

Agriculture and Food Security in Africa's Drylands

**MEETING THE REALITIES
OF SMALL-SCALE FARMERS**

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AGRA	Alliance for a Green Revolution in Africa
AUC	African Union Commission
CAAPD	Comprehensive Africa Agriculture Development Programme
CSD	Commission on Sustainable Development
FAO	(The United Nations) Food and Agricultural Organisation
GEF	Global Environmental Facility
GGWSSI	Great Green Wall for the Sahara and Sahel Initiative
IAASTD	International Assessment of Agricultural Science and Technology for Development
MDG	Millennium Development Goal
NEPAD	The New Partnership for Africa's Development
ODA	Overseas Development Assistance
PACD	Plan of Action to Combat Desertification
PSRP	Poverty Reduction Strategy Paper.
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Commission on the Environment and Development
UNCOD	United Nations Conference on Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Social and Cultural Organisation
WHO	World Health Organisation
WSSD	World Summit on Sustainable Development

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Table of Contents

Executive Summary	3
1 Introduction	4
1.1 Drylands and land degradation	4
1.2 Drylands and rural poverty	5
1.3 Local innovations and poverty reduction strategies in drylands	6
2 The international debate about agriculture in dryland areas	7
2.1 The policy context	8
2.2 New approaches or business as usual?	8
2.3 The Green Revolution revisited: old solutions for new problems?	10
2.4 A paradox unravelled: Dutch policies towards agriculture and dryland areas	12
3 Opportunities to make positive change: addressing the root causes	15
3.1 Successful local initiatives	15
3.2 Spreading local experiences: obstacles and opportunities	17
3.3 How the international community and national governments can support and encourage local initiatives	18
4 Conclusions and recommendations	20
Role of Both ENDS	24

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If the international community is serious about reaching Millenium Development Goals 1, 7 and 8, investing in drylands should be top priority.

This paper, published by Both ENDS, argues that marrying local practice and scientific knowledge and that ensuring the participation of CSO's in linking local people, scientists and decision-makers, are key to meeting basic needs in drylands, now and in the future.

EXECUTIVE SUMMARY

Some 40% of the earth's land surface is covered by semi-arid and arid ecosystems, otherwise known as drylands. More than two thirds of Africa and virtually all of the Middle East are classified as drylands. The great majority of people who live in these regions are highly dependent on these natural ecosystems for their livelihoods, which provide them with sustenance and shelter. These ecosystems have a delicate state of balance, which can easily be disrupted by land use changes, increasing pressure on resource use, climate change or a combination of all three. Some 70% of the world's drylands are affected by degradation, endangering the livelihoods of the people who live there. And some 70% of the world's poor and hungry live in drylands.

The global food crisis of 2007-8 prompted a welcome re-evaluation among the international community of the centrality of agriculture in development. Donors and investors have once again woken up to the fundamental importance of agriculture. New moves are afoot, particularly in Africa, to strengthen the role and position of agriculture and ensure a stable food supply. Yet many of these initiatives fail to grasp the realities, both environmental and economic, which most small-scale dryland farmers grapple with on a daily basis. Standard prescriptions for increasing agricultural productivity are unlikely to work in drylands. Agricultural interventions in drylands need to be tailored to local realities if they are to have any impact on these, the most food insecure, areas of the world.

Many dryland communities are developing responses to the problems they are facing. These draw on their own knowledge and often seek to strengthen their resilience by building on diversity and unique local characteristics. Yet such approaches often fall below the radar of policy makers and donors. If the joint goals of increasing food production, halving the number of hungry people in the world and maintaining the (dryland) environments on which these people depend are to be met it is essential that stronger bridges are built between policy prescriptions and grassroots experiences.

This paper examines the existing divide between current development policies related to agriculture and those related to drylands (at the international level, as well as those of the Dutch government) and the reality of food production in these, often hostile (physical and economic) environments. It argues that 'silver-bullet' solutions are unlikely to be successful in such situations and that far more grassroots involvement is required in selecting, developing and experimenting with new approaches to solving the food crisis. The central role of women in food production also needs to be acknowledged and supported if any progress is to be made towards meeting MDG1. Marrying local knowledge with scientific knowledge is not an easy task. Neither is it easy to align the interests of local communities with the priorities and operating procedures of donors and external agencies. But these challenges have to be faced. This paper points out the challenges and suggestions are made for potential ways forward. ■

1

INTRODUCTION

1.1

DRYLANDS AND LAND DEGRADATION

Some 40% of the earth's land surface is covered by semi-arid and arid ecosystems, otherwise known as drylands. More than two thirds of Africa and virtually all of the Middle East are classified as drylands. The majority of people who live in these

regions are highly dependent on rearing livestock and on cultivation, activities which rely on the quality of (and continued access to) natural resources, especially land and water. In most dryland countries these activities account for 30-50% of Gross Domestic Product and an even higher proportion of people's livelihoods. At the present time some 70% of the world's drylands are affected by degradation.

Land degradation and desertification reduce the biological and productive

potential of the land. The causes can be natural, man-made or a combination of the two. Dryland ecosystems have a specific and well-evolved balance between plants, animals, soils, water and people, but it is a fragile balance that is very easily disturbed and, once disturbed, very hard to restore. This is why it is so important to try to prevent degradation and desertification before they occur.

While there is a wealth of traditional knowledge about sound land use methods in most regions of the world, many dryland areas are experiencing changing land use practices (e.g. the burning of agricultural residues, ploughing techniques) that lead to the impoverishment of the soil and undermine production. These problems are exacerbated by climate change, increasing population pressure and competing demands

on the resource base, inadequate infrastructure and poor access to services (training, credit, etc.) and markets. According to the Africa Environment Outlook 2, diminishing soil fertility is often caused by the increasing use of inorganic chemicals, the reduction of fallow systems, increased monoculture and the cultivation of marginal areas¹. The effects of climate change, such as erratic rainfall and droughts add to this. Sometimes changes in land use practices are driven by short-term financial gain (for example large-scale mono-cropping or mining) which involve powerful interests that often take precedence over local food security. Issues of tenure, user rights and protective laws all strongly influence the opportunities that people have to use the land and its resources in a sustainable way. ■

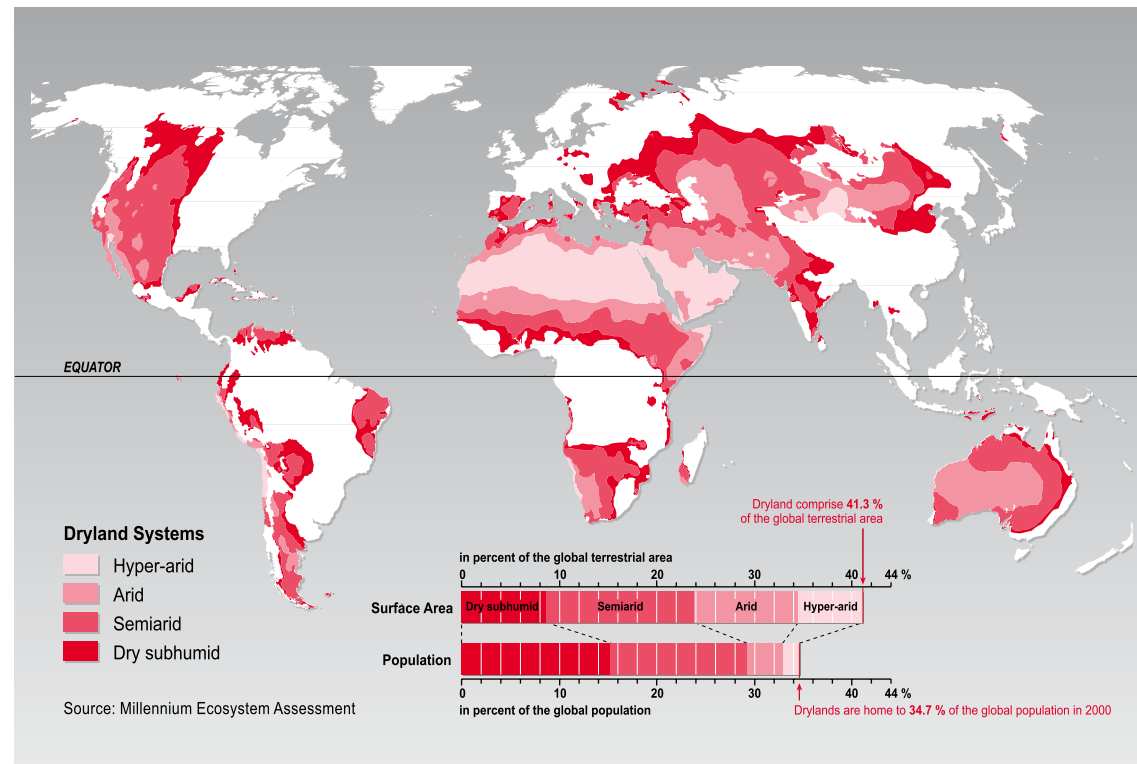
poverty suffer from a series of biases that prevent them from reaching the poor or perceiving their problems. Twenty six years later poverty alleviation efforts still fail to focus on the challenges facing the world's rural poor. Between 1990 and 2004, rich countries reduced the proportion of development funds devoted to agriculture, the mainstay of most poor people's livelihoods, from 12% to 4%².

