

# Financing Ecological Farming in Africa

A guide for international donors



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# Glossary

## Agroecology

Agroecology refers to the scientific discipline of studying agriculture as ecosystems, looking at all interactions and functions (i.e. producing food but also cycling nutrients, building resilience, etc.).

## Agroforestry

Greenpeace follows the definition of Agroforestry included in the IAASTD reports: “A dynamic, ecologically based, natural resources management system that, through the integration of trees in farms and in the landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels. Agroforestry focuses on the wide range of work with trees grown on farms and in rural landscapes. Among these are fertiliser trees for land regeneration, soil health and food security; fruit trees for nutrition; fodder trees that improve smallholder livestock production; timber and fuelwood trees for shelter and energy; medicinal trees to combat disease; and trees that produce gums, resins or latex products. Many of these trees are multipurpose, providing a range of social, economic and environmental benefits.”<sup>1</sup>

## Bio-fertilisers

Bio-fertilisers are substances that contain agriculturally beneficial micro-organisms which, when applied to the soil, can form mutually beneficial relationships with plants and can assist nutrient availability. Good quality bio-fertilisers need to be tailored for specific locations and crops, and made available to farmers at minimal or no cost.

## Chemical-Intensive Agriculture

This agricultural model is characterised by low fallow ratios of land, mechanisation of agriculture and the extensive use of chemical fertilisers and/or pesticides. Chemical-intensive agriculture is widely associated with the so-called green revolution and the many negative effects on humans and the environment, from algae blooms (dead zones) to poisoning of farmers and farm workers.

## Conservation Agriculture

Conservation Agriculture is a management system for growing crops that is based on three principles that should be applied together and reinforce each other: minimum physical soil disturbance (no tilling); permanent soil cover with live or dead plant material (mulching or growing cover crops); and crop diversification in space and time (growing complementary crops together, and crop rotation). Herbicides are sometimes promoted as being part of conservation agriculture, however, if conservation agriculture is to be truly sustainable, herbicides cannot form part of the system.

## Donors

We define donors broadly to include: governments providing bilateral overseas development assistance, multilateral financial institutions, philanthropies, and international (UN) development organisations.

## Ecological Farming

Ecological farming encompasses a wide range of modern crop and livestock management systems that seek to increase yields and incomes and maximise the sustainable use of local natural resources whilst minimising the need for external inputs. Ecological farming ensures healthy farming and healthy food for today and tomorrow, by protecting soil, water and climate. It promotes biodiversity, and does not contaminate the environment with chemical inputs or genetically engineered plant varieties.

## Organic Farming

Organic farming is a system of crop production that avoids the use of chemical fertilisers or chemical pest and disease control measures. The International Federation of Organic Agricultural Producers (IFOAM) defines organic agriculture as: “...a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.”<sup>2</sup>

## Push-Pull Technology

Push-Pull Technology is a form of ecological farming used to control parasitic weeds and pest insects that damage crops. It involves no use of chemical pesticides. Volatile chemicals from Desmodium, a leguminous herb, intercropped with the food crop (maize, sorghum or rice) repel corn borer moths (push), while volatile chemicals from a border of Napier Grass attract the moths, which lay eggs in the grass instead of the crop (pull). Desmodium also improves soil fertility, thereby combating the parasitic Striga weed. Push-pull is an affordable farming technique for small-scale farmers which not only increases yield, it also provides a source of fodder for animals (Napier Grass) which increases milk yields.

# Glossary of Acronyms

<b>ACICAFOC</b>	Central American NGO working on community agroforestry projects
<b>ADB</b>	Asian Development Bank
<b>AFD</b>	Agence Française de Développement
<b>AGRUCO</b>	Agroecology Programme at the University of Cochabamba, Bolivia
<b>ASEAN</b>	Association of South East Asian Nations
<b>AVSF</b>	Agronomes et Vétérinaires Sans Frontières
<b>BAMEX</b>	Business and Marketing Expansion (USAID supported project in Madagascar, 2004-2008)
<b>BOAM</b>	Burundi Organic Agriculture Movement
<b>BVLAC</b>	Bassin Versant Lac Alaotra Project (AFD funded project in Madagascar)
<b>CSB</b>	Community Seed Bank
<b>CEDAC</b>	Cambodian Centre for Study and Development in Agriculture
<b>CIDA</b>	Canadian International Development Agency
<b>CIP</b>	International Potato Centre
<b>CIRAD</b>	French Agricultural Research Centre for International Development
<b>COCOA-RAAN</b>	Alternative Indigenous and Afro-Descendants and Agroforestry Project (Nicaragua)
<b>EAC</b>	East African Community
<b>ERI</b>	Eco-Regional Initiative (USAID supported project in Madagascar, 2004-2009)
<b>FAO</b>	UN Food and Agriculture Organisation
<b>FFS</b>	Farmer Field Schools
<b>GEF</b>	Global Environment Facility
<b>GIZ/ GTZ</b>	German Agency for International Technical Cooperation
<b>IFAD</b>	International Fund for Agricultural Development
<b>ISSAndes</b>	Innovación para la Seguridad y Soberanía Alimentaria en los Andes (research project supported by the EU and CIP)
<b>JSDF</b>	Japan Social Development Fund
<b>KOAN</b>	Kenya Organic Agriculture Network
<b>LDI</b>	Landscape Development Initiative (USAID-supported project in Madagascar, 1998-2004)

<b>LEISA</b>	Low External Input and Sustainable Agriculture
<b>LI-BIRD</b>	Local Initiatives for Biodiversity Research and Development, Nepal
<b>MAFFAP</b>	Malawi Farmer-to-Farmer Agroecology project
<b>MAECH</b>	Association of Municipalities for School Feeding of Chuquisaca, Bolivia
<b>NACTA</b>	North American Colleges and Teachers of Agriculture
<b>NOGAMU</b>	National Organic Agriculture Movement of Uganda
<b>NGO</b>	Non-Governmental Organisation
<b>PAA</b>	Programa de Aquisicao de Alimentos, Brazil
<b>PELUM</b>	Participatory Ecological Land Use Movement (East/ Southern Africa)
<b>PLANAPO</b>	National Policy for Agroecology and Organic Production, Brazil
<b>PNAE</b>	National School Feeding Programme, Brazil
<b>PPB</b>	Participatory Plant Breeding
<b>PPP</b>	Public Private Partnership
<b>PVS</b>	Participatory Varietal Selection
<b>ROAM</b>	Rwanda Organic Agriculture Movement
<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>SFHC</b>	Soils, Food and Healthy Communities, Malawi
<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>SLU</b>	Swedish University of Agricultural Sciences
<b>SNV</b>	Netherlands Development Organisation
<b>SRI/ SCI</b>	System of Rice Intensification/ System of Crop Intensification
<b>TOAM</b>	Tanzania Organic Agriculture Movement
<b>UNCTAD</b>	UN Conference on Trade and Development
<b>UNEP</b>	United Nations Environment Programme
<b>USAID</b>	United States Agency for International Development
<b>WEF</b>	World Economic Forum
<b>WFP</b>	World Food Programme
<b>WHO</b>	World Health Organisation



# Foreword

I am pleased to pen down a few thoughts on the Prologue of this informative guide on financing Ecological Farming in Africa. The arrival on the scene of this publication is timely given that Ecological Farming is a pre-requisite to promoting healthy farming and healthy food for today and tomorrow.

I wish to congratulate Greenpeace Africa for piecing together this key document as a tool to guide Development Partners in their quest to foster collaboration with stakeholders in the agricultural sector.

The guide focuses on four channels deemed as effective conduits for scaling-up investment into Ecological Farming such as: academic and public research and training institutions. It also delves into issues considered fundamental for survival of community seed banks and seed exchange networks; public procurement schemes and producer organisations and cooperatives.

Scientific evidence demonstrates that Ecological Farming protects the soil, water, and climate, and plays a fundamental role in promoting biodiversity. In this time and age, agro-ecological methods outperform the use of chemical fertilisers in boosting food production especially in unfavourable environments.

Land today is a central resource not just to livelihoods and food security but also to identity. Even in given instances where a piece of land is tagged as unproductive, simple technology like irrigation and terracing or the enhancement of ecological farming may tremendously transform it.

There is no doubt that we need a paradigm shift in the strategies revolving on agricultural development. This is essential so that we encourage and leverage ecological, biodiversity-rich, resilient, sustainable and socially just forms of agriculture.

Given our context, the East African Community has a Food Security Action Plan (2010-2015) and the EAC Climate Change Policy to ensure the achievement and realization of food security and to rationalise agricultural production. The EAC together with the Common Market for Eastern and Southern Africa (COMESA) and the Southern Africa Development Community (SADC) are implementing a programme on climate change to bring significant

livelihood and food security benefits to at least 1.2 million small-scale farmers. The initiative is being piloted through the application of well-tested, agricultural practices that mitigate climate impacts, for instance combining crop production with agro-forestry and livestock management.

Despite all the efforts as a region and continent, we still remain largely confronted with a myriad of challenges such as inadequate capacities, reduced harvests and deficit in strategies of sustainability.

Ecological Farming thus remains fundamental in reversing the trend. The practice of ecological agriculture involves building the strengths of natural ecosystems into agro-ecosystems, purposely to produce food. The overall strategies include using practices that (a) grow healthy plants with good defense capabilities, (b) stress pests, and (c) enhancing populations of beneficial organisms. This is of absolute use to all.

I would encourage farmers by and large to embrace modern ecological farming practices. The farming fraternity can ideally enhance ecological and diversified and farm-business models which are envisaged to be economically more resilient, healthy and rewarding for farmers.

I am of the view that we need to scale up support to Ecological Farming in Africa. Development Partners do play a fundamental role in fostering new networks, linkages and partnerships to support Ecological Farming.

I am certain that donor financing is key even as the sector phases in its long term strategies that include sustainability. I urge them to add this guide to their shelves of resources as they strive to build the capacities of and empower farmers to go green through Ecological Farming.

Finally, I wish to thank Greenpeace Africa for their enormous effort to promote Ecological Farming and for persuading funders to embrace the campaign as a means of promoting development on the African continent.



**Daniel F. Kidega**  
**Speaker, East African Legislative Assembly**

# Executive Summary

This report provides a resource to the donor community to facilitate the provision of support to ecological farming across Africa. We define donors broadly to include: governments providing bilateral overseas development assistance, multilateral financial institutions, philanthropies, and international (UN) development organisations. It focuses on four primary channels as effective conduits for scaling up investment into ecological farming: academic and public research and training institutions; community seed banks and exchange networks; public procurement schemes and producer organisations and cooperatives. It analysed eleven ecological farming initiatives from around the world involving support from donor organisations.

Key lessons from the cases documented in the report include:

- Donors can provide crucial financial, technical, capacity-building and network-building assistance to scale-up ecological farming initiatives;
- Donor support to ecological farming works best when seeking to improve, not replace, local agricultural livelihoods;
- Whatever the channel through which assistance is provided, building institutional capacity among partners is a crucial component to the long-term success of ecological farming projects;
- The most effective donor-backed initiatives often involve participatory project design, implementation and monitoring systems;
- Donors can be important catalysts in helping to foster new networks, linkages and partnerships to support ecological farming; and

- Donors can use ecological farming to create synergies between environment and development programme objectives/ funding streams.

On the basis of these findings, Greenpeace Africa urges donors to:

- **Increase direct financial and technical support** to ecological farming through the channels identified in this report;
- **Support national governments** to: phase out chemical input subsidies and other barriers to scale up ecological farming; increase investment into ecological farming via the channels highlighted in this report (and others); and create policies that promote and support ecological farming, including within national rural development, climate adaptation and food security plans;
- **Identify opportunities to work with small-scale farmer associations and cooperatives** to support them in transitioning to ecological farming; where needed, support small-scale farmers in setting up cooperatives;
- **Develop partnerships with NGOs** that have a history of assisting small-scale food producers in the adoption of ecological farming;
- **Link farmers' associations practicing ecological farming to private companies** interested in procuring ecologically grown produce;
- **Support the integration of local ecologically produced crops into public food procurement systems;** and
- **Ensure the adoption of participatory approaches** to project design, implementation and monitoring and evaluation.





# Introduction

Over recent years there has been an upsurge of investment into the agriculture sector in low and middle-income countries by governments, development cooperation agencies, philanthropies and the private sector.

Sub-Saharan Africa has been the geographical focus for much of this new wave of agricultural investment, with a particular focus on eastern Africa. Between 2009 and 2011, East Africa received a combined USD \$2.4 billion of agricultural development assistance, averaging \$811 million per year. Most of this agricultural aid money came from a small number of donors; for example in 2011 the US and Germany accounted for 70 per cent of all agricultural aid to Kenya, while just four donors (Korea, the US, the African Development Fund, and the EC) accounted for 87 per cent of agricultural aid to Tanzania.<sup>1</sup>

There has been a growing recognition among policymakers that improving the position of small-scale farmers is especially crucial in order to combat poverty and improve food security. There is, however, far less consensus about what type of investments are best able to strengthen the position of these producers.

To date, development interventions in the agriculture sector in Africa have been heavily weighted towards the intensification of farming systems through the use of agricultural technologies such as hybrid seeds and synthetic fertilisers and pesticides. Yet there is mounting evidence to suggest that these methods are often unsuitable to small-scale farmers, and risk undermining long-term sustainability and climate resilience by reducing seed diversity, burdening low-income rural families with dependency on expensive and often harmful chemical inputs, and damaging soil structure and fertility. Reliance on monocultures, i.e. growing single crops over large areas, can also increase farmers' vulnerability to external shocks; including weather events such as droughts and floods, as well as fluctuations in the cost of agricultural inputs (like agrochemicals, hybrid seeds) or global commodity prices.

