encourage us to delink economic growth from environmental degradation. **Boyd Hamella.**

Policymakers need evidence that investment in sustainable environmental and natural resources management is effective in achieving the policy priorities of economic growth, food security and poverty reduction – at least as effective as alternative investments. They also need to know of the dangers of a 'business as usual' approach in ENRM – in terms of how this is constraining opportunities for sustainable and poverty reducing economic growth.

Michael Mmangisa

Most countries have improved their understanding of the importance of the environment in recent years, often spurred on by international agreements concerning global public goods. But this has not often been reflected in the key economic decisions and institutional frameworks that shape national development. In practice, mainstream decisions and institutions are often able to ignore environmental considerations beyond an initial acknowledgement of them:

[5] This case draws on work by Boyd Hamella and Michael Mmangisa; and a study commissioned by PEI: Yaron G. et al. (2010). *Malawi Poverty and Environment Initiative – Economic Study*. All tables and figures in this case are from Yaron et al unless otherwise specified.

- Countries may have comprehensive sustainable development strategies or national development plans in place but environment tends to figure only in the analytical sections, or as general aspirations, or as tangential activities that do not change the economic status quo.
- Environment-related words might appear in a development planning document but the real driver of development might not be this plan – rather a political situation that, for example, favours short-term economic growth at all costs.
- Environmental commitments may appear in national ratification of various global environmental conventions but the accountability mechanisms are lacking – in part because of the lack of a strong international regime to pay for global public goods such as biodiversity and carbon management.
- Environmental considerations might start to appear in pilot projects but they are absent where the biggest decisions are made, such as in the national budget.

Thus it is often said that environment is an externality, something that is not taken into account by the prevailing rules of economics, markets and other institutions. Clearly, to move from this situation towards internalising the environment involves a range of tasks that will not be achieved overnight. Such internalisation has to start with the mainstream language of decision-making, even if, ultimately, it has to change that language. And that language is, invariably, economics.

In all of this, Malawi has been no exception – until recently. MDPC has realised that whilst decision-makers now understand the *generic* case for environment, there are not yet the analyses and procedures for them to act on the *specific* case of individual resources or stakeholders' dependence on them. That is, what are the economic costs, benefits and risks of current environmental practice; how these are distributed among stakeholders; and how does this compare with changing practice? PEI-Malawi has been able to support the MDPC with a significant study, the first of its kind in Malawi (Yaron *et al* 2010).

The main aim of the study was to offer evidence on the costs and benefits of sustainable and unsustainable natural resource management (NRM) for four natural resources in Malawi: forests, fisheries, wildlife and soils. The analysis establishes linkages between natural resource management on the one hand, and poverty reduction, economic well-being, and development on the other. Further, it draws on case study and other evidence to assess the net benefits of key interventions that were aimed at encouraging more sustainable natural resource use in each selected ENRM sector:

Valuing the macro-economic contribution of natural resources

The economic contribution made by renewable natural resources to Malawi is very significant but is not adequately captured in official statistics. Part of this invisibility problem lies with how national income is measured: estimates of Gross Domestic Product (GDP) do not record the contribution of environmental assets such as soils or wildlife. Even where natural resource use is recorded in GDP (as with some harvests from forests and fisheries) the values tend to be understated. Official GDP figures in Malawi, for example, significantly understate the true contribution of forestry by not capturing the extensive use of wood for fuel. Table 3 illustrates how much more significant the GDP contribution of key environmental assets is than the official measure – doubling merely by recognising just two things: the energy contribution of forests; and the tourism contribution of wildlife. This inclusion of such self-evident contributions suggests the urgent need to measure growth with a more inclusive indicator than official GDP – or at least to set up some supplementary 'satellite' accounts.

[Table 3] Contribution of natural resources to GDP

Natural resource	Share of GDP by official statistics	+ Additional contribution (Yaron <i>et al</i>)	= Total share of GDP	Sources of new evidence
Forestry	1.8%	4.3%	6.1%	BEST (2009) – charcoal & firewood
Fisheries	4.0%	–	4.0%	
Wildlife	–	2.7%	2.7%	WTTC (2009) – nature-based tourism
Total	5.8%	7.0%	12.8%	

Estimating the macro-economic cost of unsustainable natural resource use

If the *benefits* of environmental assets have been underestimated to date, so also have the costs of environmental degradation. Yaron *et al* suggest that Malawi pays a high price for unsustainable natural resource use – equivalent to giving up 5.3 per cent of GDP each year. The largest costs are borne in lost agricultural productivity as a result of soil degradation, deforestation in catchments around the main urban centres to supply firewood and charcoal, unsustainable fishing, and reduced economic activity caused by indoor air pollution. The annual on-site loss of agricultural productivity as a result of soil erosion, for example, cost \$54 million or 1.6 per cent of GDP in 2007. To this might be added a further off-site cost of \$10 million in reduced hydro-electricity production, as well as further numerous off-site impacts (Table 4).

Such figures are significant in many ways. Malawi would be richer by MK 26.6 billion (US\$191 million) each year in 2007 prices, for example, if soil, forest, fishery and wildlife resources were used more sustainably. This is a very significant sum – more than the total funding allocated to the education sector and to the health sector in the 2009 Budget. Put another way, if *all* the lost economic value from unsustainable resource use each year (5.3 per cent) had been converted into economic growth over the period 2004 – 2015, the impact on poverty would be dramatic. The proportion in poverty would be halved from its 1990 level – to 25.2 per cent.

Reflecting unsustainable natural resource use in the national accounts

Even allowing for some margin of error in the above figures, they suggest that decision-makers in Malawi cannot be blind to them. The country therefore needs a way to keep track of such significant figures. One approach, which is being increasingly employed in progressive countries, is 'Adjusted Net Savings' (ANS), sometimes known as genuine savings. This is a green accounting measure that adjusts the standard measures of physical and financial savings to include natural capital (as well as health-damaging air pollution, and human capital formation proxied by spending on education). The ANS is acknowledged to offer a more holistic measure of national wealth. Where forests, fisheries and soil resources are used up faster than they are being replenished, Malawi can be said to be consuming her natural capital.

[Table 4] Economic costs of unsustainable natural resource use

Natural resource and source of cost – base case	Annual cost (2007 prices)			Discounted cost of damage over 10 years	
	MK million	US\$ million	% of GDP	MK million	% of GDP
Soils:	8,988	65	1.9%	40,665	8.2%
On-site impact on agriculture	7,540	54	1.6%	30,915	6.3%
Off-site impact on hydropower	1,433	10	0.3%	9,688	1.9%
Off-site drinking water treatment	15	0	0.0%	62	0.0%
Forests:	12,983	93	2.4%	31,795	11.0%
Unsustainable roundwood (excluding fuelwood)	3,100	22	0.4%	12,710	2.4%
Unsustainable fuelwood	6,089	44	1.2%	2,495	4.8%
Flood prevention (indicative only)	232	2	0.2%	1,987	0.8%
Indoor air pollution	3267	23	0.7%	13,394	2.7%
Outdoor air pollution – WB 2002	327	2	0.2%	2,417	0.5%
Fisheries:	3,906	28	0.8%	7,666	1.5%
Unsustainable use (lower bound)	3,906	28	0.8%	7,666	1.5%
Wildlife:	665	5	0.1%	2,730	0.5%
Poaching loss (indicative only)	665	5	0.1%	2,730	0.5%
TOTAL	26,573	191	5.3%	84,064	21.4%

Source: Yaron *et al* (2010), Table 44

The World Bank estimated ANS for 2006 for Malawi at 12.24 per cent of Gross National Investment (GNI), indicating that national wealth is increasing. This estimate, however, excludes the latest evidence on deforestation from woodfuel use, the cost of soil nutrient losses, estimates of the costs of indoor air pollution, or any estimates for the fishery or wildlife resources. By including these items (from Table 4, deflated to 2006 prices), Yaron *et al* find that the country's ANS for 2006 falls dramatically to 7.14 per cent of GNI. Again, they point to a very significant comparison: the contribution to national wealth from educating the nation is outweighed by the loss of wealth from natural resources degradation. (Table 5)

[Table 5] Adjusted Net Savings for Malawi

	WB (2006)	WB+PEI study
	% of GNI	% of GNI
Gross National Saving (various methods used)	15.69	15.69
- Consumption of fixed capital	7.30	7.30
= Net National Saving	8.39	8.39
- Education expenditure	4.87	4.87
- Energy depletion	0.00	0.00
- Mineral depletion	0.00	0.00
- Net forest depletion	0.64	2.05
- Soil erosion		2.01
- Fishery depletion (lower bound)		0.87
- Wildlife depletion (indicative)		0.15
- CO2 damage	0.22	0.22
- PM10 damage (outdoor air pollution WB 2002)	0.16	0.16
- Indoor air pollution		0.66
= Adjusted Net Saving	12.24	7.14

Source: Yaron *et al* (2010), Table 45

Improving government revenue and investment from natural resources

Quite apart from the costs of deforestation (2.05 per cent of GNI), the government is not capturing the full potential rent from the legitimate use of forests. Royalties levied on forest products by government amount to just MK 163 million (US\$1.17 million) annually, well below resource rents. In part, this is because the royalty rates do not reflect current wood market prices. But it is also in part because collection of royalties and fees is limited by inadequate capacity and funding; for example, the forest sub-sector currently only receives about one-fifth of its required operating budget per annum.

Investment in natural resources tends to yield both private and public benefits, which need to be identified when considering alternative uses of public investment. As in Case J on energy, Yaron *et al* take the view that woodfuel needs to be treated in a positive sense. It is likely to be the major energy source for most households for some time in the future, it is carbon-neutral, and potentially could attract international forest/climate funds due to its carbon-neutrality. Based on figures from community woodlots and tree planting on private farms under the existing 'Income Generating Public Works Programme', they suggest a high internal rate of return of 62 per cent on public investment but an unattractive financial return from a farmer's perspective, unless carbon payments were also made. Similar calculations for some soil conservation measures show high returns for public investment, for example, economic IRR of 42 per cent over ten years, but unattractive results for small farmers as their private discount rate is much higher. The indicated public benefits from investment in forests and soil conservation suggest the need for greater attention to improving the private returns on such investments. There is a policy imperative to do so in the MGDS – and now a real need for developing environmental economics capacity and procedures in Malawi to realise the policy in practice.



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Firewood market

Budgeting for environmental investment and expenditure

The government has recently made major progress in integrating environment and natural resource management issues through the national budget. Since the incorporation of climate change and environmental management in the list of MGDS priority areas in the 2009/10 financial year, there are significant increases in the budget allocated to natural resources and environmental management issues. The current budget for 2010/11 has a sum of K39.992 billion allocated to 'sustainable economic growth' – one of the nine thematic areas of the MGDS but 17.1 per cent of the total budget. This represents a 140.8 per cent increase over the previous year.

In the 2009/10 and 2010/11 financial years, the government has been allocating an average of K3.5 billion specifically for natural resources and environmental management. At around 1.5 per cent of overall government expenditure, this level is about the same level or slightly more than other developing countries' expenditure on environment. The aim is to curb or at least reduce environmental degradation, much of the allocation being for replanting trees in deforested areas, conserving water sources, and land conservation. It is clear that in Malawi, however, environmental issues are treated as an NRE sector and not yet integrated in the finance system, or indeed the accounting system. In other words, there is not yet an environment component within every sector, such as health, infrastructure, industry or education, in spite of the environmental risks and needs facing those sectors. It is felt that this is partly because those in charge of such other sectors are not yet feeling the burn of those sectors' dependence on environmental assets or exposure to environmental hazards. Investment in centralised information – especially economic information – would be needed to improve their awareness and incentives to act.

Environment in fiscal policy and practice

There is not yet a comprehensive environmental fiscal policy or reform process in Malawi but several recent examples can be built on:

- One recent development that is directly aimed at reducing environmental degradation and pollution is the controversial increase in *duty on second-hand imported cars*, that is, a 50 per cent duty on 12-year-old cars – see Case A. Apart from the revenue benefits of this development, it will reduce air pollution and carbon dioxide emissions.
- The government plans to introduce an *additional tax on plastic bag users*, since plastic bags rank in the top five pollutants of land in Malawi. With the introduction of environmental taxes, one consideration is the possible impact on poorer groups: there are intentions to carry out poverty and social impact assessment (PSIA) on the additional tax on the plastic bag users before the policy is effected.
- The government has reduced *duty on energy-saving light bulbs* to incentivise people to more readily access electricity as a cleaner source of energy.

[Recommendation B] Explore means for routine valuation of environmental assets, accounting for the environment, and environmental expenditure review and budgeting

Environmental issues need to be observed at micro level in any capital investment project, and at macro level in determining national development paths and the budget. It is critical to keep track of the environmental assets on which so many in Malawi depend: farmers in relation to the quality of soils and water; the tourism business in terms of the quality of wildlife and landscapes; urban businesses and citizens in terms of the quality of water supplies; and government in terms of both natural resource revenues and potential future revenues from international payments for carbon, biodiversity and other global public goods. All of this requires better environmental evaluation and accounting than currently exists. Various World Bank opportunities – such as the new partnership WAVES (Wealth Accounting and Valuation of Ecosystem Services), which also accommodates more modest approaches – may be helpful, and PEI could form a platform for exploring them.

Government Financial Statistics (GFS) do require an evaluation of all the environmental assets, including subsoil assets, to be maintained on the government books, but currently this is not produced and it is not clear that there are plans to do so in the near future. Yet investment in such accounting – and the information systems to feed it, and the policy review and budget processes to require it and use it – is critically needed. If there is one major public administrative investment so that Malawi can shape a productive and profitable green economy, and so that we can prevent the poor from feeling the raw impact of environmental mismanagement, environmental valuation and accounting may well be it. Building on recommendation A, one option may be national wealth accounting, where the relative contribution of environmental wealth can be clarified. Recognising how the national budget really counts – it is often the major point where crunch decisions about the environment are actually made – another option may be the inclusion of environment questions in public environmental expenditure reviews. This can help to shape a budget that invests more in environment to get more out of it. Finally, for all such work, investment in environmental economics capacity will be needed.

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[3] Mainstreaming from the ground up: partnerships with poor groups driven by local government, business and sector authorities

Chapter 2 focused on what have traditionally been considered to be the major means to mainstream environmental concerns: centralised and technocratic policy, planning, budgeting and information systems. Indeed, many donors and policymakers have assumed that these are the only means for integrating environment and development, with Poverty Reduction Strategies and other forms of national plan being particularly burdened with the task.

Yet, as international experience shows, centralised and planned mainstreaming has not been as successful in environmental mainstreaming as its proponents assume. This is especially true when it is (a) projectised – expected to seamlessly link the separate worlds of environment and development within a 2-3-year period only; (b) reliant more on putting the right environmental words in plans than in changing actual expenditures and behaviours; (c) inadequately resourced to shift from one-off mainstreaming studies to the required changes in information, planning and budgeting systems; and (d) not adequately engaged with many stakeholders in sectors and livelihood systems.⁶

The top-down ideas and information produced by such mainstreaming approaches can be real drivers of change, as Cases A-C illustrate above, but they need supplementing by the bottom-up inputs of sector and livelihood stakeholders. In other words, the push to integrate environment in development decisions needs complementing by the pull of stakeholders who want to improve environmental benefits and reduce environmental costs in a variety of circumstances, whether they are farmers wanting to produce higher yields from their land, or finance ministries wanting to access international climate and biodiversity funds. Malawi's mainstreaming endeavour therefore needs to be widened to resemble more of a movement for institutional change, admitting more players, more mechanisms and longer time frames.