Glossing over large differences between regions and households, the majority of farmers in Africa are smallholders, with access to less than two hectares of land and facing food shortages for at least three months a year³. Since the 1980s the average amount of arable land available per capita on the continent has declined from 0.38 to 0.25 ha, driven by both population growth and the exhaustion of existing arable land.

Growth in the agricultural sector and in off-farm employment (especially in small and medium enterprises) has a crucial role to play in improving the livelihoods of poor rural people. Intensification of agricultural production is needed to meet the food needs of the poor and this requires investments in soil fertility⁴. However, agricultural growth alone will not produce a decline in rural poverty. In most cases, the rural poor cannot compete in the marketplace or profit from international or regional trade developments.

Subsistence farmers are not, and are unlikely in the near future to successfully become, linked to world markets. But they can realistically expect to derive their income from local markets. Yet community supported projects and research indicate that the attempts to expand the production of commodity products for global markets is having a substantial negative impact on dryland areas. ■

THE WORLD'S DRYLAND SYSTEMS*



1.2

DRYLANDS AND RURAL POVERTY

The first Millennium Development Goal focuses on reducing poverty and enhancing food security by 2015. Today, 70% of people suffering from serious and permanent under-nourishment (an estimated 1 billion people) live in semi-arid and arid zones, especially in Africa. Sub-Saharan Africa is the only region in the world where average yields in grain harvests have not increased and food production per capita has decreased since the 1980's.

In 1983, Robert Chambers published a book entitled 'Rural Development: Putting the last first'. This book's key message was that the world's poor are concentrated in rural areas and that outsiders trying to understand

*Source: Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Desertification Synthesis. World Resources Institute, Washington, DC.

¹From UNEP (2006): Africa Environment Outlook 2. Nairobi: UNEP: Part F.

²NRC Handelsblad, 9/5/2008: Investments in agriculture back on the agenda.

³See Diagona, B (2003): Land Degradation in Sub-Saharan Africa: what explains the widespread adoption of unsustainable farming practices? Montana State University / Dept of Agricultural Economics.

⁴See for instance the findings of a CIAT/TSBF/ICRAF (CGIAR) workshop on soil fertility in Sub-Saharan Africa held in 2002.

1.3

LOCAL INNOVATIONS AND POVERTY REDUCTION STRATEGIES IN DRYLANDS

Many dryland areas are marginalised rural areas which attract little attention from central decision-makers and donors. As such it is often up to the communities themselves to draw on their own resources and ingenuity to find their own solutions to land degradation and drought. Many of these solutions are innovative and inspiring and deserve more attention and support than they currently receive. Most investments in drylands come from within dryland communities. Farmers will have a keen interest in investing in their own fields when they have, at least reasonably, secure tenure. Communities often draw up their own management and delivery systems, contributing their own labour, materials and skills. Such solutions are usually well-adapted to the local context and possibilities, answer local needs and show innovativeness in their use of local materials or in adapting technologies. With limited means these communities are finding ways to tackle the problems threatening their survival in ways that no policy-maker sitting behind a desk, in a far away capital city, could design.

It is difficult to grasp why so little attention and support is given to enhance the strategies that have been developed by and with local people, which have proven their value in enabling rural households to come closer to attaining food sovereignty and resilient livelihoods. Governments – in both the North and the South – as well the donor and research communities tend to respond to these challenges by reciting mantras about the necessity of mobilising

modern technology and the market. But these solutions often pay scant regard to local socio-economic and environmental realities or the potential negative impacts of inappropriate and externally-driven solutions. Experientially derived principles about sound soil, water and biomass management tend to be ignored, which in turn diminishes and undermines the identity and integrity of farmers and their communities.

If the international community is serious about eradicating extreme poverty and hunger (MDG1), ensuring environmental sustainability (MDG7) and developing a global partnership for development (MDG8), investing in drylands should be top priority. The only way to successfully and sustainably invest in drylands is to marry local practice and knowledge and scientific knowledge. This involves investing in local successful experiences, developing them further and disseminating them more widely. The participation of CSOs in linking local people, scientists and decision-makers is one key to success.

This paper seeks to address these three issues and the questions of how to ensure that basic needs in drylands are met now and how to revitalise degraded areas to ensure their future productivity. The following two sections explore the trends in the international debates on land use and agriculture in drylands, and look at some innovative and successful local responses to these challenges. In the last section we will draw conclusions and sketch the way forward. ■

2

THE INTERNATIONAL DEBATE ABOUT AGRICULTURE IN DRYLAND AREAS

Many rural poor live in remote areas on marginal lands, far from centres of economic activity and from policy makers. Because they are fully dependent on their natural surroundings these people put pressure on the ecosystems in which they live. But this is not the only source of pressure. Competing pressures from other land users (for, for example water or fuel) can undermine the carrying capacity of the environment and current patterns of climate change are having a profound effect on the ecology of dryland areas making it progressively harder to survive in them. Desertification and land degradation are currently undermining the very subsistence of these people, yet it is a topic that receives little attention in international debates.

Agriculture (including dryland agriculture) has been increasingly neglected as a development tool for twenty years or so, yet it has made an unexpected and forceful return to the policy agenda recently, following rapid and unprecedented increases in food prices in 2007 and 2008. While increased food prices are often good for producers they are unpopular with urban dwellers, near the centres of political power, and in the recent past two years they have caused widespread hardship. They also cause difficulty in many rural areas where most people face a food deficit for some months in the year (the 'hungry' or 'lean' months).

By November 2007, global food stocks had reached their lowest point in 25 years. In December 2007, *the Economist's* food-price index reached its highest level since 1845⁵. In the wake of the world food crisis (mostly felt by people in urban areas), the supply-side argument has gained ground, which focuses on the need to increase overall production rather than on measures to increase production in areas, or among communities, that

face the most severe food shortages. Rising food prices have been seen as a signal to invest in agricultural productivity, through launching a new green revolution, with the hope that poor farmers will benefit from these efforts. The 2008 World Bank's World Development Report⁶ was devoted to the 'rediscovery' of agriculture as a path for development and since then many multilateral and bilateral donor agencies have followed suit in putting agriculture back on the agenda.

In recent years the international community and African governments have launched a series of initiatives to promote sustainable land use, to boost agricultural productivity and to find solutions to the ongoing poverty and hunger faced by those living in Africa's drylands. In the first part of this section we review a selection of these and then the second part of this section focuses, in more detail, on the position of the Dutch government, the misalignment between some of its policy goals and mechanisms that need to be put in place to better focus delivery of support towards dryland communities. ■

⁵The Economist (6/12/2007): The end of cheap food. London: The Economist.

⁶The World Bank (2007) - World Development Report 2008 Agriculture for Development. The International Bank for Reconstruction and Development / The World Bank.

2.1

THE POLICY CONTEXT

The issues of drylands, land degradation and food production have been on the global agenda since the seventies, initially as a result of United Nations initiatives. In 1977, the United Nations Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD). This was driven by African countries, which were in the front line of desertification. Initially this was regarded as a stand-alone topic, although in later years attempts were made to link this issue with agriculture through, for example, the involvement of the FAO. In the 1990s the UNCED decided to renew efforts to combat desertification and launched the negotiations for the Convention to Combat Desertification (the UNCCD) which was adopted in June 1994 and ratified by 50 member states within just over two years, entering into force in December 1996. These UN initiatives as such have not led up to their promise. They received little priority within national agendas and became regarded as more bureaucratic than effective. Nevertheless the UNCCD remains the only global instrument on land degradation and desertification that we have.