Achieving long-lasting improvements to the livelihoods of small-scale farmers in Africa therefore requires building resilient farming systems that increase production while protecting and improving the natural resource base. This implies a major re-orientation in the direction of public support to agricultural initiatives in Africa,

away from conventional interventions and towards ecological farming solutions, such as agroforestry, push-pull farming, low external input and sustainable agriculture (LEISA), System of Rice Intensification/ System of Crop Intensification, organic farming, etc.

## What is Ecological Farming?

Ecological farming encompasses a wide range of modern crop and livestock management systems that seek to increase yields and incomes and maximise the sustainable use of local natural resources whilst minimising the need for external inputs. Ecological farming ensures healthy farming and healthy food for today and tomorrow, by protecting soil, water and climate. It promotes biodiversity, and does not contaminate the environment with chemical inputs or genetically engineered plant varieties.

Although there is a growing appreciation among governments and development cooperation partners for the potential of ecological farming systems to meet multiple food security, livelihood, poverty reduction and environmental sustainability objectives, many donors struggle to identify mechanisms via which to channel assistance to such interventions in Africa.<sup>2</sup> As a result, bilateral donors and multilateral development banks tend to default to the disbursal of large pots of money to a few big projects, often in partnership with transnational agribusiness companies with the capacity to administer large sums of money. By their nature, these projects are usually characterised by the promotion of conventional agricultural technologies, further ingraining the bias towards chemical-intensive farming systems.

Yet there are a number of examples of where donors have overcome these challenges and successfully backed transformative ecological agriculture initiatives. This report offers a guide to the types of institutional mechanisms that can be used to disburse agricultural development assistance money to support the scaling-up of ecological agriculture. It describes a series of case studies drawn from around the world that illustrate how this type of funding is already taking place. It also provides some general lessons about the types of channels that donors can make use of to switch aid budgets to support ecological farming for improved food and livelihood security in Africa.

<sup>1</sup> *ibid.*

<sup>2</sup> See, for example, K.Mondelaers et al, A meta-analysis of the differences in environmental impacts between organic and conventional farming. *British Food Journal* 111 (10), 2009, <https://biblio.ugent.be/input/download?func=downloadFile&recordId=682772&fileId=901101>; P.Tittonell, 'Livelihood strategies, resilience and transformability in African agroecosystems', *Agricultural Systems*, in press, 2014; P.Tittonell & K. Giller, 'When yield gaps are poverty traps: The paradigm of ecological intensification in African smallholder agriculture', *Field Crops Research*, 143: 76-90, 2013; UNEP/UNCTAD, *Organic Agriculture and Food Security in Africa*, 2008, [http://www.unctad.org/en/docs/ditcted200715\\_en.pdf](http://www.unctad.org/en/docs/ditcted200715_en.pdf).

# 1. The Challenge of Scaling Up Support to Ecological Farming in Africa

In recent years there has been a renewed focus on agricultural investment in Africa by the international donor community, which in this report we define broadly to include: governments providing bilateral overseas development assistance, multilateral financial institutions, philanthropies, and international (UN) development organisations.

At the 2009 G8 Summit in L'Aquila, Italy, rich countries pledged to raise US \$22 billion in support of efforts to improve global food security and nutrition with most of this to be spent on programmes in Africa. This commitment

has been followed up by high-profile multi-stakeholder initiatives, including the World Economic Forum's New Vision for Agriculture (and the Grow Africa partnerships arising from this), and the New Alliance for Food Security and Nutrition, launched by US President Obama at the 2012 G8 Summit. The World Bank, the largest single donor to agriculture-related investments in Africa, has also upped its annual commitments to agriculture, increasing its budget allocation to the sector from US \$4 billion in 2008, to US \$8-10 billion/ annum in the period 2013-2015.<sup>3</sup>

## Donor commitments to small-scale farmer projects in Africa from 2009 onwards<sup>4</sup>

### Funding area:

- **44%, or US \$2.9 billion, of smallholder-oriented funding in Africa is concentrated on direct provision of training and inputs to smallholders.**
- **34%, or US \$2.3 billion, is aimed at creating access to markets and finance for small-scale farmers.**
- **22%, or US \$1.5 billion, is focused on infrastructure and policy environment.**

### Geographical focus of donor funding:

- **Ten countries are receiving 54% of total funding in Africa** (30% of funding worldwide). These are: Tanzania, Ethiopia, Ghana, Uganda, Kenya, Nigeria, Mali, Egypt, Burkina Faso and Cote D'Ivoire.

### Donor profile:

- **71%, US \$4.7 billion, of smallholder development funding in Africa comes from multilateral organisations.** The World Bank, IFAD, the African Development Bank, and FAO are all very active in Africa.
- **Bilateral investment contributes 19% or US \$1.3 billion.**
- **Foundation funding in Africa totals US \$661 million, or 10% of the total.** The Bill & Melinda Gates Foundation provides more than 90% of this in 25 countries.

The language around these new investments has been largely framed about improving the livelihoods of small-scale farmers. Yet despite the positive trend towards increased donors' support to African agriculture, there have been questions raised over the nature and sustainability of these investments. Much of the 'new' financing arising through initiatives such as the New Alliance and Grow Africa is being leveraged via public-private partnerships (PPPs) with multinational food and agribusiness companies keen to expand their operations in Africa.<sup>5</sup> Whilst not inherently at odds with ecological sustainability objectives, these PPPs have tended to favour investments into profit-driven chemical intensive production models.

However, increased sensitivity over the risks posed by climate change and environmental degradation to global food insecurity means that many donors now emphasise

'sustainability' and 'climate resilience' within their agriculture programmes. While such terms can lend themselves to wide interpretation, there is a clear rationale within this context for donors to support the wider uptake of agricultural and land management practices that conserve natural resources while improving productivity, rural incomes and food security. For example, the World Bank's 2013-15 Agriculture Action Plan commits to:

*"...support improved farm management practices such as agroforestry, mulching, intercropping, and zero tillage to enhance the natural process of soil carbon sequestration from crop residues and organic matter..."*<sup>6</sup>

This imperative to consider funding agricultural development interventions that depart from the 'business as usual model' can also be seen in governments' commitments under

<sup>3</sup> The World Bank (undated website article). "The Millennium Development Goals: Goal 1 - Eradicate Extreme Poverty and Hunger by 2015" [http://www.worldbank.org/poverty\\_hunger.html](http://www.worldbank.org/poverty_hunger.html)

<sup>4</sup> Corporate Leadership Coalition for Smallholder Farmer Livelihoods (August 2010) *Smallholder Farmer Development: International Donor Funding Trends A Trend Analysis of the Corporate Leadership Coalition for Smallholder Farmer Livelihoods*

<sup>5</sup> Oxfam (September 2013) *The New Alliance: a new direction needed* Oxfam briefing note.

<sup>6</sup> Townsend, R.; Ceccacci, I.; Cooke, S.; Constantine, M.; Moses, G. (2013) *Implementing agriculture for development: World Bank Group agriculture action plan (2013-2015)*. Washington, DC: World Bank.

the 2012 United Nations Conference on Sustainable Development declaration, The Future We Want (see box below).

Philanthropic institutions have also begun to pay more attention to Agroecology initiatives. For example, the AgroEcology Fund is a multi-donor fund established in 2012, which is committed to supporting agro-ecological solutions locally and regionally in Africa, Asia and Latin America. Supporters of the fund include the New Field

Foundation, the Christensen Fund, the Swift Foundation, the McKnight Foundation, the Tikva Grassroots Empowerment Fund and Synchronicity Earth.<sup>7</sup>

In general, though, bi-lateral and multilateral development cooperation organisations still appear reluctant to support ecological farming programmes, especially in a period of budget austerity when more easily measurable and solely yield-driven projects get priority.

## Declaration on agricultural sustainability at the “Rio +20” UNCS<sup>8</sup>

110. Noting the diversity of agricultural conditions and systems, we resolve to increase sustainable agricultural production and productivity globally, including by improving the functioning of markets and trading systems and strengthening international cooperation, particularly for developing countries, by increasing public and private investment in sustainable agriculture, land management and rural development.

111. We reaffirm the necessity to promote, enhance and support more sustainable agriculture, including crops, livestock, forestry, fisheries and aquaculture, that improves food security, eradicates hunger and is economically viable, while conserving land, water, plant and animal genetic resources, biodiversity and ecosystems and enhancing resilience to climate change and natural disasters. We also recognise the need to maintain natural ecological processes that support food production systems.

The complexity of financing myriad small ecological farming initiatives is one prominent obstacle to donors. Because international financial institutions and bilateral development cooperation agencies tend to disperse relatively large tranches of money, they tend to channel investments via organisational structures with the capacity

to absorb, track, disperse and monitor, and evaluate the returns to that investment (e.g. multilateral organisations, recipient government ministries and agencies, domestic financial institutions, medium-to-large size companies, and international NGOs).



© Greenpeace / Sven Torfinn. Small-scale farmer James Njoronge and his wife water their vegetable garden. Kenya, 2013.

<sup>7</sup> For more information see <http://www.agroecologyfund.org/>

<sup>8</sup> UN General Assembly. (September 11, 2012) Resolution adopted by the General Assembly on 27 July 2012: “The Future We Want” Sixty Sixth Session. Agenda Item 19. A/RES/66/288\*

## Common challenges faced by donors in supporting ecological farming<sup>9</sup>

- Identifying appropriate organisations through which to channel investments
- Lack of clarity over what type of interventions constitute ecological farming
- Problems with fragmenting large funding windows into a multitude of small investments to support knowledge-intensive ecological farming interventions (as opposed to relatively straight-forward capital intensive industrial farming)
- Need for more complex monitoring and evaluation systems and lack of clear indicators for measuring short-term success
- The need to make longer-term commitments to ensure some initiatives reach full benefits of maturity; e.g. agroforestry projects
- Institutional and professional biases towards established large-scale clients with low interest in ecological farming; e.g. multinational agribusinesses, domestic banks and conventional plant breeding research centres

While this may work for conventional farming projects where large investments can, for example, be used to subsidise the uptake of synthetic fertilisers or commercial seed varieties, it represents a barrier when considering how donors can support a multitude of (individually) relatively inexpensive interventions – e.g. facilitating traditional seed sharing between farmers’ organisations, or expanding the number of farmer field schools to share learning on intercropping techniques.

As a result, donors (and indeed governments) often default to financing industrial agricultural programmes, due simply to the lack of obvious channels via which to ‘spend big’ on more ecological and climate-resilient agricultural systems.

There are, however, a number of positive examples from around Africa and across the world where donors have successfully identified channels to invest in ecological farming initiatives targeted at small-scale farmers.<sup>10</sup> This report provides a snapshot of some of the most interesting and inspiring examples, categorised into four types: academic and public research and training institutions; community seed banks and exchange networks; public procurement schemes and producer organisations and cooperatives. These four channels are highlighted because they have proven to be effective institutional mechanisms through which donors can scale up investment into ecological farming.



© Greenpeace / Sven Torfirm. Small-scale farmer James Njoronge inspects his maize crop in Thika, Kenya. 2013.

<sup>9</sup> Based on informal conversations between the author and representatives of donor organisations.

<sup>10</sup> A number of successful initiatives have been highlighted by the Alliance for Food Sovereignty in Africa (AFSA). See <http://afsa.org/case-studies>

## 2. Effective Channels of Donor Financing into Ecological Farming: Eleven Case Studies

### 2.1 Academic and Public Research and Training Institutions

Ecological farming involves a continuous process of experimentation, knowledge-building and fine-tuning to discover the best seed cultivars, cropping systems, soil and water management practices and pest and disease control measures within the agro-climatic conditions of any particular location. It is not a science that can be applied in a vacuum, but rather is most effective when adapted to fit the local economic (e.g. income and access to markets), institutional (e.g. land rights and level of community organisation), and cultural (e.g. dietary preferences, role of women and men in production) context. This approach contrasts sharply to the “one size fits all” farming practices characteristic of conventional agriculture.

As such, there is a pressing need for increased public support to universities and research institutions that are working with farmers to trial new, more sustainable farming systems. These institutions can be effective channels for donors to support the spread of ecological farming systems as they often have the administrative and institutional capacity to manage large tranches of grant income. In addition, academic and research centres are often adept at forming multi-stakeholder partnerships, meaning that financial support for ecological farming research projects often create a multiplier effect that extends well beyond the institution itself.

Below we highlight three examples of donor-backed research centres that have successfully developed new partnerships to support ecological agriculture.

### Is Organic Farming the Same as Ecological Farming?

Organic farming is a system of crop production that avoids the use of chemical fertilisers or chemical pest and disease control measures. The International Federation of Organic Agricultural Producers (IFOAM) defines organic agriculture as:

*“...a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.”<sup>11</sup>*

While organic agriculture is a form of ecological farming, it is only a subset of the latter, and carries with it a very specific set of parameters, often only ‘formally’ acknowledged through strict certification procedures. These certifications can be prohibitively expensive for small-scale farmers in low- and middle-income countries.