Thus we have looked for approaches in Malawi that used a wider range of tactics than planning, tailored to particular sectoral or local contexts. We have tried to find out what is working – not just in plans, but on the ground. In many of these cases, people are getting on with implementing activities that others plan; though these activities would be more successful if policymakers and planners recognised them and improved the enabling conditions. Each of the following cases therefore maps out possible contributors to a wider programme of environmental mainstreaming in support of poverty reduction and thus identifies some potential partners of PEI. Table 1 is our initial collection of projects and initiatives that seem to be weaving poverty reduction and environment more closely together, and we explore some of them more closely. They fall into two basic types:

- Firstly, *partnership approaches between various public and private bodies with local groups of poor people*, where the varying needs of each partner create the drive to link environmental management and poverty reduction (Cases D to F in this chapter).

[6] Dalal-Clayton B. and S. Bass (2009) *The challenges of environmental mainstreaming: experience of integrating environment into development institutions and decisions*. IIED, London

- Secondly, *approaches that combine knowledge systems*: notably poor groups' local knowledge of how best to manage environmental assets, often in times of difficulty, in ways that ensure reasonably equitable outcomes; religious tradition – and here it is notable that faith-based organisations in Malawi are doing more on the environmental deprivations and resources of poor people (see Box 4 in Chapter 4); and scientific knowledge of how best to use natural resources to meet multiple and growing needs (Cases G to J in Chapter 4).

Chapter 5 draws out some common lessons of success factors and constraints from all the cases. Chapter 6 presents some recommendations – notably how to combine and build on these different approaches to mainstreaming, so as to form a movement that could, ultimately, see Malawi shifting from environmental degradation to greener approaches to social and economic development.

[Case D] Integrating environment in local government – district council-led livelihood programmes linking environmental management and poverty reduction

M. Mulebe⁷

Mainstreaming instrument(s)	District council-led livelihood programme to achieve both environmental management and poverty reduction – this example on beekeeping Associated devolved powers
Key actors	District councils Village Natural Resource Management Committees
Benefits	Supports and builds on a traditional activity – beekeeping – that sustains many environmental, social and economic purposes Offers local business incentives to control resources, providing a mix of public and private benefits, and helping to grow SMEs
Constraints	Weak council capacity to deliver adequate support to the best local integrated poverty/environment model Moribund VNRMCs take much energy to revive
Recommendations	Develop the capacity of District Councils and Village Development Committees to identify and support effective, integrated livelihood/environment development models Consider VNRMCs as potential vehicles for improving environment-development links

Author's key message

The solution to deforestation cannot be achieved through single-sector approaches but by tackling the problem from a livelihood perspective. This means finding sources of livelihood that would provide more lucrative income to households, while at the same time preserving the forest, water, land and wildlife resources.

[7] The author would like to thank the Secretary for Local Government and Rural Development for overall support; PEI for facilitating the visit to Balaka and Machinga; Mr. Thyangathyanga District Environmental Officer, Balaka District Council; Mr. Mtambo, Assistant District Forestry Officer; Mr. Black, Forestry Extension Worker in Traditional Authority Nsamala; Victor Borjesi, Chairperson, Weleya Beekeeping Association, Balaka; Musa Chipolopolo, Chairperson, Ulaya Bee Keeping Association, Balaka; and Mr. Mlaviwa, District Environmental Officer, Machinga District Council.

Councils potentially play very significant roles in environmental management in Malawi. This is mandated and supported by the Malawi Constitution, the Decentralisation Policy, the Local Government Act and the District Development Planning System Handbook. This potential is not always fully realised, however, especially where Councils do not see environment as a foundation for development, or where they are not able to identify practical implementation models. This case explores the experience of Balaka District Council as a demonstration of how the role of Councils in environmental management can be developed and become a central component of district development.

Balaka is one of many districts where the majority of households depend on charcoal for their livelihood. This has led to deforestation, soil erosion and loss of land productivity. Balaka District Council observed that, while this could appear to be a forest sector problem, no solution to deforestation could be achieved through sectoral approaches alone. It would require tackling the problem from a livelihood approach. In particular, it would mean finding a source of livelihood that would provide a more lucrative income to households while at the same time preserving the forest, water, land and wildlife resources. The Council identified beekeeping as one of the most effective livelihood approaches for achieving an integrated approach to environmental management and livelihood improvement, observing that beekeeping needs secure water and forest cover, and appropriate land husbandry practices – thereby potentially offering an incentive to local people to ensure environmental security and good management.

The role of councils in environmental management

Malawi's Local Government Authorities, now called Councils, are established through Section 146 of the Constitution of the Republic of Malawi. This confers powers on Local Government Authorities to look after the welfare of people living within their administrative jurisdiction. One of the responsibilities of Local Government Authorities is the promotion of infrastructure and economic development through the formulation and execution of local development plans and the encouragement of business enterprises.

The Decentralisation Policy (1998) assigns functions and responsibilities to the various levels of government and devolves administrative and political authority to the district level. It assigns to the Councils the function of provision of *environmental services* including: burial services; refuse disposal; sewerage removal and disposal; environmental reclamation; and environmental education. Section 6 of the Local Government Act 1998 provides a legal basis for such functions and responsibilities. The District Development Planning System Handbook prescribes the methodology for identifying environmental problems and developing solutions.

The District Development Planning Framework outlines the synthesis of community and sectoral perceptions of problems that the district council has to tackle, including environmental problems. The environmental problems identified in the DDPF are addressed in the District Development Plan through identifying projects and programmes sequenced in three annual investment plans.

Although a 'project and programme' resolution of environmental problems would appear to be a narrow approach, being the only methodology prescribed in the District Development Planning Handbook, some projects have proven to be effective champions of environmental mainstreaming. This is especially the case where they have worked closely with local villagers, notably through *Village Natural Resources Management Committees (VNRMCs)*, which were established from 1995 in order to assist with environmental management.

The Balaka case – beekeeping as an incentive for villagers to conserve the environment

Environmental problems in Balaka include: deforestation, due to dependence on charcoal production for household livelihoods; bush fires, due to dependence on mice for household livelihoods; land degradation, due to bush fires and deforestation associated with the above; and ensuing soil erosion and consequent siltation of rivers. Balaka District Council realised that it would be difficult to solve these environmental problems with a sectoral approach and sought an integrated planning approach that focused on the household as the key actor. The Council sensitised the VNRMC and households to alternative sources of livelihood that would better foster natural resource management. This was focused on bee enterprise zones and complementary activities:

- a) *Beekeeping* to reduce economic pressures for deforestation, since this activity requires a large, biodiverse area of forest; a secure supply of water; and appropriate land husbandry – and it provides income.
- b) *Mushroom growing* within the beekeeping area to reduce economic dependence on beekeeping alone and also to utilise resources not required by beekeeping.
- c) *Fruit growing* within the beekeeping area to increase the number of trees that flower at different times of the year, as well as to reduce over-reliance on beekeeping for livelihood.
- d) *Fisheries production* also to reduce dependence on charcoal for livelihood and to make wider use of the district's environmental assets.
- e) *Alternative stoves*, that is, solar and energy-saving charcoal stoves (Chitetezo Mbaula), to reduce use of charcoal (and, in communities that have good clay soil for manufacturing Chitetezo Mbaula stoves, some direct income).

The Council coordinated various NGO efforts to improve environmental management. Concern Universal provided technology (solar energy and Chitetezo Mbaula) and training of the VNRMC, and FIDP advised on the beekeeping technology. The Council established a Beekeeping Association to help farmers sell their honey.

The Council used a number of tactics to encourage positive change in the communities, most of which were structured around incentives to keep bees happy and productive. The communities were informed that beekeeping requires good husbandry techniques because bees need water and trees that flower at different times of the year, and therefore they must avoid soil erosion and siltation of water bodies. Where communities had traditionally set bush fires in order to clear land for the purpose of catching mice, they were advised that bees do not like smoke, and bushfires will drive bees away. Finally, communities were informed that bees will collect nectar from a radius of ten kilometres and therefore need a habitat of that size if they are to be productive. The message is now clear: economically viable beekeeping is inconsistent with deforestation.

The outcomes: linked environmental and developmental benefits and an understanding of how these are mutually dependent

As a result of the campaign to introduce alternative sources of livelihood, beekeeping and mushroom production are now practised throughout the district. This has led to a renewed interest in beekeeping, once a traditional and sustainable land use. Farmers have realised that beekeeping is less strenuous but provides more income than charcoal. Moreover, this has led to a decreasing trend in the number of households depending on charcoal in Traditional Authorities Nsamala, Chamthunya, and Sawale.⁸

[8] Fisheries production was also piloted at Kachenga in Phalula area, where dependence on charcoal production is more pronounced.



© Gibson Mphepo

Beehive in Lilongwe

The benefits of beekeeping as an integrated livelihood/environment model can be summarised in four areas: benefits to the Council; benefits to the people; benefits to businesses; and benefits to the environment.

The benefits for the *Council* from the integrated livelihood/environment model include:

- a) Demonstrated reduction in charcoal dependence by 17.5 per cent in the locality concerned (TA Msamala) and potentially also reduced pressure on forests.
- b) Highly practical implementation of the Councils' mandate to integrate environmental management into development efforts.
- c) Showcased good, cross-sectoral, livelihood-based practice in environmental mainstreaming.

The benefits for the *people* can be summarised as:

- d) Increased income and living standards.
- e) Improved food security through reduced bush fires and less wanton cutting of trees.
- f) Improved water availability through better catchment area management.
- g) Savings of farmer time (the labour cost of producing charcoal is higher than for producing honey).

The benefits for *private companies* have not been fully developed but include:

- h) Regular supply of honey for use particularly in pharmaceutical products.
- i) Potential for wax by-products for use in the production of candles and polish (though current levels of production are inadequate to meet the demand).

Finally, the benefits for the *environment* are:

- j) Sustainable utilisation of natural resources.
- k) Reduction in bushfires.
- l) An increase in watershed conservation and conservation of other natural resources.

- m) Natural regeneration and reduction in forest pressure as a result of a decrease in dependence on charcoal.
- n) Better management of land resources because of linking environmental management to food production.

Conclusion – the importance of local integrated livelihood/environment models

This case study is not a call for scaling up beekeeping in Malawi, though it does point to beekeeping's suitability for producing a range of public and private environmental and development benefits. Rather, the Balaka experience suggests the need to engage Councils in working out *innovative, integrated livelihood/environment models* of development that suit the particular environmental and socio-economic conditions of the district in question.

[Recommendation E] Develop the capacity of District Councils and Village Development Committees to identify and support integrated livelihood/environment models of development, including offering a catalogue of effective models, such as bee-keeping

The common challenge is often the lack of resources to provide regular extension services and investment to support that chosen integrated approach. Balaka District encountered this in the case of beekeeping, where it has not been able to provide adequate support to meet the larger potential demand. A further approach that can be suggested is to generate a catalogue of pro-environment, pro-poor livelihood enterprises which – like bee-keeping – can earn income, create livelihoods and jobs, and use the environment well without exceeding ecological limits. This does not imply that the answer is simply about district authorities offering standard development packages, for local people need to be involved in defining, promoting and refining the particular integrated livelihood/environment models. It does however suggest the need to explore a range from the existing approaches identified in this case study, the others in this paper, and a range of others. Building on what works can be more effective than rolling out new but untried demonstration projects. A further challenge is the reconstitution, mobilisation and often capacity development of Village Development Committees themselves – especially to work with Councils in these innovative models.

[Recommendation F] Consider VNRMCs as potential vehicles for improving environment-development links

Although VNRMCs are strongly associated with the management of forestry resources, the currently rather narrow sectoral orientation of the VNRMC impedes its ability to mainstream environment into many aspects of village life. It is becoming clear that VNRMCs could and should be linked to other specialised committees such as: water, land resources, wildlife and built-up environment. Each of these (including many VNRMCs) are non-functional, with diminishing membership and/or low capacity. The reconstitution and re-orientation of the VNRMC in particular would reduce the conflict with other smaller but specialised committees, such as the water catchment area management committee, water committee, and land resource committee – which in turn have to affiliate with the Village Development Committee.

References

- The Constitution of the Republic of Malawi Section 146;
- The Decentralisation Policy (1998)
- The Local Government Act (1998) Section 6
- Social Economic Profile for Balaka
- Social Economic Profile for Machinga

[Case E] Integrating environment in business – Eastern Produce’s collaboration with tea farmers for environmental management and livelihoods

Daisy Kambalame-Kalima

Mainstreaming instrument(s)	Corporate-community partnership for tea farming-based environmental management and livelihoods
Key actors	Companies with positive sustainable development policies (in this case, Eastern Produce) Local tea farmers – organised into a company
Benefits	Joint business/community acknowledgement of their respective long-term prosperity on the quality of the environment Agreed codes and plans help diversification and risk management Improved farmer organisation helps farmers to access environmental premium markets
Constraints	Not yet enough experience, or enough intermediaries/brokers to support scale-up – though there are also examples in sugar and macadamia/honey
Recommendations	Explore a wider range of Malawian/SADC corporate-community partnerships that support multiple benefits from better environmental management, develop codes and encourage intermediaries

Author’s key message

Corporate social responsibility (CSR) doesn’t have to be a one-way philanthropic affair. It can be mutually beneficial to companies and communities. The two keys are finding ways to get local people to participate actively in value chains and to get sustainability built into the design of the enterprise from the beginning.

In Case D, it was a district council that unleashed the potential of working with communities in integrated livelihood/environmental management activities. In this case, a similar approach has been developed but this time through the leadership of a leading business. Common to both cases is a realisation that immediate local control of natural resources, together with business incentives to invest in the smallholder managers of those resources and to improve the technical quality of their management, has enabled the production of a mix of public, community and private benefits of a kind that is sorely needed in a resource-scarce world.

This case is especially relevant to situations where environmental problems are linked to poverty. Poor people are often both an immediate cause of environmental degradation and mismanagement, and a potential solution. In these situations, in theory, their dependence on continued environmental services gives them an incentive to act. Too often, poor people cannot become part of the solution because the cost of good management practice, and/or poor access to technologies and associated markets, is a hindrance to their adoption. A charcoal burner, for example, whose activities are blamed for the depletion of forest reserves, observes that “electricity costs too much for most poor people, who in any case rarely have access to it, so that’s why they need my charcoal”. In turn, the lack of alternative sources of income and the costs

of improved kiln technology make it difficult to convince him to change his charcoal-producing practice towards more sustainable approaches. A number of such practices have long-term negative effects and need to be reversed. While policies and legislation to address these challenges are in place, they may not be adhered to strictly and the catalysts needed for change may not be there. It is clear that we cannot rely on government exhortation and enforcement alone, or on poor people's immediate incentives and knowledge – but the private sector can sometimes offer the right catalyst.