In the 21st Century the emphasis on drylands has focused on including them within broader political agendas. It has also involved a broader constituency, following more general trends towards partnerships, with the private sector and private donors playing a more active role. In 2002, the Comprehensive Africa Agriculture Development Programme (CAADP) was prepared by FAO in collaboration with the NEPAD Secretariat. This initiative, built around the concept of an African Renaissance and spearheaded by South Africa and

Nigeria, aimed to build consensus around an Afro-centric vision for its own development. It was endorsed by African Ministers of Agriculture in 2003. The aims of CAADP include increasing the area of land under sustainable land management, improving rural infrastructure and trade-related capacity for market access, increasing food supply, reducing hunger, and conducting agricultural research⁷.

Yet in other respects there is an absence of policy towards drylands. For example the EC's political negotiations with Southern governments – notably within the context of the outcomes of political Country Development Strategies and trade agreements such as the Economic Partnership Agreements do not refer, or give any priority to, investing and improving in socio-economic and ecological conditions in drylands⁸. This despite the fact that a large majority of the rural poor in the developing world live in drylands and the commitment of the EU and individual member states to alleviating these issues. ■

2.2

NEW APPROACHES OR BUSINESS AS USUAL?

In 2002 the World Summit on Sustainable Development (WSSD) was held in South Africa. At this summit the FAO and the World Bank initiated a global consultative process on a proposed international assessment of the role of agricultural science and technology. The "International Assessment of Agricultural Science and Technology for Development (IAASTD)" is an international effort that evaluated the relevance, quality

and effectiveness of agricultural knowledge, science, and technology, and the effectiveness of related public and private sector policies and institutional arrangements. The overarching question that it addressed was: "How can agricultural knowledge, science, and technology be used to reduce hunger and poverty, improve rural livelihoods, and facilitate equitable, environmentally, socially and economically sustainable development through the generation, access to, and use of agricultural knowledge, science and technology?"

The IAASTD was launched as an intergovernmental process, with a multi-stakeholder Bureau, under the co-sponsorship of the FAO, GEF, UNDP, UNEP, UNESCO, the World Bank and WHO. In 2004 there was an agreement on the objectives, goals, scope, key questions, design, preparation and peer-review processes, outputs, timetable, budget and governance structure of the assessment. The final assessment report was compiled in 2009 by over 400 of the world's leading agricultural scientists. It is the most comprehensive account of agricultural knowledge, science and technology to date. The key final documents are the Global Summary for Decision Makers, and the Executive Summary of the Synthesis Report.

The main conclusions of IAASTD were listed in 22 findings. These recognised that agricultural knowledge, science and technology has contributed to substantial increases in agricultural production over time, contributing to food security, but that at the same time people have benefited unevenly from these yield increases. It states that the emphasis on increasing yields and productivity has, in some cases, had negative consequences on environmental sustainability. It also states that greater and more effective involvement of women

and use of their knowledge, skills and experience will advance progress towards sustainability and development goals and that targeting small-scale agricultural systems helps realise *existing* opportunities. It also firmly states that 'business as usual' is not the solution for Africa's increasing food crisis. Despite these recommendations, 'business as usual' seems to continue to be the main focus of the initiatives and programmes currently being proposed as a solution to the world food crisis.

On another front, the World Bank launched a multi-stakeholder initiative in Paris in June 2004, called TerrAfrica, which soon became integrated within NEPAD. TerrAfrica is a partnership that aims to address land degradation by scaling up harmonised support for effective and efficient country-driven Sustainable Land Management practices in Sub-Saharan African countries. It is a collective and inclusive partnership that builds on each partner's relative strengths.

TerrAfrica's partners are implementing a wide range of activities under the umbrella of a joint annual work programme. Activities under the work programme are organised around three mutually reinforcing 'Activity Lines':

- Coalition Building,
- Knowledge Management and
- Investments.

These together aim to generate the coalitions, advocacy, 'know-how', policies and investment packages needed for full and effective mainstreaming, up-scaling and financing of sustainable land management.

While already engaged in the TerrAfrica partnership, the African Union members under the lead of President Olusegun Obasanjo, President of the Federal Republic of Nigeria, proposed to the Fifth Ordinary Summit of the African

Union (AU) in July 2005 an initiative to establish a "Green Wall for the Sahara". The objective of the Initiative is to arrest the southern advance of the Sahara desert and to improve the livelihoods of the inhabitants of the Sahelo-Saharan zone. This initiative would help strengthen the implementation of the UNCCD in Africa and be complementary to it. Although there was no formal policy decision on the proposal, the Heads of State supported it and requested the Chairperson of the African Union Commission (AUC) to facilitate its formulation and implementation. One result of this has been the development of "The Great Green Wall for the Sahara and Sahel Initiative (GGWSSI)" which is now included as Priority Action 2 in the 2008-2010 Action Plan of the Africa – EU Partnership on Climate Change.

The original concept of GGWSSI has evolved from a tree planting initiative to a programme that more broadly promotes sustainable land management practices. It includes promoting an inter-sectoral approach to review, adapt and ensure enactment of laws and policies which promote sustainable land management – and publicise these. It is intended to integrate land management issues within national development strategies, including Poverty Reduction Strategy Papers (PRSPs). The GGWSSI is intended to contribute to the implementation of pan-continental strategic plans such as the NEPAD Comprehensive Africa Agriculture Development Programme and the NEPAD Environmental Plan. The initiative also contributes to increasing environmental sustainability within the framework of existing international environmental agreements, most notably contributing to the implementation of the UNCCD.

The GGWSSI is closely aligned to the TerrAfrica Initiative. In countries where it is being implemented,

⁷UNEP (2006): AEO 2, Op. Cit.

⁸See report by the EC co-authored by Both ENDS' staff on 'Activities undertaken and support provided by the European Community to countries in Asia, Latin America and Caribbean, Central and Eastern Europe regions in the period January 2001 – December 2005', submitted to UNCCD CRIC-5 by The European Commission, prepared by Imeson A., Koning P.C. de, Kistermann H., and Wolvekamp P.S., 2006.

the GGWSSI should complement the international / national level activities with decentralised and ground level activities. In countries where TerrAfrica has not been implemented, the GGWSSI should work at both national level and local levels, using the TerrAfrica Country Support Tool (CST). The initiative is considered unique in that it was initiated, and is being led, by Africa.

In 2006, during the African Fertiliser Summit, African Heads of State made a commitment to increase the use of inorganic fertilizers from an average of 8kg/ha to 50kg/ha by 2015 and promised concrete steps to provide farmers with better transport, credit, seeds, irrigation facilities, extension services and market information. In the same year, another high-profile initiative: the Alliance for a Green Revolution in Africa (AGRA) was set up, partly in response to a sustained rise in commodity prices which was seen as providing an incentive to improve Africa's agricultural productivity. AGRA seeks to boost productivity with new high-yielding seed varieties and input-intensive agriculture and profiles itself as rescuing the backward agricultural sector of the 'forgotten' continent and bringing it to the forefront of global production⁹. The first AGRA collaborations in 2006 focussed on developing more productive and resilient varieties of Africa's major food crops and supporting agricultural education. The Purchase for Progress programme of the World Food Program is designed to dovetail with AGRA and will provide a ready market for the additional production. As with AGRA itself, it relies on market mechanisms and pays little attention to issues of equity and redistribution.

AGRA, like GGWSSI, also responds to, and strongly endorses, the Comprehensive Africa Agriculture Development Programme. AGRA is chaired by Kofi A. Annan, the former

Secretary-General of the United Nations. It enjoys extensive support from the Rockefeller Foundation and the Bill & Melinda Gates Foundation, USAID and the UK's Department for International Development and maintains offices in Nairobi, Kenya and Accra, Ghana.

This focus on a Green Revolution for Africa was further enhanced during the recent session of the Commission on Sustainable Development (CSD), in May 2009. The chair of the commission, the Dutch Minister for Agriculture, Nature and Food Quality Gerda Verburg compiled the draft negotiating text for the session, in which she stated: "First and foremost we need a sustainable and home-grown Green Revolution, especially in Africa [...] This means calling for a revolution in ideas, a revolution in technologies and a revolution in agricultural and trade policies and market access as well as providing the financial means"¹⁰. Few would disagree with this concept of a Green Revolution, but the experiences from the past raise a number of pressing questions about whether such a revolution can indeed be sustainable. ■

2.3

THE GREEN REVOLUTION REVISITED: OLD SOLUTIONS FOR NEW PROBLEMS?