However, the large majority of ecological farming systems in developing countries are not formally certified. Another important distinction between organic and other ecological agriculture systems in developing countries is that the former is often primarily driven by market considerations, with the bulk of production destined for export. The costs of compliance to international organic certification standards often results in farms characterised by relatively less diversified systems, so as to efficiently produce a few high value organic commodities (e.g. coffee, cocoa or sugar cane).<sup>12</sup>

Although economic viability is important to all farmers, non-certified organic farmers, who are less market driven, tend to establish more diversified systems managed following the ecosystem approach (e.g. multiple cropping/intercropping). The diversity of their produce, including trees, indigenous crops, medicinal plants, etc. are often more suited to fulfilling household needs for food, fodder, fuelwood and other products.<sup>13</sup>

<sup>11</sup> <http://www.ifoam.org/en/organic-landmarks/definition-organic-agriculture>

<sup>12</sup> El-Hage Scialabba, N. and Hattam, C. (2002) *Organic agriculture, environment and food security* FAO. Rome.

<sup>13</sup> *ibid.*

“ If nature is left to itself, fertility increases. Organic remains of plants and animals accumulate and are decomposed on the surface by bacteria and fungi. With the movement of rainwater, the nutrients are taken deep into the soil to become food for microorganisms, earthworms, and other small animals. Plant roots reach to the lower soil strata and draw the nutrients back up to the surface. ”

— <http://www.greenpeace.org/international/en/publications/reports/iaastd-briefing/>



## CASE A: Agroecology Programme of the University of Cochabamba (AGRUCO), Bolivia

<b>Location:</b>	Cochabamba, Bolivia
<b>Duration:</b>	Since 1990
<b>Donor agencies:</b>	Swiss Development Cooperation (SDC)
<b>Principle actors:</b>	The Agroecology Programme at the University of Cochabamba, local NGOs, local farmers' organisations
<b>Donor financing:</b>	Unknown (variable)
<b>Nature of the project:</b>	Co-generation of knowledge and improved farming practices between farmers and academic researchers based on agro-ecological principles.

### Summary

The Agroecology Programme at the University of Cochabamba (AGRUCO) is dedicated to higher education, scientific research and social interaction with farmer communities in the field of ecological farming and sustainable development.<sup>14</sup> It has received funding from the Swiss Agency for Development and Cooperation (SDC) for over 20 years. It is part of the State University San Simon, in Cochabamba, Bolivia.

The Agroecology Programme has two main roles: to carry out field-based research activities; and to teach university courses in crops, animal husbandry and forestry, based on agro-ecological principles and the culture of the Andean farmers. The project began initially by promoting agro-ecological systems for rural development, but then soon progressed to become a centre within the University of San Simón promoting indigenous knowledge in regard to sustainable development through post secondary education.<sup>15</sup>

AGRUCO generates and disseminates concepts, methodologies, techniques and strategies for agro-ecological development in Bolivia. It also implements development programmes within local municipalities and with farmer-based organisations in rural communities. AGRUCO provides the support and cooperation of an academic institution in order to help local communities to better manage their natural resources, and emphasises the re-valuing of traditional knowledge within academia.

Although it is an academic institution, AGRUCO breaks away from the usual academic approach of maintaining a distance from local farmers and organisations by rather working with them as equals in the co-creation of knowledge and new practice, as opposed to seeing them as research 'subjects'. As such, the importance of being sensitive to the needs of the local farmers is an important part of AGRUCO's work in the surrounding communities.

### Impacts

AGRUCO has developed formal and permanent agreements between the university and local actors in the surrounding communities. It has worked to build interest and trust amongst the community to ensure the work is undertaken as a shared process, as well as to provide confidence that the benefits will be mutual. It has helped to raise the organisational, management and productive capacity of local community groups, and to boost the profile of traditional knowledge and culture in the development process.<sup>16</sup>

The programme is having a transformative impact on agricultural practices in the surrounding region. AGRUCO has also helped to reintroduce native potato and fruit tree species in many of the communities in which it works. Interviews conducted in one municipality suggested that the production of a native variety of potato called *Huachya* cultivated through the use of organic methods had increased up to 300%.<sup>17</sup>

The interventions of AGRUCO within the surrounding communities have reportedly also led to economic improvements. Increased earnings and reduced costs have enabled local households to buy clothes for family members and to send their children to school longer and pay for educational materials. Household diets have also become more diversified, as they can buy other products with the profit from the sales of their surplus harvests.<sup>18</sup>

AGRUCO has helped local farmers reduce the use of chemical pesticides and to boost the use of organic fertilisers, and in doing so, has helped farmers to reduce both their input costs and to improve the quality of their production. Beneficiaries interviewed in one assessment reported that potatoes grown under these new methods have a better taste. People also claim to have developed an enhanced level of awareness about the health risks posed by the use of agrochemicals.

<sup>14</sup> Delgado, F and Ponce, D. (2003) "Endogenous Development and University Education" in: Haverkort, B; van 't Hooft, K. and Hiemstra, W. (eds) *Ancient Roots, New Shoots* Endogenous development in practice Zed Books, London.

<sup>15</sup> SDC (2009) SDC's Contribution Towards Biodiversity: impact in the Andean region. Evaluation 2009/5 Swiss Agency for Development and Cooperation. Bern.

<sup>16</sup> *ibid.*

<sup>17</sup> *ibid.*

<sup>18</sup> *ibid.*

Facilities have been built to store crops and to protect seeds. These are widely appreciated as having played an important role in improving production and reducing post-harvest losses.

AGRUCO has also supported reforestation, introducing both native and fast-growing exotic species of trees.

This has apparently led to reduced pressure on the native tree stands within the communities. The project has also encouraged the preservation of traditional knowledge about medicinal plants, leading to an increased use of medicinal plants for health related issues.

## CASE B: Agroecology in Practice; Uganda, Ethiopia & Sweden

<b>Location:</b>	Uganda, Ethiopia, Sweden
<b>Duration:</b>	2008-2014 (SIDA funding 2008-2012) <sup>19</sup>
<b>Donor agencies:</b>	SIDA
<b>Principle actors:</b>	Centre for Sustainable Agriculture, Swedish University of Agricultural Science (SLU); the University of Mekelle in Tigray, Ethiopia; Uganda Martyrs University. Others associated with the programme include participants from NGOs and agricultural extension authorities in Ethiopia and Uganda, as well as teachers/researchers from Wondo Genet College of Forestry & Natural Resources and from Addis Ababa University.
<b>Donor financing:</b>	US \$3.26 million
<b>Nature of the project:</b>	This initiative has focused on building a long-term project to share the knowledge and experience on sustainable agriculture between SLU in Sweden, the University of Mekelle in Ethiopia and Uganda Martyrs University. The project is to initiate, manage and operate interactions between practice, training and research in sustainable agriculture.

### Summary

The project Agroecology in Practice was a research partnership between three universities in Uganda, Ethiopia and Sweden. It has aimed to alleviate poverty amongst households dependent on small-scale agriculture through the promotion of improved farming practices based on the principles of Agroecology.<sup>20</sup> The general vision of the project has been to establish an action-oriented, dynamic, creative, and interdisciplinary education and training programme that interacts across farmers' practices, development work, extension, education and research, within the area of ecological farming.

The project adopted an approach based on creative education and action-oriented training that integrated farmers' knowledge and practices, development work, extension, education and research using whole-systems approaches from ecological farming across its work in the three universities. This involved:

- programme coordinator workshops;
- introductory university courses;
- short courses for key local stakeholders, including extension officers, in the area of Agroecology;
- an MSc programme in Agroecology at each university.<sup>21</sup>

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“ The soil is the great connector of lives, the source and destination of all. It is the healer and restorer and resurrector, by which disease passes into health, age into youth, death into life. Without proper care for it we can have no community, because without proper care for it we can have no life. ”

— Wendell Berry, *The Unsettling of America: Culture and Agriculture*

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<sup>19</sup> SIDA (Dec 2008) *Decision on Contribution: Agro-ecology in Practise - Education and Training Programme.*

<sup>20</sup> Eksvärd, K. et. al. (June 2014) "Narrowing the Gap between Academia and Practice through Agroecology: designing education and planning for action" *NACTA Journal*

<sup>21</sup> Eksvärd, K. et. al. (June 2014) "Narrowing the Gap between Academia and Practice through Agroecology: designing education and planning for action" *NACTA Journal*



## Impacts

A participant evaluation of the project published in the journal NACTA concluded that the approach to planning and implementation adopted by Agroecology in Practice is successfully narrowing the gap between academia and practice by fostering shared understanding of small-scale agriculture, introducing new educational methods and promoting communication among stakeholders.<sup>22</sup>

Staff at Mekelle University were pleased with applicant numbers and hoped to expand the programme to accommodate more students because of the large number of applicants. Heightened agro-ecological awareness in students has been demonstrated by an increase in relevant thesis projects. The programme is well integrated in the university but respondents pointed to the need for more project support. Hopes were expressed for increased future exchange of students and teachers, and south-south initiatives.

At Uganda Martyrs University, staff members were impressed with how the programme has attracted students, and with how they have gained an agro-ecological perspective in their courses. Integration at university level with other courses has been accomplished and teachers are content with facilities and resources, as well as with capacity building of teachers and for student thesis projects.

Teachers at the Swedish Agricultural University also reported being pleased with the course and felt able to develop content on Agroecology that was accessible to their students. Integration with other courses, good facilities and resources, opportunities for capacity building among teachers, and strong thesis research topics were highlights.

All three universities reported that field trips, farm visits and extension interactions were valuable core components of courses for students. Farmers have been open to receiving students on a continuing basis and organisations working on agriculture have found discussions with students to be valuable.<sup>23</sup>

Crucially in terms of sustainability, a final report on the project produced in March 2014 noted that both the MSc in Agroecology education and the introductory courses for BSc and other MSc students have been integrated in the standard curriculum at all three participating universities, and are continuing after the end of this collaboration. Graduates have reportedly noted their improved abilities in working with farmers and understanding their situations, points of view and expertise, thereby creating new grounds for collaborative development.<sup>24</sup>

The process has also demanded substantial learning and collaboration among the teachers and coordinators involved in the programme. This has made it possible to share experiences, feedback, and the same base for agro-ecological education, while still developing specific courses and programmes aligned with the individual University systems and agricultural reality.<sup>25</sup>

## Key Lessons

Making adjustments to local situations is a foundation of the agro-ecological approach, which is based on uniqueness of place and solutions. By allocating funds through the tripartite academic relationship, SIDA as the principle donor was able to ensure cross-institutional learning that benefited both from an international perspective, and a deeper understanding of the specific agro-ecological conditions faced by farmers in the field.



© Greenpeace / Sven Torfirm. A farmer weeds between sweet potatoes, Kenya, 2013.

<sup>22</sup> *ibid.*

<sup>23</sup> Eksvärd, K. et. al. (June 2014) op cit.

<sup>24</sup> Salomonsson L. et. al. (March 2014) *Agroecology in Practice – an education and training programme, Final Report* Unpublished.

<sup>25</sup> *ibid.*

## CASE C: CEDAC Training on the System of Rice Intensification (SRI), Cambodia

<b>Location:</b>	Cambodia
<b>Duration:</b>	GTZ support since 2003
<b>Donor agencies:</b>	GIZ, FAO
<b>Principle actors:</b>	FAO, Oxfam America, HEKS, Centre for Studies and Development of Cambodian Agriculture (CEDAC), Ministry of Agriculture, Forestry and Fisheries.
<b>Donor financing:</b>	No details available
<b>Nature of the project:</b>	Research and extension efforts to promote the adoption of SRI cultivation methods across the country.

### Summary

SRI was first trialed in Cambodia by the research organisation Centre for Studies and Development of Cambodian Agriculture (CEDAC) in 2000.

CEDAC's partnership with GIZ, which began in 2003, has involved spreading the uptake of SRI cultivation methods, as well as building up the organic rice value chain for the national and international market since 2003.

With support from GIZ, CEDAC has encouraged the switch from conventional to ecological rice cultivation by both direct training and supporting farmer-to-farmer learning on SRI methods, e.g. the production and use of organic fertilisation methods, nurturing useful insect predators and applying non-chemical biological pest control agents like *Trichoderma Harzianum*.<sup>26</sup> There has also been a focus on the development of physical and marketing facilities to support ecological rice production and improve the rice value chain.

Through its Community Based Rural Development Programme, GIZ also helped to establish a number of rice producers' cooperative organisations in the provinces where it has supported SRI and organic rice systems. These associations not only help with providing support and collective marketing of rice, but also enable communities and individuals to access loans, as well as helping to build community cohesion.

### Impacts

By the end of 2009 there were reportedly 110,530 farmers using SRI methods in Cambodia on 59,785 hectares in 4,534 villages; the average SRI yield was calculated at 3.48 tonnes/ha, about 1 tonne/ha more than the national average.<sup>27</sup> As of 2012, CEDAC was reportedly supporting 160,000 farmer families in twenty-one provinces.<sup>28</sup>

As of 2011, CEDAC estimated that the adoption of SRI growing techniques helped to increase rice yields for

farmers from an average of 2.5 tonnes per hectare to 3.7 tonnes per hectare.<sup>29</sup> Reports by GIZ suggest that the conversion to ecological production methods is helping to preserve the soil fertility, while also saving farmers the costs of chemical inputs. Through the organic and fair-trade certification farmers are also increasing their incomes.<sup>30</sup>

The programme has also provided momentum to important policy initiatives supporting ecological rice production in the country. Due to the early successes of SRI, the Cambodian government, especially the Minister of Agriculture, officially started endorsing and promoting SRI in 2005.