The private sector in Malawi is now in a position to make some unique contributions, not least in helping to bridge some of the financial and technological gaps noted above to unleash the power of community action. Where many Malawian businesses were initially unaware of linked environmental and poverty problems, often denying them; some have progressed from reactionary to more progressive policies, and recently to changed action on the ground. Tarrred for some years with various accusations – of dumping toxic waste in rivers, of making workers use poisonous chemicals without proper protective clothing and of contributing to forest depletion, to mention just a few – the launch of the United Nations Global Compact in 2004 proved to be a milestone. It provided an opportunity for businesses in Malawi to review their operations in line with the Compact's environmental and social principles and to develop their own policies to tackle environmental and social problems. Since then, the private sector has increasingly involved itself in improvements, ranging from clean-up operations for the rivers that provide the main source of water for the majority of Malawians, to the development of sustainable forest reserves.



Malawian tea plucker

Where some of these activities might have initially been considered to be a cost centre (or written off as 'philanthropy'), some are increasingly seen as linked directly to revenue, profit and their security. In other words, they aim at an integration of environmental, social and financial benefits right inside the business model. In this section, we review a prominent example; that of Eastern Produce, a Malawian tea producer that has shaped innovative partnerships with communities around their estates, focusing on joint wealth creation.

Eastern Produce Malawi Limited (EPM) is Malawi's largest tea producer, currently accounting for about 38 per cent of Malawi's total tea output source. Its operations comprise 10 factories, 5,600 hectares of land stretching from Thyolo to Mulanje, and a workforce of 10,000 staff during the peak season, with 6,000 permanent workers for the rest of the year. At the centre of EPM's operations is a genuine recognition of its role in the sustainable development of Malawi. EPM has for many years stated its commitment to "doing business in an ethical manner by ensuring that environmental and social concerns are addressed in order to ensure sustainability". The company's Corporate Social Responsibility (CSR) profile is noteworthy but not unusual: it maintains a CSR Office and returns one per cent of its annual profit to community projects such as clinics, schools, ambulances and training of clinical staff, as well as environmental conservation. The total value of the crop traded under fair trade is 1.2million kg as opposed to EPM's total tea production of 19 million kg, however, so at present it remains a niche market. Nonetheless, EPM's core business operations are beginning to be adapted to reflect and act on the same principles.

The fair trade approach was driven by an increasing realisation that the long-term viability of both the company and surrounding communities is directly linked to the quality of environmental management. It had become clear that the land around EPM's tea estates, within the mountainous areas of Mulanje district and Thyolo, was at risk of losing its topsoil due to deforestation. In 2002, the estate started working with smallholder farmers to supply green tea leaf to the estate, improving security of supplies to the factories. This also encouraged the farmers to diversify their production base from the traditional maize crop. This shift from maize to tea also has environmental benefits: tea bushes hold the soil and protect against run-off and topsoil erosion during the rainy season. It also has immediate economic benefits: by involving the communities in growing tea, they have been provided with an opportunity to earn a greater income through the supply of green leaf to the estates, and to diversify their own crop-based risks. This is not just a question of shifting from maize to tea, however; this corporate-community partnership has produced social and institutional benefits that offer opportunities for continuing wealth creation:

- EPM has been able to access market premiums for improving the sustainability of tea cultivation, as well as associated technical knowledge on management for sustainability. The independent audits conducted by the Rainforest Alliance and the Fairtrade Foundation have included feedback after each audit on improvements to the programme.
- To ensure that the smallholder farmers are maximizing their ability to negotiate good deals, Eastern Produce facilitated the registration of smallholder farmers as a private company in 2002. As a registered company with shareholding, however, all earnings on the premium were liable to taxation, despite being meant for development projects. As a result, the smallholder company has now been converted to a trust, with a board that oversees implementation of the development projects. Currently, there are over 3,600 smallholder farmers who have been participating in the programme. The company has attracted buyers in fair trade markets in the European Union and the United States of America. Farmers negotiate prices with Eastern Produce for green leaf supplied by the farmers. In turn, EPM sells their tea at the Limbe Auction Floors and pay out a bonus when the final selling price at the Auction Floors is higher than the negotiated price.⁹
- The certified, value-added market provides the farmers with the opportunity to earn extra income through a transparent premium, which they can use for community development projects. From the total earnings of over MK60 million accumulated since June 2007, the farmers have invested in water supplies and boreholes, in building and renovating schools and their facilities, and in many other activities. By selling their green leaf to Eastern Produce, the farmers have a more sustainable source of income compared with earnings that they received from maize sales.
- In areas where the terrain prevents tea being cultivated, for instance along the Phwela River, they have planted riverbanks with indigenous riverine trees, taking care to involve the communities to ensure that the trees are protected. This has both protected riverbanks against erosion and provided fuelwood and timber for both energy and income for the communities.

Significantly, the corporate-community partnership is not structured as one-way philanthropy but as a deal meeting the different parties' needs, and based on common environmental management needs. In this case, EPM have an increased and stable supply of green leaf, smallholders earn regular income from sale of that leaf, and communities benefit from the premium earned in the form of development projects. To assure all of these, the environment needs to be managed well. While EPM is advanced, they are not the only players in town, as Box 2 suggests:

[9] This bonus is based on the Limbe Auction average price and the negotiated green leaf price. The difference between these prices is then paid out as a bonus. The bonus calculations are audited by a certified firm of Auditors.

[Box 2] Further Malawian examples of potentially sustainable trading relationships between corporations and communities

Illovo Sugar and Kasinthula Cane Growers

The Kasinthula Smallholder Sugarcane Scheme is located 10 km South of Chikwawa district in the Southern Region of Malawi, in the Shire Valley. This area experiences some of the hottest and driest weather in Malawi.

The scheme was initiated in 1997 to empower the people of the Shire Valley to participate in the government's programme of poverty alleviation. The scheme was designed to develop in three phases, of which phase one and phase two came into operation in 1997 and 1998 respectively. The scheme encourages farmers to produce sugar cane, and in turn delivers the cane to Illovo sugar, which mills and markets the sugar produced by both the farmers' and the company's fields. There are a total of 272 farmers involved in phases one and two, and plans for a further 150 in phase three. The scheme covered 312 hectares (ha) in phase one; 483 in phase two, with an additional 455 in phase three.

The farmers receive 60 per cent of their total sales at Illovo (of which 16 per cent is used to pay back loans and other costs, with the remaining 84 per cent paid directly to the farmers). 40 per cent of total sales is used to meet the milling costs and marketing of the sugar. On average, each farmer earns 13,000MK (approx \$86) per month from the supply of cane to Illovo.

Sugar milled from the smallholder farmers has access to the fair trade market and attracts a premium payment of US\$60 per tonne above the normal market price. In the last few years, Kasinthula has sold approximately 10,000 tonnes of milled sugar. Previously, all earnings from the fair trade premiums had to be used for community projects but through negotiations and discussions with the fair trade organisations, they have now adjusted the allocation of the premium to provide for the following: 30 per cent of the premium is used to fund community development projects, 30 per cent is invested back in the field maintenance, 10 per cent is retained by Kasinthula Cane Growers Limited and the remaining 30 per cent is available to the farmer for his own use.

NATURALS.M – baobab juice

Where Eastern Produce and Illovo have depended upon the opportunity to access fair-trade markets, Naturals.M is aimed squarely at the local mainstream market. Naturals.M is a small-scale juice producer that processes baobab fruit collected mainly by women's groups. Established by fair trade and natural products guru Towera Jalakasi, the product is made after extracting powder from the fruit and processing the juice. The baobab tree grows mainly in the wild and had no previous financial worth. This new opportunity to sell to juice producers has increased the local incentive to protect the trees, which are now seen to have economic value.

Naturals.M has established a relationship with a number of associations, mainly women's groups, who work to extract the powder and supply it to the factory. The factory has 25 employees and 500 women collectors, and it impacts on around 900 households. This has produced a significant income stream for the women – each of whom on average earn around 80,000MK (approximately \$530) annually. Where the average earnings for most Malawians are less than one dollar per day, this extra income can make a huge difference.

[Recommendation G] Explore a wider range of Malawian/SADC corporate-community partnerships that support multiple benefits from better environmental management, and that empower smallholders and develop codes

Eastern Produce's approach can be replicated in other sectors of the economy; sustainable business for poverty eradication and environmental management. There are similar initiatives in sugar cane (see Box 2) and schemes to support honey production by local people within macadamia nut plantations. From this case, it would appear that the private sector contribution is most effective if such efforts are based on the core business of the organisation; if they are informed by environmental realities on which both corporation and communities depend; and if they engage SMEs and communities as active players in ventures in the supply chain – rather than through philanthropy, which is not central to the business model and can create dependency in the community.

To explore the potentials further, it may now be time to bring together Malawi's varied experiences in such corporate-community partnerships (and those that include the state in so-called *4P models – public-private-people partnerships*), to reveal the benefits, explore the lessons, and develop guidance or codes of practice. Issues such as how far local control of environmental assets should be in the hands of communities, how to improve community bargaining power and how to balance government incentives to business leaders with accountability for the business side of the partnership, need to be explored.

Doing so will likely encourage more CEOs, community leaders and government officials to follow the lead of EPM and their partner communities in scaling up similar partnerships for poverty reduction and environmental management. Indeed, it is becoming clear that environmental mainstreaming is not just about formal coherence of state environment and development policies on the statute books. It is just as much about enlightened business actors on the ground, both CEOs of corporations and the SMEs and farmers who hold the key to inclusive growth.

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[Case F] Integrating environment in the forest sector – government-community co-management of forest reserves in Malawi

Nyuma Mughogho

Mainstreaming instrument(s)	Government-community co-management of forest reserves in Malawi – guidelines and pilot schemes
Key actors	Forestry Department International donors Communities formed into forest management organisations
Benefits	Environmental benefits gained at lower cost to government than forest ‘policing’ Community income and material benefits from legitimate forest access and management rights Multi-stakeholder governance could attract global carbon funds
Constraints	Lack of precedent, and time needed to build confidence means it takes longer than anticipated for co-management to spread Lack of information on different sustainable forestry practices
Recommendations	Improve the enabling conditions for a scale up of forest co-management and thus for accessing carbon funds

Author’s key message

Mainstreaming environment in the forest sector means providing public environmental benefits alongside community and private benefits; co-management of forests is the best means we have for achieving this in Malawi.

Introduction – government forest reserves and their limitations

In Malawi, setting aside forest land under government protection for conservation purposes started in the 1910s during the colonial rule (Bhargava, 1990).¹⁰ Most of the forest reserves were gazetted for protection of water catchments, biodiversity conservation and production of wood. Whilst there was no consideration of the needs of surrounding communities, and adjacent communities still do not usually have legal access to these forest reserves, forest reserves are an important *de facto* means of livelihood support for many communities – providing firewood, construction wood, wild fruits and income. The forests also continue to offer wider public benefits. Some of these are increasingly important nationally; the major cities, such as Lilongwe, have their major water sources in forest reserves. There are also global benefits that were not foreseen at the time of gazettment, notably mitigating climate change through sequestering and storing carbon.

Gazettment has continued up to this day, although the more notable trend has been an increasing number of reserves being lost to encroachment, plus degazettment for developmental purposes. The Government of Malawi has managed these forest reserves through the heavy hand

[10] The first forest reserve to be gazetted is Dzalanyama which was first gazetted as Central Angonilani Game Reserve in 1911 and then in 1922 as a Forest Reserve under Government Notice 11 (GN 11).

of forest guards and patrolmen who, where possible, attempted to apprehend encroachers and illegal tree cutters. The technique worked to a certain extent, as evidenced by many remaining forest reserves that are seen today. Indeed, in most areas, especially in the Southern Region, those natural forests that do remain are mostly forest reserves. With population increases over the years, however, many reserves have become encroached and degraded.

The shift to community involvement in forest management

The transition from one party rule to multiparty democracy in the early 1990s saw some dramatic increases in encroachment and illegal cutting of trees, mirroring the 1980s global phenomenon of putting private benefits ahead of the local, national and indeed global community. The slogan 'power to the people' was interpreted by many as meaning 'anybody has the power to do anything they like', including cutting trees in the forest reserves at will. People with inadequate land felt bold enough to move into forest reserves and charcoal-making began to be carried out openly. This led to the disappearance of trees in forests such as Ndirande and Soche in Blantyre and others in Mulanje. For the Forestry Department, fighting back was difficult, due to the lack of precedent, capacity and political will. Some politicians near forest reserves openly supported local communities moving into forest reserves, arguing that it was their right to do so.

This losing battle prompted the department to change its tactics and enter into cooperation with local people. The key driver was a realisation that the public environmental benefits of forests, as well as community and private benefits in supporting local livelihoods, needed to be brought into harmony. The resultant policy shift advocated both local control of natural resources and local burden-sharing of their management, with the result that natural resource users would play a much more active role in forest management. The approach, Community Based Forest Management (CBFM), received extra impetus from those donors and international agencies with shared concerns for environmental protection and local livelihoods.

CBFM is based on the principle that local populations have a greater interest in the sustainable use of natural resources around them, and interest in natural resource use for a wider set of benefits, than do more centralised government or private management institutions; and therefore, involving them will lead to more sustainable management. It is also based on the practical reality that governments do not possess enough personnel or resources to enforce laws adequately and therefore need cooperation with local communities.

Co-management – the new policy in outline

The 1996 National Forest Policy's goal is '*to sustain the contribution of the national forest resources to the upliftment of the quality of life in the country by conserving the resources for the benefit of the nation*' (Malawi Government, 1996). The subsequent 1997 Forestry Act went on to '*provide for participatory forestry...*' among other things. Together, this has promoted and provided for a new legal framework for the involvement of communities in forest management through co-management arrangements – the sharing of management responsibilities and benefits between the State and communities in a forest reserve.

Under such an agreement, communities become the primary implementers of an agreed management plan, assisted and monitored by the Forestry Department. The management plan takes into consideration livelihood and environmental issues. The agreement specifies the sharing of authority, responsibility and benefits between local communities and the Forestry Department with respect to management of forest resources in a forest reserve. Communities have a legal right, an institutional base (the Local Forest Organisation) and a socio-economic incentive to take substantial responsibility for sustainable management and use of forest resources (Government of Malawi, 2008).

On this basis, the communities assist in management by preventing illegal harvesting of forest resources, carrying out fire control measures and sustainable harvesting of forest resources, among other duties. In turn, the government provides policy guidance, technical advice and support. Benefits for the communities include cash and non-cash gains (notably legal access to firewood and timber), while the government benefits through increased revenue, reduced costs and responsibilities, and achieving its goal of providing public goods through sustainable forest management.

Rolling out the co-management approach

Following the approval of the Forest Policy and passing of the Forestry Act, the Forestry Department (FD) started implementing participatory forest management. It held countrywide sensitisation meetings on the new Policy and Act and sought cooperation from the local communities.

The FD's message, in sharp contrast to its previous 'keep out' messages, was that forests benefit everybody, especially those close to the forests. In 1997, co-management was piloted in the three Districts of Machinga, Kasungu and Nkhatabay under the sponsorship of the World Bank. The FD stopped charging for the collection of Non-Wood Forest Products such as thatch grass, mushrooms, wild fruits and grazing. The FD was reluctant to take the full step of permitting shared benefits from wood products, however, despite the Policy advocating this.