The first Green Revolution promoted the use and uptake of high yield seed varieties, fertilisers, together with infrastructure development, extension support and irrigation. This "revolution" started in Mexico and later spread to countries such as India and the Philippines. It managed to realise substantial increases in food

production, but at the same time was usually only taken up by relatively successful farmers who were able to invest in capital intensive agriculture. Thus, it had the unintended effects of strengthening the hand of those who were already economically powerful, increased the gap between rich and poor and made many small-scale farmers and many forms of agricultural labour redundant. The Green Revolution also had a number of environmental side effects, including a reduction of agro-biodiversity through mono-cropping, pollution through pesticides and fertiliser use, and soil salinisation through irrigation. It created unprecedented dependency on external inputs, and exposed farmers to hitherto unknown financial risks. To suggest therefore that this model provides the basis for a second, 'truly sustainable green revolution' ignores the well-documented negative impacts of the first one. There is little evidence to suggest how this second revolution will achieve a more sustainable outcome for the people of Africa, who were generally bypassed by the first Green Revolution.

Despite this the final text of the CSD17 called for a new green revolution to boost agricultural productivity in developing countries and particularly in Africa. This document notably lacks any mention of 'sustainable' in front of 'green revolution': the word having been consistently deleted on behalf of the G77, who feared that the connotation would be 'environmental'. In addition all references to 'sustainability criteria for agricultural practices' were deleted from the text. It remains far from clear how this planned revolution can be implemented in a way that will benefit farmers, and particularly small-scale and female farmers in drylands and remote areas.

Those with development interests at heart also urge caution when considering solutions that dovetail

too well with the commercial interests of international agri-business. International seed and agrochemical companies have become increasingly vertically integrated in recent years, with the top five companies having more than a 50% of the world's markets for these products¹¹. Not unnaturally they are keen to see policy outcomes that create favourable environments for their products. They take a keen interest in global agricultural fora and have often been accused of unduly seeking to influence policy choices. Yet, the solutions that they would prefer to see are often in conflict with the priorities of local people and their social and environmental realities. Bearing in mind logistics, the costs of chemical inputs and seeds and the limited effectiveness of extension services in Africa, it is likely that Green Revolution interventions will only a small fraction of the many millions of Africans suffering from hunger and poverty. It is likely that those they do reach will be the larger farmers with better access to markets.

Much African government spending is locked into paying for food imports, sustaining emergency food aid, maintaining low food prices for urban populations and paying off foreign debt. With the advent of the financial crisis in 2008 and the strong rise in food prices, this situation has deteriorated significantly. The agricultural policies of EU and USA create low world market prices for agricultural produce which results in an unfair playing field for agricultural production elsewhere. Measures need to be taken to reroute current spending patterns away from relief measures and towards long term investment in the future of African agriculture. For instance, the CAADP budget is slightly less than Africa's total foreign debt of US\$ 290 billion, i.e. debt cancellation could go a long way towards enabling such a transition.

Against a background of mounting global population growth, conventional wisdom argues that world food production needs a further boost, particularly within Africa, which has the highest proportion of hungry people of any continent. Yet adapting a new green revolution is likely to exacerbate existing environmental problems, contributing to a loss of natural and agricultural biodiversity and a weakening of African ecosystems. Research is increasingly bringing to the surface crucial information about how chemical inputs, fungicides and pesticides may have the undesired effect of making plants more susceptible to pests and diseases¹². In the context of climate change, which is already placing greater strains on ecosystems, production systems and livelihoods, this could be a recipe for disaster.

Overall it seems that the international community continues to confuse the issues of increasing overall production with that of improving the productive capacity of the most vulnerable (and most hungry) groups. An approach that focuses on the former is unlikely to benefit those people who are now most at risk and it may well further marginalise them. Small-scale dryland farmers are unlikely to be attracted to high cost, high input technologies or be able to afford them, nor do they have the knowledge or capacity to apply them. Local experts observe that the majority of farmers rely on their own resources and ingenuity and that this is unlikely to change significantly in the future. The most effective way of supporting them is by offering incentives that foster their independence and resilience rather than diminish it. This potentially tragic paradox is still very evident in international discourses. Dutch policy makers, while committed to achieving MDG 1, face some tough choices as to how they are to play their part in doing so, as shown in the following section. ■

⁹Alliance for a Green Revolution in Africa: Strategy for an African Green Revolution. Downloaded from <http://www.agra-alliance.org/section/about> at 1 September 2009.

¹⁰Ministry of Agriculture Nature and Food Quality (2009): Credibility, Cooperation and Commitment. Speech at the opening of the High level segment of the 17th session of the UN Commission on Sustainable Development.

¹¹Paul H and R. Steinbracher (2003) Hungry Corporations. London, Zed books.

¹²See for example Healthy Crops. A New Agricultural Revolution, by Francis Chaboussou, The Gaia Foundation, 2004.

2.4

A PARADOX UNRAVELLED: DUTCH POLICIES TOWARDS AGRICULTURE AND DRYLAND AREAS

The Dutch government has traditionally pursued separate policies towards agriculture and to poverty and land degradation in drylands. However, in 2008, a joint policy memorandum on Agriculture, Rural Economic Development and Food Security was drawn up by the Dutch Minister for Development Cooperation and the Minister for Agriculture, Nature and Food Quality. The document sets out the government's current thinking on these issues and how the Netherlands intends to address them in the future. The Dutch government is amongst the many donors who have 'rediscovered' agriculture in recent years and has recently earmarked a very welcome 400 million p.a. to support agriculture. However, it is unclear how much of this will reach small-scale farmers in dryland areas, as the general focus of the Dutch government's direct spending is towards multilateral, large-scale programmes. The Dutch government may, for example, well end up supporting AGRA (which is lauded as a model for success in the memorandum) and its interventions which are firmly rooted in the mould of the Green Revolution. This is despite the failings of this approach to make any serious impact on reducing the number of hungry people in large parts of the world in recent years.

Dutch Minister Verburg recognised this shortcoming herself at the 17th session of the CSD, where she said "the achievement of the first Millennium Development Goal of halving the number of people living in poverty seems further away than ever." A few months later, at the FAO World Summit on Food Security (November

2009), she called for a second Green Revolution, a sustainable and home grown one, particularly in Africa. "A revolution in ideas, a revolution in technologies and a revolution in agricultural and trade policies and market access, as well as providing the financial means."

Dutch policy appears to have a predominant focus on modernising agriculture, promoting technology-transfer and strengthening agricultural training and extension services. It could be argued that this approach is influenced by the 'success story' that is Dutch agriculture, with its strong emphasis on high input, intensive, specialised production. Equally the country's leading role as a trader in agricultural commodities, may lead politicians (and those who have their ear) to have an overly-optimistic vision about the developmental benefits of engagement in the global market. Some might also claim that a focus on 'hi-tech' approaches also opens up opportunities for Dutch suppliers and expertise. These factors may all influence the Dutch position on global agricultural policy.

The Dutch Minister for Agriculture recognises the importance of developing more drought-resistant and heat-tolerant crops as an important way of helping developing countries adapt to climate change. There is evidence of a somewhat technocratic approach to this problem through, for example, the Dutch Ministry of Development Cooperation recently (in 2008) made a substantial investment of 3 million Euro in ICARDA, the International Centre for Agricultural Research in Dry Areas, in 2008. This research institute is renowned for its high technology capacity and focus on plant genetics. It is also notable that the Dutch government has not yet endorsed the findings of the IAASTD report and appears to distance itself from its conclusions. All this points to an internal discordance in Dutch

policy: on the surface it places much importance on the role of civil society, small-scale investments and local entrepreneurship, yet the *direct* (bilateral) financial investments that it makes in agriculture seem to support projects and programmes that do not embody these values and, in some ways seem to undermine them.

At present, Dutch policy towards agriculture in developing countries does not seem to pay much attention to the paramount importance of agriculture in dryland regions, or address the most pressing problems, of land degradation and drought, that small-scale farmers in these regions are faced with. A more thorough discussion is needed about the potential conflicts that exist between promoting a Green Revolution and the goals of preventing land degradation, rural poverty and hunger.