Since 2004, there has been a national SRI secretariat hosted by the Ministry of Agriculture, Forestry and Fisheries' Department of Agronomy and Agriculture Land Improvement with technical support from CEDAC and funding support from GIZ, the FAO, Oxfam America and GB, and HEKS (a Swiss NGO). On August 21, 2009, the Minister of Agriculture directed that SRI is to become a mainstay of the agricultural development for Cambodia.<sup>31</sup>

### Key Lessons

A crucial aspect of the success of CEDAC's work in promoting SRI in Cambodia has been the sustained support it has received from GTZ/ GIZ since 2003. This lengthy relationship, more recently framed within a wider approach to supporting sustainable agriculture within the ASEAN region, has allowed the nature of the cooperation to branch out from a few SRI trials to widespread adoption, as has the development of a fast-growing market for organic rice, both for domestic consumption and export.

The formation of GIZ-supported rice producer cooperatives has also played an important part in CEDAC's expansion in the organic rice sector. These organisations have helped to achieve greater economies of scale, and to assure the organic integrity of the produce by facilitating internal controls.<sup>32</sup>

<sup>26</sup> Trust and Control – Consumer Field Trip to where the food is grown GIZ (2012). Available at: <http://giz-cambodia.com/?s=cedac>

<sup>27</sup> Chhay, N. (April 2010) "Overview of SRI application and adoption in Cambodia". Presentation by Mr Ngin Chhay, Ministry of Agriculture, Forestry and Fisheries to the Workshop on Consolidation of SRI Experiences, Lessons and Networking; Hanoi, Vietnam 21-22 January, 2010. <http://www.slideshare.net/SRI.CORNELL/overview-of-sri-application-and-adoption-in-cambodia>

<sup>28</sup> CEDAC website homepage. About CEDAC - The Cambodian Center for Study and Development in Agriculture <http://www.cedac.org.kh>

<sup>29</sup> Christian Aid. (September 2011). *Healthy Harvests: the benefits of sustainable agriculture in Africa and Asia*

<sup>30</sup> GIZ (10 July, 2013) "Rising Demand Boosts Organic Rice Industry" <http://giz-cambodia.com/?s=cedac>

<sup>31</sup> Cornell University, College of Agriculture and Life Sciences website. "SRI International Network and Resources Center: Cambodia" <http://sri.ciifad.cornell.edu/countries/cambodia/>

<sup>32</sup> COrAA (April 2011) *Organic Agriculture and Food Processing in Cambodia: status and potentials* Cambodian Organic Agriculture Association [http://www.cora.org/userfiles/file/Report\\_Organic%20Agriculture%20in%20Cambodia%20\\_COrAA\\_%20%20April%202011\\_%20final-%20for%20web.pdf](http://www.cora.org/userfiles/file/Report_Organic%20Agriculture%20in%20Cambodia%20_COrAA_%20%20April%202011_%20final-%20for%20web.pdf)



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## CASE D: The Chololo Ecovillage Project

<b>Location:</b>	Dodoma region, Central Tanzania
<b>Duration:</b>	September 2011 – May 2014
<b>Donor agencies:</b>	EU
<b>Principle actors:</b>	The Institute of Rural Development Planning (IRDP), Dodoma Municipal Council, Dodoma Environment Network (DONET), Hombolo Agricultural Research Institute, Maji na Maendeleo Dodoma (MAMADO) and the Tanzania Organic Agriculture Movement (TOAM)
<b>Donor financing:</b>	€600,000 (US \$740,934)
<b>Nature of the project:</b>	Integrated, multi-sector project aimed at trialling, evaluating and applying new adaptation strategies in an area highly vulnerable to the impacts of climate change

### Summary

The Chololo Ecovillage project arose out of the EU's Global Climate Change Alliance, and worked for three years with people in the community to identify, pilot, evaluate and implement a range of integrated innovations, spanning the agriculture, livestock, water, energy, and forestry sectors.<sup>33</sup>

Chololo is situated in central Tanzania, 50km from Dodoma town, in an area highly susceptible to periodic drought. Climate change is also posing a serious threat to local livelihoods, food security and ecosystems. The project was implemented by a planning school called the Institute of Rural Development Planning (IRDP), and was conducted in partnership with a multi-stakeholder group of research institutes, government agencies, and non-governmental organisations.

The project adopted a holistic approach to meeting the multiple challenges facing the community in the context of climate change. Building on local knowledge, traditional practices and natural resources, it introduced new ecological farming methods and technologies to make the most of the limited rainfall, improve soil fertility, reduce farmers' workload, and improve the quality of local seeds.

The agriculture research institutions working with the community also introduced several low-cost improved seed varieties bred to be more drought resistant, high yielding and early maturing. Chololo farmers were supplied with a range of these seeds to test and evaluate, namely sorghum (Macia and Pato variety), pearl millet (Okoa variety), cowpeas (Vuli 1&2), groundnuts (Pendo variety), and sunflower (Record variety). Intercropping was also introduced to reduce the depletion of soil nutrients, maintain ground cover (to prevent soil erosion and retain soil moisture), reduce risk of single crop failure, and improve household nutrition.<sup>34</sup>

As well as introducing more sustainable agriculture practices, the project also introduced forest conservation

and land use planning measures, water harvesting and efficiency techniques, renewable energy and livestock improvement activities.

In addition to this, the project trained a number of community members in leather tanning as a means of livelihood diversification away from rain-fed agriculture, as tanning leather and making leather goods requires relatively little water and makes people more resilient to climate change. Sixty beehives and ten small fishponds were also introduced as alternative livelihood options.

### Impacts

The project trained around 400 farmers in improved land preparation practices, including animal power tillage, soil water conservation techniques, and use of farmyard manure. Local people have begun to use energy-saving stoves and biogas for cooking and lighting, reducing deforestation and women's workload for fuel wood collection. They have also adopted ways to make more efficient use of natural resources and reduce their dependence on seasonal rainwater.<sup>35</sup>

Improved cultivation practices have not only helped to conserve the soil, but have also increased crop yields. Farmers report yield increases from two bags of grain / cash crops per acre to six or seven.<sup>36</sup> This has improved food security and increased household incomes. The village Chairperson summarised the positive nature of the eco-village initiative:

*"I assure you that in the two years of Chololo Ecovillage project, our village was free from hunger and according to the good condition of the farms in this year 2013/14, my village will get more yields than in the previous two years... Nobody is going out of the village in search of food. Those who have shortage get food within the village from farmers who have enough to spare."<sup>37</sup>*

<sup>33</sup> Institute of Rural Development Planning. (2014) *Chololo Ecovillage: a model of good practice in climate change adaptation and mitigation* Dodoma, Tanzania.

<sup>34</sup> *ibid.*

<sup>35</sup> *ibid.*

<sup>36</sup> Institute of Rural Development Planning (2014) *Chololo Ecovillage – The Book* <http://chololoecovillage.files.wordpress.com/2014/05/chololo-book-ver-10-lores.pdf>

<sup>37</sup> Institute of Rural Development Planning. (2014) *op. cit.*

## Key Lessons

The Chololo project has been a great success. Elements of the project are now being replicated in other parts of the country, and people from across Africa are coming to visit Chololo to learn from its experience.<sup>38</sup>

Crucial to the success of the initiative has been its multi-sectoral and holistic approach to tackling the threats to local livelihoods and food security posed by climate change. A booklet financed by the EU summarising the project's impacts noted that the challenge going forward will be to scale up the impacts of the Chololo Ecovillage by inspiring similar activities elsewhere. It suggests that this can be achieved in a number of ways, including

- having policymakers visit Chololo and see the positive impact of the project's activities;
- farmer field days to help to share good practice;
- additional national media coverage, which has already helped to spread the word of Chololo's successes around the country;
- getting farmers from Chololo to tell their story on local radio and encourage other farmers to try their innovations;
- a Swahili drama and dance group that explains the causes and effects of climate change, encourages tree-planting, good agricultural practices, rainwater harvesting, and the use of alternative energy;
- hosting students to learn directly from the experience of local people; and
- via the Chololo Ecovillage website, which has kept a diary of the project in words and audio-visual materials.<sup>39</sup>



© Greenpeace / Jan-Joseph Stok. Farmers working on their land. Tembeya Ntaherya (in the background) is the chief of village of Kahunga. DRC. 2012.

<sup>38</sup> European Commission, Development & Cooperation Facebook page.

<sup>39</sup> <http://chololoecovillage.wordpress.com>

## 2.2 Community Seed Banks (CBS) and Exchange Groups

Maintaining and building on agro-biodiversity is crucial to the development of thriving ecological farming systems. Over time, farmers have bred thousands of locally adapted landraces to fit their particular agro-climatic conditions and livelihood needs. Households may consider a range of factors when choosing which cultivars to grow – including qualities such as tolerance to drought/ flooding, resilience to pest attacks and disease, productivity, taste, versatility, storage ‘shelf-life’, marketability and even aesthetic features such as colour.

Farmers also learn from one another through informal networks about which crops grow best where, and with what production methods, and will often willingly experiment with new cultivars. However, because they are often isolated and lack institutional support, the extent to

which farmers can have exposure to different seed types, or exchange knowledge with farmers about growing these, is often limited to their immediate surroundings.

It is for this reason that seed banking and exchange programmes have become an important avenue for supporting the uptake of ecological farming.

Not only do such programmes enable farmers to access a much wider range of seed stock, but just as significantly they provide opportunities for producers to share and exchange knowledge about the ideal conditions, intercropping strategies, fertility management techniques, and pest control measures under which those cultivars thrive.

When equipped with sufficient institutional capacity, seed banks and exchange programmes are also an effective channel for donors to achieve the up-scaling of their support for ecological farming.

### CASE E: The Western Terai Landscape Complex Project, Nepal

<b>Location:</b>	Nepal
<b>Duration:</b>	January 2006 to 31st December 2012
<b>Donor agencies:</b>	UNDP, GEF, Bioversity International
<b>Principle actors:</b>	LI-BIRD (local NGO, Bioversity International, the Nepal Agriculture Research Council)
<b>Donor financing:</b>	US \$4.6 million from UNDP and GEF with in-kind funding from Bioversity, plus US \$3.9 million from SNV and WWF
<b>Nature of the project:</b>	Establishing effective systems and building capacity for the sustainable use of Nepal’s Western Terai landscape and biodiversity conservation through community seed banks.

#### Summary

The Western Terai Landscape Complex Project (WTLCP) was an integrated landscape management project running from 2006 through 2012, with the objective to conserve and sustainably use biodiversity at the landscape level, while addressing the livelihood needs of farmers in the west of Nepal. The project was a joint initiative of the Ministry of Forests and Soil Conservation (MFSC), the United Nations Development Programme (UNDP), the Global Environment Facility (GEF), the SNV-Nepal, WWF Nepal, Bioversity International (BI), the Nepal Agriculture Research Council and the Nepalese NGO Local Initiatives for Biodiversity Research and Development (LI-BIRD).<sup>40</sup>

A key component of the initiative was to empower local communities to take the lead in conserving agro-biodiversity on the farm through a number of different activities, including the establishment of seed banks and seed exchange programmes. It covered three districts in

the western Terai landscape, namely Bardia, Kailali, and Kanchanpur, with a particular focus on three landscape corridors.<sup>41</sup>

Most of the agro-biodiversity programmes were implemented through LI-BIRD farmers’ groups and schools. LI-BIRD has supported the establishment of 14 other CSBs across the country.<sup>42</sup> Farmers’ organisations, called Biodiversity Conservation and Development Committees, were established for the management and conservation of agricultural biodiversity. The Nepal Agriculture Research Council provided research and technical support to farmers.

#### Impacts

A mid-term assessment of the project by UNDP showed that the project had generated greater awareness among farmers of the importance of conserving agro-biodiversity.<sup>43</sup> Over 11,500 households had already participated in various

<sup>40</sup> His Majesty’s Government of Nepal (HMG/Nepal), UNDP, GEF (undated) *Landscape Level Biodiversity Conservation in Nepal’s Western Terai Complex: Western Terai Landscape Complex Project (WTLCP)* UNDP Project Document.

<sup>41</sup> Maharjan S. K. (June 2011) *Enhancing On-Farm Conservation of Agro-biodiversity through community seed bank: an experience of Western Nepal* The Journal of Agriculture and Environment Vol:12, June 2011

<sup>42</sup> Shrestha P. et. al. (eds.) (2013) *Community Seed Banks in Nepal: Past, Present, Future*. Proceedings of a National Workshop, LI-BIRD/USC Canada Asia/Oxfam/The Development Fund/IFAD/Bioversity International, 14–15 June 2012, Pokhara, Nepal.