Since 2006, with European Commission (EC) support, the Forestry Department has been implementing the 'Improved Forest Management for Sustainable Livelihoods' programme in twelve districts. Through the programme, co-management guidelines have been developed. Now

communities can take out wood, with 60 per cent of the income accruing to the community, 10 per cent to cover the costs of the Local Forest Management Organisation and 30 per cent to the government (Malawi Government, 2008). The system is regulated through defined compartments within the forest to ensure a regular and sustainable annual cut. Local communities work together with a qualified forester and the process is supervised by the District Forestry Officer. The FD has also supported



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Carbon stock measuring in Chimaliro forest

communities to engage in forest-based enterprises such as beekeeping, mushroom growing and making oil products from the *Jatropha* tree, to increase their cash income. Today, however, carbon is holding out the potential to provide one of the highest economic returns on forest resources, provided forest governance and markets are suitable. Plans are being developed to review the policy to improve how the communities can benefit further through the carbon trade.

The roll-out has been only gradual since the 1990s policy advance towards participatory management, however, as the shift towards local control is a new innovation and was initially without demonstrated success in Malawi. Uncertainties on the part of government and

communities linger. There is fear on both sides of overharvesting, capturing of benefits by the elites within communities, and the limited success of tree regeneration thus far. Worries about destroying forests that have been in existence for hundreds of years are an understandable preoccupation for both the Forestry Department and communities. Despite this, there have been small but promising indications of stakeholders changing their attitudes and behaviour. Communities in Chimaliro Forest Reserve, one of the pilot sites, have expressed the wish that the whole of Malawi should come under co-management so that forests could be better conserved. Local communities around Chimaliro Forest reserve have been working with the government for over ten years in managing the reserve; they report livelihood benefits such as firewood, edible caterpillars and beekeeping from the reserve, and are happy to contribute to environmental protection. The forest is now a well-conserved habitat for flora and fauna, securing water and mitigating climate change through sequestering and storing carbon (a recent study revealing the Reserve stores 30tC/Ha (Aslam, 2009).

[Recommendation H] Improve the enabling conditions for a scale-up of forest co-management, potentially accessing carbon funds

We can expect environmental mainstreaming to take time if it is to be genuine and sustained. The important thing is to take the first step. In this, the Forestry Department and many forest-based communities have already been bold. But the roll-out has been slow and, clearly, it takes a lot of confidence-building for the forestry authority and communities to both believe in the changes and to implement them. Demonstrations of success, in terms of forest management, environmental and livelihood benefits, will be pivotal in building that confidence and speeding up effective implementation. Further progress needs to be smoothed by improving the enabling conditions. A full participatory review of the experience to date is warranted in order to be clear about these enabling conditions. That might include learning the lessons of a wider range of joint environment/livelihood activities, some of which are touched on in this paper. This will improve Malawi's readiness for REDD+ in the near future.¹¹ Already, however, it is clear that for co-management to succeed:

- *Participatory monitoring and evaluation*, along with scientific study, will be needed for producing the kind of credible evidence needed to show that co-management works and benefits both people's livelihoods and the environment.
- *More forest management information* is needed to improve take-up of co-management. In particular, the FD should disseminate research results on the coppicing and regeneration capabilities of different species.
- *Forest governance* needs to be clear, or revised where necessary, in order to provide assurance to all parties that co-management can work for valuable forest assets like wood, and new markets like carbon storage – as well as to avoid elites capturing all the benefits. The whole target community should be clear on current laws and policies; access rights and conditions; and management agreements need to be transparent.

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[11] REDD+ - Reduced Emissions from Deforestation and forest Degradation, plus co-benefits, such as biodiversity and poverty reduction

[4] Mainstreaming through linking knowledge: mobilising science and local tradition

[Case G] Integrating environment in agriculture – improving conservation agriculture by integrating environment and poverty reduction objectives

James L.L. Banda

Mainstreaming instrument(s)	Conservation agriculture – a scientific solution aimed at integrating public environmental benefits with farmer poverty reduction
Key actors	Land Resources Conservation Department Many conservation agriculture programmes of government, NGOs Agricultural scientists
Benefits	Potential major vehicle for conserving soil and water Potential major vehicle for farmer income security
Constraints	Top-down, science-driven approaches can ignore farmer incentives Generic CA solutions not suited to particular circumstances Inadequate (economic) analysis of outcomes to date
Recommendations	Strengthen farmer involvement in shaping CA approaches Ally CA more closely with mainstream agriculture programmes

Author's key message

Conservation Agriculture (CA) can provide a low-cost way of nurturing Malawi's soil assets, so that they sustain high yields for farmers, confer resilience to droughts, and reduce farmer risk – but farmers must be involved in developing CA methodologies.

Introduction

For decades, Malawian farmers have practiced small-scale maize-based cropping with annual ridge tillage, often on the same land for long periods. Conventionally, land is prepared with hoes, where ridges are remade every season and where plant residues are covered with inverted soil, or removed, or burnt. The growth of all vegetation except for the desired crop is prevented. (Materechera and Mloza Banda, 1999).

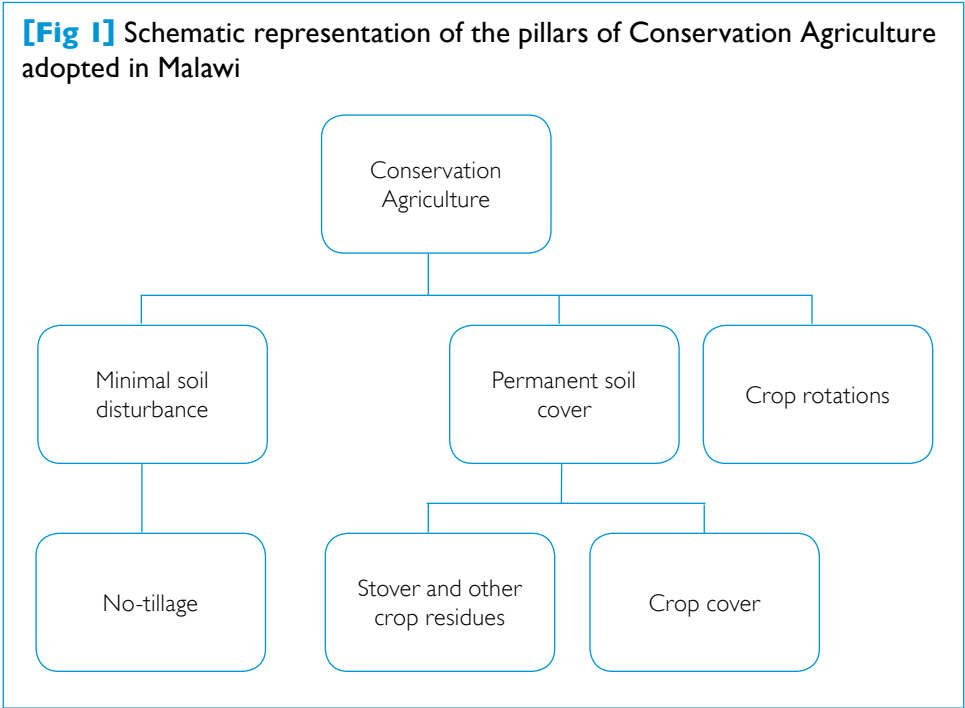
While this form of agriculture has continued to play a central role the livelihoods and economic development of the country, it has had varying levels of success and looks to be less resilient for the future. Indeed, Malawi's smallholder agriculture now seems to be neither productive enough to significantly reduce poverty for the farming majority, nor resilient to climate change. Furthermore, the routine annual tillage of the soil with associated removal or burning of plant residues is creating

its own environmental problems, notably of soil erosion. The reduced physical quality of soil makes it vulnerable to the impacts of drought, less responsive to fertilizer and less able to infiltrate rainfall or irrigation water.

It is unrealistic, however, to propose a broad-scale move away from maize cultivation. Maize remains the main staple, accounting for 50 to 90 per cent of calorific intake in most districts. It is cultivated on over 70 per cent of Malawi's arable land.

Among the first significant attempts to mainstream environmental objectives into a central development objective – improved maize productivity by small-scale farmers – was an ambitious range of programmes of conservation agriculture (CA). CA has now become an established, alternative way to cultivate maize and other crops. It entails the application of wise soil and water management practices that improve and safeguard the quality of land and rainwater resources, so that they can continue to meet the needs of the farmer, society and nature. The three main principles of conservation agriculture are: maintaining soil cover with plant residues; reducing mechanical soil disturbance (tillage); and the use of rotation and cover crops.¹² This mainstreaming initiative has been technologically driven, perhaps more so than others. This has enabled it to benefit from scientific knowledge about how to balance economic and environmental benefits in soil management, but it has perhaps made less progress to date in understanding and changing the mainstream decisions and behaviours of a majority of farmers. To improve its form and scale-up, CA might learn from those initiatives that have taken more participatory approaches.

[Fig 1] Schematic representation of the pillars of Conservation Agriculture adopted in Malawi



[12] Conservation agriculture is defined as “a resource-saving agricultural crop production system that strives to achieve acceptable profits together with high and sustained production levels while concurrently conserving the environment. It is based on enhancing natural biological processes above and below the ground. Interventions such as mechanical soil tillage are reduced to an absolute minimum and the use of external inputs such as agrochemicals and nutrients of mineral or organic are applied at an optimal level and in a way and quantity that does not interfere with, or disturb the biological processes.” (FAQ, 2007).

Drivers and rationale for CA in Malawi

The conservation agriculture movement in Malawi is driven by the realisation that excessive cultivation is destroying one of the country's most significant assets: the soil on which all farming depends; and in the process is also contaminating water resources. CA is spearheaded by the Land Resources Conservation Department (LRCD) of the Ministry of Agriculture. The LRCD realises that deteriorating soil structure, reduced moisture retention capacity, depletion of nutrients and organic matter, and decreased micro-fauna and flora are threats to soil fertility, crop productivity, general agricultural production and available surface water resources. The World Bank in 1992 estimated soil loss in Malawi at an average 20 tonnes per hectare per year, which has contributed to crop yield losses of between 4 and 11 per cent.

Malawi faces high risks of meteorological droughts and intra-seasonal dry spells, which can lead to low crop yields and sometimes total crop failures. Farmers who face uncertain rainfall patterns tend to choose low-input / low-return activities to minimise their exposure to risk. The result: poverty. Various strategies to circumvent drought have been recommended, ranging from breeding more drought-tolerant maize varieties, to changes in land surface configuration, and to changes in cropping systems and practices. These involve significant changes, however, which farmers perceive as risky.

Now though, there is sufficient evidence to show that good aggregation of soil particles, abundant surface crop residues and a biologically active soil are key to drought-proofing a soil, and the CA required to achieve this does not require farmers to take undue risks. Evidence from farmers suggests that CA seems to be highly effective in enhancing soil water recharge and water conservation in years with much lower rainfall. Given increasing climate variability and potential climate change, CA could represent a viable technical option towards improving smallholder efficiency; in particular, through lessening the expected impact of Malawi's environmental/climate hazards.

How conservation agriculture works in practice

Much of what has been achieved by farmers on the ground is far from the full CA prescription; such that it becomes more realistic to call what the farmers are practising as some form of CA. The most commonly adopted technologies are permanent planting ridges and planting basins, with some form of mulching with organic matter. Only a very small percentage of the farmers are also practising crop rotation and crop mixing, largely due to their limited land holding sizes.

The LRCD's aggregate figures on the extent of CA cover four aspects of CA: reduced tillage, use of herbicides¹³, crop residue management and pit planting in isolation. There are no figures for those adopting the whole package that can ensure minimum soil disturbance, ground cover and crop combination in space or time.

Implementation models

Conservation agriculture in Malawi is being implemented under the leadership of the National Conservation Agriculture Task Force (NCATF) which comprises members from government, NGOs and the private sector. There are many models being followed by various implementers, four of them being:

[13] It may be surprising to see the use of herbicides cited as a component of CA. One argument centres on the belief that minimum or zero disturbance to soil during weeding is only possible with herbicides. Others argue that it is possible to suppress weeds with adequate ground cover using crop residues, live mulch, plus light hand weeding. This debate is still inconclusive while research is being conducted at Chitedze Research Station. However, agriculture with reduced mechanical tillage is only possible when soil organisms can take over the task of tilling the soil. This has implications for the use of chemical farm inputs: synthetic pesticides and mineral fertilizers have to be used in ways that do not harm soil life.

- *Farm Income Diversification Programme (FIDP) model* under LRCD, where farmers are organised in groups for demonstrations. After sensitisation and training, target farmers are given start-up inputs in the first year on a revolving fund basis.
- *Total Land Care model* coordinated by an NGO operating in Malawi, Mozambique and Tanzania. Its work is premised on the need to increase the production and income levels of small-scale farmers whilst conserving and managing the wider natural resources base, through a range of soil and water conservation and conservation farming activities.
- *Food and Agriculture Organization (FAO) model* targets villages that are contiguous to one another in a given catchment. Farmers are organised in groups to access CA inputs provided by the project through a village revolving fund, administered by local leaders.
- *National Smallholder Farmers Association of Malawi (NASFAM) model* uses lead farmers to demonstrate technologies, having been trained by government extension front-line staff. They make considerable use of print and electronic media, including video.

There is a need, however, to move from CA mainstreaming as scaling-up niche farming models, to allying with a major, mainstream agricultural development programme. *The Sustainable Productivity Growth Initiative* within the Agriculture Sector Wide Approach-Support Project (ASWAp-SP) is a significantly funded project that supports initiatives aimed at sustainable improvement of food security, and includes activities for sustainable land and rainwater management. The initiative aims to increase smallholder adoption of sustainable maize-based cropping practices by adapting and up-scaling innovative conservation farming technologies, including minimum tillage and mulching with crop residues; permanent pit / basin planting, intercropping and rotation with legume crops and trees (agroforestry). This is potentially a major entry point open to LRCD for scaling-up CA activities in the country.

The bottom line – benefits from CA in Malawi

Environmental benefits include building up and maintenance of soil fertility; significant reduction in soil erosion; increased water infiltration; and reduction in emissions of greenhouse gases. The water conservation benefits of a mulch tillage system have been ascribed to reduced run-off and lower evaporation.

The *economic* benefit of conservation agriculture is two-fold. Firstly, the reduction of production costs, which the farmer can enjoy even in the first year; and secondly, the assurance of yield, by considerably reducing the risk of crop failure during droughts – food sufficiency being the most immediate need of all households in the country. CA has proved to reduce energy requirements (both fuel and labour) and capital (and its wear and tear). The total input requirement, particularly fertilizers and chemicals, also gradually reduces over time once CA principles are fully adopted.

Assuming that farmers have enough information regarding CA, the decision of farmers to adopt it, like any other investment decision on the farm, is often driven by the profit motive and perceptions of risk. Kamtimaleka (2009), evaluating FIDP-led CA work in Salima and Balaka, reported 75 per cent higher gross margins for farmers practising CA, compared to those not practising CA (\$552 ha⁻¹ yr⁻¹ vs. \$316 ha⁻¹ yr⁻¹). This resulted from both higher yields (4.6 t ha⁻¹ vs. 3.4 t ha⁻¹) and lower total variable costs per hectare (\$217 vs. \$255). It is argued that for smallholder farmers, however, cash benefits per unit of land may not be the only significant incentive; labour productivity and risk reduction are also important. Land preparation, ridge tillage, and weeding are labour-intensive with CA, although labour savings are evident where chemical weed control replaces hand hoe weeding. The issues of risk reduction need to be addressed more thoroughly in future research and monitoring work.

[Recommendation I] Strengthen farmer involvement in shaping CA approaches and ally CA more closely with mainstream agriculture programmes

It is clear from the above that, despite the benefits, CA is not yet fully mainstreamed.