The Dutch government is committed to helping alleviate poverty in drylands and promoting the sustainable use of natural resources in these areas in order to contribute to national economic development through protecting and restoring ecosystem functions and increasing the productivity of the natural resource base. It has identified 4 paths for achieving this objective:

- 1 Creating an enabling environment for local investments in sustainable land use and the management of natural resources;
- 2 Promoting partnerships for access to markets, through the participation of the commercial sector and aiming at markets with high added value;
- 3 Improving land and ownership rights;
- 4 Capacity development¹³.

The Dutch government recognises that previous policy measures have not contributed enough to the goal of alleviating poverty. Contributory factors included insufficient support to internalise sustainable land management in policy and practice

and too much emphasis on a project-based approach, which distracted attention from actual problems. The Dutch government has learnt and recognises that poverty eradication should be linked with investments in sustainable land use.

Dutch policy, as spelled out in 'Agriculture, Rural Economic Development and Food Security', lists increased market access, the participation of the commercial sector and a focus on high value crops as paths forward. This belies an underlying belief that access to the international market is the key to growth and poverty. This underplays the primary value of helping small-scale farmers address their more pressing problems of subsistence, survival, generating surpluses and supplying local markets to feed the regional population.

This can be a viable strategy for many: some 20 million farms in developing countries have expanded into large mechanised market-oriented businesses, but there are still over a *billion rural people running small-scale multi-functional family farms of less than two hectares* – and their numbers are growing. Over 80% of total agricultural production in Africa is consumed locally. In Brazil, family farmers work on 25% of the agricultural land yet produce 65% of the country's food. In Peru, smallholders control around 90% of farms and produce 60% of the total food¹⁴. Efforts to reduce hunger and poverty need to start with these people.

Despite the important role that smallholder farmers play in meeting local and regional needs there is a visible tendency for the Dutch government to invest in large-scale land use projects. One explanation for this is that it involves them in signing fewer contracts, thereby reducing transaction costs and increasing

efficiency, a strategy that is partly a response to political pressure to reduce the number of civil servants. As a result, support for initiatives like TerrAfrica and the GWSSI plays an increasingly large role in its international cooperation efforts and investments. The government finds TerrAfrica an attractive project for several reasons: it enhances coherence in policy, implementation, finance and expertise and is owned and led by African governments through NEPAD (rather than being a UN initiative). TerrAfrica also seeks to expand and up-scale existing knowledge and build on proven success stories and is seen as having a potential to make a significant contribution to achieving the MDGs and meeting the objectives of the climate change agenda. All these factors no doubt influenced the Dutch government's decision to make a substantial contribution (of USD 6 million into the Multi Donor Trust Fund to cover the period of January 2008 to April 2012) to TerrAfrica.

Some aspects of TerrAfrica and the Dutch government's support for it deserve further scrutiny and debate. Firstly, one of the ways identified by the Dutch government to achieve poverty alleviation and sustainable use of natural resources is to improve land and ownership rights. The assumption is that when people have access to and control over land, water and other natural resources, they are motivated to make long term investments in protecting and enhancing these resources. However, TerrAfrica does not explicitly seem to embrace this assumption. The Dutch government faces a challenge to ensure that these rights are indeed secured in the programme.

TerrAfrica has a mandate to include NGOs and CSOs in its activities and for these groups to be represented on the governing body of TerrAfrica. However, to date TerrAfrica has not showed enough sign of taking

¹³Source: DGIS 'Meer over droge gebieden' on http://www.minbuza.nl/nl/Onderwerpen/Millennium_Ontwikkelingsdoel_7_duurzaam_leefmilieu/Milieu/Thema_s/Droge_gebieden (accessed on 13 October 2009). LNV/ DGIS policy memorandum Agriculture, rural economic development and food security (May 2008).

¹⁴Family farming first, by Bara Gueye, Paulo Petersen, Roberto Ugas, Edith van Walsum and K.S. Gopa, in *The Brooker*, December 2009.

this responsibility to heart and genuinely sharing information about its activities with CSOs. The two CSO representatives on its Executive Committee have not been as effective as they could have been in building links between African CSOs and TerrAfrica, and TerrAfrica has not been very proactive in improving this situation in a transparent way. The Dutch government has repeatedly asked TerrAfrica to make greater efforts to include civil society within its activities and take its involvement with African civil society more seriously. This challenge also needs to be addressed by African CSOs themselves.

There is also a need for both TerrAfrica and the Dutch government – within or outside the framework of its international agricultural policy – to identify the mechanisms(s) to be used to support the many small-scale solutions that dryland agricultural communities are developing. Often these only need a little push (taking away barriers, such as unfavourable land tenure policies, giving incentives for up-scaling or making more information available so farmers get to make more informed choices) to become thriving and sustainable. Effort needs to go into finding ways of effectively up-scaling these initiatives¹⁵. These approaches need to be adopted as a matter of urgency.

Finally, while the Dutch government is supporting TerrAfrica's work in Africa, it has not yet announced plans for promoting sustainable natural resource use and alleviating poverty for the 1,627 billion people living in rural drylands outside Africa. This is a pressing challenge that deserves considerably more debate and consideration. ■

3

OPPORTUNITIES TO MAKE POSITIVE CHANGE: ADDRESSING THE ROOT CAUSES

At the other end of the spectrum from the 'grand' ventures described in section 2 lie small-scale alternatives emerging from the dryland communities and Civil Society Organisations (CSOs) themselves. These local grassroots initiatives often fall under the radar of policy makers and the international development community. There are several possible reasons for this, including the firm attachment of the international development community to providing silver bullet solutions and the poor performance of local CSOs and producers in monitoring and documenting their successes and experiences (because of a lack of capacities, finances and such like).

Dryland communities are often highly dependent on the natural resources surrounding them and have a direct relationship with them. As a result they can draw on their experience and intuition to react quickly to unexpected events. The ability of communities to cope and respond to change is based partly on historical experience, and partly on survival instincts, knowledge and ability to 'read their environment'. Local communities are often the first to recognise the symptoms of a crisis, since these can have such a profound effect on their daily lives.

CSOs can potentially provide a crucial link between local land users and higher level decision makers. They are the eyes and the ears of the local population, conserving, documenting and spreading traditional knowledge, monitoring the situation and implementing activities at a grass-roots level.

In this section we give some examples of local initiatives that have improved livelihood opportunities and food security of dryland communities, by taking the specific environmental conditions within drylands into account. We then go on to look at how policy makers and donors can contribute to supporting such initiatives and thereby make their development efforts more effective. ■

3.1

SUCCESSFUL LOCAL INITIATIVES

The 'African Re-greening Initiative'

Studies done by the Centre for International Cooperation of the Free University of Amsterdam show that vast areas of land in Niger and parts of Burkina Faso now have more vegetative cover than 20 years ago. The researchers discovered that this is due to farmers in the densely populated regions of these countries protecting and managing trees that naturally seed themselves on their farms.

The scale of this re-greening is quite remarkable. Estimates suggest that some 5 million hectares in Niger, in the provinces of Zinder en Maradi, have more vegetative cover than before as a result of an estimated 4 million farmers protecting trees. At an average density of 40 trees per hectare the study estimates that some 20 million trees have been nurtured and protected from grazing cattle. This makes it the largest reforestation initiative ever to have occurred in Africa – and one carried out largely through the initiative of farmers; in fact, the government and

¹⁵Source: DGIS 'Meer over droge gebieden' on http://www.minbuza.nl/nl/Onderwerpen/Millennium_Ontwikkelingsdoel_7_duurzaam_leefmilieu/Milieu/Thema_s/Droge_gebieden (accessed on 13 October 2009). LNV/ DGIS policy memorandum Agriculture, rural economic development and food security (May 2008).

international agencies were hardly aware that it was happening.

Conventional wisdom holds that population pressure has a negative effect on the natural resource base of drylands, but here it seems that farmers are adjusting their farming practices to accommodate an increasing population. Their strategies include protecting saplings, controlling grazing, and sustainable harvesting of woody materials from trees.

When mature the trees can provide additional fodder, help protect crops (particularly in their early growth stages) from desert winds, fix nitrogen, stabilise the soil, raise the water table and provide a source of wood. Their proximity to people's homes means that women spend much less time gathering wood. This farmer-led regeneration can eventually lead to the re-emergence of complex ecosystems. In one village in the Maradi region villagers protect 37 different tree species.