<sup>43</sup> Acharya, D; Shyam, B. and Ferguson, A. (Nov. 2010) *Mid-Term Evaluation of Western Terai Landscape Complex Project (WTLCP)*. UNDP.

project activities, and six community seed banks had been established. The review pointed to a number of other early achievements, including:

- Establishment of 36 ‘diversity blocks’ – essentially *in situ* seed banks – of rare and indigenous rice varieties (15 upland and 17 lowland varieties); as well as for vegetables such as taro, bottle gourd and cowpea. These were also used as the basis of PhD research trials to develop new landraces, building on the genetic material already existing within the area.
- The community seed banks saved 643 types of traditional landraces of 37 species of 8 crop categories - cereals, pulses, oilseeds, cucurbits, leafy vegetables, other vegetables, spices and root crops - and became very popular in the project areas.
- The establishment of biodiversity fairs to create awareness and locate and document traditional varieties and associated traditional knowledge.
- A participatory plant-breeding programme carried out jointly by farmers and researchers was promoted in project sites to conserve the local rice genetic resources on-farm, and to identify and promote the most promising rice varieties in project areas.
- Establishing a community biodiversity register to inventory biodiversity and document the traditional knowledge associated with genetic resources.
- Setting up a community biodiversity management fund, which provided small-scale farmers with credit facilities linked to the conservation of rare local crop varieties.<sup>44</sup>

“ When it is understood that one loses joy and happiness in the attempt to possess them, the essence of natural farming will be realized. The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings. ” — Masanobu Fukuoka, *The One-Straw Revolution*

## CASE F: The Soils Food and Healthy Communities Project (SFHC) and the Malawi Farmer-to-Farmer Agroecology Project (MAFFA), Malawi

<b>Location:</b>	Ekwendeni, northern Malawi
<b>Duration:</b>	SFHC since 2000, MFFAP since 2012
<b>Donor agencies:</b>	CIDA
<b>Principle actors:</b>	Ekwendeni Hospital, Western University in Canada, the University of Manitoba, Presbyterian World Service and Development, Canadian Food Grains Bank and Cornell University.
<b>Donor financing:</b>	US \$2.5 million to support MAFFA (through Western University)
<b>Nature of the project:</b>	Farmer-to-farmer seed sharing and training on Agroecology

### Summary

The Soils, Food and Healthy Communities (SFHC) project was launched in seven villages in 2000 by a hospital in Ekwendeni, northern Malawi, in collaboration with Canadian and Malawian researchers. It aims to improve the health, food security and soil fertility of resource poor households in the region around Ekwendeni through participatory research and an integrated systems approach to agriculture.<sup>45</sup>

The project is reaching out to over 4,000 farmers in the region, and involves seed exchanges and a legume seed bank, as well as experimental agricultural on-farm trials and nutritional and agricultural education activities. In collaboration with agricultural, nutritional and social scientists, hospital staff have sought to identify ‘best bet legume options’ that could improve soil fertility, food security and child nutrition for small-scale farmers in Malawi.<sup>46</sup>

<sup>44</sup> *ibid.*

<sup>45</sup> Bezner Kerr, R. et al. (2012) “Growing Healthy Communities: farmer participatory research to improve child nutrition, food security and Soils in Ekwendeni, Malawi” in: Charron, D. (ed.) *Ecohealth Research in Practice: Innovative Applications of an Ecosystem Approach to Health* International Development Research Centre/ Springer Science and Business Media.

<sup>46</sup> Biodiversity for Food and Nutrition Project website (undated). “Legume Intercropping in Malawi” <http://www.b4fn.org/case-studies/legume-intercropping-in-malawi/>

The legumes fix nitrogen from the atmosphere, so when the leaves and roots are incorporated directly into the soil following harvesting they add nitrogen and other nutrients, as well as organic matter.<sup>47</sup> Farmers can then grow a grain crop such as maize in the improved soil at the start of the next cropping season, as well as eat the edible legume.

In October 2012, a new initiative, the Malawi Farmer-to-Farmer Agroecology project (MAFFA) was launched in Mzimba District as a sub-project of the SFHC and Ekwendeni Hospital's AIDS Program, in collaboration with Chancellor College (University of Malawi), Western University in Canada, the University of Manitoba, Presbyterian World Service and Development, Canadian Food Grains Bank and Cornell University. The project is being supported by the Canadian International Development Agency (CIDA)'s Partners for Development programme, channelled through Western University, in Ontario.<sup>48</sup>

MAFFA is using farmer-to-farmer teaching about Agroecology, nutrition and developing local food markets to improve food security, nutrition and livelihoods. Food insecure rural households are learning from fellow farmers about ways to sustainably manage their soils, increase food diversity and yields, and improve child nutrition. Farmers and youth are also developing local food enterprises to improve incomes and boost local rural economies.

Through the project's focus on farmer-to-farmer education, 6,000 farming households will learn ecological farming methods and will be provided with technical support in food production and cooperative development. In addition, 200 youth are to receive training in operating small businesses.<sup>49</sup>

## Impacts

It is still early in the life of the MAFFA to assess its impacts, however academic studies have investigated the impacts of the SFHC programme. According to one study published in 2007, more than 3,000 farmers had incorporated legumes and gained knowledge of legume contributions to child nutrition and soil productivity over the preceding five-year period.<sup>50</sup>

In 2005, the average area of expansion of legume systems on smallholdings was 862m<sup>2</sup>, with farmers generally favouring edible legume intercrops, such as pigeon pea and groundnut. Education on the soil benefits of improved crop residue management and participatory methods of knowledge sharing were associated with enhanced labour investment.

Households reported feeding significantly more edible legumes to their children compared with non-project households. Participatory research that incorporated nutritional education fostered discussions within households and communities.<sup>51</sup>

A subsequent study which also looked at climate change resilience found that pigeon pea/maize intercrops were highly likely to produce sufficient calories for small-scale farming households across variable rainfall patterns, from 73 to 100% of the years simulated, for 10 out of 12 case study households. This stands in contrast to monoculture maize, where sufficient calories were consistently produced for only half of the case study households.<sup>52</sup>

Survey data from that study documented strong adoption patterns of legume mixtures, and gains in farmer capacity. Farmers shared agronomic information and seeds of pigeon pea and other improved legumes.

The research found that farmers were highly motivated to experiment with and adopt legumes that produced food and other valued combinations of traits, such as reliability under variable rainfall.<sup>53</sup>

Overall, the project is contributing to crop and dietary diversity of the community, builds local markets, and recognises the multi-functionality of agriculture by making household food production and nutrition a key component.

In addition, the farmer exchanges, community seed banks, and discussion groups at the community and household level provide avenues to promote collective action and to recognise the key role women play in agriculture and household food security.<sup>54</sup>

<sup>47</sup> Snapp S, et. al, (2013) "Modeling and participatory farmer-led approaches to food security in a changing world: A case study from Malawi" *Sécheresse* 24: 350-8.

<sup>48</sup> Government of Canada: Foreign Affairs, Development and Trade website (March 11, 2013) "Harper Government partners with Western University to increase food security in Malawi" <http://www.acdi-cida.gc.ca/acdi-cida/acdi-cida.nsf/eng/NAT-31195041-J99>

<sup>49</sup> *ibid.*

<sup>50</sup> Bezner Kerr, R., Snapp, S., Chirwa, M., Shumba, L., & Msachi, R. (2007). Participatory research on legume diversification with Malawian smallholder farmers for improved human nutrition and soil fertility. *Experimental Agriculture*, 43(4), 1-17.

<sup>51</sup> *ibid.*

<sup>52</sup> Snapp S, et. al, (2013) op. cit.

<sup>53</sup> *ibid.*

<sup>54</sup> Canadian Foodgrains Bank (2008) *Pathways to Resilience: Smallholder farmers and the future of Agriculture. Country Case Study: Malawi* <http://foodgrainsbank.ca/resilience.aspx>





## CASE G: Community Biodiversity Development and Conservation initiative, Malawi

<b>Location:</b>	Ntchisi and Dowa districts, Malawi
<b>Duration:</b>	2007-2010
<b>Donor agencies:</b>	Norad, via the Development Fund (DF), Norway.
<b>Principle actors:</b>	Self Help Africa (SHA)
<b>Donor financing:</b>	GBP £100,000 (US \$156,602)
<b>Nature of the project:</b>	Promoting the conservation of indigenous seeds for local food crops, as well as women's empowerment, education and wider policy issues that affect agro-biodiversity

### Summary

Over the past few decades, the erosion of agro-biodiversity has been a growing threat to food security in Malawi. Recent agricultural policies and practices that have favoured modern seed varieties, particularly hybrid maize, have contributed to the loss of local and indigenous cultivars. The preference of hybrid maize by the government has led to the marginalisation of a wide range of indigenous cereal crops, including sorghum and millet.<sup>55</sup> Moving away from monoculture cropping systems and conserving and building upon agro-biodiversity on small-scale farms are therefore vital for achieving ecological farming and food sovereignty.

In response to this threat, communities in the Ntchisi and Dowa districts of central Malawi have worked with the NGO Self Help Africa to regain control of their agricultural systems through a farmer-led seed conservation and sharing initiative. The Community Biodiversity Development and Conservation project was launched to strengthen local people's capacity to develop, manage and use agro-biodiversity, increasing household food production and reducing poverty.

The programme focused on five main thematic areas of work:

1. Increase crop diversity based on access to local varieties and indigenous knowledge and practices.
2. Strengthen women's role and participation in decisions related to agro-biodiversity use and conservation.
3. Enhance awareness of the agricultural and cultural role of agro-biodiversity in securing food security.
4. Promote better nutrition for resource poor farmers and people living with HIV.
5. Forge linkages between community level conservation and national and regional seed conservation efforts.<sup>56</sup>

The programme implemented a wide range of activities. Farmers were trained in crop diversification and agro-biodiversity management, land resources management, green manure making and seed bank management. The project also organised community workshops and

seed conferences and built partnerships with regional stakeholders.<sup>57</sup>

Central to the programme was participatory varietal selection (PVS) of seeds, participatory plant breeding (PPB), and seed diversity fairs. PVS involves a partnership between farmers, researchers and plant breeders to select new or previously released cultivars and varieties by farmers based on favoured characteristics identified through both on-farm and on-station testing. PVS selection gives farmers, breeders and agronomists the opportunity to interact and exchange knowledge in order to produce seeds that are desirable, accessible and suitable to their local agro-ecological conditions. PPB generally involves a higher and more complex degree of involvement of farmers, as they are engaged in germplasm selection and decision-making in earlier stages of the varietal development process.<sup>58</sup> The farmers were also trained in crossbreeding techniques, which they implemented independently.

### Impacts

The use of local biodiversity in the breeding process, and the fact that PPB is carried out in the farmers' own fields, facilitated the development of seeds well adapted to local conditions. The PPB process also provided an important incentive to maintain local biodiversity in agriculture, helping to decrease the vulnerability of farmers to climate change, and to reduce their dependence on commercial seeds, which reduced their input costs thereby raising profits.<sup>59</sup>

Evaluation at the end of the project reflected significant progress in achieving its objectives, including:

- Enhanced awareness of the agricultural and cultural role of agro-biodiversity in securing food security.
- Farmers had adopted most of the techniques introduced by the project such as participatory plant breeding, setting up of community seed banks, seed systems management, and manure making.

<sup>55</sup> Self Help Africa (2011) *Documenting Instruments of Change in Agricultural & Rural Development in Africa* Self Help Africa Technical Series: 1st edition - Seed Security for Food Security: Local Seed System Development

<sup>56</sup> *ibid.*

<sup>57</sup> Self Help Africa/ Development Fund (unpublished internal document) Community Biodiversity Development And Conservation Project. Annual project report, Jan-Dec 2009.

<sup>58</sup> Halewood, M. et al. (2007) "Participatory Plant Breeding to Promote Farmers' Rights" *Biodiversity International*. [http://www.biodiversityinternational.org/index.php?id=244&tx\\_news\\_pi1\[news\]=1078&cHash=f9271a9cace76820cf4302f0c65888b6](http://www.biodiversityinternational.org/index.php?id=244&tx_news_pi1[news]=1078&cHash=f9271a9cace76820cf4302f0c65888b6)

<sup>59</sup> *ibid.*

- PPB is being spread by the farmers and they are able to explain the techniques of PBB/PVS and manure-making and how they are using them in their community plots and individual fields.
- Seed diversity fairs strengthened local/traditional knowledge and informal seed supply systems. Participation by a range of stakeholders also provided important public recognition of farmers and their crop varieties, raising awareness of the value of crop diversity. Social networks that were enhanced by the seed diversity fairs played a key role in improving access to seed and information to other farmers.<sup>60</sup>

## Key Lessons

Enhancing seed diversity provides a crucial resource to ensure food security in rural Malawi, particularly in the face of climate change.

As in much of Africa, seed sharing has long been the basis of local food security and sovereignty in Malawi. Seeds have been used as a community resource, encouraging constant sharing, experimentation and improvement. As such, seed fairs and food fairs have been a culturally relevant way to showcase the diversity of crop varieties developed by farmers over hundreds of years.

By helping farmers develop a network to learn about, conserve, trial, breed and exchange local seed cultivars with the support of the NGO Self Help Africa, the Norwegian government has used a relatively small amount of money to make an important intervention that will benefit many households for years to come.

## 2.3 Public Procurement Schemes

All over the world, including in low-income countries, the public sector is an extremely important purchaser of goods and services. Although estimates vary, governments spend on average around 12% of their GDP on public procurement in OECD countries, and slightly less in developing countries.<sup>61</sup>

Food is one of the most critical goods procured by government agencies: be it as part of food aid or aid-in-kind programmes; to supply hospitals, public offices, prisons, army barracks, etc.; or as part of free school meal initiatives. School feeding programmes exist in 70 out of the 108 low and middle-income countries, mainly with support from the World Food Programme. Food-for-work and other in-kind food aid programmes managed by public authorities are also highly economically significant. For example, in India, federal and state food subsidies accounted for 2.7% of total annual expenditure incurred by Indian federal and state governments in 2010-11.<sup>62</sup>

In some countries public procurement of food has rapidly expanded over recent years. Brazil, for instance, increased its budget for its National School Feeding Programme fourfold between 2003 and 2011.<sup>63</sup> Brazil has also started to realise the potential of these programmes to support local small family farmers, and to encourage the uptake of ecological farming methods.

Public procurement schemes can be a highly appealing channel for donors to support ecological farming, as they are often comfortable and familiar working through public sector agencies, both through direct budget support and via specific sectoral initiatives and individual projects. Below we look at how two school meal initiatives, from Bolivia and Brazil, have incorporated ecological farming within the delivery of their programmes.