Mainstreaming may need: (a) a better link with major (mainstream) agricultural development programmes, such as the Sustainable Productivity Growth Initiative within ASWAP-SP; and (b) the CA movement finding ways to involve farmers more intensively in action research, to identify a truly farmer-driven and farmer-accepted CA. Key aspects to consider are:

- a) *Positioning conservation agriculture squarely on a farmer-first, socio-ecological foundation*, rather than solely a technical one. The history of conservation agriculture worldwide includes too many examples where there is a mismatch between the technology being pushed by 'experts' and the actual socio-economic (and indeed biophysical) environment.
- b) *Enabling farmers to explore and interrogate different CA practices*, particularly through participatory activity and on-farm demonstrations, so that they can get to know the benefits, costs and practicalities of cropping techniques and equipment.
- c) *Fostering cooperation and dialogue* between scientists, suppliers and farmers, and between government and educational institutes.

In conclusion, this case serves to underscore the need to involve natural resource managers of all types as active players in p/e mainstreaming initiatives, whether they be research, planning or enterprise-based. Being passive participants of experts' 'integrated plans and solutions' will not realise the vision of sustainable, equitable and wealth-producing natural resource use.

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[Case H] Integrating environment in fisheries – co-management and traditional knowledge helping shift Lake Chilwa from recession to recovery

Friday Njaya

Mainstreaming instrument(s)	Using traditional knowledge and social organisation to support Lake Chilwa recovery, through fisheries co-management
Key actors	Department of Fisheries (DoF) Beach Village Committees Traditional authorities
Benefits	Using and keeping alive traditional practices that are resilient to environmental disequilibrium (changing lake levels and fish stock) Environmental and income security Stronger awareness by the community of the importance of lake environmental health and how to maximise it
Constraints	Difficulty of ensuring equity within fishers' organisations Clashing approaches between modern and traditional authorities
Recommendations	Improve understanding, recognition and support for community knowledge, especially where this helps to improve human and environmental resilience in disequilibrium environments

Author's key message

For mainstreaming environment to truly work, it has to resonate with our daily lives. Rather than be a top-down planning idea, traditional knowledge and practices must be at the centre of mainstreaming.

The economic and social significance of Lake Chilwa

Lake Chilwa offers an extraordinarily clear example of the linked fortunes of an environmental asset and the local economy – in this case, a large lake that is important for its commercial fishery. It can be summarised in this way: cyclical recession in the physical extent and productivity of Lake Chilwa regularly causes local economic recession; subsequent lake recovery spurs economic recovery; and local communities' management is key to ensuring a positive relationship between the local economy and the local ecology.

Lake Chilwa (Figure 1) is situated in the centre of the low-lying Chilwa-Phalombe plain in the southern part of Malawi. It is the second largest lake in Malawi, a shallow lake surrounded by a reed belt, wider on the north shore (about 15km wide) and north-east shore (1-2km wide) and a seasonally flooded plain. Its size varies from 2,077 km² to 2,107 km² depending on the season, but at times the lakes dries up completely (GoM, 1999; Njaya, 2002).

The flood plain fisheries of the lake are an important economic resource but they are unstable, characterised by seasonal and long-term fluctuations in the lake level. In good years, Lake Chilwa supplies almost half the total fish production in Malawi, in bad years almost none (Chiotha, 1995).

[Fig 2] Map of Lake Chilwa



Source: Kalk et al. (1979)

The importance of Lake Chilwa as a commercial fishery dates back to the 1940s, although earlier reports show trading with fish products under a barter system in the 1800s, after the arrival of the Nyanja, Yao and Portuguese (GoM, 1962; Kalk et al., 1979; Vaughan, 1982). The fishery is predominantly artisanal, with fishers catching Matemba (*Barbus paludinosus*) mostly with seines and fish traps, and Makumba (*Oreochromis shiranus*) and Mlamba (*Clarius gariepinus*) with gillnets. Malawi once exported dried Matemba to neighbouring Zimbabwe and Zambia in the 1980s, though most entered domestic markets (Salama & Jones, 1982). Makumba and Mlamba are usually destined for local markets.

In terms of the fishery value, Schuijt (1999) estimated an annual value of US\$17 million of all fishing from Lake Chilwa, whilst Njaya (2002) estimated a seine fishery value of about US\$8 million per year during a normal fishing year. This substantial value provides livelihoods to over 9,000 households connected to fishers and crew. With other people active along the fish value chain, including fish processors and traders, the figure can substantially increase. Indeed, Lake Chilwa is important for sustaining the livelihoods of many people in Malawi.

Lake Chilwa goes through cyclic recessions in its surface area and volume due to persistent droughts that usually last three to four years (Njaya et al., 1996). Records indicate eight occurrences of such recessions since 1879 (Njaya, 1998). When the lake recedes, the fishery collapses, but it can recover within three to four years after water refilling. After the 1995 recession and the recovery of the lake in the 1996-7 rainy season, for example, the estimated fish production from the lake rapidly increased from practically zero to 9,000 tonnes by 1999 (GoM, 2005).

Several environmental problems have been reported on Lake Chilwa (GoM 1999, Njaya 2009). The more serious tend to result from pollution from Zomba city that flows into the lake, and use of chemical fertilizers in dambo (wetland) areas where rice is grown. Siltation of rivers and the lake due to deforestation and cultivation along influent rivers is also an issue.

In all, the significance of Lake Chilwa is such that it has been extensively studied by scientists. Several studies conducted since 1979 form the basis for this case study.¹⁴

Introducing of co-management following the 1995 lake recession

Co-management was the decisive response to many cycles of recession and recovery of Lake Chilwa, in particular the crisis caused by a three-year drought from 1992 to 1994 (Njaya, 2009). There were two main drivers of this co-management. Firstly, a recognition of the effectiveness of traditional, resource-intensive post-recession fisheries restoration practice; and secondly, encouragement by recent pro-participation policies.

In the 1968 lake recession, the official strategy to facilitate recovery of the collapsed fishery involved artificial restocking by breeding local Makumba in ponds at Domasi and then releasing the young fish into the lake. However, this proved too expensive and demanding of technical skills. Furthermore, it was not possible to breed significant numbers of Matemba in ponds for restocking. Natural restocking was considered a more suitable strategy during the 1995 recession, therefore, and was suggested by both traditional leaders and DoF experts. The natural restocking programme involved conserving all fish stocks in Mpoto lagoon and reservoirs along the influent rivers. The aim was to have the conserved fish stocks repopulate the lake after refilling, which was a traditional household practice after many earlier lake recessions.

A coordinated, collective action involving river-based households was therefore developed as the fishery recovery strategy. It was influenced by more recent participatory development policies¹⁵ and provided a basis for the Lake Chilwa Fisheries Co-management Programme. The local leaders and the DoF organised meetings in several villages located along the major influent rivers, seeking to work out an effective partnership for the enforcement of rules, which they formulated and publicised via radio and newspapers. The rules were as follows:

- a ban on the use of poisonous plants (katupe) for fishing in rivers flowing into Lake Chilwa;
- a ban on seining operations in all influent rivers and lagoon; and
- a ban on the use of seines from 1996 to 1997.

The fisheries co-management programme comprised the following activities:

- community awareness about the impact of water recession on the fishery;
- conservation of remnant fish stocks in influent rivers and lagoons;
- community mobilisation into user committees and setting up of rules and bylaws;
- consolidation of the co-management arrangement by registering associations with the Office of the Registrar General for Empowerment;
- developing participatory fisheries management;

[14] The studies include: the Lake Chilwa Studies of Change in a Tropical Ecosystem in 1979; State of the Environment Studies for the Lake Chilwa Wetland and Catchment Management Project in 1999; the Broadening Access and Strengthening Input Market Survey (BASIS) Project; and reports by district fisheries offices in Phalombe, Machinga and Zomba. Additionally, historical literature sheds light on ethnographic information and traditional fisheries practices.

[15] The National Fisheries and Aquaculture Policy of 2001, and the Fisheries Conservation and Management Policy of 1997, both focus on local community participation. The MGDS recognises the role of the fishing community in resource management. The RAMSAR Convention promotes wise use of natural resources with local community participation.

- signing of management agreements; and
- monitoring implementation of the agreements by BVCs, chiefs' associations and the DoF.

The exclusion of seine fishers in the BVSCs meant that there was limited participation of other user groups in the co-management, however. Nevertheless, through meetings conducted during the United States International Development Agency (USAID) funded programme, many local seine fishers joined the co-management as partners through their own association, not wanting to recognise the existing association composed of chiefs alone.

Involvement of local leaders – and clashing interests

Developing the co-management arrangements was not an easy task. It revealed clashes between the government and traditional authorities, and the difficulties both of them have in ensuring equitable approaches among fishing households. It involved two strands of technological understanding – scientific and traditional – and exposed the difficulty of putting both on the same page.

The Department of Fisheries encouraged Beach Village Committees (BVCs) to form. Fishers, mostly those operating fish traps, gillnets and long lines, became members of 48 BVCs through elections conducted in fishing villages around the lake. The BVCs aimed to legitimise rules and regulations but these were not aligned with the existing traditional structures. Consequently, the BVCs did not have powers to regulate the fishery on their own.

While the Department of Fisheries was thinking about artificially restocking the lake as in the 1968 recession, several traditional Chiefs formulated and enforced rules that drew on traditional customs. These included a ban on seining to protect fish for repopulation after recovery of the lake within two to three, and a ban on using poisonous plants which kill fish non-selectively. They enforced sacred places and performed rituals to appease spirits, all of which drew attention to the importance of improving lake vitality and had a recognised basis in previous practice. The Chief's



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Lake Chilwa fish drying

fisheries management association, however, had no elected fisher to represent the interests of fishing households. This led to the perception that the reviewed rules were not actually in the interests of the fishers but were for the benefit of the Chiefs' association, which it was perceived would benefit from charging penalties in the form of fines imposed on illegal fishers (Lowore & Lowore, 1999; Njaya, 2002). Indeed, the Chiefs did exercise their own interests, which included soliciting fish catch portions from every seine fisher and imposing fines from illegal fishers. Nonetheless, with further influence from intermediaries such as the COMPASS project (Community Partnerships for Sustainable Resource Management), restructuring of the user committees resulted in a partial shift of powers from Chiefs to the fishers' own co-management groups.

Resulting outcomes of the co-management

The practices and interests of the user community have influenced the co-management techniques of fisheries resources in Lake Chilwa. Conservation of the remnant fish stocks in lagoons and influent rivers during recessions, for example, uses a strategy inherited from community practice in circumstances where the DoF had not succeeded in its artificial restocking programme. This has integrated local environmental understanding in restocking fish on the lake during recession.

Present management of the fisheries resource is making further progress in managing the environment. This includes banning those fishing methods that destroy the weeds, which local fishers claim are important as food and habitat for breeding fish. The user community itself has also banned nkacha, a non-selective fishing gear used in open waters of the lake. The benefits of these initiatives have included facilitating recovery of the fishery after recession; improved catches to an average of 9,000 tonnes per year; and, consequently, an enhanced local economy for those households in Lake Chilwa basin that are dependent on over 3,500 fishers, traders and processors.

A new initiative to address environmental degradation takes a climate change entry point: the Lake Chilwa Basin Climate Change Adaptation Project, which has a particular focus on reforestation. Whilst it aims at global carbon benefits, it is also expected to provide local benefits in the form of reduced soil erosion.

[Recommendation J] Improve understanding, recognition and support for community knowledge, especially where this helps to improve human and environmental resilience in disequilibrium environments

Environmental mainstreaming sometimes entails the difficult task of working out how to handle environmental extremes – floods, droughts, and so forth – in circumstances of considerable uncertainty and poor scientific knowledge. Communities that have evolved in such disequilibrium environments, for example where lakes recede, often have environmental management knowledge that can guide development – knowledge which needs to enter the mainstream. In the case of the Lake Chilwa initiative, that knowledge has proven sound and is accepted by the Department of Fisheries. Recognising such knowledge as a foundation for integrated environment/development activity, it now needs to be supported by scientific and economic study:

- Policies should recognise and support the role of communities and local knowledge in environmental management and development. Scientific information should be used to validate the impacts of this but should not replace local knowledge.
- Economic benefits of the application of local knowledge should be carefully monitored. In this case, this ensures that district councils and other players in water, irrigation/agriculture, fisheries and forestry can appreciate the importance of integrated management of lake basins and catchments.

[16] The recent *International Assessment of Agricultural Science and Technology for Development (2009)* is a prominent example; it included a *Sub-Saharan Africa assessment (2008)*.

- Malawi's scientific community should join the vanguard of global efforts in finding ways to link traditional and scientific knowledge.¹⁶ The various poverty/environment endeavours of the MGDS could be one key vehicle for this: where national-level development and environment institutions (including knowledge) are characteristically separate, local communities have often not separated these areas of knowledge. A focus on local p/e knowledge could therefore reveal findings of wider benefit.

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[Case I] Integrating climate change adaptation in farming – building on community knowledge of flooding and drought

Prof Sosten Chiotha & Gibson Mphopo

Mainstreaming instrument(s)	Identifying and supporting traditional community knowledge of farming in flooding and drought – what to plant and when
Key actors	Farming communities
Benefits	<p>Traditional practices responding to climate variability can integrate livelihood and environmental objectives</p> <p>Best use is made of periodic environmental changes such as flood and drought patterns</p> <p>Offers lessons for socially sustainable climate change adaptation</p>
Constraints	<p>Inadequate data and scientific correlation of traditional practice with specific environmental/economic outcomes</p> <p>Inadequate resources to support and build on community approaches to adaptation, in spite of increasingly urgent need</p>
Recommendations	<p>Document, assess and support community coping strategies, and ensure they are reflected in national and district climate change adaptation strategies</p> <p>Improve scientific capability to help communities in their prediction and risk management of environmental and climate events</p>

Author's key message

Climate change is inevitable and Malawi is rightly preparing long-term adaptation strategies. Community practices in coping with climate variability can form sound practical foundations for those strategies but they will need scientific validation and support, especially to improve early warning systems. **Sosten Chiotha**

Introduction

For many older Malawians, a key historical reference point always used to be 1949 – a year when there was serious famine in the country as a result of drought. Yet droughts, once isolated events, have become more frequent since the late 1970s, from which time other extreme weather events such as floods also increased in both frequency and magnitude.

Nsanje and Chikhwawa are two districts in Malawi that bear the brunt of frequent drought and flood episodes. These districts can, however, provide important lessons about how enduring community knowledge and action can help in adapting to the changing climate. Both districts may experience both drought and floods in the same growing season (usually from November to April) but farmers have adapted to this. Whenever the rainfall is adequate, smallholder farmers grow maize on land away from the flood plain; but they also grow sorghum, a more drought-tolerant crop, in case there is inadequate rainfall.

Whilst drought in Nsanje and Chikhwawa districts would clearly be a result of low rainfall, and floods would be due to high rainfall in the two districts, floods may also arise due to normal or higher rainfall in the neighbouring districts of Thyolo and Mulanje. These are at a higher elevation and sit on major catchments for the principal rivers in Nsanje, such as the Ruo. Similarly, Chikhwawa experiences floods from the Mwanza river; whose catchment is also outside the district.