The initial triggers for farmers protecting saplings and trees appear to have been the drought years of the 1970s and 1980s, which convinced farmers of the need for protection of trees, strong demographic growth and a shift in perceptions about the ownership of trees – while they remain the property of the state farmers now have *de facto* usufruct rights over them and are prepared to invest in protecting them. A series of informal farmer-to-farmer exchanges slowly led to a spread in the practice that provides farmers with a capital asset for use in times of hardship and a regular stream of benefits.

Other farmers can be supported in taking up these initiatives by changes in user rights, by including farmer-led regeneration approaches within existing and new projects, by promoting farmer exchange visits and publicising this success story

through the mass media and extension services.

Sustainable growing and commercialisation of dryland endemic species

Drylands harbour a unique richness of species and breeds, interesting in terms of biodiversity but also potentially valuable from a commercial perspective. Drylands are often perceived as wastelands, whereas in reality these ecosystems provide water, food, fodder, fuel, shelter and medicinal plants. African herders graze no fewer than 150 varieties of cattle, 60 different strains of sheep and 50 different varieties of goats on drylands. There are many food and non-food products on the global market that have originated in drylands and only can be found in these areas. Neem, Aloe Vera and Shea Butter are just a few examples of natural products now widely found in the cosmetic industry, and gum arabic is used in many processed foods found in supermarkets.

Aspalathus linearis is a shrub that occurs naturally in western South Africa and has been utilised since pre-history to make rooibos tea. Once just a local product, rooibos is now consumed in many parts of the world. However, the global market is dominated by the fast-growing plantation variety, which is much less resistant to pests and droughts than its wild cousin. Its cultivation has led to widespread destruction of indigenous vegetation and land degradation. On the Suid Bokkeveld plateau a highly adapted, drought-resistant variety of *Aspalathus linearis* occurs naturally in the bio-diverse veld and is used to produce a high quality tea. For the area's small-scale farmers, the productivity of their lands (and thus their livelihoods) is extremely vulnerable to fluctuations in climate and weather patterns, to over-cultivation and to overgrazing. In 2002 the Heiveld Co-operative in

Suid Bokkeveld started marketing wild-harvested rooibos as a distinctive and sustainable product, and has achieved notable success. It is now sold as an exclusive and "climate friendly" product in European and North American markets, enabling the farmers to earn a sustainable income whilst actively caring for the environment.

A similar example of the sustainable use and exploitation of an endemic dryland species can be found in Sanliurfa Province in Turkey, close to the Syrian and Iraqi borders. Local agriculture is dominated by cotton mono-cropping, which accounts for 70% of agricultural production, but requires frequent irrigation (seven to eight times a year). This leads to increased salinity and the loss of nutrients in an already water-scarce area. The area is also home to several indigenous varieties of saffron, one of the most expensive spices in the world, which grow wild in the area. It takes 500 kilograms of bulbs to produce just 200 grams of flower stamens, yet its cultivation only requires 10% of the water that cotton needs. The local university explored the possibility of re-introducing commercial saffron cultivation into the area together with the local farmers. Farmers who took up saffron cultivation found that they doubled or tripled their incomes, which led other farmers to become interested in saffron production. Though small in scope, this project has received national and international acclaim (for example United Nations prizes) and has raised the profile of saffron production both within Turkey and further afield.

Other examples include PhytoTrade Africa, an association trading in natural products from southern African (such as Baobab fruit extract and Marula oil), and the promotion of camel's milk in Rajasthan (India). The Food and Agriculture Organisation (FAO) of the United Nations estimated in 2006¹⁶

that the potential global market for camel's milk could be billions of dollars. It differs significantly from cow's milk, containing enzymes with anti-bacterial and anti-viral properties as well as an insulin-like substance that reduces blood sugar levels in diabetes patients. ■

3.2

SPREADING LOCAL EXPERIENCES: OBSTACLES AND OPPORTUNITIES

There are plenty of good examples of how dryland inhabitants, in Africa and elsewhere, have adapted to the multiple challenges of climate change, water scarcity and food insecurity as well as of policies that successfully reach out to the poor. If there are plenty good examples, what stands in the way of scaling these up?

Scaling-up initiatives involves enabling and encouraging more people to adopt a successful idea, practice, innovation or solution to a certain problem. Of course, this only happens when people see the benefits of changing their normal practices: be it a higher yield, a more diverse diet, a less risky livelihood, a financial gain or a less demanding workload. Secondly, they need to be aware of the initiative, to understand it and to be able to predict how it could work in their own situation. Lack of documentation of best practices and bad communication are often mentioned as obstacles to up-scaling good practices. Communication of knowledge and ideas in the right form is essential. In societies with low levels of literacy this is rarely achieved solely through written documentation but first by enabling people to learn from and share the successes of others: "seeing is believing".

Once interest has been aroused, documentation is important to pass on the knowledge. Appropriate documentation is also important for another group of stakeholders in the scaling-up process: lack of good documentation specifically designed for policy makers is often mentioned as another obstacle to up-scaling. To influence policy, one needs to present sound evidence, i.e. well-documented examples of good practices. Doing this requires specific skills and dedicated resources. Often, it is only the large organisations with good communication officers and a research capability that manage to secure an audience with policy makers, while local voices remain unheard.

But is it necessary to be heard by policy makers in order to spread a good idea? Here we get to the core of the problem: the disconnection between governments, donors and local realities often creates situations in which policies and funding priorities tend to overrule and undermine the up-scaling of small-scale local solutions rather than promoting it. The policy and legal environment and the market situation all influence what local people can and will do. People have no incentive to encourage trees to regenerate on their farms if the government owns them. A sustainable technique of using shallow wells becomes irrelevant if neighbouring companies drill wells up to 200m deep, and have legal backing to do so. Even if such authority is not granted, a lack of government control can still discourage farmers from pursuing more sustainable options in the face of the unsustainable practices of others. Small-scale farming might become impossible if government policies favour producing commodities such as cotton or coffee for export markets, since this will place competing pressures on scarce local resources (land, water etc.). Priority should be given to undertake sustainable and diversified production. And what if

your poor, but stable existence, is drawn into war or civil conflict?

Strangely, little attention is paid to lessons from the past. These show that up-scaling needs bottom-up local initiatives and good practices and top-down support and enabling circumstances. This requires a long-term commitment (often at least five years), whereas most donor and governmental programmes have short time horizons and are driven by short-term objectives and results.

Integration is a key word in supporting up-scaling. This involves integrating interests, sectors and stakeholders; targeting both farmers and cattle breeders – as in many SSA countries they are symbiotic; aligning market circumstances and land use laws and policies and integrating environmental objectives into Poverty Reduction Strategies and other development programmes.

Establishing a sound connection between local field realities and national / international programmes, donors, the scientific community and decision makers is of vital importance. This can be done through civil society organisations, better documentation, site visits or other means. Making and keeping a strong a strong link is vital to ensure that government and donor policy is anchored in a realistic view of local realities. When bottom-up and top-down meet, this can lead to a fruitful collaboration in up-scaling successful practices can occur: it can trigger innovations and adaptations, lead to investment in, and dissemination of, proven or promising strategies.

Successful local initiatives often only occur when a number of circumstances are right. This is why it is often difficult to up-scale initiatives to other areas where not all of the required circumstances are in place, even if one is missing this might hamper successful

implementation. The successful scaling-up of local sustainable initiatives therefore needs to include a careful process of building up local-level experiences to higher levels, including all the involved stakeholders, and respecting local culture and local institutions. These are long-term processes that involve investing much time and energy. However the process of highlighting other people's positive experiences and achievements can inspire others and encourage them to adopt new practices. ■

3.3

HOW THE INTERNATIONAL COMMUNITY AND NATIONAL GOVERNMENTS CAN SUPPORT AND ENCOURAGE LOCAL INITIATIVES

The following issues are crucial to consider in the attempt to reach out to the people living in drylands, to fight poverty, to increase food production, and to stimulate sustainable management of natural resources.

Foster small-scale, low external input and low cost solutions: A high priority should be given to small-scale, low external-input and low cost solutions regarding agricultural production and sustainable land practices, activities and initiatives that are successful should be actively scouted, gathered, documented in order to realise existing opportunities.

Focus on local seed and livestock varieties: These are often best adapted to local conditions (soil, climate, sun hours etc.). Many improvements in agricultural production can be achieved by focusing on locally adapted species and varieties that are resilient to,

often extreme, local conditions and variations.