© Greenpeace / Sven Torfinn. Two farmers planting spring onions on a field, Kenya, 2013.

<sup>60</sup> SHA (2011) op. cit.

<sup>61</sup> De Schutter, Olivier (Jan 2014) *The Power of Procurement: public purchasing in the service of realizing the right to food*

<sup>62</sup> *ibid.*

<sup>63</sup> *ibid.*



## CASE H: Innovation for Food Security and Sovereignty in the Andes and the Sustainable School Feeding Programme, Bolivia

<b>Location:</b>	Bolivia
<b>Duration:</b>	IssAndes since 2010; Sustainable School Feeding Project since 2009
<b>Donor agencies:</b>	CIP, EU, World Food Programme
<b>Principle actors:</b>	Association of Municipalities for School Feeding of Chuquisaca (MEACH), World Food Programme (WFP), IssAndes, local farmers' organisations
<b>Donor financing:</b>	No details available
<b>Nature of the project:</b>	Promotion and innovation of native crop varieties for food security & municipal government procurement of local and ecological farm produce to supply school meals

### Summary

Innovación para la Seguridad y Soberanía Alimentaria en los Andes (IssAndes) is a project undertaken by the International Potato Centre (CIP), together with the European Union, which has been promoting innovation around native crop varieties for food security and sovereignty in the Andes since 2010.<sup>64</sup>

IssAndes adopts a food security and food sovereignty strategy based on the consumption of nutritious native potato varieties and other local foods, and focused on populations with calorie-protein deficiencies. It also seeks to improve public perceptions of local foods from the Andean territories. Native potato varieties have high concentrations of micro- and macro-nutrients, and antioxidants that can improve food security of the Andean population.<sup>65</sup>

In Bolivia, another key food security initiative is the National School Feeding Programme, which is supported by the World Food Program (WFP) under its sustainable school-feeding project, funded by the EU. The scheme aims to alleviate short-term hunger for 80,000 school-age children between 6 and 14 years in the 52 most food-insecure municipalities of the country.<sup>66</sup>

The school-feeding programme promotes the use of traditional foods and the establishment of local food markets, as well the establishment of gardens and small livestock development projects in schools. Food is being procured locally by the municipalities with technical assistance from WFP.

In Chuquisaca, a large Department in the southern part of the country, IssAndes has been working with the World

Food Programme and the Association of Local Municipal Authorities (MAECH) to support the introduction of ecologically produced native potato varieties into the local school meals programme, which includes breakfast and lunch.<sup>67</sup>

### Impacts

The IssAndes initiative and the national and municipal school feeding programmes have generated synergies with beneficial impacts to the people of Chuquisaca. For example, at Sundur Wasi School, in the municipality of Zudañez, the municipal government enables children to eat organic potatoes produced by their parents, with the support of MAECH and the IssAndes project. The lunch menu consists of rice provided by WFP and organic potato stew produced in the same community. The school also has a greenhouse from which children harvest vegetables to complement their school meals.<sup>68</sup>

The scheme also creates an important local economic benefit. Small-scale farmers in the region are typically farming small plots of land and are uncompetitive on official markets outside of their municipalities. With the recent devolution of governance systems in Bolivia, procurement by municipal authorities has therefore become an increasingly important market outlet for local producers. For example, in Chuquisaca, an estimated income of at least US \$400,000 p.a. has been generated for amaranth value chain actors as a result of the school meal policy.<sup>69</sup> The programme also provides a source of additional income to local families, especially women, who are employed to cook the meals.

<sup>64</sup> Climate Himalaya website (Apr 9, 2013) "Potatoes for Food Security in the Andes" <http://chimalaya.org/2013/04/09/potatoes-for-food-security-in-the-andes/>

<sup>65</sup> Innovation for Food Security and Sovereignty in the Andes (undated) IssAndes Brochure (available online at <http://www.issandes.org>)

<sup>66</sup> World Food Programme website (undated) *Bolivia: WFP Activities*. <http://www.wfp.org/countries/bolivia/operations>

<sup>67</sup> World Food Programme website (October 5, 2013) *Bolivia: 'WFP No Longer Gives Us the Fish, It Teaches Us How to Fish'* <http://www.wfp.org/node/3404/4215/566290>

<sup>68</sup> *ibid.*

<sup>69</sup> Padulosi, S. *et al.* (March 2014) "A Holistic Approach to Enhance the Use of Neglected and Underutilized Species: The Case of Andean Grains in Bolivia and Peru" *Sustainability* 6 (3), 1283-1312; doi:10.3390/su6031283

## CASE I: Programa de Aquisicao de Alimentos (PAA), and the National School Feeding Programme (PNAE), Brazil

<b>Location:</b>	Brazil
<b>Duration:</b>	The PAA was initiated in 2003, with the agro-ecological component added in 2011
<b>Donor agencies:</b>	None
<b>Principle actors:</b>	Government of Brazil, municipal authorities, rural social movements
<b>Donor financing:</b>	N/A
<b>Nature of the project:</b>	Public procurement of ecologically grown produce from family farms at a premium price, within the context of the national 'zero hunger' legislative framework.

### Summary

Farming in Brazil is characterised by a dichotomous structure, with a large-scale industrial and predominantly export-oriented agriculture sector juxtaposed with a large number of small-scale family farmers, who grow 70% of the country's domestically consumed food.<sup>70</sup>

Since launching the 'Zero Hunger' strategy in 2003, the government of Brazil has enacted a number of new laws and initiatives to support family farmers, as well as to promote the adoption of ecological farming on family farms. Within this context, several public procurement schemes have been put in place to encourage and support ecological farming including the Food Acquisition Programme (PAA). Some of the schemes have been designed to complement the National School Feeding Programme (PNAE), which has been running in Brazil since the 1950s.

The government brought in the PAA with Law No. 10.696 as part of the overarching Zero Hunger Programme. The PAA is a multifaceted programme that supports vulnerable family farms by providing market access and minimum price guarantees; supplies communities at risk of hunger with food aid; and provides incentives for producers practising ecological farming. It gives family farmers a secure guarantee for their crops and allows them to organise and plan production based on an assured minimum market price.<sup>71</sup>

In 2011, Law No. 12.512, Article 17, established that ecologically grown products may be procured at a price premium of up to 30% in relation to the prices set for conventional products by CONAB, the Brazilian public agricultural supply company.

This has since been reinforced by the National Plan for Agroecology and Organic Production (PLANAPO), launched

by the government in October 2013.<sup>72</sup> This framework outlines 134 initiatives for assisting in the transition to organic and ecological production coordinated across 10 ministries with an initial investment set at R\$8.4 billion (US\$3,271,560), including scaling up existing programmes to facilitate the transition to ecological farming.<sup>73</sup>

Approximately 46% of Brazil's 90,497 known 'organic/agro-ecological' establishments are located in the northeast region of the country. For this reason, the PAA food acquisition programme has allocated the majority of its resources in the northeast.

The PNAE aims to provide adequate, healthy and safe food for students, encouraging increased school attendance and improving student performance. On June 2009, Law No. 11.947 introduced a new legal requirement that at least 30% of the budget reserved by local (state or municipal) schools for food purchases under the PNAE should go to small-scale farmers and/or their cooperatives. Thus, while the central purpose of the programme is to increase the level of food security for students attending public schools, the law also intends to provide new market opportunities for small-scale farmers.

This same legislation stated that organic food and food produced via agro-ecological practices should also be prioritised in school menus, in line with similar priority criteria developed by the PAA.<sup>74</sup>

Although the federal and municipal school feeding initiatives in Brazil do not receive donor assistance, many bilateral cooperation agencies and multilateral development institutions do support local and national school meal programmes. Examples include the Ghana School Feeding Programme (funded by USAID and Dutch

<sup>70</sup> Government of Brazil (27/07/2011) "Agricultura familiar produz 70% de alimentos do País mas ainda sofre na comercialização" <http://www.brasil.gov.br/economia-e-emprego/2011/07/agricultura-familiar-precisa-aumentar-vendas-e-se-organizar-melhor-diz-secretario>

<sup>71</sup> McKay, B. and Nehring, R. (March 2014) *Sustainable Agriculture: an assessment of Brazil's family farm programmes in scaling up agroecological food production* International Centre for Inclusive Growth. Working Paper number 123

<sup>72</sup> Government of Brazil (2012) "Decreto no. 7.794 de 20 de Agosto de 2012: Institui a Política Nacional de Agroecologia e Produção Orgânica" Office of the President.

<sup>73</sup> Ministério do Desenvolvimento Agrário do Brasil (2013) "Plano Nacional de Agroecologia e Produção Orgânica: PLANAPO 2013-2015"

<sup>74</sup> McKay, B. and Nehring, R. (March 2014) op. cit.

Embassy), the DfID-funded programme in Sierra Leone, the Japan-funded programme in Kenya as well as similar initiatives in many countries globally funded by the World Bank and WFP.<sup>75</sup>

## Impacts

An in-depth analysis of the various initiatives designed to support family farmers and promote ecological farming through public procurement systems notes that while there are many promising elements in place, there still is work to be done to make these fully effective.<sup>76</sup>

On the positive side, recent research suggests that prices offered to family farmers through the PAA are, on average, much higher than selling to a private intermediary – anywhere from 30 to 300%.<sup>77</sup> The PAA has also made considerable progress in procuring organic/ecologically-grown crops. In 2011, the PAA reportedly procured US \$3.9 million worth of organic products, up from US \$1.94 in 2009.

However, the same study suggested that the PAA should do more to promote the ecological incentive, as awareness about the premium was low amongst farmers interviewed. The research also found severe regional disparities in regional procurement: over two thirds were sourced from the Southern region in 2011 despite the area having just over 20% of the nation's organic family farms, and despite the bulk of the PAA's resources being spent in the northeast.

Overall, the authors of the study suggest that four key weaknesses in carrying out the Agroecology component to the PAA must be addressed:

1. Raising programme awareness amongst family farmers;
2. Providing increased technical assistance and extension services;
3. Supporting farmer networks; and
4. Scaling up the initiatives.<sup>78</sup>

Another weakness that has been highlighted by farmers and analysts, is the high level of bureaucracy involved in order for farmers to register for the programme.<sup>79</sup> Every family farmer must have a basic set of documents to be part of the programmes. The most important one is the DAP (Declaração de Aptidão Ao Pronaf), which is difficult to obtain. The simplification of the process for getting a DAP has been a key objective amongst Brazilian farmers organisations and peasant movements, such as the Movimento Sem Terra, or Brazilian Landless Workers' Movement (MST).<sup>80</sup>

In terms of the PNAE, the programme of encouraging procurement from local farmers appears to have been successful overall. Within three years of the law introduced in 2009, the proportion of implementing agencies purchasing from small-scale farmers has increased from 48% to 67%.<sup>81</sup>

The public procurement programme has generated new market opportunities for family farmers and increased household earning potential, as well as providing food and nutritional security to local families. Family farmers can earn up to US \$5027 a year through the scheme. High quality and nutritious meals provided at schools also means that students are more likely to attend school, reducing drop-out rates. This also contributes to student health and improves general educational performance.<sup>82</sup>

In addition, by procuring at least 30% of school meals from local family farmers, the programme helps to maintain the local food culture and dietary habits, which in turn reinforces regional crop diversity and strengthens the resilience of the food system to climate change and price shocks. Furthermore, the high level of planning and organisation involved in running the process encourages social cohesion and community participation, which leads to the strengthening of social capital and positively impacts the community as a whole.

Finally, because farmers are feeding their own children through the school meals programme, there has been a heightened level of awareness and sensitivity about reducing chemical inputs applied to their crops, and hence the adoption of ecological means of fertilisation and pest control.<sup>83, 84</sup>



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<sup>75</sup> For more information on this see: The Partnership for Child Development (July 2014) *Home Grown School Feeding: time for donors to deepen engagement* School of Public Health, Imperial College, London.

<sup>76</sup> McKay, B. and Nehring, R. (March 2014) op. cit.

<sup>77</sup> *ibid.*

<sup>78</sup> McKay, B. and Nehring, R. (March 2014) op. cit.

<sup>79</sup> UNDP (2013) *Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE*. International Policy Centre for Inclusive Growth. United Nations Development Programme

<sup>80</sup> See for example: Herrero, R. (March 2014) *The Institutional Market: evaluating programmes in Brazil* Published by Comissão Pró-Índio de São Paulo (CPI) and ChristianAid.

<sup>81</sup> McKay, B. and Nehring, R. (March 2014) op. cit.

<sup>82</sup> Nehring, Ryan; McKay, Ben (2013) *Scaling up local development initiatives: Brazil's food acquisition programme* Working Paper, International Policy Centre for Inclusive Growth, No. 106

<sup>83</sup> McKay, B. and Nehring, R. (March 2014) op. cit.

<sup>84</sup> UN System Standing Committee on Nutrition (November 2013) *Nutrition Impact of Agriculture and Food Systems Brazil* Country study for the second International Conference on Nutrition

## 2.4 Producer Groups, Cooperatives and Farmer Networks

One of the most effective ways for development cooperation initiatives to encourage the scaling up of ecological farming is to work directly through producer groups and farmers' networks. While it can sometimes be challenging for donor agencies to identify and work with a series of local community groups, it is often possible to support

large numbers of farmers through projects undertaken in partnership with larger farmer federations and producer cooperatives.

This section profiles three cases where donors have supported producer federations that have been pioneering new ecological farming systems to improve their livelihoods.