Farmer adaptation to floods

In the flood plains of the Ruo, farmers have taken advantage of the flooding episodes to grow additional crops to supplement those grown under rainfed systems. These can prove to be especially important when rainfed agriculture fails. "*Timadikira kufika kwa Ruo*", farmers say: they wait for the Ruo river to flood to decide what crops to grow. For low-intensity flooding, they grow crops such as sweet potatoes, which do well with only residual moisture. When there is extensive and more persistent flooding, they grow rice.

This arrangement has worked particularly well in sites such as Makhanga in Nsanje, where there is a grassed buffer (about 100-200 m wide) between the riverbank and the flood plain under cultivation. Close to the edge of the buffer, rice is grown when there is standing water; further afield, sweet potatoes are grown when there is no standing water but sufficient residual moisture. Sometimes, rice paddies are prepared on dry land, usually between October and November, in anticipation of the flood. Neither of these two conditions (standing water or residual moisture) are suitable for maize, therefore maize is not one of the options under the flood-based agriculture in Makhanga. To date, around 3,000 farmers have gone into rice production, having learned rice production skills from the nearby Muona Rice Irrigation Scheme operating under the Ruo Cooperative Society.

This initiative is presented here to illustrate that environmental considerations have already been truly mainstreamed into farmer decisions. This mainstreaming example is not about an external programme, as is so often the assumption among donors and government bodies. The local communities are the main actors, having the local knowledge to monitor flood episodes and to decide the cropping options. Once these decisions are made, however, government extension workers may help with fine-tuning land husbandry practices and forecasting of droughts and floods, using modern scientific tools that may be more reliable. There is potential for both government and NGOs to support these communities with water lifting equipment (treadle pumps and diesel pumps). This will increase the area under production during the dry season and provide opportunities for further crop diversification beyond what is possible due to the floods alone.

Benefits for environment and development

This land use strategy in response to flooding provides an excellent example of environmental stewardship. The fact that a buffer is maintained between the riverbank and the area under cultivation, means that the flood plain retains natural wetland characteristics. This includes all the valuable ecosystem services associated with wetlands, such as buffering the intensity of floods and aiding long-term retention of moisture. The buffer also provides habitats for birds and other species, thereby protecting biodiversity, and it curbs soil erosion.

As for the developmental benefits, the cultivation systems provide a safety net against drought but, even in normal years, the farmers are able to grow additional crops, thereby increasing overall production in one year. Potatoes and rice are also sold to supplement household income.

Conclusion – traditional knowledge is of increasingly topical interest where it addresses the links between environment and development

The land use pattern in this case study shows a high level of community knowledge and planning: to design the cropping system suitable for this particular flood plain requires an action plan based on various sources of information. This information includes where to plant rice and sweet potatoes, when to prepare the site for growing the crops and some knowledge of the flooding pattern. The question that remains a challenge is how the farmers are able to predict floods or droughts. In their view, evidence of a high population of ants suggests flooding is imminent. They

also argue that floods alternate yearly. As for drought, they contend that the wind pattern can give an indication of impending drought. Further, if the cold season stretches into those months that would normally be warm, farmers hold that there will be a drought in the following rainy season.

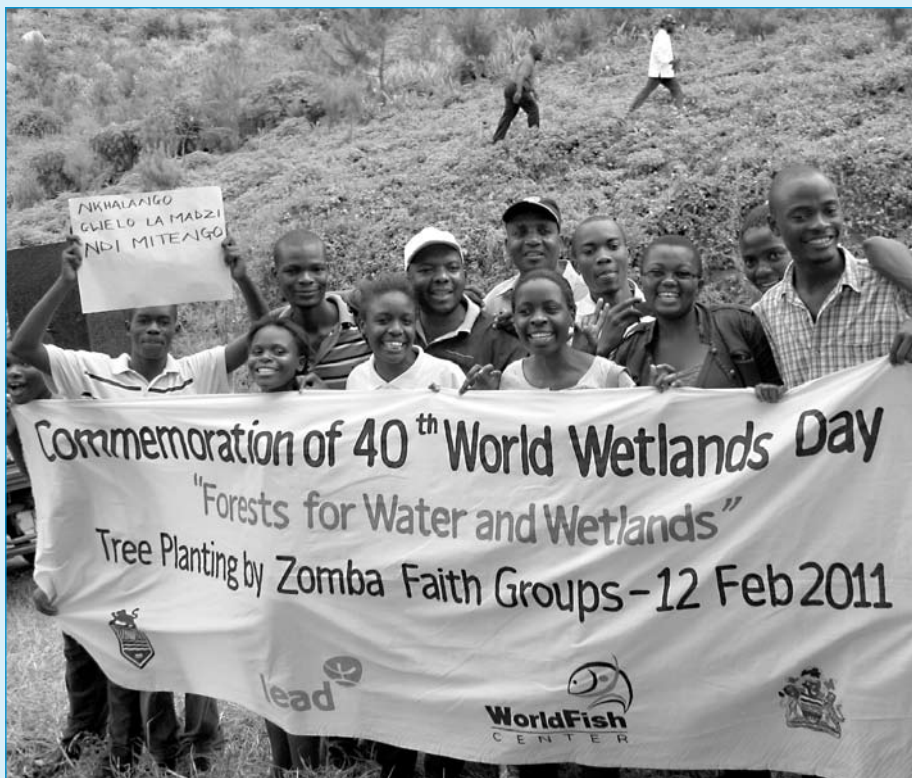
This is untested ground scientifically but it does demonstrate the existence of a knowledge system based on many years of environmental observation. It will require research to separate facts that may support practical climate change adaptation from inappropriate correlations or misconceptions. Integrating environment and development is therefore as much about linking the disciplines of science with the practice of local management, as it is about linking different government institutions in more holistic policy and planning.

[Recommendation K] Document, support and apply community knowledge of the links between environment and development; and augment it with modern science to ensure enduring climate change adaptation

Floods can be traumatic, and indeed in both Nsanje and Chikhwawa, there has been both damage to property and loss of life. What this case study has shown, however, is that by understanding the flood dynamics, the farmers have been able to adapt by developing a cropping system that takes advantage of the changing environmental system. This adaptive practice reduces their vulnerability to drought by taking advantage of higher rainfall in districts up-river. It suggests a range of recommendations:

- *A broad understanding of ecosystem dynamics* is advisable before fixing issues such as land use boundaries and technologies. Climate, water regimes and other natural factors are no longer as unchanging as they once might have been considered.
- *Local knowledge of flooding, means for predicting flood episodes, and adaptation practices* can provide a basis for resilience and adaptation to climate change. There are limits, however, in extending such knowledge from one locality to another. Such knowledge therefore needs documentation and, where necessary, further research, so that it informs better adaptation practices and policy at district and national levels. There is an immediate need for improved scientific capability to help communities in their prediction of environmental and climate events.
- *Cost-benefit analysis of local adaptation practices* can help to improve the case for scaling them up, or indeed for improving on them. In this case, the potential for switching to rice growing instead of continued maize production is worth examining more broadly.

[Box 3] Mainstreaming environment through faith-based activities



It is notable that some of the richest areas of biodiversity in Malawi are those that have been conserved as sacred areas for centuries by local communities. Environmental stewardship is a fundamental principle of many religious traditions worldwide. In Malawi, missionaries promoted environmental conservation as integral to their poverty alleviation work, which was largely agriculturally based, as well as focused on artisan skills such as carpentry, arts and craft that made use of Malawi's forest products. It is not by chance that many of Malawi's formally protected forests and river catchments also surround mission centres. Notable examples include Nkhoma Presbyterian church (CCAP) in Lilongwe district, Mua Catholic mission in Dezda, and Malosa (Chilema) Anglican mission in Zomba. Where there is good catchment protection and consequently reliable river discharge, some mission centres have established micro hydroelectric schemes.

Climate change has become a critical development challenge, and as a result, many faith-based organisations are now looking to their holy books to recall environmental stewardship as a moral obligation. Empowering communities to adapt to climate change has been widely embraced by faith-based organisations. LEAD SEA in Malawi organised a climate change session for faith leaders in May 2010 and since then there has been renewed interest by the faith communities to mainstream environment in their preaching, project activities and training of faith leaders. In Balaka district, for example, several faith-based organisations are implementing successful programmes that range from conservation agriculture to fish farming, which both utilise natural resources sustainably and improve household nutrition and incomes.

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[Case J] Integrating poor people’s energy access needs with the shift to clean energy – realising new potentials of biomass

Joseph Kalowekamo

Mainstreaming instrument(s)	Biomass briquette technology, using waste materials
Key actors	Department of Energy Affairs
Benefits	Retaining low-carbon benefits of renewables, while reducing the environmental degradation that usually results from the prevailing use of woodfuel Positive use of waste material
Constraints	Although in practice poor people will remain biomass-dependent, the attention of the Department of Energy remains focused on electricity, despite the many practical barriers to its expansion This is a small pilot, using materials that could not form a major part of Malawi’s energy portfolio
Recommendations	Modernise Malawi’s strategy for biomass energy, with criteria and targets to continually improve poor people’s access to clean energy forms Develop and roll out financially-sound business models for biomass briquettes and other forms of modern biomass energy

Author’s key message

The dual goals of poverty reduction and environmental conservation are both increasingly urgent, making the promotion of alternative energy sources that are accessible to poor people, that are clean, and that are low-carbon, a critical activity.

Malawi has an unusually high dependence on biomass for energy. According to the National Energy Policy (2003), Malawi depends excessively on biomass fuels. Firewood, charcoal, crop residues and animal dung together account for nearly 93 per cent of the country’s aggregate energy demand. Biomass energy in Malawi is principally firewood (80 per cent), charcoal (8.8 per cent) and crop/ industrial residues (11.2 per cent). In contrast, modern energy sources account for a very low 7 per cent. This is made up of electricity (2.3 per cent), petroleum products (3.5 per cent), coal (1.0 per cent) and other renewable energy sources (0.2 per cent).

In many ways, therefore, Malawi faces the opposite of the challenges facing higher-income countries, where there are moves to *increase* the use of biomass energy due to its environmental benefit of carbon-neutrality, as well as the costs and pollution of fossil fuels. In OECD and BRICS countries, strenuous efforts are being applied to researching and rolling out modern, clean renewable energy including biomass energy. Malawi could also benefit from new approaches to biomass, since biomass energy sources are potentially renewable, accessible, carbon-neutral and locally producible. What, therefore, would be the right level of biomass dependence in Malawi, and how can its economic, social and environmental performance be improved? What production and market changes are needed? These issues are addressed in this section, but they call for an actively managed and implemented renewable energy strategy, with an emphasis on biomass energy.

Malawi's energy portfolio has significant environmental and social impacts. Malawi's over-dependence on biomass fuels may be carbon-neutral but the way it is currently produced has negative impacts on the environment, due to deforestation in particular. It also significantly contributes to poor social welfare and health: the rural population bears the burden of woodfuel collection; and users often suffer the effects of indoor air pollution. The Department of Energy Affairs (DoE) estimates that household firewood and charcoal consumption, currently estimated at 7.5 million tonnes per annum (p.a.), exceeds sustainable supply by 3.7 million tonnes, leading to an annual destruction of between 50,000 and 75,000 hectares of natural forests. Since it takes nine tonnes of firewood to produce one tonne of charcoal using the inefficient traditional carbonization technologies being used in the country at the moment, the use of wood is significantly greater in charcoal-burning households than in firewood households.

Forest reserves have declined in the past 25 years from 47 per cent to 28 per cent of land cover, according to the Department of Forestry (DoF). Only 21 per cent of forests are in protected reserves. The country's high deforestation rate of 2.8 per cent p.a. is attributed largely to heavy woodfuel utilisation for firewood and charcoal production, including for curing tobacco. Deforestation has caused many problems, damaging catchment areas and leading to siltation and seasonal drying up of streams. Sedimentation in lakes and rivers has caused loss in fish biodiversity and production. Flash floods, as well as threatening the lives of people – particularly in the Lower Shire Valley and along Lake Malawi – damage roads and bridge infrastructure. In addition, women and young girls have to walk long distances to source firewood, and are denied opportunities for more productive activities such as employment and education as a result, making it difficult for Malawi to achieve the Millennium Development Goals (MDGs). It has further feedbacks into energy production: the siltation of Lake Malawi and the Shire river has interfered with hydropower generation for years (around 95 per cent of electricity in Malawi is generated from hydropower, with six out of the seven hydropower plants located along the Shire river).

The biomass market involves a large number of individual vendors involved in harvesting, transporting and marketing and lacks any formal structure. It is therefore very difficult to intervene effectively. According to the National Energy Policy (2003), the biomass trade employs nearly 55,000 individuals, jointly generating about US\$6 million per annum. Biomass is traded through informal structures, however, so revenue is neither recorded in national accounts nor taxed.

Biomass dependence and poverty are intimately tied together. The dominance of biomass fuels in the country's energy mix is largely attributed to poverty factors, which emanate from two sources. To producers and suppliers, the charcoal and firewood business is a lucrative income-generating activity, which does not carry any capital investment premium, since it is based on what are perceived as "God-given free trees". From the user's side, woodfuel is perceived as a source of relatively cheap energy, compared with the available modern energy sources such as electricity, petroleum and gas-based fuels (PAESP, 2006).

Malawi's initiatives to modernise energy sources have had mixed success, suffering from inefficiencies. For a long time, the national policy has been to transform the country's economy from one that is overly dependent on biomass energy to one with a high modern energy component, particularly electricity, to stimulate economic activity and reduce poverty. The Government of Malawi (GoM) has recently recognised, however, that a more realistic approach to the biomass energy sector is required at the same time, to address the energy needs of households – particularly those without access to electricity. The objective of the energy policy is therefore to meet national energy needs with increased efficiency and environmental sustainability. The GoM has set a goal of reducing biomass reliance from 93 per cent in 2000 to 50 per cent in 2020, a realistic target informed by

the penetration rates of modern biomass and electricity access, among other factors. Recent research suggests, however, that the contribution of biomass was still 88.5 per cent in 2008 (BEST, 2009), down from 93 per cent five years earlier.

Electricity has not ousted biomass and most people still cook with firewood or charcoal. Since Malawi's electricity is mainly produced from hydropower, its production process does not significantly damage the environment. However, due to frequent power black-outs, the electricity market has witnessed an upsurge in the number of companies, institutions and households buying standby generator-sets to meet part of their electricity needs, with a corresponding increase in greenhouse gas emissions. Insufficient and unreliable electricity supply has therefore exacerbated the use of firewood and charcoal in major towns and cities. Notwithstanding electricity availability, a large number of firewood users in Malawi (91 per cent) cook on traditional three-stone cookstoves with 10 to 14 per cent efficiency, resulting in very high energy losses. Such inefficiencies result in a high consumption of biomass fuels and therefore degraded forests. Around 90 per cent of charcoal consumers use ceramic charcoal stoves with 30 per cent efficiency, whilst the remaining 10 per cent are still using the traditional metal stoves with 20 per cent efficiency.

In 2007, the GoM, through its Ministry of Natural Resources, Energy and Environment launched the Promotion of Alternative Energy Sources Project (PAESP). This flagship was established to promote alternative energy sources to charcoal and firewood for cooking and heating, specifically



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Straw and organic briquettes

aiming to improve the state of the country's environment. This included expanding the use of improved ceramic stoves in poor urban households and reducing the proportion of households using three stone cookstoves.