Focus on how pastoralists manage drylands: Pastoralist communities have extensive experience in drylands management. This experience is not only valuable to them, but also an important source of information for improving the sustainability of land management.

Concentrate on local food systems: Intensive export-oriented agriculture often has adverse consequences, leading to the export, and unsustainable management, of soil nutrients and water, or exploitative labour conditions. It also puts commercial considerations above local ecological realities – often introducing mono-cropping into areas that are vulnerable to drought, pests and disease. Local and regional food systems tend to be more diverse than commodity agriculture, more resilient to ecological and market shocks and provide a more varied diet and nutrient intake.

Focus on female agricultural producers: Female producers are at the heart of efforts for poverty reduction. They often remain in rural areas while the men go to urban areas (national and overseas) to find jobs and are more likely to be responsible for growing household food crops. As such they have extensive knowledge of, experience and practice with, agricultural production. Yet their potential often remains unfulfilled by a range of social and economic factors (e.g. lack of access to credit, extension or training). Policies and programmes should recognise this potential and these constraints and provide sufficient and suitable incentives to meet the needs of these female producers.

Foster the marriage between existing knowledge, technology and practice (formal, traditional and local) and science: The knowledge

and practice of people who live in drylands need to be incorporated into agricultural and land management discourses and be used as a basis for setting the agenda for agricultural and knowledge development.

Strengthen agroecological approaches: Agroecological sciences have a vast potential to addressing environmental issues while maintaining and increasing productivity.

Stimulate dialogue among land users: In order to for them to more clearly understand their requirements and challenges, to strengthen their position in negotiations and to better inform sustainable land use planning.

Foster dialogue between local land users and policy makers: Through capacity building of (representatives of) local land users and policy makers, they will come to a better understanding of each other, which in turn will lead to more balanced land use plans and decisions (at local, national and regional level) that tackle environmental degradation and social exclusion.

Enhance land tenure: People with no or poorly defined land tenure have no incentive to make long term investments in their land or in sustainable improvements of natural resources. Dialogues on comprehensive and unambiguous definition of land tenure systems should be stimulated with the aim of developing an understandable and unambiguous legal framework of land rights.

Promote investments in successful local initiatives: Create easily accessible systems of micro-credit and seed money that prioritise enhancing the sustainability of existing practices. Stimulate more small-grant systems under different financial mechanisms, such as the Climate Change Adaptation fund or GEF.

Prioritise agriculture: National governments should honour their commitment of directing 10 % of national budgets to agriculture and rural, development with a special focus on small-scale agricultural producers and sustainable food systems.

Develop effective, people-oriented extension services: Agricultural extension services (where they exist) should expand their focus on increasing the yields and productivity of selected crops and adopt a more integrated approach which embraces the sustainable use of natural resources, ecosystem services and storing, processing and marketing produce. Opportunities to support the innovation and entrepreneurship of small-scale agricultural producers should be actively explored. Special focus should be placed on the needs and constraints of women producers and to this end priority should be given to recruiting and training more female extension workers.

Mitigate against the negative impacts of international trade: Fragile national agricultural markets need protection from (often subsidised) international competition which can seriously undermine the productive potential of the domestic agricultural sector, having serious long-term negative effects on food security, poverty alleviation and the environment.

Broaden the analytical capacity and skills base among development professionals: Scientists, development practitioners and the staff of international and donor agencies and national and regional governments need to have a better understanding of complex rural realities if they are to improve them rather than undermining them by seeking to impose “quick fix” solutions that threaten to undermine the sustainability of local land use systems. ■

4 CONCLUSIONS AND RECOMMENDATIONS

More political priority needs to be given to dryland management and restoration. This is a key precondition to achieving the MDGs and allowing vulnerable communities to adapt to climate change¹⁷. These political changes need to be embedded in the framework of trade and ODA agreements, notably within EU Country Strategies with Southern host countries and other international policy negotiations.

Technocratic solutions to solving these problems, notably those channelled through the large multilateral institutions, have an irresistible attraction to policy makers. Economies of scale and the opportunity to reduce administrative costs are key factors in donors' preference for funding conventional large-scale schemes and institutions such as AGRA and other NEPAD-related initiatives. This leads decisions about budget allocations and aid packages to be taken in capital cities, far away from the field and with little or no involvement of the targeted beneficiaries themselves. This is despite the recorded shortcomings of 'silver bullet' solutions, classically a package of fertilisers, hybrid seeds and pesticides.

Small-scale farmers tend to spread their risks as a strategy against setbacks, engaging in a range of activities and raising a variety of crops in response to risky climatic, environmental and economic surroundings. Farmer-led initiatives put the reduction of these risks at the heart of growth strategies.

This is not to say that we need only bottom-up focus, or that all top-down programmes should be abandoned. Some suggest that we should look for a 'Rainbow Revolution' rather than a New Green Revolution, and carefully explore these ideas with all

the involved stakeholders, in order to promote food sovereignty in a sustainable way.

From a policy perspective, there is an urgent need to place more emphasis on participatory approaches and tools in order to capture and understand local land users' knowledge and practices for managing pests and diseases, for maintaining soil fertility and using water in the most effective way. Tapping into this knowledge is the most direct way to find solutions that suit local needs, local vulnerabilities, local preferences and the local environment¹⁸. For example, locally available knowledge on restoring vegetation and the productive capacity can contribute significantly to reducing pressure on fragile local resources.

Meaningful development and participation of grass-roots structures is required. This can be achieved by sharing and/or transferring authority, responsibility and resources to a more local level. Decentralising natural resource management programmes and policy decisions is an important aspect of this. In some cases, the role of national parliaments needs to be strengthened. Support and political commitment – both domestic and from the international community – to institutional reforms, democratic governance and gender issues in affected countries is required. Local

institutions also need capacity building and experience-sharing programmes for effective dryland management.

Gender needs to be more continuously addressed, especially in country level programmes and political dialogues. This is crucial to achieve an equitable and effective division of responsibilities and benefits in dryland management. Policy makers need to continually reflect on how they can support women producers. This, first of all, requires the acknowledgement, that one of the single most important factors underlying poverty, malnutrition, environmental degradation and the loss of biodiversity is the limited control that women have over land and their limited access to seeds, credit, extension services, education, markets, political power and other important resources. This implies a re-thinking of the costs and benefits of New Green Revolution approaches and re-evaluating them in relation to those of traditional land use systems. It requires more serious and committed investigation of and engagement with existing local land-use strategies: identifying and building on their strengths and potential and working on reducing their weaknesses. Above all this requires improving the knowledge and capacity of women who play a key role in assuring there is nutritious food on the household table.

With land degradation happening in 70% of the world's drylands that are used for agricultural production, efforts to halt it and to restore degraded lands need to be integrated with policies that target agriculture and food production. This involves identifying the root causes of degradation: demographic changes; adverse land tenure policies; social changes; markets; and macro-economic policies. Only then can policies be put in place to address these root causes. Often these will require improving equality of access to

assets such as land, water, inputs and know how – modern and traditional. They should also draw on sound land use management methods practised by people elsewhere working under more or less comparable conditions.

There are many examples where poorly designed external interventions have led to environmental destruction and human hardship. These lessons should not be forgotten. One of the major challenges in the coming years is to focus on positive examples of successful marriages between modern insights and techniques and traditional know-how and approaches. It is important to identify tangible, 'home grown', improvements in dryland management, crop yields and human welfare that can be adopted for further replication, up-scaling and used to inform policy development.

Improving agriculture and other systems of land use, including mixed systems of agro-forestry, range land management, harvesting non-timber forest products and veld products is by far the most cost-effective way of promoting pro-poor economic development. This process starts with what local people grow and harvest from their fields, their gardens and their surroundings. This approach requires a shift from the current donor and research agenda, which largely promote simplified production systems based on a few improved varieties of crops, to one in which agricultural and ecosystem diversity plays a much larger role.

This approach, which closely follows and builds on the realities faced by the poorest and their methods of risk aversion is the most prudent approach towards improving the conditions of the poor and their ability to feed themselves and their families. This approach directly relates to issues of land tenure, usufruct rights and gender. It also requires acknowledging that most rural people depend on a

wide range of sources of production: annual arable crops, kitchen gardens, perennial crops from trees and bushes, fruits, nuts, leaves and other sources rich in protein, vitamin and animal protein from milk or meat, fish or fowl.