### CASE J: Agroforestry and Marketing of Organic Cocoa by COCOA-RAAN, Nicaragua

#### Project features

<b>Location:</b>	Nicaragua
<b>Donor agencies:</b>	Japan Social Development Fund/ World Bank
<b>Principle actors:</b>	ACICAFOC, local indigenous peoples' organisations
<b>Donor financing:</b>	US \$1.93 million total, with sub-grants of up to US \$25,000
<b>Nature of the project:</b>	Enable local indigenous communities to improve their livelihoods through adoption of agroforestry practices and marketing of quality organic cocoa

#### Summary

Since 2010, the COCOA-RAAN project has been applying the farmer field school approach with indigenous communities in Nicaragua, encouraging people to adopt land-use planning and management practices that incorporate agroforestry, natural resource management, and biodiversity conservation.<sup>85</sup> Initiated in 2010, the project is being implemented by ACICAFOC, a regional NGO that coordinates local associations of indigenous peoples and farmers practicing agroforestry, with financial support from the Japan Social Development Fund (JSDF) administered by the World Bank.

COCOA-RAAN aims to strengthen the capacity of indigenous Miskito organisations to produce and market quality cocoa in an economically and environmentally sustainable manner. As such, the project is transforming environmentally damaging cocoa cultivation systems into practices that conserve biodiversity, regenerate and sustainably manage forest resources, and improve farmers' livelihoods. COCOA-RAAN involves participatory approaches in all activities through four key components<sup>86</sup>:

1. Develop integrated management systems for agroforestry on at least 1,000 small cocoa farms;



© Greenpeace/Jean-Pierre Kepsou. Cocoa fruit from Adoif Ngbe Ebong's farm, the regent of Babensi 2 Village, Cameroon, 2013.

<sup>85</sup> Gonzalez, Mary Lisbeth (2012) *Innovative Training in Cocoa Agroforestry: The Farmer Field Schools of Nicaragua*. World Bank, Washington, DC. World Bank.

<sup>86</sup> Baseline and impact monitoring COCOA-RAAN project (2014) Available at: <http://cocoa-raan.acicafocnic.org/>



2. Improve marketing to international fair trade and sustainable chocolate companies;
3. Strengthen the social, commercial and environmental management capacity of beneficiaries; and
4. Undertake participatory design, monitoring and evaluation work.

The programme has provided technical assistance to cooperatives and community-based organisations to prepare projects with the participation of the wider community. A project-sponsored fund finances sub-projects of up to US \$25,000 to help community producer organisations and cooperatives to address locally specific challenges<sup>87</sup>.

To assess progress, the project applies two complementary participatory monitoring and evaluation (M&E) tools: organising focus groups with members of a single subproject; and organising focus groups with members of all or several subprojects. These participatory exercises identify bottlenecks, needs, weaknesses, strengths, and new ideas to improve project supervision. The first allows for a deeper understanding of the needs of the specific group and addresses the needs in more detail. The second modality creates interesting information-sharing dynamics and allows mutual learning among all stakeholders (the subprojects, the implementing agency, and the Bank). The participation of all stakeholders, beneficiaries, the implementing agency, and the Bank has contributed to building trust in the farmer community.<sup>88</sup>

## The Japan Social Development Fund

Japan Social Development Fund (JSDF) grants are disbursed through the World Bank as Trustee for the programme. The Bank oversees implementation and ensures use of the funds in accordance with its Procurement and Financial Management Guidelines.

The objectives of the JSDF programme is to provide grants in support of community-driven development and poverty reduction projects that empower the poorest and most vulnerable groups. Grants are made to eligible recipient countries, based on income level classification.

A unique feature of the JSDF programme is that it provides a platform for cooperation with NGOs and other local stakeholders in the development process. Unlike most World Bank-financed projects that are executed by the government at the central level, JSDF grants are executed by NGOs/CSOs and local governments and implemented at the community level.

JSDF projects are expected to meet several fundamental criteria:

- Targeting the neediest: delivering direct benefits to poor, vulnerable, and disadvantaged groups
- Piloting alternative approaches, utilising NGOs/CSOs or local governments to reach the target groups
- Reflecting a participatory design and consultation process with the targeted beneficiaries who endorse the grant inputs
- Empowerment of local communities and organisations through capacity building.
- Using participatory design and monitoring to help beneficiaries address their vulnerability and to ensure ownership and sustainability
- Promoting scale up of pilot upon completion through bank-financed operations, recipient government activities, or other entities.

*Source: Government of Japan/ World Bank. JSDF Annual Report, 2012.*

During the first seven months of implementation, 42 FFS sessions were organised in the five municipalities. During the training sessions, farmers learned about the environmental and soil requirements of local and new cocoa varieties, agroforestry and diversification strategies, supplying nutrients and organic fertilisation management, crop cultivation and maintenance, organic pest and disease management, and post-harvest treatment and processing. Farmers learned to apply this new knowledge in their efforts to rehabilitate or maintain crops, bring existing trees

into better production, graft new plant material onto an old root system, or replant trees.<sup>89</sup>

The FFS approach builds the capacity of farmers to evaluate subproject performance. Farmers benefit from the training by gaining additional knowledge and skills, whether or not they participate in a subproject. FFS have also contributed to the consolidation of farmer groups and fostered the participation of women and indigenous peoples in the learning process.<sup>90</sup>

<sup>87</sup> Gonzalez, Mary Lisbeth (2012) *op. cit.*

<sup>88</sup> Gonzalez, Mary Lisbeth (2012) *op. cit.*

<sup>89</sup> *ibid.*

<sup>90</sup> *ibid.*

## Impacts

The project is directly benefiting 1,000 families in 114 communities (estimated 5,000 people) in the north-eastern part of the country. It has also provided technical assistance and training to more than 1,200 men and women through the FFS.<sup>91</sup>

Supervision reports use farmers' knowledge and practices to measure the learning and capacity-building impact of the FFS. Small-scale farmers are adopting land-use planning and management practices that incorporate natural resource management and biodiversity conservation objectives. Early results indicated that farm productivity has increased by about 30%. Farmers save 70% on their production costs by replacing synthetic fertilisers trucked in from the capital Managua with compost and organic fertilisers.<sup>92</sup>

Planting on the farm also saves an average of US \$28 per hectare compared with planting seedbeds in greenhouses, and US \$56 when transporting the seedbed to the farm, not including approximately US \$1,400 per hectare for labour.

Additionally, around 10% of the plants would die when seedbeds were transported to the farm, and a further 15% during transplanting. With this project, plant mortality dropped by 70%. Organic cocoa sold to RAAN goes for a much higher price than conventional cocoa, which is another major benefit for local farmers.<sup>93</sup>

Going forward, the project will continue disseminating impacts and experiences to improve the work of practitioners and to indicate ways this experience could be improved, scaled up and replicated.<sup>94</sup>

## CASE K: Investing Farmer Organisations adopting the System of Rice Intensification (SRI), Madagascar

### Project features

**Location:** Eastern Madagascar

**Donor agencies:** USAID

**Principle actors:** Confédération Nationale Koloharena Sahavanona (*Koloharena*), Association *Tefy Saina*, Slow Food, Lotus Foods, BVLAC

**Donor financing:** Landscape Development Interventions (LDI), 1998-2004: US \$22m; Eco-Regional Initiatives (ERI), 2004-09: US \$2m; Business and Marketing Expansion (BAMEX), 2004-08: US \$5.3m (all from USAID).

**Nature of the project:** Integrated landscape management, forest preservation and farmer livelihood improvement programmes based on adoption of sustainable rice cultivation, using SRI.

The Confédération Nationale Koloharena Sahavanona (or *Koloharena* for short) is a national representative body of 29 farmer cooperatives that have been practicing the System of Rice Intensification (SRI) in the humid forested region of eastern Madagascar for over a decade.

SRI is an approach to rice cultivation that aims to simultaneously reduce chemical inputs to farms while increasing productivity, through changing the management of plants, soil, water and nutrients. It is currently being practised in over 50 countries and is promoted by organisations such as the International Fund for Agricultural Development (IFAD), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the US Agency for International Development (USAID), the Asian Development Bank (ADB), FAO, and the World Bank in their development portfolios.<sup>95</sup>

From 1999 to 2008, the USAID-funded Landscape Development Initiative (LDI), a subsequent project called the Eco-Regional Initiative (ERI), and the Business and Market Expansion (BAMEX) programme encouraged the development of the *Koloharena* network and its promotion of SRI, working closely with *Tefy Saina*, a local association from whom staff from the Landscape Development Initiative first learned about SRI.<sup>96</sup>

The landscape development projects, in conjunction with projects working to build capacity within civil society, devoted significant efforts to developing social and organisational capital within communities living in dispersed and low-density settlements at the forest fringes. They helped establish, and then nurture, the *Koloharena* farmers' movement. By 2010, the network encompassed nearly 1,700 village-based associations, serving about

<sup>91</sup> Norori, M.T. (September 30, 2012). *Nicaragua responds to global demand for cocoa* Available at: <http://www.nicaraguadispatch.com/news/2012/09/nicaragua-responding-to-global-demand-for-cocoa/5484>

<sup>92</sup> Gonzalez, M. L. (2012) op. cit.

<sup>93</sup> Gonzalez, M.L. (May 13, 2013) *Is Organic food more expensive to produce? Fact or fiction?* Available at: <http://blogs.worldbank.org/latinamerica/organic-food-more-expensive-produce-fact-or-fiction>

<sup>94</sup> Gonzalez, M. L. (2012) op. cit.

<sup>95</sup> Oxfam (2014) *Building a New Agricultural Future: Supporting Agroecology for people and planet* Oxfam Issue Briefing

<sup>96</sup> Randrianarivelo, J. et. al. (May 2013) "Organic Production of Pink Rice in Madagascar" in: Auerbach, R. et. al. (eds.) *Organic Agriculture: African Experiences in Resilience and Sustainability* FAO.

20,000 members that were joined under 30 cooperatives and 18 federations.<sup>97</sup>

ERI introduced the farmer-to-farmer extension system, enabling the experimentation and sharing of ideas in the absence of other agricultural extension services. Toward the end of the project, farmers were even paying for extension services offered by farmer field agents (trained *Koloharena* members), demonstrating the extent to which such information was valued.<sup>98</sup>

By 2005, the *Koloharena* was growing red rice using SRI methods, as well as spices, essential oils, fresh fruits and vegetables, and had a full-time coordinator for marketing these products. This effort was backstopped by BAMEX, which assisted in the commercialisation of products produced by *Koloharena* members. As the government in office at the time was supporting eco-friendly agricultural strategies as part of the Madagascar Naturellement initiative, these initial efforts coincided well with national policy.<sup>99</sup>

In 2009 *Koloharena* worked with the international organisation EcoCert to obtain organic certification of the particular strain of rice they producing, a pink strain known as 'Dista'. Dista rice has several positive attributes including a long grain with an attractive pink colour and good flavour; a longer growing cycle compared with other varieties (one week longer); drought and flood tolerance; disease resistance; good response to organic fertilisers; with yields of 4–8 tonnes per hectare with SRI; as opposed to the national average of 2 tonnes per hectare.<sup>100</sup>

In November 2006, the US-based company Lotus Foods visited Madagascar and selected the pink rice as their clear favourite out of a range of potential varieties.<sup>101</sup> Other partners have also become involved in supporting the initiative. Jim Carrey's Better U Foundation also provided

grants to help farmers get additional technical assistance and have access to key inputs and equipment such as certified organic fertiliser, weeding implements and hand held hoes.

Since 2009, the Bassin Versant Lac Alaotra Project (BVLAC), funded by the Agence Française de Développement and implemented by the organisation CIRAD, has also played a critical role in backstopping the programme, e.g. providing financial support, overseeing the organic certification procedures and liaising with Lotus Foods to bridge the language and communication barriers.<sup>102</sup>

## Impact

The adoption of organic SRI among the members of the *Koloharena* movement has had a highly positive impact on farmers' livelihoods, as well as on the sustainability of local farming systems. On average, farmers' rice yields increased from 3–5 tonnes per hectare to around 5–8 (and in some cases as high as 11 tonnes) per hectare following full conversion.<sup>103</sup>

While some production costs rose (namely labour), this was offset by decreases in other input costs, and earnings increased significantly due to the higher value of organic pink rice.

Another clear benefit has been the fact that farmers are guaranteed a set price from the buyer, negotiated by *Koloharena* at the beginning of the season, giving them greater predictability and security of income. This allows them to invest more into their agricultural activities and make continuous improvements to their farms. In addition, as only surplus harvests beyond household needs are exported, the initiative has also reduced vulnerability to food insecurity.<sup>104</sup>

## Economic comparison of conventional versus SRI rice<sup>105</sup>

Results	Traditional Rice Cultivation	System of Rice Intensification (Organic)
Costs of Production	150kg seeds  Herbicide cheaper than labour for weed control  Significant costs of pesticides	10kg seeds  More expensive labour for weeding, but costs offset by higher yields and gains through soil aeration  Biological controls available at low cost
Yields	3-5 tonnes per ha.	5-8 tonnes per ha.
Target Market	Local	Local and export

<sup>97</sup> Freudenberger, K. (July 2010) *Paradise Lost? Lessons from 25 of USAID Environment Programs in Madagascar* USAID

<sup>98</sup> *ibid.*

<sup>99</sup> Randrianarivelo, J. et. al. (May 2013) *op. cit.*

<sup>100</sup> *ibid.*

<sup>101</sup> *ibid.*

<sup>102</sup> *ibid.*

<sup>103</sup> *ibid.*

<sup>104</sup> *ibid.*

<sup>105</sup> *ibid.*



## 3. Key Lessons

### 3.1 Donors can play a unique and vital role in supporting eco-agriculture

Ecological farming involves a continuous process of experimentation, knowledge-building and fine-tuning to discover the best seed cultivars, cropping systems, soil and water management practices and pest and disease control measures within the agro-climatic conditions of any particular location. It is not a science that can be applied in a vacuum, but rather is most effective when adapted to fit the local economic (e.g. income and access to markets), institutional (e.g. land rights and level of community organisation), and cultural (e.g. dietary preferences, role of women and men in production) context. This approach contrasts sharply to the “one size fits all” farming practices characteristic of conventional agriculture.