The poverty/environment mainstreaming challenge in the energy sector is to get a system-wide linking of the many initiatives, changing the enabling conditions towards more sustainable outcomes. In its national policy document, the GoM realises that deforestation is not an energy issue per se, but rather it is linked to the whole question of poverty and people's survival. It cannot therefore be resolved by forest or energy interventions alone but rather by an integrated development path that alleviates poverty, sustains the environment and increases economic productivity. This is reflected in the Malawi Growth and Development Strategy (MGDS, 2005), which includes energy generation and supply, and climate change as two of the nine 'priorities within priorities'.

In the energy sector, the MGDS focuses primarily on the development of electricity infrastructure, seeking to increase access to electricity and thereby reduce reliance on biomass fuels. The MGDS does not provide clear guidance on biomass as such, that is, on how the energy needs of the over 90 per cent of the urban, peri-urban and rural population without access to electricity will be addressed. If this is not strategically planned, the bulk of the population will remain dependent on biomass energy for the foreseeable future. That dependence will continue the environmentally damaging woodfuel production and consumption approaches, and will not be able to access the modern biomass benefits that many other countries are now aiming for. This omission is typical of planning that prioritises sectors, in this case electricity, as opposed to prioritising outcomes, which in this case might be 'energy services that improve human and ecosystem wellbeing'.

While the GoM has limited funds for policing deforestation, there are a number of possible interventions that can redress the situation. These include the provision of subsidies to make electricity more affordable and widely available; planting more woodlots as fuelwood and charcoal farms; co-management of forests with communities (see Case F); and finding and promoting more efficient and affordable alternatives to firewood and charcoal, such as gas-based fuels, ethanol-based fuels and biomass briquettes (Malawi BEST, 2009).

The PEI-supported biomass briquette programme

The case of biomass briquettes is a particularly interesting example of an approach to address the linked environmental and social challenges in the energy sector. It offers some pointers to significant changes in the future. Since 2009, the Department of Energy (DoE), with financial support from Poverty and Environment Initiative (PEI) programme, has been promoting biomass briquettes and the associated stoves in Dedza, Ntcheu and Balaka Districts and Liwonde Township. The idea is that briquettes, by providing alternatives to charcoal and firewood, will reduce deforestation. Furthermore, briquettes do not involve the carbonisation that is associated with inefficient charcoal and firewood burning. The technology will mitigate some of the health and safety hazards from smoke, carbon monoxide and other fumes associated with usage of charcoal and firewood. Finally, women and children (especially girls), who spend many hours collecting fuelwood, will save that time by using briquettes.

To begin the scheme, the DoE held consultations with various stakeholders from the districts on the prospects for replacing charcoal and firewood with technology providing alternative energy (for cooking and heating). The consultative meetings were coordinated by the respective District Assemblies and helped groups of men and women to form into groups, who were later trained in biomass briquette and stove production by DoE staff. The locations for briquette production were determined by the availability of raw biomass material and markets.



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Organic briquettes

Briquetting is a technology that compresses raw biomass to form a product of higher bulk density, lower moisture content, and uniform size, shape and properties. In this project, the biomass used to produce the briquettes is sawdust and waste paper; in other areas, different sources could be used.

The trained groups of men and women have proven to be eager to learn production and use of biomass briquettes, spurred on by the increasing scarcity and escalating prices of firewood and charcoal, as well as the related environmental degradation. The groups see the briquette production as having potential to be a successful income-generating activity. To date, about 500 people have been trained in briquette and stove production under the PEI pilot programme and the number is expected to grow very soon. Although the stoves were specifically designed for briquettes, some households have also used them with firewood (in the absence of briquettes) and they are said to work well. The technology is thus not dependent upon a supply of briquettes, which is not yet guaranteed around the country.

According to the Briquette Evaluation Report (DoE, 2000), biomass briquettes were reported to be cheaper than firewood and charcoal. Although the briquette technology was not yet able to benefit from a good marketing strategy, or authoritative technical information on environmental, social and economic advantages, the government has now identified this technology as one of a portfolio of viable alternatives to charcoal and firewood to add to the existing list of LPG, paraffin and ethanol stoves. Whilst sawdust and waste paper can never be a major source of energy for the public, other biomass material can be suitable for briquetting. What this pilot shows is that it is both desirable and possible for Malawi's energy system to shift to a new approach that mainstreams environment and developmental needs:

- using waste material;
- avoiding carbon-intensive, expensive fossil fuels;
- improving health by lowering pollution;
- involving low-cost production;
- consequent job and livelihood creation or supplementation;
- being accessible to all, without expensive infrastructure; and
- supporting the special needs of women and children.

[Recommendation L] Modernise Malawi's strategy for biomass energy, with criteria and targets to continually improve poor people's access to clean energy forms

The twin challenge in improving energy in Malawi is therefore: (1) to make affordable energy *accessible to poor people*; and (2) to shift the overall energy portfolio towards *clean energy*. It is not easy to achieve both together; energy that is accessible to poor people (firewood and charcoal) is not always produced in environmentally sustainable ways, and clean energy sources such as electricity are not always accessible or affordable.

While the government's aim is for an increase in rural and peri-urban electrification through the Malawi Rural Electrification Programme, and penetration of modern and clean fuels (currently, the GoM is considering removing duty on importation of LPG), it is essential to recognise that biomass energy sources are potentially renewable, accessible, carbon-neutral and locally producible. Weighing up the technical, economic, environmental, governance and socio-cultural challenges in achieving a sustainable national energy portfolio, Malawian experts suggest a continuing reliance on biomass energy – albeit in more efficient, cleaner forms where possible.

Biomass is therefore still expected to make up 50 per cent of Malawi's energy mix by 2020, down from the current 88.5 per cent, and 30 per cent by 2050. With most of the rural and urban poor reliant on biomass energy for the foreseeable future, the challenge then is to ensure that biomass production and products are modernised, to reduce pressure on forests and trees. Biomass use also needs to be made more efficient, learning lessons from experiments such as the briquette example. This will require synchronisation of policies, among other factors, since biomass energy supply is not currently a policy mandate of the DoE. The supply side is instead covered under the Land Policy Act (2002), the Forestry Policy (1996) and the Forestry Act (1997). A modern biomass energy strategy has been drafted, with a framework of criteria and targets to continually improve poor people's access to clean energy forms that have a low environmental burden and high social and economic benefit. The strategy needs to be finalised, actively pursued, and to emphasise the rolling out of biomass energy approaches that make money for producers and save money for consumers.

The potential market is significant. To enhance interest in briquette production and use, and ensure sustainability of the technology, current charcoal and firewood suppliers and end-users should be made aware of costs, benefits and efficacy of briquette technology. The producers of briquettes should also be trained in marketing and business, so that they can realise the potential profits.

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[5] A stock-take – success factors in mainstreaming, remaining constraints, and opportunities

Success factors in p/e mainstreaming to date

The poverty/environment mainstreaming initiatives assessed in Chapters 2 to 4 are highly diverse. They are based variously on central government approaches, a range of partnerships with local communities and a mix of scientific, technological and local knowledge. There appear to be some common success factors in tackling poverty/environment issues, however. Eight can be identified. They might usefully be incorporated into the principles governing the work of PEI and other initiatives that intend to integrate environment and poverty reduction. Many of these lessons of success may also apply beyond Malawi's borders:

1. *Understanding of poverty as multifaceted:* Together, the case studies demonstrate a growing understanding that both poverty and prosperity are multifaceted and not focused on finance and financial deprivations alone. Many of the initiatives we showcase have made a priority of listening to community knowledge and perspectives, especially about their environmental assets, management approaches and problems. Furthermore, installing that broader understanding in institutions and their targets and monitoring is perhaps the critical step to creating incentives for authorities, NGOs and donors to address those multiple facets and not merely, for example, the dollars per day indicator.
2. *Understanding of environmental diversity and dynamics:* An understanding that environments are complex and locally-specific has been fundamental to change. Notably, good evidence of the often very complex ways that ecosystems and natural resources are linked to food, fibre, energy and water production and carbon storage; that is, to those services that are important to people's livelihoods. Furthermore, ensuring adequate investment in both scientific capacity to deliver that understanding, and in listening to local knowledge and putting it on the same page as scientific knowledge.
3. *Economic understanding of poverty/environment links:* Compelling economic evidence of the extent and impact of particular p/e issues and the costs and benefits of action to address them, are almost essential to convince mainstream authorities of the need to act. This evidence is still in short supply but can have a significant impact when available, as PEI's ground-breaking study has shown: it has already influenced the Environmental Outlook Report and the revised MGDS. Politicians need to know what the real main issues affecting the public are, and how many people they affect; government officials need to know the implications of this in terms of costs and benefits. Expenditure reviews and budgets are critical entry points for environmental considerations, and they are regular and mandatory requirements which can be made good use of. This is in direct contrast to environment decisions, which tend not to be so routine and obligatory.
4. *Time taken to achieve change, and long time horizons for planning:* Many of the cases reveal that it takes considerable time to build confidence in those institutions that need to change. Modern institutional arrangements have separated 'people' and 'environment'. Consequently, the procedures of people-focused institutions treat environment as a threat or risk, and vice versa. In such circumstances, fundamental procedural or behavioural barriers stand in the way of mainstreaming and it is taking considerable time to overcome these through positive

feedback and learning. Longer time horizons also need to be built into decisions on poverty and environment – addressing likely problems of tomorrow and not just today. Policy scenarios can help in thinking through these decisions. Mainstreaming is a social and institutional challenge that maps more closely to generational timescales than to project schedules.

5. *Leadership from government and beyond:* Mainstream authorities, knowledgeable champions at national level and, for example, traditional leadership at local level, are at least as important – and often more so – as environment stakeholders in driving environment mainstreaming. The cases make it clear that empowered communities, economic actors with a clear dependence on natural resource and environmental quality, and national development planning and finance authorities are often better positioned to drive the process and, importantly, to present the case to mainstream decision-makers. In many countries, enlightened business leaders are as important as government in driving linked poverty reduction and environmental outcomes. While this is not yet the case in Malawi, there are enough examples to suggest what might be achieved if business was to engage with government and communities around the common vision of, for example, a green Malawian economy.
6. *Partnerships between actors and between knowledge sources:* Almost all of the cases, and not just those focused on partnerships, involve different forms of collaboration. Most of these include local groups in active roles. Poverty/environment integration covers a range of outcomes; from global environmental benefits such as climate regulation and biodiversity conservation, to highly local private benefits such as farmer income. Where once those requirements conflicted, it is now clear that it is in everyone's interest to find ways to unite them, and partnerships can be the solution which is most efficient (low-cost), effective (enduring, high-impact) and equitable (minimising losers). Poverty/environment integration also necessitates a range of knowledge types: from scientific knowledge about the probabilities of climate change, to local knowledge about land management to manage climate-related risks and potentials. Again, where one knowledge system has been in the ascendancy in formal science, the limits of that knowledge in relation to environmental change and the limits of formal technology in relation to real local needs, are becoming acknowledged. It is in the common interest to pool knowledge, although this requires overcoming perceptions of local knowledge as somehow inferior. The partnerships explored in the case studies are often fragile and subject to governance and resource constraints, as well as lack of experience, but they point the way forward.
7. *Local control of resources and social organisation:* Many of the cases suggest that only when communities and/or resource user groups have adequate control over local environmental resources and access to good management technology, will they have an incentive to manage those resources with the continuity and longer timeframes necessary to secure public environmental benefits. While a number of forms of social organisation have been used in Malawi, and particularly in resource co-management, there is not yet clarity on the best forms of stakeholder organisation and management model.
8. *Catalytic role of public administration and its capacity, and well-grounded guidance:* Irrespective of the above point on partnerships, it is clear that central government, and specifically public administration, sets the fundamental enabling framework for environmental mainstreaming. Where this framework is not active beyond environment words in plans, little mainstreaming takes place. Some of the cases make it clear that procedural manuals, checklists and indeed case studies themselves are useful aids to help government officials to begin to dissolve unhelpful institutional boundaries and find greater coherence and synergies between environment and development work. Too often, grand plans for p/e integration have been made, whereas guidance material and associated training that helps professionals and decision-makers to make more integrated decisions in their daily work are at least as critical. Such guidance could lead

to more effective outcomes if it adopts a positive approach, not just a 'do-no-harm' safeguard approach. Frameworks and guidance for those who have to make financial decisions look to be especially promising.

In addition to these success factors, there are some enabling conditions that would appear to improve their effectiveness. It is likely that (a) a *free and effective press* and (b) a *quality education system*, both of which are increasingly exploring issues of environmental and livelihood significance, are important. The authors of this paper have not had the chance to explore these further in Malawi, but their role in raising issues and possibilities for change has been well documented elsewhere.

Remaining and new constraints to p/e mainstreaming

In spite of the above success factors that have enabled some mainstreaming using a variety of central government, bottom-up and knowledge tracks, p/e mainstreaming is not yet routine. Consequently, signs of improving p/e outcomes are not common in Malawi; at least as far as limited information suggests. We identify nine constraints that hinder further p/e integration:

1. *Mainstreaming initiatives are not all recognised, or networked together:* The diversity of mainstreaming experiences we have explored above has had very little lesson-learning, joint advocacy or partnering. Indeed, they may not have been placed on the same page until now. This may in part explain why few of them have reached significant scale and why they are neither coordinated nor well supported by policy. Many of the initiatives would benefit from better recognition as p/e players, with networking, financial support, and mobilisation.
2. *Policy incoherence, and focus on priority sectors:* For some critical p/e issues, the various policies that affect them are neither integrated nor up-to-date, especially for emerging concerns such as biofuels and carbon markets. These two top issues require specific governance, market and technical conditions to ensure positive social and environmental outcomes, but Malawi's policies are not yet enabling those conditions. A continued narrow approach to sector priorities also constrains integration. It is good to have environment recognised in a sectoral sense in the MDGS, and some recognition of the fact that the other MDGS priorities do have cross-cutting environmental foundations. Unless and until policy aims at integrated outcomes, however, p/e issues will never be fully addressed in a policy and planning environment that assumes that certain sectors have priority. There is little cross-cut environmental analysis and budgeting in the eight other priority MDGS themes. To continue with the energy sector example, the policy preoccupation with electricity is obscuring the reality that pro-poor modern biomass energy has much p/e potential.
3. *Limited inclusion of environment in economic methodology and procedures, and a narrow reliance on safeguard procedures to handle matters of environment:* There is little experience of environmental valuation and accounting in Malawi. This constrains effective case-making on the costs of inaction and/or the benefits of action, and consequently hinders effective prioritisation of investment. Instead, environment tends to be treated in a negative sense in key investment decisions, with EIA and occasionally SEA used as safeguards, although their results or conditions may be ignored in political decisions.
4. *Lack of operational models and investment to integrate poverty reduction and environment objectives:* Even if policy might support p/e mainstreaming, a lack of resources and technologies or of integrated p/e answers to practical livelihood questions, mean that policy cannot be implemented. Consequently, although national and sector plans are beginning to cover p/e issues and legislation is supportive, confidence in what the best ways forward are, and thus relevant investments at a significant scale, are lacking.