In many cases local food production is severely limited by shortages in terms of minerals and other key ingredients. Africa's soils are often mineral depleted. This is often presented as an argument for increasing the use of fertilisers. But there are social, economic and ecological constraints to this solution-farmers (especially women) often do not have the money or access to credit to pay for these inputs – especially if they are for 'subsistence crops' and poor infrastructure means that such inputs are often not available. Finally, to be effective artificial fertilisers need an adequate supply of water something that, by definition, is in short supply in drylands. Often local resources can be used to address this deadlock, and this can involve manuring, composting or growing legumes to capture nitrogen. In some cases however these solutions may not be sufficient to overcome a serious mineral deficiency – which might then require targeted application of specific inputs ('micro-dosing'), although the social and economic constraints of actually getting these inputs to the farmers still need to be overcome.

A similar set of economic, social and ecological constraints also influences seed selection. Local, home grown, seed varieties are often better adapted to local climatic conditions than seeds brought in ex-situ. Farmers often rely on a diversity of crops and species that enable them to make better use of the different qualities of their land, make the best use of unreliable rainfall and provide a form of insurance against drought, pests and diseases¹⁹. Hybrid seeds may achieve higher yields but only under conditions that can be carefully controlled.

¹⁷See report by the EC co-authored by Both ENDS' staff on 'Activities undertaken and support provided by the European Community to countries in Asia, Latin America and Caribbean, Central and Eastern Europe regions in the period January 2001 – December 2005', submitted to UNCCD CRIC-5 by The European Commission, prepared by Imeson A., Koning P.C. de, Kistermann H., and Wolvekamp P.S., 2006.

¹⁸Managing pests and diseases with crop diversity. By Casandra Moore, GeneFlow News, Biodiversity International, 2008.

¹⁹Agricultural biodiversity: the key to solving the food crises? by Emile Erison, GeneFlow News, Biodiversity international, 2008.

Also the higher bulk of hybrids may be of a less nutritious value than traditional varieties, or less well suited to local cooking patterns. Lastly, using hybrids usually prevents farmers from producing their own seeds for the next sowing season, which means that the farmer has to buy seed every year instead of being able to set aside (the most promising) part of the harvest as seed material for the next season.

Much conventional agricultural development involves reducing the diversity of crops and diets, often with a resultant loss in nutritional value – or seasonal nutritional availability. New drives to promote a green revolution, such as those pursued by AGRA, will only increase this troubling development. At a time of rising global food prices, the need for self-reliance in food is greater than ever before²⁰, and food *sovereignty* is increasingly being recognised as a powerful way of ensuring food security.

Women in the dryland regions of Africa typically take charge of feeding and nourishing the family. In rural and peri-urban areas, women are often also responsible for collecting nutritious plants, tubers and other foodstuffs from the wild, which they use to supplement the family diet. They are responsible for managing small parcels on the family farm or for growing food in small gardens around the home. The crops that they produce include leafy traditional vegetables and 'minor' staples such as tubers, legumes etc. They sell any surplus in markets, providing a vital extra source of income – for schooling, clothing, etc. and emergency situations. These responsibilities provide women with a wealth of knowledge about local food and food preparation traditions, handed down from generation to generation.

Agricultural policies have led to a significant shift from traditional food

crops to cash crops such as ground nut, cotton, and rice, reducing the availability of traditional crops. Women play an important role in maintaining traditional diets and the dietary, seasonal and nutritional diversity that they represent. In this respect women can be considered the primary guardians of diversity. Their knowledge forms a cornerstone to achieve food sovereignty, nutrition and health in rural dryland regions.

Taking the realities of rural dryland food producing economies as a point of departure implies fully recognising the key role of women and giving them full support. This is fundamental if any progress is to be made in reaching MDG 1. In this respect the international community and African governments have clearly failed so far. This issue clearly needs to be addressed if any serious progress is to be made in this respect.

In May 2009 Both ENDS hosted a meeting with some leading development experts from the South²¹ in which the issues underlying this paper were discussed. Apart from contributing to the development of this briefing paper, a number of recommendations emerged about how to further support sustainable local land use initiatives and promote participative policies towards food security and dryland management. These included the following further recommendations:

- Get a better insight into the realities in the field and learn from local experiences. Invest in things that have proven successful.
- Emphasise the importance of bottom-up approaches, grassroots movements and farmer-to-farmer exchange and communication.
- Invest in partnerships.
- "Small amounts of money carefully and strategically invested in the right places and partnerships can sort more effect than large amounts of money in the wrong places."

- Bring good practice and positive stories into the limelight.
- Tackle the obstacles to up-scaling by improving documentation and communication of good practices and local success stories. Seeing = believing, so visits are more inspiring than stories on paper.
- To influence policy, start from evidence (i.e. well-documented examples of good practices) rather than from the conceptual level.
- Combine traditional governance systems and local practice with new approaches and technologies to manage natural resources, regulate access to water, land and grazing grounds.
- Invest in participatory research systems, local knowledge and practice to improve the productivity of local seeds. Reliance solely on external seed systems is not sustainable.
- Involve stakeholders at all levels, including academics, so that extension practitioners, producers and students have tools and knowledge about integrated natural resource management and best practices.
- Focus in the first instance on local markets and food demand, then on regional markets and only then look further afield.
- African governments need support in financial policy formulation. If they could make better use of the revenues from their natural resources they would have less need for foreign aid.
- Bring decision-makers from the South to forums like this expert-meeting.
- Reorient AGRA towards a sustainable Rainbow Revolution that takes into account the different agro-ecological settings, farmers' – male and female – stakes and interests and ecosystems' limitations. ■

²⁰Food and traditional in Nepal: a melting pot of diversity, by Bhuwon Sthapit, Ambika Thapa, in *GeneFlow News*, Biodiversity International, 2008.

²¹Including Mamadou Goita, a social-economist from Mali and Noel Oettle, a representative from the South African NGO Environmental Monitoring Group.

THE ROLE OF BOTH ENDS

With the support of the Dutch government (DGIS) and the European Commission, Both ENDS and its partners have focused on land degradation, and drylands in particular, as a key issue. The main focus has always been to support southern organisations in their efforts to protect their land and livelihoods.

In all corners of the world, local land users - farmers, pastoralists, forest dwellers - and civil society organisations have developed sound land management strategies, often based on local knowledge and local traditions, and these practices have stood the test of time. Many of these approaches have achieved noteworthy successes. However, these successes are often not published and need to be brought to the attention of colleagues in other countries as well as policy makers both in the South and in the North. Both ENDS is devoted to the analysis and promotion of these experiences and supports the exchange of learning experiences amongst southern partners and other key actors.

Both ENDS' staff co-authored the European Commission's Report to the UNCCD on activities undertaken and support provided by the Commission to combat desertification. Both ENDS is a managing member of Drynet, an EC-funded project that involves 14 civil society project partners in 17 countries that work together with dryland communities on abating land degradation, through practical initiatives and through policy dialogue. Drynet has grown into a network of organisations that strengthen civil society in their respective countries. It provides access to the information and skills needed to enhance knowledge and visibility so these organisations can positively influence policies. A second aim is to build international links between CSOs so that they can learn from each others' experiences and share knowledge. Drynet's partners have embarked on building dialogue, civil society platforms and cooperative structures within their countries, all of which are affected by desertification and land degradation. These strong CSO platforms have provided a crucial tool to promote collaboration between

civil society and policy makers, scientists and the private sector. They have provided a unique access point to local sources of knowledge on drylands and the unique resources that they harbour. They have laid the foundation for national cooperation, which is the basis for any meaningful representation in policy processes at the international level. The Drynet network plans to continue to represent the views and experiences of dryland communities and people and to bridge the gap between local dryland realities and political and development processes.

Both ENDS also builds links between civil society and local stakeholders in drylands and the scientific community through ongoing research projects. It is a partner in the DESIRE joint research project, under the EC Framework Programme. Both ENDS is a member of the International Alliance for the Regreening of Africa and is co-founder and member of the International Analog Forestry Network. Both of these partnerships support locally-led ecosystem regeneration.

Both ENDS strives for a socially just and sustainable world. To this end we support organisations in developing countries that are active in the areas of poverty alleviation and environmental management. These local organisations have in depth knowledge of what the problems are and often come up with inspiring, sustainable solutions. We support them by providing information and mediation in funding, lobbying and networking.

More information:
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