As such, there is a pressing need for increased public support to universities and research institutions that are working with farmers to trial new, more sustainable, farming systems. These institutions can be effective channels for donors to support the spread of ecological farming systems as they often have the administrative and institutional capacity to manage large tranches of grant income. In addition, academic and research centres are often adept at forming multi-stakeholder partnerships, meaning that financial support for ecological farming research projects often create a multiplier effect that extends well beyond the institution itself.

Below we highlight three examples of donor-backed research centres that have successfully developed new partnerships to support ecological agriculture.

### 3.2 Long-term financial commitments pay the biggest dividends

Ecological farming is a journey, not a destination. Projects promoting sustainable agriculture therefore require sustained commitment from partners, including donors, to realise their potential. For example, the engagement and support of USAID in the different phases of the *Koloharena* farmers movement - from organisational development, to technical assistance, to the identification of export marketing channels - have been vital to the effective spread of SRI approaches for rice cultivation in Madagascar.

In Bolivia, continuous support by SDC for AGRUCO’s work with farmers in the Andes has helped to foster a strong level of trust and collaboration between the university and the communities with which it works. This has created a solid platform for the co-generation of new knowledge and applied skills to enable farmers in the region to farm sustainably and improve their livelihoods.

### 3.3 Agroecology should improve, not replace, local farming systems

When planning a major new agricultural investment initiative, the temptation is to introduce something new: a technology, crop, seed variety or marketing arrangement. Yet, while innovation is useful, the successes documented in this paper suggest that it is best applied when building on the livelihood strategies, cultural traditions and farming systems already employed by local communities, rather than seeking to replace these wholesale.

The success of the COCOA-RAAN project, for example, hinged to a large extent on using project funds to support sustainability improvements to an existing source of local livelihood, e.g. cocoa production. By building on local farmers’ knowledge and introducing complementary techniques such as agroforestry, the project has been able to harness local skills and resources to maximum effect. The WTLCP project, meanwhile, built on a cultural tradition of seed saving and sharing within the western Terai region of Nepal, helped to strengthen these informal systems through seed banks and on-farm participatory plant breeding. AGRUCO has also sought to use its research capacity to help build on indigenous knowledge and improve the cultivation of native crop varieties in Bolivia.

### 3.4 Building institutional capacity is vital to long-term success

Whether looking at farmers’ organisations’, research centres, or seed banks, capacity building is crucial to the long-term success of most ecological farming initiatives. For example, the success of the COCOA-RAAN project was built not only by addressing the technical side of sustainable cocoa production, but also the economic and institutional aspects of the process. The project works to strengthen the management skills and capabilities not only of the local farmers organisations, but also of the regional Central American Cocoa Producers Association. In terms of the latter, the project creates an effective mechanism to finance the association’s coordination functions, certification procedures and marketing activities, as well as its leadership role.

Capacity building has also been a major feature of developing the *Koloharena* network of SRI farmers in Madagascar, the development of seed saving and seed banks through the WTLCP in Nepal, the agro-biodiversity conservation work in Malawi and the academic training and research work of students and staff involved in the Agroecology in Practice programme.

### 3.5 Participatory project design, implementation and monitoring works

A crucial component of COCOA-RAAN's positive impacts appears to be the participatory monitoring and evaluation process embedded in the design of the project. This has provided an iterative learning mechanism for ACICAFO that has enabled the project to adapt its functions and activities according to the needs of the participating households, ensuring the project's finances are used to maximum benefit.

Participatory and collaborative approaches are also important for fostering effective research and extension efforts to support ecological farming. Participatory learning for action was central to the design of courses and evolution of the MSc programme within the "Agroecology in Practice" initiative. Throughout the programme, there has been an emphasis on experiential learning, integration of enterprises, focus on local food systems and open attitudes of instructors and students toward participation of farmers.<sup>106</sup>

The evaluation conducted by the Agroecology in Practice participants also highlighted how regular workshops involving stakeholders from all partner universities were essential to the success of the programme. In addition, the annual general meetings allowed participants to share ideas and experiences, use face-to-face discussions to assess progress, handle administrative matters, select course content and undertake future planning.<sup>107</sup>

Another key aspect of this emphasis on participation is the success of farmer field school approaches in helping to spread ecological farming. Support for farmer-to-farmer learning has been critical to the success of the SHFC/MAFFA project in Malawi, and a co-learning approach provided valuable insights to researchers regarding which technologies were more adaptable, and ultimately, adoptable by small-scale farmers living in a highly variable environment. Similarly, farmer field schools have been one of the main avenues through which SRI has spread throughout both Madagascar and Malawi.

### 3.6 Donors can be important catalysts in building networks and linkages

Development cooperation agencies can also support Agroecology projects through their ability to forge linkages between multiple partners. For example, the catalytic role played by USAID in bringing together a number of different partners, such as Jim Carey's Better U Foundation, AVSF, Lotus Foods and BVLAC, helped the movement to not only develop the technical side of SRI training, but also to establish new and profitable markets for ecologically grown rice.

In the final evaluation of the Agroecology in Practice programme, teachers pointed out the importance of the local and global networks created in improving their understanding of Agroecology. Participating in these networks also improved the quality of their internal assessments of the programme development, as well as enabling the sharing of a wider range of materials. Administrators also bring up the importance of the networks and the improved collaboration within the specific university.<sup>108</sup>

### 3.7 Seeing the big picture: linking environment and development objectives

Creating synergies in development assistance programmes is an obvious but often elusive objective for donor agencies. Ecological farming initiatives can offer an effective means of achieving this; by bridging developmental and social objectives (poverty reduction, rural economic growth, food and nutritional security, women's empowerment) and environmental goals (landscape protection, biodiversity conservation, climate resilience).

In Madagascar, the integration of agricultural development objectives alongside wider landscape management and forest protection measures was critical in terms of not only improving farmers' livelihoods through SRI, but also in stopping traditional slash and burn cultivation in the forest margins.

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“ An increase and strengthening of agricultural knowledge, science and technology (AKST) towards agroecological sciences will contribute to addressing environmental issues while maintaining and increasing productivity.” ”

— IAASTD Global Summary, Key Finding 7, page 10 available at: <http://www.unep.org/dewa/assessments/ecosystems/iaastd>

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<sup>106</sup> Eksvärd, K. *et. al. op. cit.*

<sup>107</sup> *ibid.*

<sup>108</sup> Salomonsson L. *et. al. (March 2014) op. cit.*

In the Andean region, SDC has pursued poverty reduction objectives alongside various biodiversity conservation objectives; including reforestation, native potato diversity projects, support for research on other native Andean crops, market innovation and livelihood programmes, sustainable soil and water management projects, the revitalisation of indigenous knowledge, and the coordination of larger scale programmes aimed at a regional ecosystems approach of conservation.<sup>109</sup> SDC's sustained support for AGRUCO is consistent with many of these objectives, as AGRUCO is working with communities to re-value indigenous knowledge and build on native agro-biodiversity, reforest the landscape, improve livelihoods and natural resources management practices.

In the case of the WTLCP in Nepal, the establishment of community seed banks fits within a wider project framework of landscape management, conservation and

livelihood improvement involving multiple partners. This allowed donors to channel finance through a number of existing institutions at the central, regional, and local levels to promote the sustainable use of agro-biodiversity.

Another good example of creating synergies in development assistance comes from the EU's crucial support to the development of two complementary food security interventions in the Andean region. EU/CIP support for IssAndes has helped to promote and improve native crop varieties that provide nutritional benefits, bolster sustainable local livelihoods and play a critical role in maintaining agro-biodiversity in the Andean region. At the same time, EU support for the World Food Programme's sustainable school feeding project has led to the integration of local and organic produce into the diets of children in food insecure areas, while generating additional income for their families.



© Greenpeace / Jennifer Heslop. Difference between maize grown with push-pull method (b/g) & without. (f/g, left). Suba District, Kenya, 2000.

<sup>109</sup> SDC (2009) *op. cit.*

# 4. Conclusions and Recommendations to Donors

## 4.1 Conclusions

The enormous challenge of helping small-scale farmers in Africa to improve their food and livelihood security in the face of climate change means that governments and donors need to look beyond business as usual approaches to agricultural investment. There is now widespread consensus among international development NGOs that a major shift in donor financing towards more ecological and climate-resilient forms of agriculture is necessary to address the multiple challenges facing small-scale producers.<sup>110</sup>

The need for greater investment into sustainable and climate resilient agricultural systems is also increasingly appreciated within the donor community itself. For example, the SDC (Swiss Agency for Development and Cooperation) notes:



© Greenpeace / Jennifer Heslop Mrs Omulo's cows eating napier grass fodder, required for their acquisition, Suba District, Kenya, 2013.

*“SDC... supports all cultivation systems that conserve the natural resources for coming generations, are economically viable and socially balanced. In this respect agro-ecological approaches and technologies play a key role. SDC considers Agroecology a powerful tool to address food and nutrition security and organic agriculture as an important motor for innovation in Agroecology. Agro-ecological approaches and technologies play an important role in enhancing the resilience and sustainability of farming and livelihood systems, while increasing productivity.”<sup>111</sup>*

The cases from Africa and around the world that are highlighted in this report demonstrate that ecological farming can provide new livelihood opportunities and improve productivity, build social capital, protect landscapes and watersheds, nurture biodiversity, improve food and nutritional security, and provide greater resilience to the impacts of climate change. Small-scale farmers are often incredibly innovative, willing to experiment with new seeds, crops, planting techniques, farm management techniques and market outlets to get the most out of their limited resources.

However, many small-scale farming households are often living on the margins of economic viability. The support of bilateral and multilateral donor agencies, channelled via effective local institutions and/or governments, can therefore be crucial in helping farmers to develop integrated, diversified and ecological farming systems and find new markets. Further, the range of development cooperation agencies involved in the cases highlighted in this report demonstrates openness within the donor community to use the channels featured here to increase support to ecological farming initiatives.



© Greenpeace / Sven Torfinn. Field with Organic Vegetables in Kenya, Kenya, 2013.

<sup>110</sup> See for example Oxfam (2014) *Building a New Agricultural Future: Supporting Agroecology for people and planet*; ActionAid (2013) *Walking the Talk: why and how African governments should transform their agriculture spending*. Institute of Agriculture and Trade Policy (2013) *Scaling Up Agroecology*; Ecumenical Advocacy Alliance (2012) *Nourishing the World Sustainably: Scaling up Agroecology*; Christian Aid (2011) *Healthy Harvests: the benefits of sustainable agriculture in Africa and Asia*

<sup>111</sup> SDC (2013) *GPFS at Work: Organic Agriculture and Agroecology* Swiss Agency for Development and Cooperation, Global Cooperation / Global Programme Food Security



## 4.2 Recommendations

On the basis of the evidence arising from the case studies presented in this report, Greenpeace proposes that donors should:

- **Increase overall financial, research, and technical support** to ecological farming, using the four channels highlighted within this report as conduits, as well as exploring new channels that could help to scale up successful local ecological farming initiatives.
- **Support national governments** in using the channels highlighted in this report (and others) to increase investment in and create policies that promote ecological farming to complement donor investment. This also implies working with government partners to reassess budget allocations for agricultural development, and integrating progressive targets for budget spending on ecological components into national agricultural development, climate adaptation and food security plans.
- **Develop new ecological farming partnerships with small-scale farmer associations or cooperatives, academic/research institutions, seed bank and exchange initiatives**, and help build institutional capacity amongst partners to scale up such initiatives. Regional small-scale farmer platforms can be a good entry point for donors to learn more about the work of farmers' associations and cooperatives. As this report has shown, ecological farming projects also benefit from longer-term commitments and partnerships.
- **Link small-scale farmer associations to private companies interested in procuring ecologically grown produce**; e.g. local hotels, restaurants and supermarkets that directly supply consumers, or to food manufacturing companies targeting wider domestic, regional or international markets.
- **Support the integration of local ecologically-grown crops into public food procurement systems.** In the final report of his mandate, the UN Special Rapporteur on the Right to Food, Olivier de Schutter, stressed the value of such schemes to help States fulfil their duty to progressively realise the right to adequate food.<sup>112</sup>
- **Ensure participatory approaches** to the design, implementation monitoring and evaluation of ecological farming projects, to ensure the projects meet and respond primarily to the needs of small-scale farmers, particularly women.
- **Use ecological farming initiatives as a strategic opportunity to develop synergies** between various national development assistance programme objectives – for example between food security goals, climate adaptation measures, environmental protection aims and rural poverty reduction objectives.
- **Encourage and support the use of farmer field school approaches** as an effective means of supporting training in ecological farming methods, as well as the co-generation of new knowledge.



© Greenpeace / Sven Torfinn. Small-scale farmer James Njoronge between crops of beans and maize on his farm. Kenya. 2013.

<sup>112</sup> De Schutter, O. (April 2014) *The Power of Procurement Public Purchasing in the Service of Realizing the Right to Food* Office of the UN Special Rapporteur on the Right to Food. Briefing Note 08 - April 2014.

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