Playground water pump

5. *Limited information and monitoring of p/e issues:* Effective mainstreaming is driven by an effective exchange of information on poverty or environment that improves the chances of environment and poverty goals respectively being achieved. Yet there is a weak information base in Malawi on the specific p/e links of different groups of poor people and different ecosystems. In addition, there is weak demand for such information from non-environment authorities. P/e issues are not included in standard development project monitoring and household surveys, thereby limiting incentives to address them.
6. *Limited interdisciplinarity:* A lack of working experience and shared space between development and environmental professionals means that opportunities to develop joint perspectives and solutions have been rare. This is worsened by the lack of common language to help different sectors and professions consider the environmental needs of poor people. There is even ambiguity about what constitutes 'environment', which in Malawi is usually considered to be everything apart from natural resources, although by some does cover the full set of environmental assets (NRs) and environmental hazards.
7. *Limited participation in decisions:* There are significant capacity constraints to engaging poor people themselves in p/e diagnosis, discussion, planning and action. This is critically felt at local government level. Similar constraints are faced by environment interests in penetrating mainstream development decision-making. Stakeholders are often unable to influence the really key decisions, as they lack a detailed understanding of how political and bureaucratic processes actually work, when and by whom decisions are made, as well as their limitations.
8. *Low capacities for mainstreaming, especially at local level and in weaker ministries and NGOs.* Key local actors are potentially well-positioned to ensure mainstreamed outcomes, for example, district councils, VDCs, and community resource management organisations of various types, but few have the capacity or powers. Consequently, there is weak ownership of mainstreaming initiatives by policy-makers or by poor groups, some of which are perceived as being elite- and/or donor-driven.

9. *Last century's development paradigm*: Some policymakers, politicians and donors are still preoccupied with a development agenda that is focused on short-term economic growth, with narrow financial targets. Environment issues can be seen as a distraction, with the assumption that environment can be rehabilitated later, following economic growth. The emerging ideas of joint human/environmental wellbeing goals – as discussed internationally, for example in 'beyond GDP' initiatives of the French and UK governments involving Nobel economists, and of UNEP, governments and civil society actors for green economy – have not yet found their place in the Malawian development consensus. There are promising signs of change, however, which PEI is helping to lead.

Many of these constraints relate to the fundamental institutional problem introduced in Chapter 2, namely that environment is still considered an externality in economics and institutions. This anomaly is becoming exposed through current policy and business discussion of the potentials of environment-based economies and jobs – or green economy. Here, the strands of environment, economy and society are intimately and indivisibly woven together, so that each policy or activity aims to have positive impacts in all three of these major arenas.

Pulling the 'sustainability strands' together: PEI – a catalyst for linking and significantly scaling-up successful mainstreaming and tackling constraints

The Malawi Poverty and Environment Initiative (MPEI) aims to enhance the contribution of sustainable ENR management to poverty reduction, food security and economic growth. The Government of Malawi (GoM) is implementing the MPEI with support from the Global Poverty and Environment Initiative of the United Nations Development Programme (UNDP) and the United Nations Environmental Programme (UNEP).

PEI aims at changing governance, so that p/e issues are treated systemically from the beginning. Governance, in plain language, is about 'who gets to decide what, how and when'. Thus PEI has had a strong emphasis on the language of mainstream decision-making (economics), and its processes, aiming to improve the participation of affected p/e interests. As such, PEI's main work is aimed at formal national and sector policy and programme frameworks – especially the MGDS, the Guide to Executive Decision Making, district planning processes and the national budget process.

PEI has got to grips with the economics of environment and poverty. Perhaps the most influential product of PEI to date has been the major economic analysis explored in Case C. This is an unusual core activity for an environmental mainstreaming initiative but it has proven to be very effective. It has raised the awareness of policymakers concerning the economics of both sustainable and unsustainable management of the environment, with a focus on four themes: forestry resources; fisheries resources; wildlife resources; and soils. Its evidence has been extensively used not only for the Malawi State of Environment and Outlook Report but also for the revised MGDS. As the MGDS sets the medium-term framework, it is expected that the study will also have an influence on: the National Development Plan (NDP); national sector policies (in the current phase, PEI is helping to revise the Forestry Policy, 1996 and Fisheries Conservation and Aquaculture Management Act 1997); and annual budgets. The findings of the study will be distilled for use by members of parliament and cabinet in addition to government policymakers. The study and continuing analysis of this type is being seen as a key vehicle for mainstreaming at higher levels of policy-making, and it is hoped that it will stimulate greater action at policy and legislative levels.

[17] The budget stages are: (1) review policy; (2) set policy and undertake planning; (3) mobilise and allocate resources; (4) implement planned activities; (5) monitor activities and account for expenditure; and (6) evaluate and audit.

PEI is using the economics study findings to improve integration of ENRM within the Budgeting Process. Its guidance on integrating ENRM covers the six stages of the budget process as outlined by the World Bank (1998).¹⁷ For each stage, the guidance note identifies the key entry points and the main challenges faced, and suggests what needs to be done in relation to the environment, especially as it affects poverty reduction. In the long run, it advocates an Environmental Sector Wide Approach (E-SWAp) and enhancement of diversification of sources for the Environmental Fund to ensure coordinated efforts in the environmental sector (Moon, 2010).

PEI has also been of practical assistance in shaping policies so that they integrate p/e issues. PEI is providing support to integrate ENRM guidelines in the official policy-making guide (Guide to Executive Decision Making). It is also supporting the government in developing and rolling out decentralised environmental management guidelines, to support integrated local level planning and implementation at district level. With improved awareness and understanding, it is hoped that these guidelines will pave the way to further clear avenues for mainstreaming defined at local level.

PEI is currently supporting a key sector that has major p/e implications and is helping to shape the Agriculture Sector Wide Approach (ASWAp). PEI aims to provide decision-makers with a platform for environmentally conscious decisions, through developing ENRM sustainability indicators for the ASWAp Monitoring and Evaluation Framework. The ASWAp is a government umbrella for priority investments in agriculture outlined in the MGDS.

In these ways, PEI has already proven to be an effective bridge between mainstream decision-makers and those who have the knowledge to ensure the environmental implications of decisions are as positive as possible for poor people. It has done so by linking diverse professional communities, information sources and initiatives, in ways that both prove new insights for all concerned and make those insights available to mainstream decision-makers.

Moon (2010) concludes, however, by stressing that important institutional and political challenges remain to be addressed, in order to ensure effective integration of the environment into the budget, policy and planning processes. Chief amongst these is the insufficient political and institutional weight of the environment coordination agency in Malawi to mobilise and coordinate stakeholders within an intricate institutional milieu, and to address critical policy coherence challenges. Finally, success in bringing environmental policy into the budget process is, as with any sector policy, heavily dependent on the success of broader reforms within and between policy and budgeting. Important among these is the effective integration of the MGDS into the national budget process, that is, coherence between policy objectives and targets, and the distribution and use of public resources.

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[6] Recommendations

Malawi has more experience of integrating the twin endeavours of poverty reduction and environmental management than was immediately apparent before this review. To reiterate, environmental mainstreaming is a matter of long-term institutional change rather than a single technical project to tweak development plans. As such, effective mainstreaming will include a number of dimensions: from top-down to bottom-up; from reinforcing traditional practice to introducing new technology; from changing expenditure priorities to finding new investment. The Government of Malawi has recently introduced what has been missing – a 'poverty/environment mainstreaming project' in the form of PEI. The difference now is that we will not expect PEI to achieve mainstreaming alone. It can instead act as a catalyst to link up and build upon the contributing initiatives that we have identified, as well as insights from other countries. Ten preliminary recommendations are offered. They are addressed to all those in Malawi who are working to improve the environmental aspects of poverty reduction, or to ensure that Malawi's efforts towards a green economy are positive and helpful for poor people:

1. *Political vision of creating national wealth from sustainable use of environmental assets:* With environment both more valuable to poor people than has been assumed to date, and with environmental degradation more costly, some big decisions need to be made about how government institutions and businesses operate, as well as the roles of poor groups. We encourage government to develop a political vision in support of national wealth creation, including environmental wealth, with positive outcomes for poverty reduction. Debating the very real prospects for Malawi shaping a resilient green economy – one that thrives on sustainable use of natural resources, that achieves social justice in doing so, but that works carefully within ecological limits – could be one means to lead towards an enlightened political vision.
2. *Investment in environmental assets in support of all the MDGS priority areas and an Environment SWAp:* It is notable that our review, as well as the new Environmental Outlook Report and the 2010 PEI Economics study, all call for improved public and private investment in natural resource management, as a foundation for a sustainable economy and the livelihoods of the majority. This entails pro-poor investment too, so that, for example, smallholders can all participate in environmental value chains. Whilst investment is needed across all the nine MDGS areas, as environmental assets contribute to each of them – and environmental hazards pose risks to each – an Environment SWAp or Environment Fund might also be warranted so that the environment sector is in good shape to support other sectors. An environmental expenditure review process would reveal where the needs and potentials are.
3. *Building indicators of the cost of environmental degradation into national poverty and growth reporting:* Environmental potentials and risks need to be integrated into key economic and financial reports and decisions. This is especially the case in Malawi, where environment and natural resources form an unusually important foundation for development. A system should be built, step by step, to keep track of the changing status, use and value of environmental assets. The first step is better physical information on environmental stocks and flows of, for example, forest, fish and water resources. The next is to build on the PEI Economic Study valuation of key environmental assets, and track progress over time. Environment questions in public expenditure reviews would elicit a better picture of how much is being invested in maintaining the environmental assets, or in tackling environmental hazards, perhaps on a sector basis. All of this can better inform the budgeting process, so that the reality that environment



Treadle pump for irrigation

is a foundation for development is reflected in budget decisions. There has been some study of rates of return on natural resource production (forest, fish and farm products) in Malawi, which can help with the above. Evidence of rates of return on public ecosystem services such as water conservation, soil conservation, carbon storage and clean energy, is also now needed, however. With Malawi so dependent on environmental assets, it is important to monitor the cost of environmental degradation over time. This will require associated capacity development.

4. *Focusing poverty/environment integration on three key sectors: biomass energy, sustainable agriculture and water provision.* Mainstreaming is about action and not just planning, and it is tactically better to focus action where there is a will and the means, rather than try to achieve mainstreaming on all issues at once. Agriculture, energy and water are universally important for poor groups; they face severe threats from climate change, scarcities are becoming apparent, and the sectors have relatively significant budgets. Public procurement of, for example, sustainably-produced food, timber and other products can be another way for government to lead by example, as long as this is linked to work to improve sustainable supply in the domestic market.
5. *Putting poor groups' environment needs and knowledge centre-stage:* If environment and development objectives are to be pursued in a coherent way, local people on the ground need incentives to integrate both concerns, and the confidence to use best local practices that can achieve this. For example, community practices in coping with climate variability can form sound

practical foundations for climate adaptation strategies, although they will need scientific validation and support. Top-down processes need to find ways to listen to specific poor groups, and to understand and support their specific p/e needs and knowledge. This can be achieved by, for example, including p/e concerns in public hearings, participatory needs assessments, community action plans and bylaws. District Councils, NGOs and Village Development Committees need the capacity to identify and support integrated livelihood/environment development models.

6. *Mobilising and incentivising businesses to put linked poverty reduction and environment objectives at the centre of their business models:* The current focus on government plans and budgets as entry points for environmental consideration needs to be complemented with a focus on investment, enterprises and jobs that are accessible to poor people, that make better use of natural resources, and that have sustainability built in. To identify good business models in Malawi and to work out how to scale up successful approaches, we suggest engaging more with the private sector. In particular, exploring Malawian or SADC corporate-community partnerships, and the role of brokers and business support organisations that help SMEs play active roles in sustainable supply chains. Malawi should accept only the best environmental standards associated with trade, and at the same time build on the best indigenous technologies that satisfactorily work for the poor.
7. *Bringing together poverty/environment information and monitoring, focused on the Environmental Outlook Reporting process:* To inform both macro and micro policy, Malawi's environmental outlook reporting should be made a routine and recognised part of the machinery of government. It should adopt a continuous improvement programme to draw together relevant p/e information, organise it, communicate it in accessible ways to the general public, and make it available in just the right format to help the decision-making processes of mainstream policy-makers, planners and investors. For the new areas of carbon, green economy, and so on, Malawi would benefit from developing an efficient way to access and share international knowledge and ideas. A means also needs to be established to monitor progress in p/e mainstreaming – using a common set of p/e criteria, targets and indicators linked to the MGDS.
8. *Supporting interdisciplinary approaches:* To achieve integrated approaches on the ground, the hard boundaries separating disciplines such as economics and environmental science, and institutions such as government and business need to be broken down, and ways found to work together. One key to this is to organise workshops and other learning exercises – like the retreat held between our authors of very different backgrounds – to build bridges, and therefore form common understanding, targets and measures. Another method is to encourage research in p/e issues, helping to improve the empirical base for decision-making and investment in the environment, as well as to validate and improve traditional knowledge. Wherever possible, such exercises should involve poor groups.
9. *Poverty/environment mainstreaming forum to address both continuing and emerging challenges:* We strongly support the idea of a continuing forum that would accelerate best-practice learning and sharing of resources in mainstreaming environment into poverty reduction. Such a forum could continue the work of PEI and address emerging integrated challenges such as green economy. Our own small team of authors has learned a lot from each other and could form a core of this forum. There is real merit in networking together diverse p/e mainstreaming initiatives for joint learning, advocacy and mutual support, and generating catalogues of best practice to scale up. An annual meeting might be considered.
10. *Capacity and tools for mainstreaming:* To be truly mainstreamed, p/e issues need to be at the heart of the daily work of key institutions. This requires capacity. For example, politicians need the ability to understand and make decisions on the complex issues. Planners need facility in

using proven mainstreaming tools, notably environmental impact assessment (EIA), policy-oriented strategic environmental assessment (SEA), and public environmental expenditure reviews. Economists need upgrading in resource/environmental economics, to make much more use of economic methodologies to prepare the business case for environmental investment. Civil society needs the tools to scrutinise the changing status of environment in the development process and hold government to account. Business needs to move beyond niche corporate social responsibility, towards putting sustainability and poverty reduction at the heart of business models, and to enter into partnerships to achieve this. Farmers and community groups need capacities for effective management of natural resources and for accessing value chains. All stakeholders need the means to collaborate in ways that unite environment and development interests in a green economy. This is a long-term institutional change agenda, but is at the heart of what environmental mainstreaming needs to do: (re)build capacities to pursue environment and development goals *together* in a time of rapid change. It suggests a continuing role for PEI, or a similar cross-cutting initiative, for some time into the future.

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Mainstreaming the environment in Malawi's development: experience and next steps

Malawi is more dependent on environmental assets than most other countries, with over 80 per cent of Malawians involved in farming. The country is also vulnerable to environmental risks, such as floods and droughts and long-term climate change. If the stocks and flows of environmental assets are properly recognised, valued, and treated positively, however, Malawi could develop a truly green economy – wealth generation and social justice, all within ecological limits. To do this requires 'environmental mainstreaming': integrating environment into development policies, plans and budgets, as well as into day-to-day management.

This paper, produced by leading Malawian thinkers, explores several case studies of experience in environmental mainstreaming. It looks not only at top-down planning and coherence, but also at bottom-up action; notably, local authority and business partnerships that unleash community management potential. Where economics is the main language of policy and business, it shows how economic analysis of poverty-environment links has been influential in planning, budgeting and executive decision-making. Ten recommendations are offered that will enable the Malawi Growth and Development Strategy, as well as other initiatives, to ensure secure environmental foundations for Malawi's prosperity.

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International Institute for Environment and Development

80-86 Gray's Inn Road, London WC1X 8NH, UK

T: +44 (0)20 3463 7399 W: www.iied.org



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